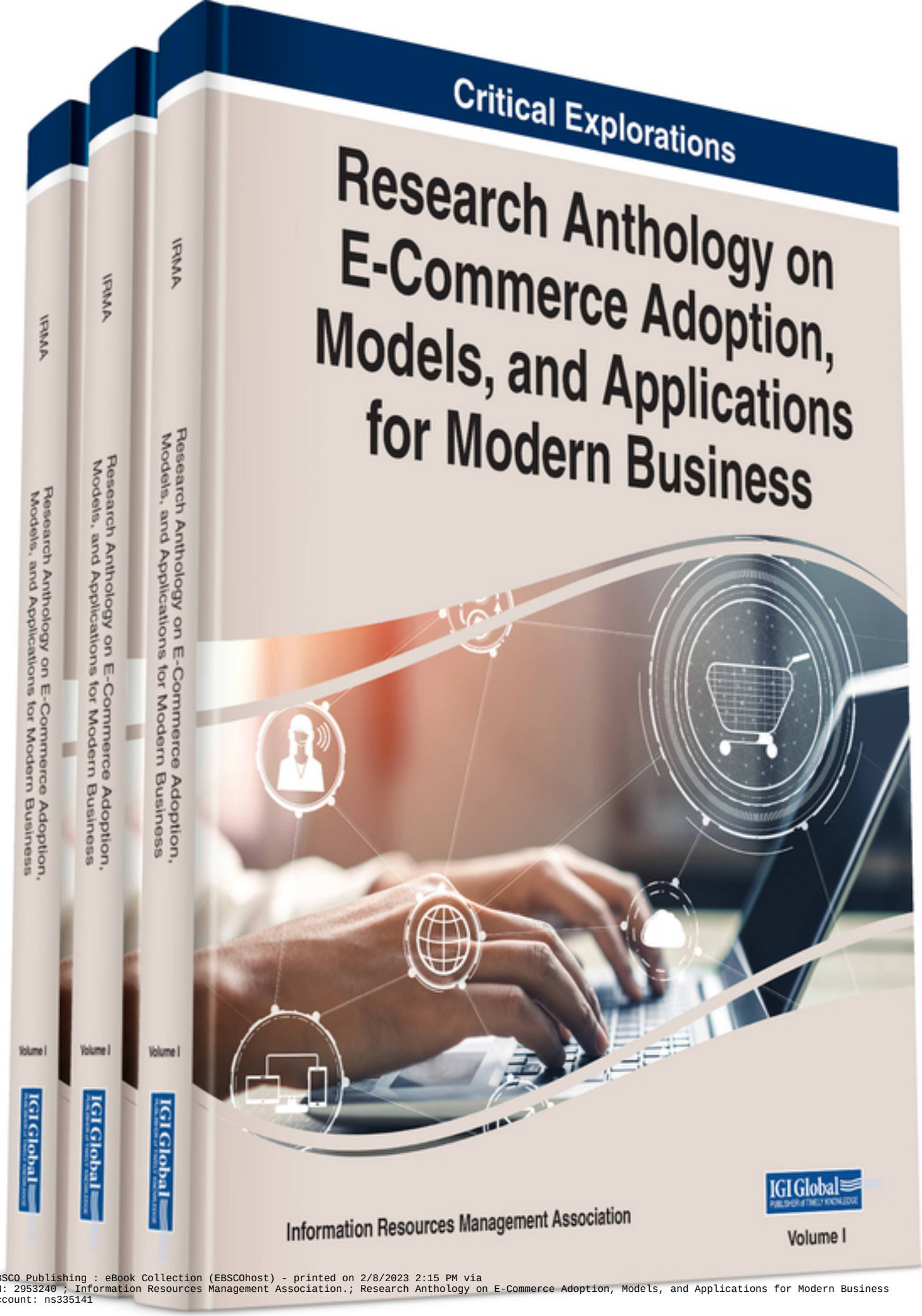

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Preface

Technology, while completely changing the processes and efficiencies of business operations, has also changed the way in which businesses locate and engage with consumers. The introduction of e-commerce to companies has allowed for the rapid expansion of consumer bases, providing 24/7 service and shopping possibilities that previously were impractical in traditional commerce. Subsequently, businesses began adopting e-commerce models into their business plans. These models proved convenient to businesses not only because of their accessibility, but also because of the ability to analyze consumer online shopping preferences and mold their products to better fit the needs of their consumers. Still, even as this digitalization has helped businesses, they must also be wary of security issues that arise with the overwhelming data that they create.

Staying informed of the most up-to-date research trends and findings is of the utmost importance. That is why IGI Global is pleased to offer this three-volume reference collection of reprinted IGI Global book chapters and journal articles that have been handpicked by senior editorial staff. This collection will shed light on critical issues related to the trends, techniques, and uses of various applications by providing both broad and detailed perspectives on cutting-edge theories and developments. This collection is designed to act as a single reference source on conceptual, methodological, technical, and managerial issues, as well as to provide insight into emerging trends and future opportunities within the field.

The *Research Anthology on E-Commerce Adoption, Models, and Applications for Modern Business* is organized into six distinct sections that provide comprehensive coverage of important topics. The sections are:

1. Fundamental Concepts and Theories;
2. Development and Design Methodologies;
3. Tools and Technologies;
4. Utilization and Applications;
5. Organizational and Social Implications; and
6. Critical Issues and Challenges.

The following paragraphs provide a summary of what to expect from this invaluable reference tool.

Section 1, "Fundamental Concepts and Theories," serves as a foundation for this extensive reference tool by addressing crucial theories essential to understanding the concepts of e-commerce in multidisciplinary settings. Opening this reference book is the chapter "New Economy, E-Commerce Businesses, and E-Businesses: Types, Similarities, and Differences" by Prof. Duygu Toplu Yaşlıoğlu of Istanbul University, Turkey, which explains the concept of business model in the new economy and the transfor-

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mation of business models into e-business models. This first section ends with the chapter "Influences and Intention of Consumer's Online Shopping Decision: Jordan as a Case" by Profs. Radwan Moh'd Al-Dwairi and Murad Al Azzam of Department of Yarmouk University, Jordan, which sheds light on consumers' attitudes towards online shopping decisions and extends the technology acceptance model ease of use and perceived usefulness of the technology acceptance model (TAM) with four factors: trust, security, privacy, and risk.

Section 2, "Development and Design Methodologies," presents in-depth coverage of the design and development of business models and consumer engagement initiatives through e-commerce. This section starts with "E-Commerce Business Model" by Profs. Durga Patel, Sachin Goyal, and Ratish Agarwal of University Institute of Technology, India, which provides an overview of the e-commerce business model, the history of e-commerce, the scope of e-commerce, the difference between e-commerce and traditional commerce, issues related to e-commerce, electronic data interchange, value chain, supply chain, and the pros and cons and limitations of e-commerce. This section ends with the chapter "Designing Indulgent Interaction: Luxury Fashion, M-Commerce, and Übermensch" by Profs. Christopher J. Parker and Stephen A. Doyle of The University of Manchester, UK, which explores the history and meaning of luxury and branding in relation to the current state of m-commerce in fashion.

Section 3, "Tools and Technologies," explores the various tools and technologies used in e-commerce adoption and to ensure the efficiency of the process. This section begins with "Electronic Commerce and Decision Support Systems: Theories and Applications" by Prof. Kijpokin Kasemsap of Suan Sunandha Rajabhat University, Thailand, which argues that utilizing e-commerce and DSSs has the potential to enhance business performance and reach strategic goals in modern business. This section ends with the chapter "Understanding Vietnamese Consumer Intention to Use Online Retailer Websites: Application of the Extended Technology Acceptance Model" by Prof. A. F. M. Jalal Ahamed of the University of Skövde, Sweden; Prof. Yam Limbu of Montclair State University, USA; Prof. Long Pham of the University of Louisiana at Monroe, USA & Thuyloi University, Hanoi, Vietnam; and Prof. Ha Van Nguyen of Banking Academy, Hanoi, Vietnam. This chapter examines the applicability of an extended technology acceptance model (TAM) that incorporates trust, perceived risk, and self-enhancement as antecedents to the TAM constructs.

Section 4, "Utilization and Applications," describes how businesses can adopt and utilize e-commerce to enhance their operations and provide better customer service and engagement. The opening chapter in this section, "Reverse Logistics in E-Retailing," by Prof. Senem Ergan of Namık Kemal University, Turkey and Prof. Ayşe Akyol of Trakya University, Turkey, indicates the importance of reverse logistics in e-retailing. This section ends with the chapter "Exploring Online Marketing Adoption Factors Among Used Car Sellers in Ghana" by Profs. Masud Ibrahim and Anthony' Freeman Mensah of University of Education, Winneba, Ghana and Prof. Frederick Asare of Kumasi Technical University, Kumasi, Ghana, which explore factors responsible for the adoption of online marketing by secondhand car dealers to sellers in Ghana.

Section 5, "Organizational and Social Implications," includes chapters discussing the impact of e-commerce on society and shows the ways in which e-commerce is used in different industries and how this impacts business. The chapter "Examination of the Extent and Effects of Strategic Management on E-Commerce Companies" by Prof. Zafer Adiguzel of Istanbul Medipol University, Turkey opens this section by examining and analyzing the companies that have commercial activities in e-commerce environments in terms of strategic management. This section ends with the chapter "Adoption of E-Commerce Among Travel Agents in Brunei Darussalam" by Profs. Md Hisyamuddin Hamir, Nurul Qamarina Ali

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Sham, Siti Nazihah Ahmad, Nur Khalifah Ibrahim, Shazedah Osman, and Amalina Zuadi of School of Business and Economics, Universiti Brunei Darussalam, Brunei, which explains the important role that information and communication technology has played in the tourism industry.

Section 6, "Critical Issues and Challenges," presents coverage of academic and research perspectives on challenges to e-commerce in different methods, technologies, and techniques in varied industry applications. Opening this final section is "The Implications of Unethical and Illegal Behavior in the World of E-Commerce" by Prof. Adel Ismail Al-Alawi of University of Bahrain, Bahrain; Profs. Arpita Anshu Mehrotra and Hala Elias of Royal University for Women, Bahrain; Prof. Sara Abdulrahman Al-Bassam of The Social Development Office of His Highness the Prime Minister's Diwan, Kuwait; and Prof. Hina S. M. Safdar of University of Bahrain, Bahrain, which identifies the behaviors of the consumers and sellers of e-commerce in Bahrain. The final chapter in this section is "The Challenges and Opportunities of E-Commerce Data Collection in Indonesia Compared to BRICS Countries" by Muhammad Basorudin, Khalilur Rahman, Nadra Yudelsa Ratu, Easbi Ikhsan, and Wida Siddhikara Perwitasari of BPS-Statistics Indonesia, Indonesia, which explains the rapid development of e-commerce in Indonesia and its challenges.

Although the primary organization of the contents in this multi-volume work is based on its six sections, offering a progression of coverage of the important concepts, methodologies, technologies, applications, social issues, and emerging trends, the reader can also identify specific contents by utilizing the extensive indexing system listed at the end of each volume. As a comprehensive collection of research on the latest findings related to e-commerce the *Research Anthology on E-Commerce Adoption, Models, and Applications for Modern Business* provides managers, e-commerce managers, marketers, advertisers, brand managers, executives, IT consultants, practitioners, researchers, academicians, and students with a complete understanding of the applications and impacts of e-commerce. Given the vast number of issues concerning usage, failure, success, strategies, and applications of e-commerce in modern industries, the *Research Anthology on E-Commerce Adoption, Models, and Applications for Modern Business* encompasses the most pertinent research on the impacts, uses, and development of e-commerce.

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Section 1

Fundamental Concepts and Theories

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Chapter 1
New Economy, E-Commerce Businesses, and E-Businesses: Types, Similarities, and Differences

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ABSTRACT

Electronic commerce and electronic business concepts are highly researched in recent management literature. Network economy has revealed e-commerce, a new trade route that is carried out over the interlinked computers and mobile devices. E-commerce is a method used by almost all businesses that are physically processing. Therefore, there should be a significant distinction between e-business and e-commerce. With the development of e-commerce, new ways of doing business have emerged. Thus, many e-commerce companies have emerged, traditional businesses have started trading in electronic networks, and new business models have begun to be created in digital environments. In order to understand how e-businesses make money, many business models have been studied. For this reason, the concept of business model in the new economy and the transformation of business models into e-business models are examined. In line with this, it is aimed in this chapter to examine e-businesses, to clarify e-business models, and to explain e-commerce types and e-business model types in detail, with examples.

INTRODUCTION

E-business models, which have many similarities with classical business models, continue to develop and diversify along with e-commerce. In the new economy, many studies are being conducted to examine new business models in order to understand how e-commerce enterprises survived or why they could not survive (Persson & Stirna, 2001). Many researches indicate there has been an organizational transformation in some sectors and enterprises with the development of information and communication technologies.

E-commerce is defined as "doing things electronically", in general. European Union Commission defines e-commerce as "selling goods and services over the Internet" and OECD defines it as "trading

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of products or services through computer networks". E-commerce includes the electronic trading of physical goods and nonphysical products such as information and data, and this trading includes steps such as online marketing, orders, payment, and post-delivery services (Timmers, 1998). This concept is also referred as "Internet-based business", "e-trading" and "e-market". Even though the product and services are ordered electronically, payment and delivery processes are not necessarily online. In other words, while e-commerce businesses perform their operations in the traditional sense, they can fulfill the transactions through the Internet (Zott et al., 2011).

Identifying e-commerce as a world-wide trading on the network will be a depreciatory assumption. Although e-commerce is perceived as a buying-selling process only because of its trading concept, it is understood that it has a much wider meaning with the use of e-business term (Özmen, 2013). E-business term was first used by IBM in 1997. According to IBM's definition, e-business is defined as "transforming the main business processes using Internet technologies" (https://www-03.ibm.com/ibm/history/ibm100/us/en/icons/ebusiness/transform/ accessed at 11.01.2019).

It is understood that e-business is a term that includes not only buying-selling but also other processes, from accounting to human resources, production to marketing, from the acceptance of the order to automation and the use of information technologies. In short, e-business includes new ways of doing business, new business methods. It is the restructuring of all processes from e-business supply chain to customer relations (Dubosson-Torbay et al., 2002).

New business models have started to surface with the emergence of e-commerce and have become powerful components in e-commerce environment (Kalakota & Robinson, 2001). However, e-commerce is a method used by almost all businesses that are now physically processing. Therefore, there should be a significant distinction between e-business and e-commerce. Every e-commerce business cannot be referred as e-business, but every e-business has to include electronic commerce.

In order to understand how e-businesses make money, many business models that emerged in the new economy have been studied in various ways. In fact, although e-businesses are in a different perspective from each other, they actually have the same purpose and working on the same subject. The most critical issue in the e-business models is whether these companies can be compared and whether they can be examined under the categories. Common point in the planning of e-business models is to clarify the revenue models and to develop the business processes and strategies to the finest detail. (Dubosson-Torbay et al., 2002). Some researchers have made classifications of e-business according to the degree of functionality and innovation (Timmers, 1998), some according to the ability of economic control (Tapscott et al., 1999), the type and degree of relationships and the power of buyers and sellers (Pigneur, 1996).

E-commerce and e-business concepts are highly debated and researched in the recent management literature. With the development of information technologies, businesses in the digital age have had to adapt themselves and their business models to this era. Thus, many e-commerce companies have emerged, traditional businesses have started to trading in electronic networks and new business models have begun to be created in digital environments. In line with these developments, it is aimed in this chapter to examine e-businesses, to clarify e-business models, to explain e-commerce types and e-business model types in detail with examples.

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BACKGROUND

New Economy and New Businesses

Changes triggered by computers, Internet and communication technologies have led to the formation of an economy called network economy. The network economy has also revealed the electronic commerce, a new trade route that is carried out over the interlinked computers and mobile devices. In the digitalization process, formed by the network economy, problems related to customers and business life have also been differentiated. Old ways of doing business have been insufficient from time to time to solve these problems. Thus, parameters of business management have changed, especially in terms of risks and gains. Organizational structures of businesses have changed and organizational structures based on information and information technologies have emerged instead of the old hierarchical organization structures.

The very first rule of business in the new economy is being agile and creative. Frame of time is expanded and can be offered every hour of the day, every day of the year through the Internet. Importance of distance has reduced. Value is created with abstract services and information creation rather than tangible products (Meyer & Davis, 2000). Businesses in the new economy, must be agile. They have to offer their products and services faster than before. Hence, process of production should be finalized rapidly in order to proceed offerings. That is, business now needs to supply, produce and market faster. In order to carry out these transactions fast, they have to utilize their management skills better at every stage and have to perform business functions faster.

In global competition, being agile is an important advantage. Thanks to the Internet, users have the opportunity to reach the information they want from any location and at any time. Internet, along with wired and wireless connections, led to an abundance of data and information. Increasing number of subscriptions to social networks through Internet, interactions and sharing add value to the business as long as it is managed correctly. As the number of Internet users, the number of transaction and shoppers on networks, number of buyers and sellers (who are members of virtual market places) increase, the potential value created through these networks also starts to raise (Amit & Zott, 2001; Wirtz et al., 2010). As an e-retail company begin operating on the Internet, the more visitors to its website are attracted, and therefore more value is created in the virtual environment. Because of the traces left by those visitors, it is possible to gather feedback on product preferences, product or service advices, and negative opinions. These can be clearly identified in all types of business models operating on the Internet (Dubelaar et al., 2005).

Another important factor that changes the business rules of the new economy is the increase in the number of production factors. Creativity and innovation are added to the factors of production, which formerly were only enlisted as capital, labor, land and entrepreneur (Kim & Mauborgne, 1999). Accordingly, Internet-based new business models have emerged. Companies that were born in the Internet and which did not exist in the tradition trade life, were called "virtual" formerly. During this period, not only dot-com companies but also the companies which are trading in the traditional sense have increased their productivity and earnings by being included in network-based practices. Using information and network technologies, companies bring innovation not only in the products and services, but also in their business models, processes and management approaches. So, businesses that can develop their skills and abilities in new ways of doing business have come forward (Morris et al., 2005; Onetti et al., 2012).

Digitalization of information and communication infrastructures is economy based. Developments in the digital economy have significant impact on the creation of economic systems and economic value.

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Basic features of digital economy are structures, processes, products and infrastructure (Zimmermann, 2000). Not to be the best in the market or to produce products in the most efficient way important in the digital economy; it is important to win the customer, to satisfy their needs, to have the best strategy and business model (van Eijsden, 2000). Powerful new digital technologies have created a serious change in customer behaviors. When a product, interaction, or device starts to digitize, there is no power to stand in the face of this, and in this case the old business models cannot be flexible, adaptable or unable to adapt so the old business model has to be deleted (Rogers, 2016).

BUSINESS MODEL CONCEPT

The concept of the business model, which includes all the processes of a business, covering its activities and describing the business plan, is closely related with the economy. Nowadays, when the digital transformation is experienced, the business structures that are transformed with the development and expansion of the Internet are also affected by this. The geographical distance is no longer a problem with the new economy, also markets expanded globally. Sales, production and marketing activities have become independent of the place. The globalization of the markets has led to the globalization of competitors. Thus, the definition of competition and the expectations of customers have changed as well.

Drucker's 1994 work in Harvard Business Review did not explicitly mention the business model, but there are a number of assumptions about what a business should and should not do. Moreover, some of the assumptions suggested by Porter, in an article published in Harvard Business Review in 1996, were also accepted as a starting point of the business model concept by some researchers (Ovans, 2015). While defining the business model, it is necessary to take Drucker's assumptions into account and to answer the questions by Porter such as "who is the customer?", "what creates the customer value?", "how can we earn money in this business?", "how can we provide value to customers?". The reason to answering those questions is the definition is that the business model is a set of elements of explaining how businesses operate (Magretta, 2002).

According to some researchers, the business model is defined as the concept that explains the business logic (Timmers, 1998; Teksten, 2001; Petrovic et al., 2001), while others refer to it as the link between business strategy, business processes and information systems (Nilsson, 1999; Osterwalder & Pigneur, 2002). Difference between these two interpretations of the business model roots from the relation of the business model with the concepts of strategy, business processes and technology. In the first interpretation, these three concepts are included in the definition of business model, while the second interpretation accepts them as interconnected components, which are set at different levels of pyramid structure. In this case, a business model is considered as the conceptual and architectural implementation of the business strategy and represents the basis of the implementation of business processes and information systems (Pateli, 2003). Many businesses are designing and evaluating their business models independently from the environment. However, especially without an examination of the business models of competitors, this can lead to failure (Casadesus-Masanell & Ricart, 2011).

Timmers, who mentioned the concept of business model for the first time, describes it in three different ways in his article published in 1998;

- Design of product, service and information flow where many different elements and their roles are combined.

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- Identification of potential profits created or will be created by different business elements.
- Definition of income sources.

There are many different studies that define the concept of business model in various ways. Some of them define it as the technical capacity as an experiment-based logic that brings together the realization of economic value (Chesbrough & Rosenbloom, 2002), some as the basic logic of creating and retaining value within the network of values (Shafer et al., 2005).

According to Dubosson-Tobay et al. (2002) business model frame is divided into four basic elements. First of all, the product or service offered by the business should create value for the target customer, secondly, the relationship capital created by the business is used to satisfy the customer and generate sustainable income. Thirdly, designing of a structure to create value and creation of a network of stakeholder relations; and finally, the expected financial effects such as cost and revenue as a result of the previous three.

More specifically, Osterwalder et al. (2005) described the business model as a concept consisting of series of elements. These elements are value propositions (product, service offerings, customer segment identification and customer relations), activities, resources, shareholders, distribution channels, cost structure and revenue model. In 2010, Zott and Amit's approach to the business model was activity-based perspective and refers to the selection of some activities, system's activity structure and answering for questions concerning the realization of those activities. Referring to these perspectives, it is argued that the supply chain should be taken into consideration while developing a business model. In this respect, the business model consists of two main elements. First, everything related to production/service activity (design, raw material procurement, manufacturing, planning etc.), secondly everything related to the sales and marketing (finding and accessing customers, realizing the sale, distributing the product, or performing the service, etc.) (Ovans, 2015).

Three features of a good business model are listed below (Casadesus-Masanell & Ricart, 2011).

- It should be consistent with goals of the business. Choices made while designing business models should be aimed at achieving the goals.
- It should be self-strengthening. The choices made when designing business models must complement each other and must have internal consistency.
- It should be stable and durable. A good business model should be able to maintain its effectiveness and integrity against various threats.

For the success of the business model, implementation is as important as formulation. It should be checked whether there is a difference between the activities carried out during the implementation and the results and the plans. In case in a change of circumstances and conditions, corrections should be made in the business plan if necessary. Initially planning of a business model may be more successful or less successful than expected. In both cases, the plan is unlikely to have been made properly. If the result is unsuccessful, it may be considered that the planned business model is not working properly. Therefore, if it is more successful than expected, it can also be assumed that the positive developments could not have been predicted well enough (Özmen, 2013).

It has always been important for businesses to achieve competitive advantage and make it sustainable. However, since digital copying and replication is quite easy nowadays, businesses need to be innovative not only in products and services but also in processes and business models to be successful. In the past,

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competition has taken place between competing companies that are similar to each other, with fixed boundaries and clearly defined sectors, and now competition can still be experienced among unrelated businesses. Previously, businesses used to create value through their suppliers, sales channels. But now, because of digital revolution, boundaries between sectors have become transparent, distinction between stakeholders and competitors is changing, and the value creation can be made through different channels (Rogers, 2016).

E-COMMERCE AND E-BUSINESS MODELS

E-commerce, in the most general sense, is defined as "doing business electronically". European Union Commission has defined e-commerce as "the goods and services being sold on the Internet", OECD has defined it as "trading of products or services through computer networks" and World Trade Organization definition is "the production, advertisement, sales and distribution of goods and services over the Internet". E-commerce involves the electronic trading of physical goods and intangible products such as information and data. And this includes the steps of online marketing, ordering, payment and post-delivery services. It also facilitates the provision of e-commerce services and electronic transactions such as after-sales support and online assistance (Timmers, 1998). Even though the product or services are ordered electronically, payment and delivery processes do not have to be online. In other words, e-commerce companies perform their operations in the traditional sense, while they can do their job through the Internet (Zott et al., 2011).

New ways of doing business with the Internet are constantly improving. Most of these business practices attract the attention of consumers/customers and customer focus is prioritized. For those who are not directly in relation with the consumers, e-commerce can also be used to carry out business to business (B2B) transactions. New models in e-commerce are run in all types of business forms, sucha as business to business, business to consumer and business to government (Timmers, 1998). In a study which examined the strategies of e-commerce companies conducted by Mohapatra (2013), e-commerce companies are classified as business to consumer (B2C), business to business (B2B), consumer to consumer (C2C), consumer to business (C2B), business to employee (B2E), government to government (G2G), government to business (G2B), business to government (B2G), government to consumer (G2C) and consumer to government (C2G). From this point on, it is important to determine the direction of e-commerce.

E-commerce, which has been growing very rapidly especially in the last 10 years, has reshaped the shopping habits of consumers and therefore the business models of enterprises. Benefits of e-commerce, which continues to grow rapidly for both society and economy, are listed below (TÜSİAD, 2017);

- Restrains the hidden economy, increases productivity and supports the growth of enterprises.
- Contributes to the development of industries such as logistics and information technologies.
- Eliminates the costs of physical transactions and enables SMEs to compete with large enterprises.
- Increases the export potential by ensuring that products and services are promoted globally more easily, faster and at lower costs.

Defining e-commerce as a world-wide trade ground on the network is the main assumption. Although e-commerce is perceived as a trading process only because of its trading concept, it is understood that

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it has a much broader meaning with the use of e-business term (Özmen, 2013). E-commerce, which is perceived as the use of Internet in business functions such as communication, marketing and sales channels, continues evolve even though it moderately changed the business models. However, besides the evolution of e-commerce, it should be said that it is in fact a revolutionary development (Zimmermann, 2000; Kalakota & Robinson, 2001). This development will radically change the processes and structures within and between industries, and will help the digital economy pave the way for businesses. This situation is clearly predicted to have a major impact on basic business models. Most importantly, digital technologies are increasing the power of business models that enable an enterprise to create value by improving its interaction with other businesses or customers (Rogers, 2016).

E-business term was first used by IBM in 1997. According to IBM's definition, e-business is defined as "transforming the main business processes using technologies". Thus, it is understood that e-business is a term that includes not only trading but also other processes, from accounting to human resources, production to marketing, acceptance of order to automation to delivery and using information technologies. In short, e-business includes new ways of doing business, business model and business methods. E-business is an enterprise that covers the restructuring of all processes from supply chain to customer relations.

A business model is to build the business and its partners in order to create value and create a profitable and sustainable revenue stream. E-business models have the purpose of creating value by providing information to related parties, providing communication, buying and selling of activities, providing an exchange of ideas. It has been suggested that e-business model should consist of the following elements (Dubosson-Torbay et al., 2002):

- Product innovation (value creation, definition of target market, capabilities)
- Customer relations (customer feedback, customer service, brand building)
- Design management (resources/assets, activities/processes, shareholder relations)
- Financial aspects (revenue, cost, profit)

As mentioned above, new business models have started to emerge with the emergence of e-commerce and have become powerful components in e-commerce environment (Kalakota & Robinson, 2001). There should be a significant difference between e-business and e-commerce. Every e-commerce company cannot be defined as an e-business, but every e-business has to make e-commerce.

E-business models have the same objectives as the traditional models. Business models help businesses to identify their vision and strategies, redesign and regulate their business operations, facilitate the sharing of information about their processes and visions, and to ensuring that the decisions made are shared with shareholders (Persson & Stirna, 2001). In e-business models, there are targets such as increasing efficiency, the number of customers and the number of transactions. Traditional enterprises involved in the digital transformation, experience significant challenges in terms of ensuring integration of their business processes using information technologies. In order to accomplish digitalization of all processes, various databases, different software and hardware must be integrated. A business within the digital transformation process should not only build and manage a website, but should also be able to transform all its processes into e-business (Özmen, 2013).

E-business models create value by combining two or more sides within the framework of the work done instead of creating the value alone. For example, while e-marketplaces such as eBay and AliExpress bring together all kinds of buyers and sellers, Uber serves through a system that brings together people

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who need a vehicle and drivers who use their own vehicles (Rogers, 2016). In addition to the previously mentioned Timmers' business model definition, Klose and Lechner defines business model as design of products and services that meet customer needs, determination of the many different actors, their roles, relationship between them and benefits of different actors and sources of income. It is important to analyze and understand current developments to answer the questions within this definition and to design effective business models for the future. Analyzing them reveals four key elements that characterize the evolving digital economy. This analysis process, which includes observations, researches and experiences related to the real world, makes it necessary to concentrate on issues including the structure, business processes, products or services and infrastructure of enterprises (Klose & Lechner, 1999; Zimmermann, 2000).

E-Transformation Process and Being E-Business

E-businesses add value to all parties (customers, manufacturers, suppliers, employees, and managers) provide convenience, comfort, benefit and cost savings. It is essential that enterprises adapt to new technologies and new management approaches in order to sustain in the competitive environment. In recent years, it has become more important to start e-transformation process with the correct goals and strategies and to take a quick lead.

The most important success factors for the transformation of business processes into e-business, are the re-definition of enterprises into being a successful e-business, being visionary and making strategic decisions. It is not the old paradigms that are important in the process of transforming traditional businesses and their ways of doing business, but the realities of new economy and the realities of e-commerce. One of the main reasons for the negativity of e-transformation efforts, is the lack of business and management skills (Lee, 2001; Osterwalder et al., 2005).

Process of transforming businesses into e-businesses, managers to e-managers, requires strategic direction. This process starts with the enterprise deciding how to position itself in the market. In other words, it must first decide how it wants to see itself in the future. A business can carry through the stages of e-transformation process by spreading them to a certain time period, or it may initially emerge as an e-business, designing all business processes as e-processes (Hanna, 2009; Özmen, 2013).

Efforts of companies to differentiate themselves from their competitors have gained a different momentum in recent years due to the opportunities offered by Internet technologies. One of them is to set up the website. Companies want to reach more customers by establishing a website and communicate better and continuously with their existing customers. The first thing an e-business has to do is to build a website that users will like and enjoy during their visit. If the website visitors cannot access the information they want in the first few seconds, they may get lost on the site. Or if the pages are visually choking, visitors may prefer another website (Reichheld & Schefter, 2000). Taking care of such issues is the first rule of being an e-business.

Purpose of e-business models is to inform the relevant parties, to create value, to communicate, to buy/sell, to exchange ideas and to share (Zott et al., 2010). Also, a revenue model is extremely important.

In recent years, people have been exchanging ideas with each other, sharing their comments and complaints in social networking sites and blogs. Those shares reach very large audiences on aforementioned channels (Harris & Rae, 2009). For this reason, companies should visit at least certain portals frequently and should examine the negative comments about the products and services.

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Basic elements that must be integrated for strategic activities in e-business ecosystem are; customers, markets, products, processes, organizations (structure and relations), shareholders, financing, social values and government policies. E-business ecosystem, that emerged from this point of view, is a network of customers, suppliers, distributors and trading service providers. E-businesses use the Internet for business-related basic communications and operations, including creation of value for new customers, transforming competition rules, moving people and resources to unprecedented performance levels (Pateli, 2003).

Zimmermann (2000) defines four elements that are changing for e-business models, and in the light of these elements given below, points to be taken into consideration while creating new business models are listed as;

- In today's e-commerce models, there is a value chain in which the customers and suppliers interact directly. E-commerce has changed the industry structures and differentiated the value creation process. Businesses can be divided into units or transformed into a modular structure. Technological ventures, especially called "start-ups", are often a single product enterprise that focus on one or more services or products (Sarkar et al., 1995). Rather than focusing on the entire value chain, businesses have started to pay attention on customer relations by focusing on their core competences.
- Process of creating value reversed, focusing on the customers' wishes and needs has come to the fore. In a structure focused on delivering personalized products or services, business processes have made the customer an element of market value that should be deemed as an individual. Industrial mechanisms have constituted the necessity for the processes coordination not only within the business, but also between enterprises.
- Especially in information intensive products, content is usually prepared with multiple contexts and infrastructures. Thanks to the infrastructure of information and communication technologies, each unit of a product is prepared in a flexible and diverse context. For example, latest breaking news are available through a large number of websites. Thus, information needs to be updated continuously. There are also many ads and other content on these websites.
- Many innovations in value creation processes and many technical platform infrastructures are needed to produce new products. These technical platforms are required for the actualization of the business models. Especially from business to business (B2B) perspective, businesses from different industries should meet the needs of different actors.

In addition to the above-mentioned elements, it is necessary to perform some basic functions for the success of the e-businesses. One of these is the planning of business processes. It is determined by whom these processes will be managed and which tasks will be maintained. It is necessary to revise the business functions within the framework of the business model. It should be noted that the purpose it to generate revenue while preparing a business plan. It is important to calculate the costs well and identify the return of the investment for this revenue to turn into profits (Özmen, 2013). It should be kept in mind that it is difficult to create a sustainable business model and provide a competitive advantage in the digital age where product life cycles are very short.

E-businesses often come to the forefront with the value created by the customer and achieve success. These business models often have a lot in common with the value they offer. E-businesses generally make it possible to offer the same product or service at a cheaper price. In addition, many new e-business

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models offer a system where some service is provided free of charge. The most common value source for e-business models is that the content or services can be accessed remotely from anywhere. Most e-businesses make purchasing easy and simple by eliminating any problem in the sales process. E-businesses give importance to personalization, allowing people to choose and use the service or product that suits their needs (Rogers, 2016).

E-Business Types and Examples

In order to understand how e-businesses earn money or not, various business models have been studied. Common point in the planning of e-business models is to clarify the income model and to develop business processes and strategies to the finest detail. The most critical issue in e-business models is whether it can be used to compare the companies that implement these models and whether they can be examined in categories (Dubosson-Torbay, 2002).

When e-business models are examined in general terms, can be listed as: virtual market places that bring buyers and sellers together and offering auction opportunities, private shopping opportunity sites that offer products or services at discounted prices, search engines, portals, supply chain enterprises that bring together suppliers and manufacturers, social networks that provide social interaction and information sharing, blogs, service providers that provide e-commerce solutions, distribution networks performing electronic and physical distribution (Özmen, 2013). According to the e-business model classifications in the literature, some of them have been classified according to the degree of functionality and innovation (Timmers, 1998), some according to the ability of economic control (Tapscott et al., 1999), some according to the type and degree of relations and some according to the power of buyers and sellers (Pigneur, 1996).

According to Tapscott et al. (2000)'s study, e-business models should be evaluated by the main theme, the value offered to the customer, the customer's role and knowledge and finally by main business processes. Main theme and main business process criteria refer to the mission, purpose and tasks of the enterprise to achieve its goal. Main business processes will be shaped around the main objectives of an enterprise. Value proposition criteria should answer the question of how the business model offers benefits to its users. For example, Amazon offers buyers the opportunity to get the product they want, while seller provide income for Amazon. Thus, it creates value for both sides. Another factor in the evaluation of e-business models is the role of the customer. Customers often play an important role in business processes. Customers who evaluate the product they buy in shopping sites, make comments on the books they buy in book sales sites, evaluate their vacation and the hotel they stayed on tour and travel sites. These factors affect business processes and sales directly. Usability of knowledge acquired by the business while implementing e-business models is related to how the business analyzes the information obtained and how it benefits from the findings of the analysis (TÜSİAD, 2017; Özmen, 2013). For example, in online book sales sites such as Barnes & Noble, all of the products that the user looks at, buys or discontinues to look for are recorded with a profile of his or her personal characteristics, such as his or her age, gender. These are all the information they need to focus on and analyze. When this information is analyzed correctly, customer satisfaction and loyalty can be improved.

Researchers working to examine the business model have developed many different schematic presentations about the applicability of models. In a study conducted by Weill and Vitale in 2001, tools necessary for the design and analysis of the e-business models included in these presentations were examined and analyzed in a simple manner. The "business model schematic" as a result is divided into

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three. The first is roles and relationships (electronic and primary, its customers, suppliers and collaborators), the second is major flows of product, information and money, and the third is revenue and other benefits each participant receives (Fielt, 2014). In that study, various e-business models were examined in accordance with these components.

Many different researchers have classified e-business models in various ways (Tapscott, 2000; Timmers, 1998; Applegate, 2001; Rappa, 2003). All types of e-business models are described by examining three of the most accepted classifications. First of these classifications was made by Timmers (1998) and the other was by Tapscott et al. (1999), and third, by Zott et al. (2011). E-business models discussed according to these classifications are briefly explained below.

One type of e-business model is so-called *e-shops,* which refers to Internet marketing and promotion of a business or a store. The priority of e-shop is the promotion of the company's products and services through the Internet. It is often used in conjunction with traditional marketing channels. Customers have the opportunity to compare product offerings, evaluate more options, get better information and make transactions such as selection, purchasing and acquisition easier (Timmers, 1998; Zott et al., 2011). An example of this business model is the online ticket sales of airlines, online stores of brands such as Zara, Gap or Walgreens.

Another e-business model is the where e-shops of well-known brands are often found. This business model, *e-mall*, provides a common technological platform for different e-shops. Thus, e-shops, which are members of e-malls, have some benefits such as lowering some of their costs and not having to deal with services like electronic payment and promotion. Besides, for customers, it is possible to examine and compare many brands at once (Timmers, 1998). It brings customers who want to shop over the Internet together with sellers who do not have the opportunity to host or cannot sell through a web site. Zimmermann (1997) acknowledges that an e-mall is a regional marketplace with multi-national products within the same region. An e-mall may also contain products from multiple contiguous regions (Laudon & Traver, 2016). Globally, e-malls are the most important purchase sites and their revenue model involves advertising, subscription, sales, affiliates, and transaction fees (Bahaddad et al., 2012). There are many examples of this business model. An e-mall hosts many online merchants. Examples of this model are Yahoo!Shopping, zShops and so on (Wen et al., 2001).

Another e-business model, *e-procurement*, depends on the products and services by offering them electronically. Large enterprises or government authorities can operate the e-procurement process over the Internet. Products or services offered to the large supplier network offer advantages such as lower cost, better quality products/services, better delivery and lowering of procurement costs (Timmers, 1998; Zott et al., 2011).

Similar to auction or traditional bidding, electronic version is called *e-auction*, which is an auction and bidding environment over the Internet (Zott et al., 2011). Such models are usually implemented with multi-media presentations of products and are carried through the integration of stages such as bidding, making deals, payment and delivery. Revenues of the e-auctioneers' businesses consist of the use of technology environment, payments made through the transaction and advertising revenues. For buyers and suppliers, there are benefits such as being more efficient, time-saving and global trading (Timmers, 1998). This business model is used by many different industries. There are e-auction websites established for different areas ranging from antiques and artworks to housing sales.

Virtual communities are based on the acquisition of the final value from members (customers or suppliers). Members enter the basic knowledge of the virtual community and obtain the necessary environmental elements from them. The virtual community offers the necessary marketing operations

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to create customer loyalty and receive customer feedback. In such models, revenue is generated from membership fees and advertisements (Zott et al., 2011).

Companies that want to meet their products with more customers and to test their operational processes and competencies use *e-marketplaces.* These businesses, in agreement with the e-marketplace, benefit from their systematic infrastructure, network, knowledge and traffic (Brunn et al., 2002). The e-marketplace concept provides the opportunity for companies to coordinate complex and multifunctional activities of supply chain processes through web-based applications (Eng, 2004). Ebay is one of the most important enterprises of the group of e-marketplaces in the world. Ebay, Amazon and Alibaba, the pioneers of e-marketplaces in different formats, have been very successful and have achieved a significant market share in the retail sector with thousands of suppliers and millions of customers.

Another e-business model is the third-party marketplace where an enterprise leaves the web marketing of the business to a third party (usually in addition to other channels). Generally, it serves as an interface where product catalogs are provided to suppliers, it ensures the secure execution of the processes such as branding, payment, logistics and ordering (Timmers, 1998; Zott et al., 2011). For example; "Google My Business" application operates as a digital media that manages business information that the business does not have.

Enterprises that specialize in one step of the value chain such as electronic payment or logistics, called *value chain service providers* (Timmers, 1998; Van de Vorst et al., 2002). Freight operators such as FedEx or UPS, payment businesses such as PayPal are examples of this model. Especially, e-businesses that specialize in terms of delivery, have created many different models.

Another business model focuses on many steps of the value chain, which creates value through the flow of information between these steps. Revenues of *value chain integrators* are usually obtained from consulting and processing fees (Timmers, 1998; Cagliano et al., 2003). Business called "Global Value Web" can be used as an example. The business defines itself as a company that serves to connect global businesses and creates a global value chain (https://global-value-web.com/index.html). It is a company that integrates the value chain steps among many companies in various industries, provides quality solutions and engineering services.

Business model of the enterprises that provide the necessary tools and information environment to ensure cooperation between enterprises also called *collaboration platforms.* Businesses in this model are focused on specific functions such as design and engineering, or do project-based work through virtual teams (Timmers, 1998). There are many companies that have a business model in the form of a collaboration platform. Looking at the examples of this model, it is seen that there are many different companies that provide environment and human resource for project based works.

Yet another e-business model is a large number of new information provisioning services, which are created by large amounts of data on open networks. These type of enterprises are called *information brokers.* In brief, they have emerged to provide services such as information search, customer profiling, investment advice and commercial business information services (Timmers, 1998; Hayes & Finnegan, 2005). Acxiom, for example, collects customer information to provide some businesses with information for marketing activities.

Another e-business model is *trust or other third party services*. They usually provide trust services, that are provided by certification authorities and electronic notaries. These services may charge subscription fees or service fees, combined with software sales and consultancy revenues (Timmers, 1998; Rappa, 2003).

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Types of e-business models discussed in this part, have been obtained by considering many different sources. Such a viewpoint, which makes it easy to classify e-business types, of course, can be transformed and changed by the development of digital technologies. Increase in digitalization leads to different factors in the transformation from e-business models to digital business models. For this reason, new business models will lead to different classifications or different types of e-business models.

Internet entrepreneurs who set up an e-business model, or businesses planning to survive in the digital economy, were generally inspired by business models that first emerged in the United States. For example, entrepreneurs inspired by eBay's business model have implemented similar business models in many countries and have been successful.

Amazon, founded in 1994, has become a stand-alone brand thanks to its e-business model. As an enterprise that started to work primarily by selling books, it has achieved great success by selling twenty thousand books in the first two weeks of its establishment. Today, Amazon is an e-business with more than 350 centers across the globe (Eczacıbaşı, 2018), selling almost all of the products. Along with this, cloud technology systems called Amazon Cloud, have become an important opportunity for technology entrepreneurs today. Amazon's business model is based on an innovation that provides interface connectivity to more than two million stores that it doesn't own or manage (Keen & Wiliams, 2013).

Another important example of e-business model was the establishment of Uber company, which led to the birth of a new sector as a result of dream of an entrepreneur named Garrett Camp. E-business models similar to Uber company redefine the concept of transportation, through sharing economy, as competing with taxis all over the world. In US, Lyft, BlaBlaCar in France and Addison Lee in London are companies using the similar e-business models (Rogers, 2016).

Another example is the business model of Airbnb, which was founded in 2008. Airbnb is growing rapidly and has more rooms than the most important hotel chains in the world (such as Hilton, Inter Continental). According to 2015 statistics, Airbnb provided accommodation for over 25 million tourists in more than 190 countries. Airbnb's business model is a platform that brings together the homeowners who want to rent part or all of their houses and customers looking for accommodation. The most important feature of Airbnb in terms of business model is that the value offered to customers is different from other enterprises (Kavadias et al., 2016).

It would not have been possible for Amazon to change the concept of shopping 20 years ago. Also, the idea that the world's largest hospitality company would not have a single hotel could not be understood five years ago. A similar example is that Apple has become the world's largest digital music company in almost 10 years, thanks to its business model, not products such as iPod and iPhone. Apple has created 92% of the market by supporting the iTunes app with smartphones. What is important here is that the new and different business model is transformed into one of the world's largest shops, selling not only music but all kinds of products and services (Eczacıbaşı, 2013).

Another e-business model application, known as TaskRabbit, was established in 2008 as an individual outsourcing site. Operation of the business model starts by logging into the system by describing what kind of service is needed and by continuing to communicate with them by selecting the most appropriate person to perform the requested service. Person who receives the service is responsible for payment via the application or website when the job is completed (Ay et al., 2018).

E-business models, sometimes creating a new sector from scratch, sometimes appearing as a different formation of the existing sector, can disable other players in the sector. For example, business model of Craigslist, a classified ads service, has had a very negative effect on the newspapers that obtained most of its revenue from classified ads. The most profitable section of the newspapers with high production

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costs, is the classified ads sections that readers want to sell or rent for their various needs. However, a new e-business model created by Craig Newmark, a software programmer in the USA, with the idea that everyone is free to submit their ads online. With this idea, in a short period of time, it has become a global company which has been broadcasting in 70 countries and 13 languages and its contents have been read 50 billion times as day (https://www.feedough.com/how-does-craigslist-make-money/ accessed at 06.11.2018; Rogers, D. (2016). The Digital Transformation Playbook. Columbia University Press.)

Companies in several countries, such as GrubHub in US, Seamless in UK and Delivery Hero in Germany are another example of an e-business model. People can order online by ordering the most suitable meal by scanning the restaurants around their house or workplace. Value created by this model is that, it offers a more convenient experience than examining different restaurants websites, brochures and trying to order by phone (https://mediacat.com/caginin-otesinde/ accessed at 6.11.2018).

Examples given above are those that have created a unique business model and even give insight to those who come after. Different e-business model types and examples examined in this section. These e-business models continue to be added every day with the development and utilization of technology.

DISCUSSION AND CONCLUSION

Since the mid-1990s, commercial websites have become widespread. Success of e-commerce businesses, established since the 2000s, have attracted attention and the business models they implement are different from traditional business models. First enterprises operating in the early stages of e-commerce, are businesses that appear directly on the Internet. Many of them failed because of the proliferation of these enterprises and their activity only on the Internet. Later on, enterprises that are successful in traditional commerce and also integrate the Internet into their business model have been successful.

Effects of technology and Internet on our lives have increased with the beginning of the transformation of enterprises digitally. However, it is clear that digitalization is much more than just Internet usage. Business practices, workplace structures, relationships between employees, information sharing, customer relations and even competition are affected by digital transformation. In an e-business model, it is necessary to integrate the value network with technology, and most importantly, to use technology in every process of the business.

As it can be seen from detailed examples in the chapter, it is very common for businesses with traditional business models to convert their business model into e-business models. Companies invest in digital channels in order to create different experience from their competitors, and businesses in the service industry are trying to bring their business processes to a digital environment.

One of the most important effects of digital transformation is, its impact on business structures and therefore on business models. Nowadays, it is an inevitable necessity for businesses that sell to end customers to transform themselves in digital transformation. For this reason, it is thought that the differentiation of the business processes of all enterprises which are born in digital environment and trying to exist in digital environment, will bring a transformation to the business model literature and there are many opportunities to make research in this direction.

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REFERENCES

Amit, R., & Zott, C. (2001). Value creation in e-business. *Strategic Management Journal*, *22*(6-7), 493–520. doi:10.1002mj.187

Applegate, L. M. (2001). E-business Models: Making sense of the Internet business landscape. *Information technology and the future enterprise: New models for managers*, 49-94.

Ay, C., Yakın, V., & Kacar, A. İ. (2018). *Paylaşım Ekonomisi, A'dan Z'ye Tüm Boyutlarıyla* (pp. 41–42). Ankara, Turkey: Akademisyen Kitabevi.

Bolumole, Y. A. (2003). Evaluating the supply chain role of logistics service providers. *International Journal of Logistics Management*, *14*(2), 93–107. doi:10.1108/09574090310806620

Brunn, P., Jensen, M., & Skovgaard, J. (2002). e-Marketplaces: Crafting A Winning Strategy. *European Management Journal*, *20*(3), 286–298. doi:10.1016/S0263-2373(02)00045-2

Cagliano, R., Caniato, F., & Spina, G. (2003). E-business strategy: How companies are shaping their supply chain through the Internet. *International Journal of Operations & Production Management*, *23*(10), 1142–1162. doi:10.1108/01443570310496607

Casadesus-Masanell, R., & Ricart, J. E. (2011). How to design a winning business model. *Harvard Business Review, 89(*1/2), 100-107. Retrieved from https://hbr.org/2011/01/how-to-design-a-winning-business-model

Chesbrough, H., & Rosenbloom, R. S. (2002). The role of the business model in capturing value from innovation: Evidence from Xerox Corporation's technology spin-off companies. *Industrial and Corporate Change*, *11*(3), 529–555. doi:10.1093/icc/11.3.529

Dubosson-Torbay, M., Osterwalder, A., & Pigneur, Y. (2002). E-business model design, classification, and measurements. *Thunderbird International Business Review*, *44*(1), 5–23. doi:10.1002/tie.1036

E-business. (n.d.). Retrieved from https://www.ibm.com/ibm/history/ibm100/us/en/icons/ebusiness/transform/

Eczacıbaşı, F. (2018). *Daha Yeni Başlıyor: Geleceğin Dünyasında Esneklik, Yakınsama, Ağ Yapısı ve Karanlık Taraf* (pp. 60–62). İstanbul, Turkey: Koç Üniversitesi Yayınları.

Eng, T. Y. (2004). The role of e-marketplaces in supply chain management. *Industrial Marketing Management*, *33*(2), 97–105. doi:10.1016/S0019-8501(03)00032-4

Fielt, E. (2014). Conceptualising business models: Definitions, frameworks and classifications. *Journal of Business Models*, *1*(1), 85–105.

Global Value Web. (n.d.). Retrieved from https://global-value-web.com/index.html

Glossary: E-commerce. (n.d.). Retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:E-commerce

Hanna, N. K. (2009). e-Transformation: Enabling new development strategies. Berlin, Germany: Springer Science & Business Media.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Harris, L., & Rae, A. (2009). Social networks: The future of marketing for small business. *The Journal of Business Strategy*, *30*(5), 24–31. doi:10.1108/02756660910987581

Hayes, J., & Finnegan, P. (2005). Assessing the of potential of e-business models: Towards a framework for assisting decision-makers. *European Journal of Operational Research*, *160*(2), 365–379. doi:10.1016/j.ejor.2003.07.013

Kalakota, R., & Robinson, M. (2001). E-business 2.0: Roadmap for Success. Boston, MA: Addison-Wesley Longman Publishing

Kavadias, S., Ladas, K., & Loch, C. (2016). Dönüştürücü İş Modeli, *Harvard Business Review Türkiye.* Retrieved from https://hbrturkiye.com/dergi/donusturucu-is-modeli

Keen, P., & Williams, R. (2013). Value architectures for digital business: Beyond the business model. *Management Information Systems Quarterly*, *37*(2), 643–648.

Kim, W. C., & Mauborgne, R. (1999). Strategy, value innovation, and the knowledge economy. *Sloan Management Review*, *40*(3), 41–42.

Klose, M., & Lechner, U. (1999). Design of business media-an integrated model of electronic commerce. *AMCIS 1999 Proceedings*, 193.

Lee, C. S. (2001). An analytical framework for evaluating e-commerce business models and strategies. *Internet Research*, *11*(4), 349–359. doi:10.1108/10662240110402803

Magretta, J. (2002). Why business models matter? *Harvard Business Review*, *80*(5), 86–92. PMID:12024761

Meyer, C., & Davis, S. (2000). Blur: The speed of change in the connected economy. *Work Study*, *49*(4). doi:10.1108/ws.2000.07949dae.003

Mohapatra, S. (2013). E-commerce Strategy. In *E-Commerce Strategy* (pp. 155–171). Boston, MA: Springer. doi:10.1007/978-1-4614-4142-7_7

Morris, M., Schindehutte, M., & Allen, J. (2005). The entrepreneur's business model: Toward a unified perspective. *Journal of Business Research*, *58*(6), 726–735. doi:10.1016/j.jbusres.2003.11.001

Nilsson, J. (1999). Co-operative organisational models as reflections of the business environments. *The Finnish Journal of Business Economics*, *4*(99), 449–470.

Onetti, A., Zucchella, A., Jones, M. V., & McDougall-Covin, P. P. (2012). Internationalization, innovation and entrepreneurship: Business models for new technology-based firms. *The Journal of Management and Governance*, *16*(3), 337–368. doi:10.100710997-010-9154-1

Osterwalder, A., & Pigneur, Y. (2002). An eBusiness model ontology for modeling eBusiness. BLED 2002 Proceedings, 2.

Osterwalder, A., Pigneur, Y., & Tucci, C. L. (2005). Clarifying business models: Origins, present, and future of the concept. *Communications of the Association for Information Systems*, *16*(1), 1.

Ovans, A. (2015). What is a business model? *Harvard Business Review*, 1–7.

Özmen, Ş. (2013). *Ağ Ekonomisinde Yeni Ticaret Yolu – E-Ticaret*. İstanbul Bilgi Üniversitesi Yayınları.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Pateli, A. (2003). A framework for understanding and analysing ebusiness models. *BLED 2003 Proceedings*, 4.

Persson, A., & Stirna, J. (2001, June). Why enterprise modelling? an explorative study into current practice. In *International Conference on Advanced Information Systems Engineering* (pp. 465-468). Berlin, Germany: Springer. 10.1007/3-540-45341-5_31

Petrovic, O., Kittl, C., & Rappa, M. (2001). Managing the digital enterprise - Business models on the Web. North Carolina State University.

Pigneur, Y. (1996). A Framework for designing new information systems. In F. Bodart (Ed.), *Future of Information Systems – Challenge and Pitfalls* (pp. 61–102).

Porter, M. E. (2017, Oct. 3). *What Is Strategy?* Retrieved from https://hbr.org/1996/11/what-is-strategy

Rappa, M. (2003). Business models on the web. *Managing the Digital Enterprise website.* Available at http://digitalenterprise. org

Reichheld, F. F., & Schefter, P. (2000). E-loyalty: Your secret weapon on the web. *Harvard Business Review*, *78*(4), 105–113.

Rogers, D. (2016). The Digital Transformation Playbook. New York, NY: Columbia University Press. doi:10.7312/roge17544

Sarkar, M. B., Butler, B., & Steinfield, C. (1995). Intermediaries and cybermediaries: A continuing role for mediating players in the electronic marketplace. *Journal of Computer-Mediated Communication*, *1*(3), 1–14.

Shafer, S. M., Smith, H. J., & Linder, J. C. (2005). The power of business models. *Business Horizons*, *48*(3), 199–207. doi:10.1016/j.bushor.2004.10.014

Statistics Directorate, O. E. C. D. (n.d.). Electronic Commerce. Retrieved from https://stats.oecd.org/glossary/detail.asp?ID=4721

Tapscott, D. (2000). Digital capital: Harnessing the power of business webs. Brighton, MA: Harvard Business School Press.

Tapscott, D., Ticoll D., & Lowy, A. (1999). The rise of the business web. *Business 2.0,* November, 198-208.

Teksten, R. (2001). Developing Business Models for eBusiness. *Proceedings of the International Conference on Electronic Commerce*.

Timmers, P. (1998). Business models for electronic markets. *Electronic Markets*, *8*(2), 3–8. doi:10.1080/10196789800000016

TÜSİAD. (2017). *Dijitalleşen Dünyada Ekonominin İtici Gücü: E-Ticaret.* 04-587.

Van der Vorst, J. G., Van Dongen, S., Nouguier, S., & Hilhorst, R. (2002). E-business initiatives in food supply chains; definition and typology of electronic business models. *International Journal of Logistics*, *5*(2), 119–138. doi:10.1080/13675560210148641

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

van Eijsden, G. A. I. (2000). *Banking in the Digital Economy* (Doctoral dissertation, Technical University Eindhoven, The Netherlands).

Wirtz, B. W., Schilke, O., & Ullrich, S. (2010). Strategic development of business models: Implications of the Web 2.0 for creating value on the Internet. *Long Range Planning*, *43*(2-3), 272–290. doi:10.1016/j.lrp.2010.01.005

WTO. (n.d.) Retrieved from https://www.wto.org/english/rese/bookspe/ecombrochuree.pdf

Zimmermann, H. D. (2000) Understanding the Digital Economy: Challenges for new Business Models. In: *Proceedings of the 2000 Americas Conference on Information Systems*. 10.2139srn.2566095

Zott, C., Amit, R., & Massa, L. (2010). The business model: Theoretical roots, recent developments, and future research. *IESE business school-University of Navarra*, 1-43.

Zott, C., Amit, R., & Massa, L. (2011). The business model: Recent developments and future research. *Journal of Management*, *37*(4), 1019–1042. doi:10.1177/0149206311406265

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Chapter 2
The Affective Domain of E-Commerce

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ABSTRACT

The purpose of this chapter is to examine customer perceptions in the affective domain that directly or indirectly influence the shopping process and purchasing decision between the online customer and online shopping sites. This chapter investigates the effects of nine different perceptions as perceived benefit, perceived control, perceived customer services, perceived customization, perceived risk, perceived security, perceived self-efficiency, perceived privacy, and perceived value on the trust, satisfaction, and loyalty of online customers. Revealing the effects of these relationships on online customer trust, satisfaction and loyalty is important for online shopping sites to maintain their existence in the long-run, be able to compete with others, and increase their profitability.

INTRODUCTION

Trade is an initiative that has existed among people since the ancient times. With the prevalent usage and centralization of the internet in our lives at the end of the twentieth century, it emerged as a new format that is known as "Electronic Commerce". In the digitalizing world, electronic commerce can also be defined as the digitalized state of commerce. Costs of accessing customers have decreased because the internet provides opportunities for the consumer to be able to access information about products or services. The price difference that was caused by reduced costs has led customers towards online shopping and increased the trade volume (Bourlakis, Papagiannidis, & Fox, 2008). Electronic commerce (e-commerce) was accepted by a wide proportion of the public and started to spread (Erbaşlar & Dokur, 2008; Xiong, Hou, Dong, & Nyberg, 2012). Sales made to consumers from e-commerce businesses worldwide have reached 3.3 trillions of dollars (Orendorff, 2017). This situation has brought along changes in shopping behaviors and habits for both vendors and customers in in a digitalized world.. This development revealed a different structure to those in markets where producers and consumers are found together, and e-commerce establishments started to interact with online customers all over the world.

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The prevalence of e-commerce turned all people in the world into potential customers for vendors (Butler & Peppard, 1998; Civan & Bal, 2002). Now, consumers have become e-customers and been turned towards online shopping sites to meet most of their needs for goods and products. In this new form of shopping and trade, it was observed that the purchasing behaviors, shopping habits and general behaviors of consumers are influenced by various factors. This is why a need arose for reevaluation of the effects of some affective factors such as perception, motivation, learning, attitude and beliefs on this process. Additionally, the relationships between e-commerce businesses and online customers resulted in changes in and redefining of selling and purchasing behaviors. Customer satisfaction, trust and loyalty, which are among the main elements between the seller and buyer in trade, have become affected more by some affective characteristics of customers. The purchasing decisions of customers during the process of shopping from online shopping sites are affected more by affective factors (Akbar & James, 2014), and this influences customer satisfaction, trust and loyalty.

Considering the perspective of online shopping sites, having an organization in terms of e-commerce and increasing the satisfaction, trust and attachment of customers who prefer online shopping have become a key factor in terms of the purchasing behaviors of customers, profit margin and long-term growth goals. This is why it has become important to investigate the relationships between customer perceptions and customer satisfaction, trust and loyalty, as well as their effects on the purchasing decisions of customers (Srinivasan, Anderson, & Ponnavolu, 2002; Park & Kim, 2003; Flavia´n, Guinaliu, & Gurrea, 2006; Cyr, Hassanein; Head, & Ivanov, 2007; Kim, Ferrin, & Raghav, 2008).

In the following parts of this chapter, firstly the findings of studies which investigated customer perceptions, satisfaction, trust and loyalty and the relevant literature are presented. Secondly, online customer trust, satisfaction and loyalty are discussed in terms of e-commerce. The third part presents the customer perceptions that affect the trust, satisfaction and loyalty levels of online customers the most, and the relationships of the determined perceptions with customer satisfaction, trust and loyalty are separately presented.

BACKGROUND

The relationships between online customer perceptions and customer satisfaction, trust and loyalty and the effects of these on customers' purchasing decisions have been prevalently researched in recent years (Bilgihan, 2016; Ozkara, Ozmen, & Kim, 2017; Kim, & Peterson, 2017; Pee, Jiang, & Klein, 2018 . This section discusses the results of previous studies on relationships among online customer perceptions, customer satisfaction, trust and loyalty and the effects of these on the purchasing decisions of consumers. While presenting the aforementioned literature, firstly studies that demonstrated the relationships among customer loyalty, customer satisfaction and customer trust are included. Then, the section presents the findings of studies that investigated the effects of customer perceptions separately on customer satisfaction, customer loyalty and customer trust. Finally, findings on the comprehensive relationships between online customer perceptions and customer loyalty, satisfaction and trust are provided.

Considering the findings of studies which investigated the relationships among online customer loyalty, satisfaction and trust, it is seen that customer satisfaction and trust affect loyalty directly or through mediating variables. Akbar and James (2014) asserted that customers' online purchasing behaviors, what they understand from the concept of a product and what they have learned through their lives are associated with their attitudes and beliefs. They concluded that perceptions, satisfaction and

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trust directly affect purchasing. Other studies also emphasized that customers' decisions on shopping or not shopping online are affected by perceptions, motivations, learning, attitudes and beliefs (Corbitt, Thanasankita, & Yi 2003; Kim, Ferrin, & Raghay, 2008). Customer satisfaction, trust and loyalty may be increased by accurately determining and suitably managing their expectations and perceptions (Chiu, Hsu, & Chan, 2012). As stated by Reichheld and Schefter (2000), for the management of online shopping sites, it is critically important to know which factors affect the customers and which factors make them loyal customers. Gaining loyal customers for online shopping sites is dependent on several factors, and studies have reported that customer satisfaction, trust and perceptions have a determining role in this issue (Srinivasan et al., 2002; Park & Kim, 2003; Cyr et al., 2007; Kim et al., 2008).

A study which investigated the factors that affect online customer satisfaction reported that electronic service quality, perceived values, customer trust and customer satisfaction are the most significant and effective factors on customer loyalty (Suhartanto, Triyuni, & Leo, 2018). Another study investigated the effects of perceived website usefulness (PU) and customer satisfaction on customer loyalty. While PU affected customer loyalty more after the first purchase, as the number of purchases the customer made increased, there were more effective and determining factors on customer loyalty (Pee et al., 2018). Jaiswal, Niraj and Venugopal (2010) emphasized that at least one purchase should take place for online customer loyalty to be measured. They stated that, if one customer purchases again from the same vendor, they will be a potential loyal customer, and this situation may be directly associated with customer satisfaction and loyalty.

Kim and Peterson (2017) conducted a meta-analysis study and found that online trust was affected by perceived privacy and perceived service quality, while trust affected loyalty and repeated purchase intentions. Song and Lai (2017) determined that customer satisfaction in online shopping had a positive relationship with perceived value that changes based on the online shopping experience. On another study, the researchers studied the factors that affect the trust of customers who shop online for clothes. Accordingly, the showed that customer satisfaction was indirectly effective in shaping online loyalty through the mediating variables of trust and perceived value (Molinillo, Gomez-Ortiz, Pe'rez Aranda & Navarra-Garcia, 2017). Another study that investigated customer loyalty found that customer loyalty was affected by customer satisfaction and trust. It was also reported that customer satisfaction and trust were affected by service quality, which consisted of the sub-components of web design, responsiveness, customization and assurance.

The findings of studies which examined the relationships between customer loyalty and online customer perceptions revealed significant relationships between these and provided important information for organizations who are involved in online commerce. Oypan (2017) emphasized that customers want to feel special while shopping online, and they prefer firms that offer such services more. They also stated that individuals may use their time more efficiently and complete their operations faster with personalized websites. Sherbill (2014) also reported that the sales of online shopping sites that made customizations increased. Öztürk, Coşkun and Dirsehan (2012) emphasized that customization was one of the most important factors in distinguishing those with low e-loyalty and those with high e-loyalty.

Bilgihan (2016) investigated the relationship between the online loyalty of generation Y in online shopping and factors of user experience and brand loyalty. As a result of the study, they found that all three variables affected online loyalty, but the most effective one was trust. Another study which examined online shopping site customer loyalty compared online shoppers in Taiwan and Thailand (Chen, Yen, Pornpriphet, & Widjaja, 2015). They reported that information, system and service quality, including customization, affected customer satisfaction, trust and loyalty. In addition to this, they stated

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that customer trust and satisfaction also affected customer loyalty. There were significant differences in the perspectives of online customers from two difference cultures on information and system quality. Srinivasan et al. (2002) also emphasized that customization is one of the important perceptions that affect customer loyalty.

Pan, Sheng and Xie (2012) investigated the precursors of online customer satisfaction. As a result, they revealed a conceptual framework that showed that online customer satisfaction was affected by variables in two main group as customer-related and product-related factors. Customer-related factors consisted of customer satisfaction, trust, psychological commitment, loyalty program membership, while product-related factors were perceived value, product quality, perceived fairness, switching cost and brand reputation. They reported that these two groups of factors shaped customer loyalty.

The findings of studies which investigated the relationships between customer satisfaction and online customer perceptions revealed a direct connection. Rowley (2006) argued that online shopping sites should adopt strategies that increase online shopping self-efficacy levels in management of customer satisfaction for their sites. Shih (2004) reported that customers with high self-efficacy levels displayed a more positive attitude towards online shopping, while Sanchez-Franco and Roldan (2005) also stated that e-service quality and self-efficacy would affect satisfaction and trust positively. Thongpapanl and As (2011) reported that information and customization options offered to the customer on online shopping sites positively increased customer satisfaction and shopping intentions. Additionally, it was stated that information provided to the customer is important, but it is not sufficient by itself to motivate the customer for shopping and satisfy them. Consequently, they asserted that customer satisfaction and shopping intentions that develop in a positive way will increase the sales performance of the business.

The findings of studies which investigated the relationships between customer trust and online customer perceptions revealed a direct connection between these except for risk perception. Kim et al. (2008) proposed a decision-making model based on customer trust. As a result of their study, they determined that customer trust was affected by information quality, perceived security and perceived privacy. Moreover, they revealed that risk perception, customer trust and perception of benefit affected the customer's intention for shopping. While risk perception affected customer trust and intention for shopping negatively, the other factors affected these positively. Teo and Liu (2007) examined the factors that affected the trust of online customers in the United States, Singapore and China. They reported that the results for the three countries were not different, and customer trust affected the customer's perceived risk and attitudes. According to their findings, the intention for purchasing decreased by risk perception and increased by positive attitudes.

The findings of studies on the relationships between online customer perceptions and customer loyalty, satisfaction and trust that were conducted in a comprehensive way revealed direct and indirect relationships between these variables. Kurt (2013) investigated the effects of the ethical value perceptions of online vendors on customer loyalty based on the intermediary variables of customer trust and satisfaction. Accordingly, they revealed that perceptions of ethical values consisted of sub-components including security, privacy, honesty and reliability. While ethical value perceptions directly affected customer trust, it affected customer loyalty and satisfaction indirectly. In conclusion, they stated that customer trust affected satisfaction, and satisfaction affected loyalty, while these effects were direct. Kaya and Özen (2012) stated that perceived value has a significant effect on purchasing. Mathwick, Malhotra and Rigdon (2001) also argued that obtaining value is a main goal of purchasing and the basis in all successful transactions. The study conducted by Eid in Saudi Arabia in 2011 found that user interface quality, information quality, perceived security and perceived privacy were variables that affected online

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customer trust and satisfaction. The researcher reported that online customer satisfaction and trust also affected online customer loyalty. Özgüven (2011) argued in their study that the website that is designed should feel secure for the customer, and for this, all security measures must be taken. While it was seen that customer satisfaction is an important predictor of loyalty, it was emphasized that the security factor for online shopping sites also plays an important role on loyalty.

To sum up the findings of the studies cited above which investigated the relationships between online customer perceptions and customer satisfaction, trust and loyalty, the interactions of customer perceptions with customer trust, satisfaction and loyalty were explained by two models. In the earlier periods, these relationships were explained over a model that states perceptions affect trust, trust affects satisfaction, and satisfaction affects loyalty. In recent years, these relationships were explained by a model that argues that perceptions affect both trust and satisfaction, and trust and satisfaction together affect customer loyalty. Some current studies focused on a model that aimed to explain the relationship of the trust and satisfaction defined in the second model with loyalty through an intermediate variable defined as perceived value. However, there are not enough studies for explaining these relationships over this model.

Online Customer Trust

Customers only shop from individuals, brands, organizations and shops that they trust. This is why managing the sale is important. After this, the exchange continues based on a connection of trust, and the continuity of shopping is achieved. Customer trust on online shopping sites is the belief of the customer that the site and the brand will fulfil their responsibilities during or after shopping and their desire to trust the site in case of a security problem (Erçetin, 2015). In other words, online customer trust consists of the beliefs of customers that the online shopping site will support them when they are defenseless (Hou, 2005; Rewatkar, 2012). While online customer trust is important, the lack of trust of customers in the online shopping website is the main reason why they do not shop online.

As the decisions to be made by the customer during the online shopping process carry risks, online customer trust also has an effect that speeds up decision-making. Studies have reported that the website to be designed should make the customer feel safe, and for this, all security precautions must be taken (Ozguven, 2011). Customer satisfaction is an important determinant of loyalty, while customer trust in online shopping sites plays an important role on loyalty. Studies have defined customer trust as an important factor for customer loyalty (Garbarino & Johnson, 1999; Chaudhuri & Holbrook, 2001). Furthermore, if the customer trusts a site, they are more likely to develop a positive attitude towards the product, pay a good price, stay loyal and mention positive things through word of mouth (Chaudhuri & Holbrook, 2001; Wu, 2013).

Online Customer Satisfaction

Satisfaction has always been a critical issue since the earliest times of trade, and it is becoming increasingly more important. Today, customer satisfaction has a highly significant place in the achievement of competitive advantage by businesses (Bitner & Hubbert, 1994; Su, 2004). Satisfaction is generally defined as the level of the customer's pleasure with and expectations that are met from the good or service they have purchased (Bennington & Cummane, 1998). Online customer satisfaction is the level of satisfaction or dissatisfaction the customer takes from the good or service they have purchased online (Barutcu, 2007). Customer satisfaction is one of the important priorities of online customers that make them ready

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to shop online (Kuo & Wu, 2012; Wu, 2013). Customer satisfaction plays a key role in repeated purchasing, achieving customer attachment and higher profits by businesses (Reichheld & Schefter, 2000). Online shopping sites must provide customer satisfaction as their customers can distribute information to other customers very easily and fast with the help of the internet. While achievement of customer satisfaction means new customers for a business, dissatisfaction corresponds to loss of customers. This the necessity to satisfy the customer has a vital significance for businesses today. Online shopping sites, just as in conventional commerce, aim to keep their customers.

Customer satisfaction on online shopping sites is accepted as one of the key variables that affect the future purchasing intentions and decisions of customers that shop online. On the other hand, in the case of dissatisfaction of the customer of the online shopping site, the customer stops shopping from online shopping sites and turns towards conventional distribution channel (Barutcu, 2007). While an appeased customer may express their satisfaction to potential customers, a dissatisfied customer poses a risk of expressing their complaints and dissatisfaction to those around them (Dubrovski, 2001). Hence, it is crucially important for online shopping sites to have satisfied customers.

In order to achieve customer satisfaction, online shopping sites need to monitor the process until the product is delivered to the customer and provide support afterwards. As a result of this, the satisfaction level of the online customer will increase, and the customer who is pleased by the good or service they purchased will make their next choice in favor of the same vendor (Leclerc, 2013). As a result of solutions that would not negatively affect the satisfaction and loyalty of customers, online vendors will experience the feeling of permanence as the trust in the website will increase.

Online Customer Loyalty

Loyalty may be explained as a customer's positive attitudes, tendency, likelihood to come back and make purchases from a business due to their belief that the value perceived from a business service is higher than those of alternatives. As drawing new customers towards online shopping sites is costlier in comparison to conventional businesses, loyalty is vitally important in e-commerce in the economic sense. Loyal customers are customers who have formed an emotional connection with the business, and they help presence and recognition of the site's name by making positive recommendations to people around them (Avcikurt & Koroglu, 2006). Therefore, loyalty is seen as an important factor for achieving the success and sustainability of an online shopping site (Dekimpe, Steenkamp, Mellens, & Abeele, 1997; Casaló, Flavián, & Guinalíu, 2008). Online customer loyalty is also seen as a significant competitive advantage in terms of customers' attachment to a business and preference of that business despite the presence of others. This is why it is important for businesses to establish customer loyalty (Çati & Koçoğlu, 2008). Studies have shown that loyal customers stay attached to the brand and the site even if they encounter better options. These customers visit online shopping sites more by 32% and spend 46% more money (Corless; 2019). Establishing customer loyalty is a very difficult process for online shopping sites. The preliminary conditions for this are achieving customer satisfaction and trust and developing long-term customer relations (Eid, 2011).

Customer Perceptions of Online Customers

This section introduces customer perceptions that affect the satisfaction, trust and loyalty of online customers and presents the relationships of these perceptions with customer satisfaction, trust and loyalty.

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Perception is defined as complex, objective consciousness content that emerges with the contributions of memory and through an affective impression, namely, becoming aware of something through the senses by directing attention towards it. Perception is formed by signals on the nervous system that are created by stimulation of the sensory organs of individuals. Considering it regarding customers who purchase from online shopping sites, it is defined as interpretations that are felt and made before, during and after shopping for a good or service. Customers' development of positive perceptions towards online shopping and sites will lead to the development of e-commerce. This is why revealing the perceptions of customers towards online shopping and designing appropriate e-commerce strategies will allow online shopping sites to conduct their operations efficiently. Furthermore, the perceptions of online customers form a structure that is directly effective on the success of e-commerce. The comprehensive review of the literature showed that, as a result of the interactions of customers with online shopping sites, they developed perceptions of benefit, customer services, control, customization, privacy, risk, security, self-efficacy and value.

Perceived Benefit

Perceived benefit is defined as the perceptions on the benefits customers gain from their shopping process on the online shopping site and as a result of this process (Pavlou, 2003). These benefits may be listed as practicality, easy purchase, opportunity of searching fast and increased options. Online shopping sites should be designed in a practical way for searching for and purchasing products, and this process should be made easier for online customers. Moreover, the options of online customers should be increased by allowing them to look for and buy products faster.

Online shopping sites' provision of detailed information and product diversity to the customer for shopping will increased the perceived benefit they gain as a result of this exchange. After the formation of the perception that the online shopping site's purchasing process for goods or services is beneficial, shopping processes on these websites will increase customer satisfaction and trust (Bhattacherjee, 2001; Devaraj, Fan, & Kohli, 2002; Pavlou, 2003). Customers with feelings of satisfaction and trust will become loyal customers.

Perceived Control

Perceived control refers to the feelings of customers regarding their degree of ability to have control over the content access, searching and processing processes while using the online shopping site with the help of their skills of using information and communication technologies (Rose, Hair, & Clark, 2011).

In the shopping process, there are activities that will develop perceived control in the positive direction. First of these is the feeling of customers to be technically equipped and adequate regarding what they would do when they visit the online shopping site for the first time. Knowing what they would do throughout the shopping process and feeling that they have control in making the purchasing decision are others. Thinking that they can check the information that is provided and feeling that all the process is under control while setting their order are also activities that shape perceived control. One of the advantages of the internet environment is the depth of information provided to customers, and it is important that, through the shopping process, customers feel that they are adequately equipped and have the control. Having a positive perception of control regarding online shopping sites and the shopping process will increase the number of purchases that are made on online shopping sites.

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The results of some studies showed that individuals behave more positively when they think they have control over their environment (Ozkara et al., 2017). Therefore, if users have perceived control over the process, it is natural to expect that their trust and satisfaction levels will increase. Perceiving that they can control whatever piece of information they want and will make the best purchasing decision will affect the approaches of customers towards online shopping and their experiences positively. Customers who perceived that control is in their hands will be pleased by the shopping process. Customers with increased satisfaction levels will also have increased trust levels in online shopping.

Perceived Customer Services

Difficulties that are encountered as a result of the impossibility of customers to closely examine and immediately obtain products as in physical stores may only be compensated by advanced levels of customer services. Customer services is an issue that should be prioritized by online shopping sites of all sizes, and it is in the center of the business strategies of e-commerce establishments. While the price and brand of the product create the different in today's commerce, it is expected that this difference will be created by customer services in 2020s. The Customer Report by Microsoft Customer Services stated that almost all of their customers emphasized the importance of customer services. Perceived customer services consist of the feelings of customers that online shopping sites will provide them with the necessary services before and after purchasing not only while conducting their real-time transactions but also for achieving long-term customer services. When today's customers have a question, they want to be answered fast. In the case that they cannot get a response fast, they also quickly move their shopping on the internet towards a different site. Customer services of online shopping sites provide information regarding the usability of the selected products and the status of the orders. They spend efforts to minimize the problems in the provision of the demanded services.

The success of online shopping is determined by the services that are provided during and after the shopping process. The greatest problem is when customers are not sufficiently satisfied by customer services (Bal, 2014). Online shopping sites need to spend an effort to not lose the customer they accessed once. Minimizing the problems experienced in customer services will lead to higher levels of perceived customer services (Eid, 2011). When customer services are provided successfully, customers will be satisfied and develop trust. In turn, this will help keeping the existing customers and drawing new customers. Studies have reported that one of the most effective methods of accessing loyal customers is provision of a high-quality customer service (Eid, 2011).

Accordingly, online shopping sites should also aim to increase this perception by developing a sensitive feedback mechanism based on understanding customer needs and improving services. The customer services of the online shopping site should be accessible for improving this perception, product delivery information should be easily accessible, and detailed product information and answers to frequently asked questions should be certainly provided to the customer.

Perceived Customization

Perceived customization refers to an online shopping site's provision of operational opportunities and platforms for the customer to customize the products or services based on their taste (Srinivasan et al., 2002). Online customers state that the like it very much when online shopping sites present them platforms that feel like directly talking to themselves which allow customization of the colors and visuals on

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the windows that open after logging in as a registered user. When customers log in to online shopping sites as registered users, they have the feeling of being accepted as a customer. It is seen that online customers attach great importance to their feeling of the shopping site as a space that is theirs. This is why online shopping sites need to provide a customized shopping experience to their users to increase sales and achieve customer loyalty (Schrage, 1999). Customization also allows the online customer to focus on the product they want and make a choice fast (Shostak, 1987). Online shopping sites that carry out customization work report that their sales increase (Sherbill, 2014). Customers report that they want to feel special while shopping online, and they prefer firms that provide this opportunity more (Lee & Lin, 2005; Oypan, 2017). Studies have reported that 59% of customers found more interesting products on customized online shopping sites, and 56% visited the sites that recommended products again for purchasing (Saleh, 2018). Customers use their time more efficiently and complete their operations fast in customized sites. Providing customers with a more personalized experience and products that appeal to their interest will lead them to see the website as a special place. With the provision of these advantages, online customers will visit the online shopping site again, and their purchasing probability will increase. As a result of achieving the satisfaction of customers, it will naturally be possible to turn them into loyal customers. Studies reported that one of the most important variables in distinguishing those with low loyalty and those with high loyalty levels is customization (Ozturk et al.,2012).

Perceived Privacy

Privacy is one of the three elements that form the basis of information security. Privacy aims to prevent information from being obtained by unauthorized individuals. Personal and private information is requested for the activities customers perform on online shopping sites. Such information may include name, last name, e-mail addresses, home and work addresses and credit card numbers. Perceived privacy is a customer perception that is based on the extent to which an online shopping site pays importance to prevent the private information of customers from being accessed by unauthorized users or released. Revelation of private information is one of the main sources of anxiety for customers. It is very important for customers that this information they use while shopping is protected (Kim et al., 2008). Studies have revealed that, although online firms promise security, 90% of customers state that they do not trust these firms for the protection of their personal information and feel anxious about this issue (Light, 2001). Online shopping sites should inform their customers regarding how and in what way the personal data they collect for different purposes will be used. It was reported that the vast majority of customers trusted businesses more when they are informed on how their personal information is being used and how their privacy is ensured (Saleh, 2018). Provision of appropriate and sufficient privacy by online shopping sites increases the customer's perceived privacy (Odom, Kumar & Saunders, 2002; Ramanathan, 2011). Customers with high perceived privacy will continue their shopping as satisfied, and then probably, loyal customers.

Perceived Risk

Perceived risk is defined as the uncertainty encountered by customers when they cannot foresee the outcomes of their purchasing decision (Schiffman & Kanuk, 2000). It plays role in shaping customer behavior and is highly important for customers of online shopping sites (Doolin, Dillon, Thompson, & Corner, 2005).

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The risk that is perceived by customers is seen to be one of the most significant obstacles in online shopping. Online shopping sites should take the steps necessary to eliminate risk anxiety in their customers by security technologies, awareness campaigns and security policies and reduce perceived risk (Liao & Cheung, 2002; Chih-Chung & Chang, 2005; Lopez-Nicolas & Molina-Castillo, 2008). A study that was conducted in the United States, China and Singapore found that, in all three countries, as the perceived risk of the customers regarding online shopping sites increased, online consumer trust decreased, while perceived risk directly affected the customer's decision to shop or not shop again from the same site (Teo & Liu, 2007). Another study determined that perceived risk that decreased as a result of positive experiences was replaced by perceived advantage (Saydan, 2008). The degree of perceived risk affects customer satisfaction and trust negatively. In order to minimize the perceived risk in customers, online shopping sites should adopt appropriate strategies that will eliminate their anxiousness about the quality, delivery and return of products or services.

Perceived Security

Security refers to mechanisms that prevent unauthorized access to data and systems that include such mechanisms. Perceived security is defined as the perception of a customer that is formed as a result of work that is carried out by online shopping sites to meet security requirements. As online customers cannot interact with the vendor face to face as in the case of conventional shopping, they experience more trust issues (Ha & Stoel, 2009). Trust is at the center of people's interpersonal relationships, and achieving trust in sites that are involved in e-commerce is directly related to technical infrastructure. Sites that have a complicated structure where security features (security policy, security agreement, guarantee of secure shopping) and protection mechanisms (encryption, protection, authentication, secure socket layer technology) are not used lead customers to have trust issues (McKnight & Chervany, 2001). It is known that lack of perceived security is the main reason why several potential customers do not make purchases on online shopping sites. This is why e-commerce sites should create a security plan where security systems work in harmony and provide the infrastructure that is needed for it (Chiu et al., 2012). Shopping sites need to take a set of security precautions for a positive and high perceived security. Some of such precautions include digital certificates to prove the online shopping site is real, secure socket layer (SSL) technology that allows transfer of customer information through a secure platform, 3D security passwords for credit card purchases and usage of firewalls. In addition to these, online shopping sites must have Privacy and Security Policies, and these policies should be presented to customers. If customers feel that the online shopping site aims to meet the security needs of its customers and their goal is to provide a secure shopping platform, their perceived security will increase. As a result of high and positively developed perceived security, customer satisfaction and the sales of the site will increase (Chellappa & Pavlou, 2002; Eid, 2011; Chen, 2012).

Perceived Self-Efficacy

Online shopping self-efficacy is the perception of a customer regarding their skills of online information and price researching and purchasing. In other words, online shopping self-efficacy is the output of the socializing of the consumer, and it is defined as the acquisition of certain consumer skills that contribute to the adequacy of the individual. This variable is an indicator of the extent to which online customers are comfortable in collecting information and shopping on online shopping sites (Chuang,

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Lin, & Chin-Chung, 2015). Rowley (2006) emphasized that, in customer satisfaction management, online shopping sites should adopt strategies towards increasing online shopping self-efficacy levels. A study emphasized that customers with high self-efficacy levels display more positive approaches towards online shopping (Shih, 2004). Another study noted that high perceived self-efficacy levels will positively affect the quality of the e-service, satisfaction and trust (Sanchez-Franco & Roldan, 2005). The perceived self-efficacy of customers during online shopping leads them to have a positive shopping experience. This, in turn, affects trust, satisfaction and loyalty positively (Corbitt et al., 2003; Udo, Bagchi, & Kirs 2010; Rose et al., 2011).

Perceived Value

Perceived value is formed as a result of the combination of the cost of the product or service purchased by the consumer and the benefits it provides, and it affects the shopping intention and behavior of the customer (Lai, Griffin, & Babin, 2009). When the value they get compensates or exceeds their expectations, customers decide that the product or service they have purchased is worth purchasing (Srinivasan et al., 2002). Obtaining value is the goal of a basic purchasing process, and perceived value has a substantial effect on purchasing behavior. Customers choose the product that will provide them the best value by comparing the value they obtain to alternatives. This situation is applicable to all commercial operations (Mathwick et al., 2001). In the case that online customers' perceived value regarding a product on an online shopping site is low, they will turn towards the products of competing brands and be more likely to purchase the product from the other site (Parasuraman & Grewal, 2000; Sirdeshmukh, Singh, & Sabol, 2002; Srinivasan et al., 2002). E-commerce sites that work with customers who have low perceived value have to spend more effort to be able to compete with those that work with customers who have high perceived value (Ates, 2018).

Perceived value is one of the perceptions that trigger repeated purchasing behaviors (Parasuraman & Grewal, 2000). Studies have shown that the perceived value of customers who shop online is the most significant variable that predicts customer trust and loyalty. If perceived value is high, online customer trust and loyalty are also high, and this situation affects both the vendor and the customer positively (Flint, Woodruff, & Gardial, 2002; Srinivasan et al., 2002; Chen, 2012). Perceived value is one of the driving forces in the formation of customer trust and loyalty. The feelings of having made a profitable and rational purchase and their efforts were worth it after online shopping will lead to attraction of a loyal customer by creating a positive perception of value. Achieving customer loyalty is a very difficult process, and previous research reported that online shopping sites lose 25% of their users by average each year. Turning customers loyal may prevent a loss of as much as 25% in the profits of the firm. In contrast, when the perception of value that will be formed in the customer is low at the end of the shopping process, the online shopping site will have to spend more effort to stay in the competition (Chen, 2012). Online shopping sites follow up on the constantly changing customer values by acting in this direction and analyze what they and their suppliers could do regarding this matter.

SOLUTIONS AND RECOMMENDATIONS

In order to increase their profit margin, businesses that have online shopping sites need to increase the number of customers who will purchase the services or products they offer. As it is very easy to lose

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customers on the internet, it is greatly important for online shopping sites to increase the number of customers that are loyal to them. The first thing to do in achieving customer loyalty is achieving customer satisfaction. Customer trust should be earned for customers to become satisfied customers. Trust and satisfaction which affect customer loyalty are also influenced by customer perceptions. Online shopping sites should increase their awareness on how customer perceptions affect this process, work towards managing customer perceptions and adopt relevant strategies.

The great increase in the numbers of security and privacy violations in online shopping shows that the two most important threats for e-commerce today are security and privacy. As it is not possible for vendors and customers to interact directly and in person, security and privacy policies act as a bridge between the two sides. With the help of these policies, customers are able to understand the approach of the online shopping site to these two high-priority issues. Online shopping sites should share information online about the precautions they have taken against threats related to this issue by security and privacy policies.

In order to gain the trust of their customers, online shopping sites should provide the necessary information that customer data are stored in a very secure way and at a very secure place. Online shopping sites may increase their revenues to a significant extent by taking steps that will reduce the fears and perceived risks of their customers regarding online shopping. They may reduce perceived risk and facilitate customer trust by additional precautions using technology such as protection of sensitive customer data, website authentication and risk management. Gaining the trust of online customers will play a great role in increasing sales and reaching the firm's strategic goals.

Online customers have different perceptions in comparison to traditional customers. While shopping, online customers prefer sites that make them feel more special and provide such services more. Online shopping sites may strengthen the bilateral relationships with their customers by collecting information about the activities of the customers on their site and providing customized products and price opportunities based on this information. Online shopping sites may allow customizations based on redirection, prediction and third-party data. The method of customization that is based on behavioral characteristics of customers like the products that check out on the online shopping site, the tabs they browsed, and their purchase history is redirection-based customization. This way, the probability of the customer to purchase may be increased by directing the customer to areas they are interested in. In prediction-based customization, based on orders placed by others, product/service recommendations may be shown to customers with similar profiles. The e-commerce giant Amazon, which achieved 30% increase with the help of recommendation, is one of the firms that benefitted the most from the "frequently bought together" approach, which is one of the best examples of customization. Customization that is based on third party data is a highly practical approach for transmitting the most accurate message to the most accurate audience at the most appropriate time. With the help of these services that are provided, the satisfaction and loyalty levels of customers with high perceptions of customization will increase.

Online shopping sites should make it easier and faster for customers to search for and purchase products in order to increase their perceived benefit. The storefronts that are used in traditional businesses are replaced by the main pages of websites in online shopping. In online shopping, websites with high usability should be designed. This way, the product search and purchase processes of customers will be easier and faster. Additionally, with the help of usable websites, the perceived control of customers that they have the information, resources and capabilities required in the process of using the internet will also increase. In order to increase perceived control and benefit, it is needed to avoid complicated structures that bore their customers, are difficult to use and lead the customer to leave the site in a short

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time. The customer should be helped in easily accessing products and information related to products with graphics and category titles. As customers cannot see or touch the product itself, the site should include high-resolution and fast-loading images of the product. In-site search and reliably comments and reviews should be provided for products. Hence, in order to increase the perceived benefit of customers, an online shopping site should certainly utilize usability, speed, comprehensive product/service information, visuals and true opinions and reviews.

The perceived value for online customers is influenced by their perceptions of quality, price and sacrifice. In online shopping, if the customers find products more reliable, durable and higher-quality, they will think their online shopping experience is more valuable, and their perceived value will increase. Online shopping sites should provide low prices, develop strategies to motivate customers for shopping and increase product variety.

One of the main reasons for customers' lack of trusty in online shopping sites is related the problems related to customer services that they experience while shopping. Customers are able to solve the problems they encounter in conventional trade with sales representatives. So, they have concerns that they might not find a person that will help them solve the problems they encounter during online shopping for a real-time conversation. Such problems in online shopping are usually solved through phone calls after the fact and e-mails. Instead of this, providing online customer services will be more useful. Knowing that there is a customer services platform from which they can receive support any time they need will contribute to their trust by eliminating their concerns.

At the point customers have purchased online, the responsibility falls on the online shopping site. Fulfilling the promises that are made for increasing customer satisfaction is a golden rule for the continuity of trade in the virtual world. An active and up-to-date 'frequently asked questions' part that covers the topics that might confuse customers should be available on the online shopping site. When customers are able to find the answers to the questions they might have here, they will feel safer. Providing guarantee of original product, quality and return, making payment easier, explaining the return policy and providing technical support will create satisfaction and trust in the customer. Payment processes constitute another factor that shapes customer trust. Secure Socket Layer (SSL) certificates, 3D secure systems, address verification and tokenization are services that may be used for payment. Offering different payment options will increase customer satisfaction. Diversification of payment options such as installments, bank transfer, payment on delivery, PayPal, Payu and Ipara will increase the probability of purchases.

FUTURE RESEARCH DIRECTIONS

This chapter presented the effects of customer perceptions on customer trust, satisfaction and loyalty in a comprehensive manner. The number of studies on online customer perceptions that were newly defined by recent studies such as perceived fairness may be increased, and the interactions of these perceptions may be examined in the model. Moreover, studies may also be carried out by considering the types of each perception within itself. In future studies, moderating effects of additional variables, for example, demographic and psychographic variables on customer trust, satisfaction and loyalty may be studies. Additionally, the effects of customer perceptions in online and offline shopping on customer trust, satisfaction and loyalty may be examined. Researchers may investigate whether or not these effects on customer satisfaction, trust and loyalty differ in two different formats of shopping.

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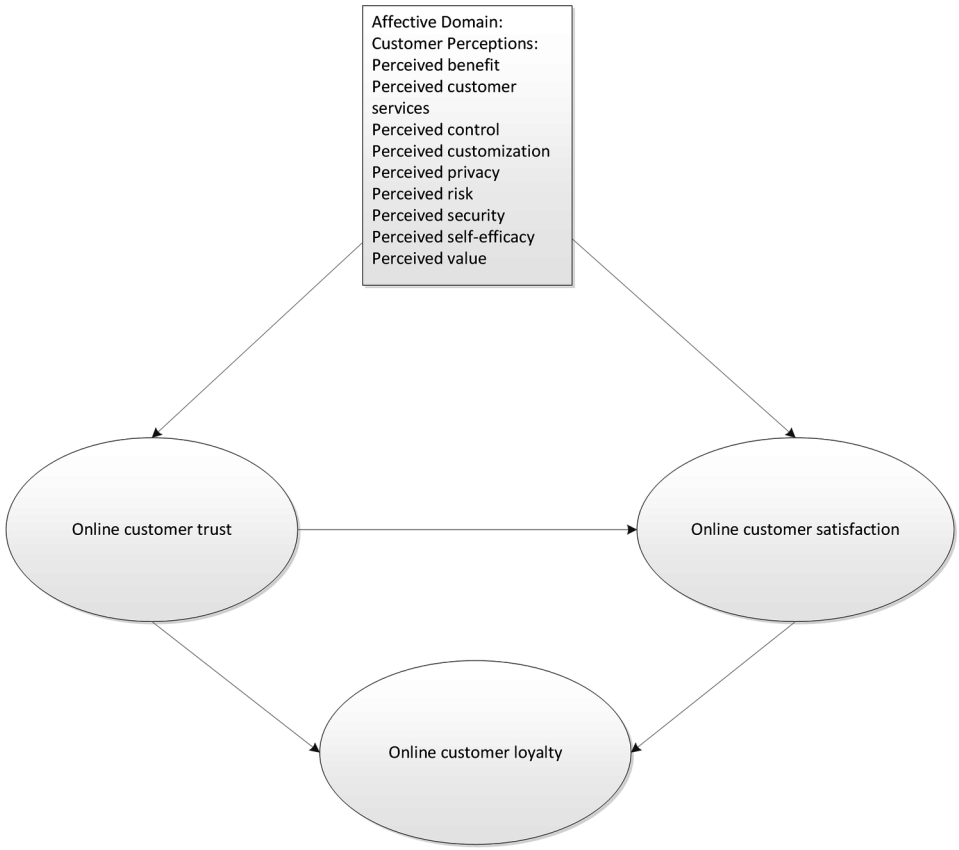
Another topic that may be worth studying is investigating online shopping sites in different sectors and determine whether or not the effects of customer perceptions on customer trust, satisfaction and loyalty differ based on sectors. Researchers could also study the effects of perceptions in real-time online shopping processes on customer trust, satisfaction and loyalty. Mobile devices are frequently preferred by online customers, and mobile commerce (m-commerce) is developing rapidly. Accordingly, online customer perceptions may be studied in terms of e-commerce, m-commerce and omnichannel commerce and comparison may be made.

CONCLUSION

Customer trust, satisfaction and loyalty are important in commerce. However, in difference to conventional commerce, it is seen that customer trust, satisfaction and loyalty in online commerce are affected some customer characteristics whose effects were not well-known before. This study investigated some perceptions in the affective domain that are thought to affect purchasing decisions directly and indirectly in the commercial process between online customers and online shopping sites.

As a result of the study, it was observed that customer trust affects customer satisfaction. Customer trust and customer satisfaction both affect customer loyalty separately and directly, while trust also

Figure 1. Conceptual model



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affects loyalty indirectly through satisfaction. Customer trust and satisfaction are shaped by customer perceptions as shown in Figure 1. This study investigated the effects on nine perceptions in the affective domain as perceived benefit, perceived control, perceived customer services, perceived customization, perceived risk, perceived security, perceived self-efficiency, perceived privacy and perceived value in the purchasing process.

The important issue for online shopping sites is not how many new customers they gain but how long this relationship will last. Today, responsible customers now know what they want, how much they are willing to pay as a price or how they will receive services. The future of online shopping will be in the hands of businesses that manage the perceptions of customers well and are able to keep up with customer needs.

In conclusion, customers should be approached not as transactions but as relationships, and they should be viewed not in terms of one-time shopping but in terms of increasing the number of loyal customers. Online shopping site that consider customer trust, satisfaction and loyalty, understand the perceptions that affect these completely and develop strategies towards these and are able to manage the affective aspects of customers will be able to preserve their competitive power and sustain their existence and profitability.

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REFERENCES

Akbar, S., & James, P. T. J. (2014). Consumers' attitude towards online shopping: Factors influencing employees of crazy domains to shop online. *Journal of Management and Marketing Research*, *14*(1), 1–11.

Avcıkurt, C., & Köroğlu, Ö. (2006). An Investigation to determine the attributes which increase the customer loyalty in the thermal hotel establishment. *Journal of Travel and Hotel Management*, *3*(1), 5–16.

Bal, V. (2014). Online sales experienced by entrepreneurs analysis of customer compliants. *AIBU Journal of Social Seciences Institute*, *14*(1), 59–74.

Barutçu, S. (2007). The factors affecting e-customer's attitudes and e-customer's satisfaction ın e-stores. *The Journal of Social Economic Research*, *7*(14), 219–238.

Bennington, L., & Cummane, J. (1998). Measuring Service Quality: A Hybrid Methodology. *Total Quality Management*, *9*(6), 395–405.

Bhattacherjee, A. (2001). An empirical analysis of the antecedents of electronic commerce service continuance. *Decision Support Systems*, *32*(2), 201–214.

Bilgihan, A. (2016). Gen Y customer loyalty in online shopping: An integrated model of trust, user experience and branding. *Computers in Human Behavior*, *61*, 103–113.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Bitner, M. J., & Hubbert, A. R. (1994). *Encounter satisfaction versus overall satisfaction versus quality. In New Directions in Theory and Practice*. Sage Publishing.

Bourlakis, M., Papagiannidis, S., & Fox, H. (2008). E-consumer Behaviour: Past, Present and Future Trajectories of an Evolving Retail Revolution. *International Journal of E-Business Research*, *4*(3), 61–76.

Butler, P., & Peppard, J. (1998). Consumer Purchasing on the Internet: Processes and Prospects. *European Management Journal*, *16*(5), 600–610.

Casaló, L. V., Flavián, C., & Guinalíu, M. (2008). The role of satisfaction and website usability in developing customer loyalty and positive word-of-mouth in the e-banking services. *International Journal of Bank Marketing*, *26*(6), 399–417.

Çati, K., & Koçoğlu, C. M. (2008). A research for determination between customer satisfaction with customer loyalty relationship. Selcuk University Journal of Social Sciences Institute, (19), 167-188.

Chaudhuri, A., & Holbrook, M. B. (2001). The chain of effects from brand trust and brand affect to brand performance: The role of brand loyalty. *Journal of Marketing*, *65*(2), 81–93.

Chellappa, R. K., & Pavlou, P. A. (2002). Consumer trust in electronic commerce transactions. *Logistics Information Management*, *15*(5/6), 358–368.

Chen, J. V., Yen, D. C., Pornpriphet, W., & Widjaja, A. E. (2015). E-commerce web site loyalty: A cross cultural comparison. *Information Systems Frontiers*, *17*, 1283–1299.

Chen, S. (2012). The customer satisfaction–loyalty relation in an interactive e-service setting: The mediators. *Journal of Retailing and Consumer Services*, *19*, 202–210.

Chih-Chung, C., & Chang, S.-C. (2005). Discussion on the behavior intention model of consumer online shopping. *Journal of Business and Management*, *11*, 41–57.

Chiu, C. M., Hsu, M. H., & Chan, C. M. (2012). Re-examining the ınfluence of trust on online repeat purchase ıntention: The moderating role of habit and its antecedents. *Decision Support Systems*, *53*(4), 835–845.

Chuang, S., Lin, F., & Chin-Chung, T. (2015). An exploration of the relationship between Internet self efficacy and sources of Internet self-efficacy among Taiwanese university students. *Computers in Human Behavior*, *48*, 147–155.

Civan, M., & Bal, V. (2002). E-commerce and SME's Future. In *National Information Conference*. Kocaeli University.

Corbitt, B. J., Thanasankita, J., & Yi, H. (2003). Trust and E-Commerce: A study of consumer perceptions. *Electronic Commerce Research and Applications*, *2*(3), 203–215.

Corless, M. (2019). *40 Powerful Online Shopping and Ecommerce Statistics*. Retrieved from https://founderu.selz.com/40-online-shopping-ecommerce-statistics-know/

Cyr, D., Hassanein, K., Head, M., & Ivanov, A. (2007). The role of social presence in establishing loyalty in e-service environments. *Interacting with Computers*, *19*, 43–56.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Dekimpe, M. G., Steenkamp, J. B. E., Mellens, M., & Abeele, P. V. (1997). Decline and variability in brand loyalty. *International Journal of Research in Marketing*, *14*(5), 405–420.

Devaraj, S., Fan, M., & Kohli, R. (2002). Antecedents of B2C channel satisfaction and preference: Validating e-commerce metrics. *Information Systems Research*, *13*(3), 316–333.

Doolin, B., Dillon, S., Thompson, F., & Corner, J. L. (2005). Perceived risk, the Internet shopping experience and online purchasing behavior: A New Zealand perspective. *Global Information Management*, *13*(2), 66–88.

Dubrovski, D. (2001). The role of customer satisfaction in achieving business excellence. *Total Quality Management*, *12*(7-8), 920–925.

Eid, M. I. (2011). Determinants of E-commerce customer satisfaction, trust, and loyalty in Saudi Arabia. *Journal of Electronic Commerce Research*, *12*(1), 78–93.

Erbaşlar, G., & Dokur, Ş. (2008). *Electronic Commerce E-commerce*. Ankara: Nobel Publishing.

Erçetin, C. (2015). *Effects on purchasing behavior and preferences of consumers in e-commerce: A study on e-commerce sites* (Unpublished master's thesis). Dogus University, Institute of Social Sciences, Istanbul, Turkey.

Flavia, N. C., Guinaliu, M., & Gurrea, R. (2006). The role played by perceived usability, satisfaction and consumer trust on website loyalty. *Information & Management*, *43*(1), 1–14.

Flint, D. J., Woodruff, R. B., & Gardial, S. F. (2002). Exploring the phenomenon of customers' desired value change in a business-to-business context. *Journal of Marketing*, *66*(4), 102–117.

Garbarino, E., & Johnson, M. S. (1999). The different roles of satisfaction, trust, and commitment in customer relationships. *Journal of Marketing*, 70–87.

Ha, S., & Stoel, L. (2009). Consumer e-shopping acceptance: Antecedents in a technology acceptance model. *Journal of Business Research*, *62*(5), 565–571.

Hou, Y. (2005). *Service quality of online apparel retailers and its impact on customer satisfaction, customer trust and customer loyalty* (Unpublished doctoral dissertation). University of North Carolina.

Jaiswal, A. K., Niraj, R., & Venugopal, P. (2010). Context-general and context-specific determinants of online satisfaction and loyalty for commerce and content sites. *Journal of Interactive Marketing*, *24*(3), 222–238.

Kaya, İ., & Özen, H. (2012). Value perception and buying intentions: a comparison between traditional and Internet shopping. *İstanbul Business Research*, *41*(1), 13-30.

Kim, D. J., Ferrin, D. R., & Raghav, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, *44*, 544–564.

Kim, Y., & Peterson, R. A. (2017). A meta-analysis of online trust relationships in e-commerce. *Journal of Interactive Marketing*, *38*, 44–54.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Kuo, Y. F., & Wu, C. M. (2012). Satisfaction and post-purchase intentions with service recovery of online shopping websites: Perspectives on perceived justice and emotions. *International Journal of Information Management*, *32*(2), 127–138.

Kurt, G. (2013). The impact of e-retailers' ethics on customer loyalty: Perceived trust and perceived satisfaction as mediators. *Journal Of Internet Applications & Management*, *4*(2), 49–68.

Lai, F., Griffin, M., & Babin, B. J. (2009). How quality, value, image, and satisfaction create loyalty at a Chinese telecom. *Journal of Business Research*, *62*(10), 980–986.

Leclerc, A. (2013). Building loyalty with online financial services customers, is there a gender difference? *Journal of Retailing and Consumer Services*, *20*, 560–569.

Lee, G. G., & Lin, H. F. (2005). Customer perceptions of e-service quality in online shopping. *International Journal of Retail & Distribution Management*, *33*(2), 161–176.

Liao, Z., & Cheung, M. T. (2002). Internet-based e-banking and consumer attitudes: An empirical study. *Information & Management*, *39*(4), 283–295.

Lopez-Nicolas, C., & Molina-Castillo, F. J. (2008). Customer knowledge management and e-commerce: The role of customer perceived risk. *International Journal of Information Management*, *28*(2), 102–113.

Martin, J., Mortimer, G., & Andrews, L. (2015). Re-examining online customer experience to include purchase frequency and perceived risk. *Journal of Retailing and Consumer Services*, *25*, 81–95.

Mathwick, C., Malhotra, N., & Rigdon, E. (2001). Experiential value: Conceptualization, measurement and application in the catalog and Internet shopping environment. *Journal of Retailing*, *77*(1), 39–56.

McKnight, D. H., & Chervany, N. L. (2001). What trust means in e-commerce customer relationships: An interdisciplinary conceptual typology. *International Journal of Electronic Commerce*, *6*(2), 35–59.

Molinillo, S., Go'mez-Ortiz, B., Pe'rez-Aranda, J., & Navarro-Garcı'a, A. (2017). Building customer loyalty: The effect of experiential state, the value of shopping, and trust and perceived value of service on online clothes shopping. *Clothing & Textiles Research Journal*, *35*(3), 156–171.

Odom, M. D., Kumar, A., & Saunders, L. (2002). Web assurance seals: How and why they influence consumers' decisions. *Journal of Information Systems*, *16*(2), 231–250.

Orendorff, A. (2017). *Global e-commerce: Statistics and international growth trends*. Retrieved from http://www.shopify.com/enterprise/global-ecommerce-statistics

Oypan, S. (2017). *Why customization is very important in e-commerce and how to do it?* Retrieved from https://www.ideasoft.com.tr/e-ticarette-kisisellestirme

Özgüven, N. (2011). Analysis of the relationship between consumers' attitudes towards online shopping and demographic characteristics. *KMU Journal of Social and Economic Studies*, *2*, 47–54.

Ozkara, B. Y., Ozmen, M., & Kim, J. W. (2017). Examining the effect of flow experience on online purchase: A novel approach to the flow theory based on hedonic and utilitarian value. *Journal of Retailing and Consumer Services*, *37*, 117–131.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Öztürk, S., Coşkun, A., & Dirsehan, T. (2012). Analyzing dimensions determining e-loyalty towards daily deal sites. *Eskişehir Osmangazi University Journal of Economics and Administrative Sciences*, *7*(2), 217–239.

Pan, Y., Sheng, S., & Xie, F. T. (2012). Antecedent of customer loyalty: An empirical synthesis and reexamination. *Journal of Retailing and Customer Services*, *19*(1), 150–158.

Parasuraman, A., & Grewal, D. (2000). The impact of technology on the quality-value- loyalty chain: A research agenda. *Journal of the Academy of Marketing Science*, *28*, 168–174.

Park, C., & Kim, Y. (2003). Identifying key factors affecting consumer purchase behavior in an online shopping context. *International Journal of Retail & Distribution Management*, *31*(1), 16–29.

Pavlou, A. P. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, *7*(3), 101–134.

Pee, L. G., Jiang, J. J., & Klein, G. (2018). E-store loyalty: Longitudinal comparison of website usefulness and satisfaction. *International Journal of Market Research*, 1–17.

Ramanathan, R. (2011). An empirical analysis on the influence of risk on relationships between handling of product returns and customer loyalty in e-commerce. *International Journal of Production Economics*, *130*, 255–261.

Reichheld, F. F., & Schefter, P. (2000). E-loyalty: Your secret weapon on the Web. *Harvard Business Review*, *78*(4), 105–113.

Rewatkar, S. (2012). Factors influencing consumer buying behavior: A review (with reference to online shopping). *International Journal of Science and Research*, *3*(5), 1347–1349.

Rose, S., Hair, N., & Clark, M. (2011). Online customer experience: A review of the business-to-consumer online purchase context. *International Journal of Management Reviews*, *13*, 24–39.

Rowley, J. (2006). An analysis of the e-service literature: Towards a research agenda. *Internet Research*, *16*(3), 339–359.

Saleh, K. (2018). *Online shopping personalization- Statistics and trends*. Retrieved from https://www.invespcro.com/blog/online-shopping-personalization

Sanchez-Franco, M. J., & Roldan, J. L. (2005). Web acceptance and usage model. *Internet Research*, *15*(1), 21–48.

Saydan, R. (2008). Perceived risks and benefits by consumers in online purchasing. *Electronic Journal of Social Sciences*, *7*(23), 386–402.

Schiffman, L. G., & Kanuk, L. L. (2000). *Consumer Behaviour* (7th ed.). Prentice-Hall.

Schrage, M. (1999). The next step in customization. *MC Technology Marketing Intelligence*, *8*(August), 20–21.

Sherbill, E. (2014), *E-commerce eye candy–E-commerce personalization.* Retrieved from https://www.cleverbridge.com/corporate/e-commerce-personalization-infographic/

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Shih, H. P. (2004). An empirical study on predicting user acceptance of e-shopping on the Web. *Information & Management*, *41*(3), 351–368.

Shostak, G. L. (1987). Breaking free from product marketing. *Journal of Marketing*, *41*(April), 73–80.

Sirdeshmukh, D., Singh, J., & Sabol, B. (2002). Customer trust, value and loyalty in relational exchanges. *Journal of Marketing*, *66*, 15–37.

Song, L., & Lai, H. (2017, July). Identifying factors affecting customer satisfaction in online shopping. In *Proceedings of the 4th Multidisciplinary International Social Networks Conference on ZZZ*. ACM.

Srinivasan, S. S., Anderson, R., & Ponnavolu, K. (2002). Customer loyalty in e-commerce: An exploration of its antecedents and consequences. *Journal of Retailing*, *78*, 41–50.

Su, A. Y. L. (2004). Customer satisfaction measurement practice in Taiwan hotels. *International Journal of Hospitality Management*, *23*(4), 397–408.

Suhartanto, D., Triyuni, N. N., & Leo, G. (2018). Online shopping loyalty: The role of quality, trust, value, and satisfaction. *Advanced Science Letters*, *24*(1), 735–738.

Teo, S. H. H., & Liu, J. (2007). Consumer trust in e-commerce in the United States, Singapore and China. *Omega*, *35*, 22–38.

Thongpapanl, N., & As, A. R. (2011). Enhancing online performance through website content and personalization. *Journal of Computer Information Systems*, *52*(1), 3–13.

Udo, G. J., Bagchi, K. K., & Kirs, P. J. (2010). An assessment of customers' e-service quality perception, satisfaction and intention. *International Journal of Information Management*, *30*, 481–492.

Wu, L. (2013). The antecedents of customer satisfaction and its link to complaint intentions in online shopping: An integration of justice, technology, and trust. *International Journal of Information Management*, *33*(1), 166–176.

Xiong, G., Hou, J., Dong, X., & Nyberg, R. (2012). *A new B2B platform based on Cloud Computing*. Boston: IEEE.

ADDITIONAL READING

Bennett, C. J., & Raab, C. D. (2017). *The governance of privacy: Policy instruments in global perspective*. Routledge.

Connoly, B. (2019). *Digital trust: social media strategies to increase trust and engage customers*. Scotland: Bloomsbury Business.

Peña-García, N., Gil-Saura, I., & Rodríguez-Orejuela, A. (2018). E-loyalty formation: A cross-cultural comparison of Spain and Colombia. *Journal of Electronic Commerce Research*, *19*(4), 336.

Punyatoya, P., Satpathy, A., & Agrawal, A. (2018). Factors driving consumer loyalty intention towards e-tailers: An integrated model. *International Journal of Business Information Systems*, *27*(4), 466–492.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Sfenrianto, S., Wijaya, T., & Wang, G. (2018). Assessing the buyer trust and satisfaction factors in the E-marketplace. *Journal of Theoretical and Applied Electronic Commerce Research*, *13*(2), 43–57.

Turban, E., Outland, J., King, D., Lee, J. K., Liang, T. P., & Turban, D. C. (2017). *Electronic commerce 2018: A managerial and social networks perspective*. Springer.

Wang, D., Zha, Y., Bi, G., & Chen, Y. (2018). A meta-analysis of satisfaction-loyalty relationship in e-commerce: Sample and measurement characteristics as moderators. *Wireless Personal Communications*, 1–22.

Zheng, X., Lee, M., & Cheung, C. M. (2017). Examining e-loyalty towards online shopping platforms: The role of coupon proneness and value consciousness. *Internet Research*, *27*(3), 709–726.

KEY TERMS AND DEFINITIONS

Customer Perception: The process where a customer selects, organizes and interprets information to create a meaningful picture of the brand or the product.

Customer Satisfaction: A term that measures how products and services offered by a company meet customer expectations.

Online Customer: An individual who purchases products or services via the internet.

Online Customer Loyalty: The customer's constant preference of the same online shopping site.

Online Customer Trust: The customer's feeling of believing and connecting to the online shopping site they are using without hesitation or doubt.

Online Shopping: Conducting all processes in commercial activities through an online platform.

Online Shopping Site: A website where customers may take part in the presentation of products or services, information, and purchase of such products and surfaces online via the internet.

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Chapter 3
Mobile Social Commerce

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ABSTRACT

S-commerce and M-commerce become buzz word recent years. The social and mobile elements have brought new ways of thinking as well as challenging opportunities in e-commerce. In this chapter, we firstly introduce the concepts of online social commerce, its classifications and social shopping behaviors. Secondly, we analyze the evolution from online social commerce to mobile social commerce. Different case studies are given to demonstrate the concept of mobile social commerce, to precisely define how mobile and social feathers add value to traditional e-commerce.

INTRODUCTION

According to Criteo State of Mobile Commerce report on Q4 2015, percentage of transactions occurring on a mobile device in US, increased from 35% to 44% between Q4 2014 and Q4 2015. Japan, UK and South Korea make up the top three countries ranked by mobile share of transactions, globally. In parallel to this phenomenon, GlobalWebIndex research shows that "digital consumers are comfortable using social networks to find new brands and research products they are interested in buying. Messaging apps like Line and WeChat have pushed beyond simple chat apps to integrate a broad range of commerce options and opportunities for monetization, forming the clear inspiration for Facebook's recent development of Messenger Platform. All these developments mean that social commerce has a bright future". Mobile accounts for 40% of time spent on social media. This context underlines the growing behavior of mobile social shopping and the new topic of interest that represent mobile social commerce applications for companies. Social commerce has begun to be studied in research literature and by companies' experiments; however, few literature exists on the analysis of this new concept of mobile social commerce.

The objective of this chapter is to present an overview of e-commerce with the changing trend of social media and mobility. Towards this new trend, several questions are raised.

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- What is social commerce? What is the classification of social commerce?
- How social shopping behaviors affect on e-commerce?
- What is the evolution from traditional e-commerce to online social commerce?
- How mobile features affect on social commerce?

We will focus first on the recent evolution from e-commerce to one line social commerce. Then we will present mobile specificities for social commerce before analyzing different existing social mobile commerce applications. We conclude this chapter with some prospective on mobile social commerce.

BACKGROUND

In the digital era, customer's empowerment increased through four main phases (Labrecque et al., 2013): demand-based at the beginning of 90's, information-based during the contribution economy period, network-based at the end of 2000's with the launch of Facebook, Twitter and You Tube, and finally crowd- based through recent sharing economy. According to these authors, social networks provide a network-based power to customers through network actions and distribution, remixing and enhancement of digital content. This value derives from activities such as content dissemination (e.g., sharing and organizing content through networks), content completion (e.g., comments on a blog post that contribute to previous content, tagging), or content modifications (e.g., repurposing content, such as a video or image meme) in social networks. Social commerce emerged in this context, and social networks platforms tried to monetize their enormous audience by implementing social commerce functionalities (F-stores or Gifts for Facebook, buy button for Twitter). Stephen & Toubia (2010) show the value derived by social commerce networks.

Social Commerce on the Internet is characterized by the convergence between e-commerce and social networks. This phenomenon emerged in the 2000's, with the creation of forums, virtual communities, comments and recommendation tools, and price comparators on the web. Used initially in 2005 by David Beach, Yahoo! Shopping manager, the term "social commerce" is a set of collaborative tools dedicated to e-commerce (products lists, clients' comments, notations, and recommendation systems). A new form of social e-commerce appears in 2008 with Groupon, a successful website during the years following his creation, where individuals can buy at lower prices products and services by grouping their purchases. However, nowadays, Groupon's model has become a source of controversies due to its highly decreasing audience during the last year. In parallel to these new models, social networks and their highly increasing audience provide new opportunities for e-commerce. According to Addshopers, Facebook and Pinterest combine for over 56% of social generated e-commerce at the moment. In this context, social commerce focuses on developing on line sales by using social networks or virtual communities' platforms. From a consumer point of view, social commerce gathers a set of social and participative technologies and capitalize on collaborative web 2.0 usages such as information sharing between web users. Therefore, individuals' purchase is not any more private but becomes a social activity with his/her own community of friends or web users' networks.

Historically, shopping activity is the focus of numerous published papers in marketing literature. From a long time, shopping in real world has been considered as a social experience relying on communications with other persons presenting same centers of interests (Tauber, 1972). In current e-commerce, web consumers are both utilitarian and hedonist, searching for experience (Holbrook & Hirschman, 1982;

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Wolfinbarger & Gilly, 2001). Utilitarian web users aim to quickly find a product on a web site and purchase it easily. Hedonist consumers search for pleasure during web surfing and purchase process. Contrary to traditional shopping, online shopping in often considered as a mediated environment characterized by a low social dimension, based on anonymity and automatism (Hassanein & head, 2007). Answering these issues, social commerce is therefore an increasing phenomenon, and mobile applications allow to largely develop these usages everywhere and every time.

In the next section we will further investigate the concepts from e-commerce to online social commerce, and from online social commerce to mobile social commerce, respectively. Case studies are given to demonstrate the concepts.

MAIN FOCUS OF THE CHAPTER

Issues, Controversies, Problems

As mentioned in the previous section, s-commerce is at the convergence of social networks and e-commerce, topics largely studied in numerous researches. However, social commerce is considered as emerging by practitioners, and research is still needed on this new phenomenon. This section presents two marketing evolutions: (1) from e-commerce to on line social commerce, and (2) from one line social commerce to mobile social commerce. Applications of social mobile commerce are presented afterwards to illustrate this new trend through real cases.

Marketing Evolution

From E-Commerce to Online Social Commerce

Social Commerce Different Models

In this section we present a classification of different social commerce models. According to Marsden (2010), two main interaction modes exist in social commerce: social networks integrated to e-commerce web sites (web users connect with others on the platforms where they buy) or e-commerce integrated in social networks (web users can buy on the platforms they connect with others). However, nowadays, social commerce models classification has become more complex. Therefore we identify four categories.

The first model is social commerce models with collective buying on specific communities of information and recommendation sharing on products and services. One well known example in this category is Groupon, based on a simple process: each day, Groupon web site sends promotional offers to his members (with 50% to 90% of price decrease) on restaurants, shops, spas or other services. This offer is only available when a minimum number of individuals buy it. The social characteristic of this web site is first due to this collective buying process, and second linked to viral marketing tools inviting web users to recommend the offer to their friends' community. Bazando and Tribway constitute also typical examples of this first model. These websites are communities of web users sharing information and recommendations on products which can be bought with cash back (money retribution to the clients of this website). Therefore, more numerous people buy on this web site, more they benefit of cashback. Web users increase their utility by developing the community of buyers on this type of e-commerce site.

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The second model of social commerce is characterized by an individual purchase on a traditional e-commerce website, with information and recommendation sharing on specific communities. In this case, web users select products during surfing on the web and create a personalised area on the social commerce community, in which they comment and recommend (or not) the products. On this type of collective platforms, people discover new products by different members, inform themselves on the basis of peer to peer communication and evaluation of product. One example of this social commerce model is Kaboodle, a community of 5 million monthly users around fashion and beauty products. On Kaboodle, users can generate content by using specific tools (drag-and-drop functionality to create styleboards). However, products are bought directly on the traditional e-commerce web site. ProductWiki is another example. Content is completely user generated on this community of consumers commenting and giving reviews on products and services, with links to the e-commerce web sites to buy them.

The third model of social commerce relies on individual online purchase with information and recommendation sharing on social networks. It includes, first, social plugins ("like", "share", "comment") used on e-commerce sites connecting web users to their friends on Facebook, Twitter, Google+, or Foursquare. These social plugins are largely used nowadays in earned media. In this social commerce model, web users share comments or recommendations of products with their friends on social networks, either before or after the purchasing act. Another mechanism is "Facebook connect" to subscribe on a web site services, which is more intrusive (even in opt-in case) on account of the Facebook personal data collected by the e-commerce site. This socla commerce mechanism is frequently used by e-commerce sites as Amazon for instance. A final case is Twitter Dell page @DellOutlet, social network page used as a distribution channel and providing to Dell an amount of sales of more than 7 millions of dollars (in 2010).

The fourth and last category of social commerce model is both collective buying and information and recommendation sharing on social networks. We find in this category F-commerce, including Tab store, Page store and Wallstore on Facebook, or specific area on e-commerce site such as "My social shopping" created in 2012 on C-Discount website, with specific plugins ("I want" and not only "I like") and numerous information sharing and recommendations with friends on social networks.

Social Shopping Behaviour

On a theoretical point of view, several key concepts contribute to a better understanding of social shopping behaviour. First one is buying motivations, largely studied in marketing literature. Tauber (1972) distinguishes personal motivation (such as individual role or entertainment regardless to daily life) and social motivations (such as social experience outside home, communication with persons having same center of interest, pleasure of negotiating). Christodoulides and Michaelidou (2011) have shown that social interaction positively impacts e-satisfaction and e-loyalty and is a key variable of e-commerce. Other trend of research has shown that social commerce is an answer to the lack of social dimension in human-machine interaction on traditional e-commerce web sites. To compensate this fact, web buyers connect with others on virtual communities or social networks to share information ad recommendation on products and services. The sense of community explains this infatuation for community behavior. This psychological construct represents one of the key contributions of sociology research (Tartaglia, 2006). McMillan and Chavis (1986) distinguish the following dimensions: (1) *Membership feeling*: users have a feeling of membership and identification to the community, a personal commitment maintained over time in relation to the community. Users also share a symbolic and common system with other members of the community, translated into behaviors aiming at "singing the praises" and defining the community

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limits; (2) *The influence feeling:* the individual feels that his place is recognized inside the community, and his presence makes a difference; (3) *The integration and meeting needs feeling*: members consider that the available resources inside the community correspond to their expectations and needs; (4) *the feeling of a shared emotional link*: users feel this emotional link by frequent and high quality interactions, by organizing common events with the community. It also has been showed by Olbrich and Holsing (2011) that social functionalities positively impacts shopping behaviour. Social presence is also a key concept of online social commerce. Another concept is social presence relying on how individuals interacting through a technology, feel they are together (Shen and Khalifa, 2008). Shin and Shin (2011) show that social presence is a key element of buying on online web sites, reinforcing security and confidence. Different vectors of social presence exist, either anthropomorphic (virtual agent, voices, photos or videos) or non-anthropomorphic (text, emailing, consumers' reviews and recommendation search). Information research and peer to peer influence impact on consumers' behavior have been shown by different authors (Chevalier et Mayzlin, 2006 ; Aral et Walker, 2011). Gender impact has also been underlined: for women, shopping is a social activity with implication (Bakewell and Mitchell, 2004), and young women consider socialization and entertainment as important factor of their buying behaviour (Haytko et Baker, 2004). Finally, social psychology theories, and more particularly Cialdini's dimensions (1984) provide a theoretical framework to better understanding social shopping. This author emphasize on six particular dimensions explaining online social shopping. The first one is reciprocity: humans generally aim to return favors or pay back debts and treat others as they treat them. An application in social commerce is a recommendation I will provide on a product because I have previously receive a valuable one from one individual. The second dimension is commitment: we have a deep desire to be consistent. For this reason, once we have committed to something, we are then more inclined to go through with it. In terms of social commerce, we will be more confident toward brands or companies sharing the same values. The third dimension is social proof: we are even more likely to be influenced by people similar to us. Application in social commerce is friends' recommendation. The fourth dimension is "liking": we tend to be more influence by people we like. In social commerce, recommendation or comments from friends (or web users with closed affinity) will influence me. The fifth dimension is authority: we feel a sense of duty or obligation to people in positions of authority, such as experts for instance on social commerce communities. The last Cialdini's dimension is scarcity: things are more attractive when their availability is limited. In terms of social commerce, companies for instance often offer limited edition products on Facebook.

From Online Social Commerce to Mobile Social Commerce

Mobile social commerce (M-commerce) is a type of social commerce conducted over mobile or wireless networks. Mobile commerce services are accessible with fundamentally different presentation, processing, and interaction modalities compared to a desktop computer, such services enable a whole new set of unprecedented service capabilities, including location awareness, context sensing, and push delivery (Kourouthanassis and Giaglis, 2012). It's important to understand how mobile features add values to social commerce and e-commerce in general.

Kourouthanassis and Giaglis (2012) distinguish three main periods of M-commerce. The first one concerns M-portals, between 1997 and 2000, dominated by mobile network operators and m-commerce services bundled into mobile portals. The second period, between 2000 and 2006, focuses on m-internet with e-commerce providers and users enjoying direct internet access through their mobile devices. The

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third period, from 2000 until now, is characterized by m-applications creating a new m-commerce system. More recently, a new trend emerges in this historical evolution of m-commerce: SoLoMo. Today, location awareness and mobility have added context to even the most ordinary actions. SoLoMo, which stands for Social-Local-Mobile, is a new buzzword being thrown around by marketing teams these years. Social Local Mobile applications open new developments of location-based and context aware services, allowing companies to increase on the market their added value for consumers. For instance, SMS push localized promotions on mobile on customers closed to a shop allow retailers to improve sales. Social features allowing links on social networks or communities allow customer to be in 2.0 social shopping usage.

One challenge for companies is to capture users' attention: a difference between mobile and web services is the usage context (Oinas-Kukkonen and Kurkela, 2003), people often using mobile in a noisy and distracting environments. However, real time contextual information including peer o peer information and recommendation is source of new consumer behaviors on markets. Marketing techniques and teams need to be adapted to this new world. Hui et al. (2013) have shown that mobile promotions aimed at increasing in-store path length can increase unplanned spending.

Another interesting characteristic of social m-commerce relies on QR-code. Abbreviated from Quick Response Code, QR Code is the trademark for a type of matrix barcode (or two-dimensional barcode). A barcode is an optically machine-readable label that is attached to an item and that records information related to that item. Most recently, Starbucks turned to QR codes to create a unique opportunity for engagement with their customers. The company added QR codes to marketing materials for some of their recent products to allow customers to learn more about them. As part of the recent campaign, baristas passed out handy bookmarks with the scannable codes to customers who came in for a cup of coffee. When scanned, the codes directed users to a mobile website with a video and information about Starbucks products. Several Iphone applications include smart shopping lists with integrated access to manufacturers' coupons and support for QR code scanning. In social m-commerce era, these applications add social link and connection with friends of close persons, either on existing social networks (By Facebook connect and Facebook plugins) or on specific users' communities of information and recommendation of products and services. @Walmart Labs develop social mobile applications dedicated to m-commerce and to improve retailer's sales.

Mobile scan possibilities also provide a new way to sell products. For instance, price-comparison applications let users scan the barcode or snap a photo of a physical product (or type or speak a search for one) and then look up the price on the spot and purchase it from the online retailer or directly on mobile, or see its availability and prices at nearby stores with geo-localization maps. One can store the credit card info and pay with the Application. Some applications also include social features such as friends' reviews to help users to make decisions. Aside from price comparisons, some applications can even watch price changes: one can set up an alert for when an item reaches the price you're willing to pay for it.

Social m-commerce relies on mobile payment to pay in real time. For instance, Starbucks uses mobile to improve the customer experience by making it easier for guests to pay for their morning coffee. The company developed Square Wallet, a mobile payment app that was launched in November 2012. The convenience factor of Square Wallet is undeniable. To date, mobile payments have been implemented in over 7,000 Starbucks stores nationwide.

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APPLICATION CASE STUDIES OF MOBILE SOCIAL COMMERCE

In this last section we present and comment different user cases and mobile social commerce applications.

Asos: Buy on Facebook Page

ASOS.com is a global online fashion and beauty retailer and offers over 50,000 branded and own label product lines, which is one of the UK's largest online-only fashion and beauty stores. In January 2011, Asos became the world's first fully integrated Facebook Store in Europe, extend the same e-commerce experience to their Facebook Page. The Facebook page offers approximately 1,300 new product lines each week. On their site you can view items, "like" them, share items and comments on certain items on your Facebook profile, see which items your friends have also liked within the store and complete a purchase without ever leaving the ASOS Facebook page.

Said by ASOS community manager: "Millions of our users already interact with ASOS through Facebook, commenting on, sharing and discovering new items. Many of those go on to buy something on one of our sites. Our Facebook Store will allow them to do this directly through Facebook."

While a little slower than shopping on their site, it's a move that will definitely broaden its user base and position it as a brand that is both social media savvy and technologically hip.

Figure 1. Screenshots of ASOS e-commerce shop on Facebook

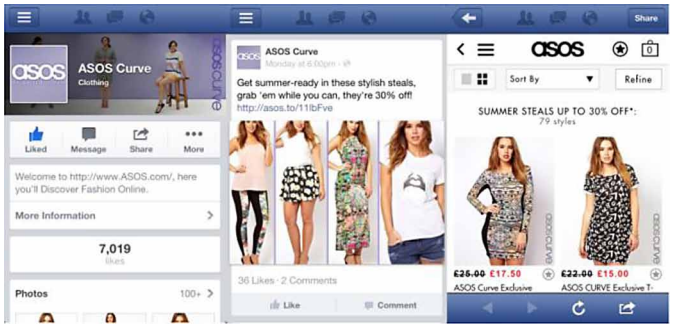

Table 1. Evaluation of ASOS Facebook page

Social features	
Social annotation	Like, Comment
Share aspect	Facebook
View friends' choice	
E-commerce features	
Online purchase	
Similar social commerce	
Topshop	Facebook commerce

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Figure 1 shows the screenshots of ASOS Facebook page, by clicking the shopping link within the description of the photo within a post, you will be redirected to ASOS e-commerce boutique to shop directly.

LISTIA: ONLINE SOCIAL MARKETPLACE TO EXCHANGE THINGS

Listia is a fun & free online marketplace where users can get rid of things they don't need anymore and get stuff they want in return for free. On Listia, you use credits to bid on auctions instead of cash. You receive credits when you sign up and anytime you give something away, and you use those credits to get free stuff you really want from other users. The more stuff you give away, the more free things you can get.

The guideline is simple:

1. A user lists something they don't want anymore (like an old cell phone).

Figure 2. Screenshots of Listia application

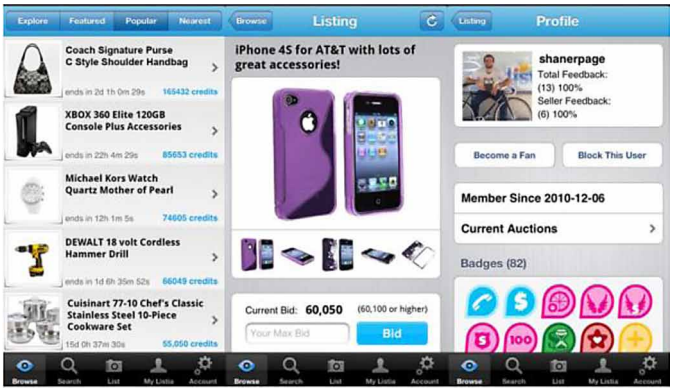

Table 2. Evaluation of the Listia application

Social features	
User generated business	Items with image and text
Social annotation	Comment
Share aspect	Facebook, Email
Follow/Unfollow a seller	
Mobile features	
Camera	Take a snap
Location awareness	Geo-localization of items
Instant notifications	
E-commerce features	
Credits	
Auction	

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2. Other users bid on the cell phone using credits they received for signing up and listing their own stuff.
3. When the auction ends, the user who bid the highest amount of credits wins!
4. The winner gets the cell phone, and the lister gets credits to use for something else on Listia.

Concerning the mobile elements in Listia, you can take a photo with your device, enter a few brief details and post it to Listia instantly. You can also use the phone to see what people are giving away nearby through the geo location feature, bid on other items and receive instant notifications any time you are outbid or an item you are watching is ending soon. Figure 2 shows the screenshots of usage of Listia.

LivingSocial: Share Shopping Experience

LivingSocial is a deal-of-the-day website that features discounted gift certificates usable at local or national companies. Like Groupon, deals are pushed to mobile device every day, one can click to view the deal and buy directly on your phone.

Concerning other mobile feathers, deals map is designed to check a deal nearby. You'll also be able to browse tons of on-demand, real-time offers on dining experiences, spa treatments, fitness classes, and other nearby deals—ready for immediate use. After one purchase, a QR code is generated to be shown to the merchant. No printing any more.

Figure 3. Screenshots of LivingSocial application

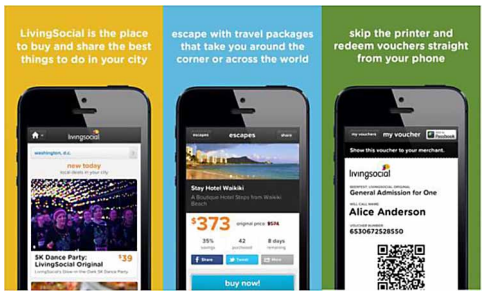

Table 3. Evaluation of the LivingSocial application

Social features	
Share aspect	Facebook, Twitter, Email, Message
Mobile features	
Location awareness	Geo-localization of deals
QR code	
Instant notifications	
E-commerce features	
Online purchase	
Similar social commerce	
Groupon	

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Concerning the social feathers, each deal can be shared to friends by email, message, Twitter AND Facebook by one click. As a reward, if three of your friends buy the deal, you'll get yours for free.

Figure 3 shows the screenshots of usage of LivingSocial application.

You Loot: User Generated Business

With the slogan "Sell the world around you", You Loot is the world's first ever social commerce marketing app for both consumers and business owners alike. You Loot makes it easy for users to take pictures of the things they want then add their own artistic touch to it before adding the price, the link, and sharing it with friends via email, facebook, twitter, or instagram.

Figure 4 shows the screenshots of usage of You Loot application.

Figure 4. Screenshots of You Loot application

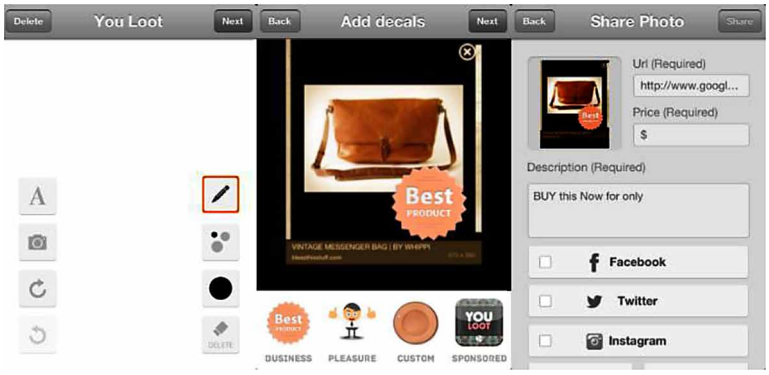

Table 4. Evaluation of the You Loot application

Social features	
User generated business	Items with image, text, business-related logo
Share aspect	Facebook, Twitter, Instagram, Email
Mobile features	
Camera	Take a snap

Trace: From Online to Offline – Discover the Cool Things People Buy

With Trace application, one can share the cool things you buy. Make a purchase and after it you can share it with your friends and followers. Just connect your credit or debit card to trace for easy sharing. Users can discover the cool things your friends are buying and the most popular trending purchases. When you see something you want to try, add it to your wish list and Trace will keep you noticed when you are near it. Share all of the cool things you buy with your friends on your favorite social networks including facebook, twitter, and foursquare.

Figure 5 shows the screenshots of usage of Trace application.

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Figure 5. Screenshots of Trace application

Table 5. Evaluation of the Trace application

Social features	
User generated content	Items with image, text and location
Social annotation	Like, Comment
Share aspect	Facebook, Twitter, Foursquare
View friends' choice	
Follow/Unfollow people	
Mobile features	
Camera	Take a snap
Location awareness	Geo-localization of interests
Instant notifications	

SOLUTIONS AND RECOMMENDATIONS

Social Mobile Social commerce presents several theoretical and managerial implications. Theories on consumer behavior in e-commerce or social networks are mobilized to explain this new emerging trend. On a managerial point of view, the examples show the importance and the specificities of mobile features such as location, QR code, notifications, camera, allowing new interactions between companies and customers. Mobile functionalities constitute interaction tools for direct marketing which has to integrate human-computer interfaces design and user experience design for social mobile commerce.

FUTURE RESEARCH DIRECTIONS

Social M-commerce applications constitute an emerging trend source of numerous future researches direction. The first one concerns ergonomics and user experience in order to develop easy to use and usefulness Human-machine interfaces. Linked to this topic, future research is needed to better understand and measure fluent navigation and flow concept, that Oinas-Kukkonen and Kurkela (2003) has shown as a key variable impacting in mobile applications a positive mobile user experience. Social M-commerce is also a rich area of future research in marketing: how to measure ROI ? Is it more efficient than other

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distribution channels? How better understanding Social m-shopping behavior? What is the new marketing paradigm of social m-commerce? What about social m-commerce communities and their impact on markets and innovation? Future researches in the sociology field will also lighten on the societal implications of these new technologies, behaviors and form of commerce.

CONCLUSION

Social m-commerce constitutes a new area of opportunities for companies. Based on emerging trend of social networks and peer influence, and existing on line shopping behavior, social m-commerce provides new technological features increasing consumer value on markets and allowing innovation on new services or products. It also opens a new area for future research in different fields such as computer science, technology, sociology and marketing. In 2013, this phenomenon is just at his beginning. However, his potential development in the future years and his consequences in terms of consumer behavior changes and marketing paradigm may be a particular source of attention for both worldwide and very local companies.

REFERENCES

Aral, S., & Walker, D. (2011). Creating social contagion through viral product design: A randomized trial of peer influence in networks. *Management Science*, *57*(9), 1623–1639. doi:10.1287/mnsc.1110.1421

Chevalier, J. A., & Mayzlin, D. (2006). The effect of word of mouth on sales: Online book reviews. *JMR, Journal of Marketing Research*, *43*(3), 345–354. doi:10.1509/jmkr.43.3.345

Christodoulides, G., & Michaelidou, N. (2011). Shopping motives as antecedents of e-satisfaction and e-loyalty. *Journal of Marketing Management*, *27*(1-2), 181–197. doi:10.1080/0267257X.2010.489815

Cialdini, R. (1984). *Influence, the psychology of Persuasion*. Collins Business Essentials.

Curty, R. G., & Zhang, P. (2011). Social commerce: looking back and forward. *Proceedings of the American Society for Information Science and Technology (ASIST) Annual Conference*, *48*(1), 1-10.

Haytko, D. L., & Baker, J. (2004). Its all at the mall: Exploring adolescent girls experiences. *Journal of Retailing*, *80*(1), 67–83. doi:10.1016/j.jretai.2004.01.005

Holbrook, M. B., & Hirschman, E. C. (1982). The experimental aspects of consumption: Consumer fantasies, feelings, and fun. *The Journal of Consumer Research*, *9*(2), 132–140. doi:10.1086/208906

Hui, S.K., Inman, J., Huang, Y., & Suher, J. (2013). The effect of in-store travel distance on unplanned spending: applications to mobile promotion strategies. *Journal of Marketing*, *77*, 1-16.

Kourouthanassis, P. E., & Giaglis, G. M. (2012). Introduction to the Special Issue Mobile Commerce: The Past, Present, and Future of Mobile Commerce Research. *International Journal of Electronic Commerce*, *16*(4), 5–18. doi:10.2753/JEC1086-4415160401

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Labrecque, L. I., vor dem Esche, J., Mathwick, C., Novak, T. P., & Hofacker, C. F. (2013). Consumer Power: Evolution in the Digital Age. *Journal of Interactive Marketing*, *27*(4), 257–269. doi:10.1016/j.intmar.2013.09.002

Mardsen, P. (2010). *Social Commerce: monetizing social media*. Hamburg, Germany: Syzygy Deutschland Gmbh.

McGuire, W. (1974). Psychological motives and communication gratification. In J. F. Blumler & J. Katz (Eds.), *The uses of mass communications: Current perspectives on gratification research* (pp. 106–167). Beverly Hills, CA: Sage.

McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory. *Journal of Community Psychology*, *14*(1), 6–23. doi:10.1002/1520-6629(198601)14:1<6::AID-JCOP2290140103>3.0.CO;2-I

Oinas-Kukkonen, H., & Kurkela, V. (2003). Developing successful mobile applications. *Proceedings of Computer Science and Technology*, 19–21.

Olbrich, R., & Holsing, C. (2011). Modeling Consumer Purchasing Behavior in Social Shopping Communities with Clickstream Data. *International Journal of Electronic Commerce*, *16*(2), 15–40. doi:10.2753/JEC1086-4415160202

Shen, K. N., & Khalifa, M. (2008). Exploring multidimensional conceptualization of social presence in the context of online communities. *International Journal of Human-Computer Interaction*, *24*(7), 722–774. doi:10.1080/10447310802335789

Shin, D. H., & Shin, Y. J. (2011). Consumers trust in virtual mall shopping: The role of social presence and perceived security. *International Journal of Human-Computer Interaction*, *27*(5), 450–475. doi:10.1080/10447318.2011.552060

Stephen, A. T., & Toubia, O. (2010). Deriving value from social commerce networks. *JMR, Journal of Marketing Research*, *47*(2), 215–228.

Tartaglia, S. (2006). A Preliminary Study for a New Model of Sense of Community. *Journal of Community Psychology*, *34*(1), 25–36. doi:10.1002/jcop.20081

Tauber, E. M. (1972). Why do people shop. *Journal of Marketing*, *36*(4), 46–59. doi:10.2307/1250426

The New York Times. (2006). *Like shopping? Social networking? Try social shopping*. Retrieved June 2013, from www.nytimes.com/2006/09/11/technology/11ecom.html?_r1/41&adxnnl1/41& oref1/4 slogin&partner1/4rssnyt&emc1/4rss&adxnnlx1/41210267372-1HIJXtBN3gaeie1G/0HTcg

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Chapter 4
Security Issues in E-Commerce

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ABSTRACT

E-commerce is selling and buying products in online shopping through the internet. When purchasing the products using internet, many security issues arise. These issues are to be addressed effectively and to be resolved. The security issue is an essential part of any transaction that takes place over the internet. Security becomes paramount not only for retailers but for any business that operates via the internet as the popularity of online shopping grows. This chapter focuses security protocols and their achievements in providing effective communication between end-users and business people.

1. INTRODUCTION

The term E-Commerce refers to the use of an electronic medium to carry out commercial transactions via internet. Now a day's E-Commerce is playing a very vital role in online retail marketing and the number of people using this technology is increasing in leaps and bounds all over the world. The security becomes a paramount as the popularity of online shopping grows exponentially in the present days, not only for retailers but for any business that operates via internet. This leads to numerous security risks for consumers. In present scenario, consumer needs to be very cautious while making any kind of online transactions or even surfing the internet. Common mistakes that leave people vulnerable include shopping on websites that aren't secure, giving out too much personal information, and leaving computers open to viruses. This chapter mainly focuses the e-commerce security issues, security threats and guidelines for safe and secure online shopping through shopping web sites. A consumer can very well secure his online shopping to some extend by religiously following the guidelines mentioned in (Niranjanamurthy & Chahar, 2013). Privacy is a state in which one is not observed or disturbed by other people whereas

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Security is the action of keeping something secret or the state of being kept secret. So e-commerce security is an essential part of the Information Security Framework which specifically applies to the components that affect e-commerce. These components are generally known as computer security, data security and other realms of the information security framework. The section defines e-commerce and its importance.

1.1 What Is Importance of E-Commerce?

E-commerce has shown enormous growth in the last few years. Sources say that the retail e-commerce sales around world will reach 12.8% in the year 2019 from 7.4% in 2015 (Kalakota & Whinston, 1996). E-commerce is rapidly increasing in the businesses all over the world. E-Commerce usage is moving towards uptrend direction and has received much attention from governments, businesses and regional bodies due to enormous increase of internet users.

The E-Commerce Applications are more popular due to the following reasons

- **Time Consuming Process:** It is very convenient for everyone to shop anytime, anywhere and in any device instead of visiting the shops in person. E-commerce proved its importance based on the fact where time is essence. In the commercial markets, time plays an important role to both the business and consumers. From the business perspective, with less time spent during each transaction, more transaction can be achieved on the same day. As for the consumer, they will save up more time during their transaction. Because of this, Ecommerce steps in and replaced the traditional commerce method where a single transaction can cost both parties a lot of valuable time. With just a few clicks in minutes, a transaction or an order can be placed and completed via the internet with ease. For instance, a banking transaction can be completed through the Internet within a few minutes compared to the traditional banking method which may take up to hours. This fact obviously proves that Ecommerce is beneficial to both business and consumer wise as payment and documentations can be completed with greater efficiency.
- **Product Comparisons:** View different products online is much simpler and more efficient than visiting different stores at different places. So researching the products is much easier by accessing different products online i.e. proper product comparison.
- **Reduction in Capital Investment:** Running an e-commerce business requires far less capital investments compared to owning physical shops. No need to invest on recruiting sales staff, rentals for high end retail stores and unwanted overheads. The only responsibility on you have in an online shop is to promote your website and deliver quality products on-time to the customers.
- **Tremendous Increase of Internet Users:** Electronic commerce, or Ecommerce, which literally means business trading through the Internet, has been around the globe since mid 90s. However, until the recent few years, Ecommerce is getting more and more attention from entrepreneur and consumers, both local and international. One of the main reasons is due to the highly successful operations of some well known names on the Internet, such as eBay, Yahoo and Dell. The sales revenue these companies shown in their annual reports are without doubt, one of the biggest factors why Ecommerce is important in the commercial market nowadays.
- **Business View:** Ecommerce is much more cost effective compared to traditional commerce method. This is due to the fact where through Ecommerce, the cost for the middleperson to sell their products can be saved and diverted to another aspect of their business. One example is the giant computer enterprise, Dell, which practice such a method by running most of their business

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through internet without involving any third parties. Aside from that, marketing for Ecommerce can achieve a better customer to cost ratio as putting an advertisement on the internet is comparably much cheaper than putting up a roadside banner or filming a television commercial. For Ecommerce, the total overheads needed to run the business is significantly much less compared to the traditional commerce method. The reason due to that is where most of the cost can be reduced in Ecommerce. For example, in running an Ecommerce business, only a head office is needed rather than a head office with a few branches to run the business. In addition to that, most of the cost for staff, maintenance, communications and office rental can be substitute by a single cost, web hosting for the Ecommerce business.

To both the consumers and business, connectivity plays an important part as it is the key factor determining the whole business. From the business point of view, Ecommerce provides better connectivity for its potential customer as their respective website can be accessed virtually from anywhere through Internet. This way, more potential customers can get in touch with the company's business and thus, eliminating the limits of geographical location. From the customer standpoint, Ecommerce is much more convenient as they can browse through a whole directories of catalogues without any hassle, compare prices between products, buying from another country and on top of that, they can do it while at home or at work, without any necessity to move a single inch from their chair. Besides that, for both consumers and business, Ecommerce proves to be more convenient as online trading has less red tape compared to traditional commerce method.

In global market sense, the appearance of Ecommerce as a pioneer has opened up various windows of opportunities for a variety of other companies and investors. For instance, due to the booming of Ecommerce, more and more resources are being directed into electronic securities, internet facilities, business plans and new technologies. In result of this phenomenon, a variety of new markets have emerged from Ecommerce itself giving a boost to the global market. In short, if without any major obstacles, Ecommerce will certainly continue to mature in the global market and eventually, it will become an essential business plan for a company in order to survive and stay competitive in the ever changing market. The next section presents e-commerce applications and its usage.

1.2 E-Commerce Applications and Its Usages

Electronic commerce is the process of conducting commercial transactions electronically over the Internet (Kalakota & Whinston, 1996). This process is carried out primarily in five levels, and the main aspect of e-commerce is a merchant selling products or service to the consumers. There are five major segments under the broader category of e-business. However, the following are some popular e-commerce models used by companies engaged in e-commerce:

- Business to business e-commerce (B2B).
- Business to consumers e-commerce (B2C).
- Consumers to consumers e-commerce (C2C).
- Business to employees e-commerce (B2E).
- Consumer to business e-commerce (C2B).

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1.2.1 Business to Business E-Commerce (B2B)

E-business is the process of conducting business on the Internet. Its scope includes not only buying and selling but also services, fulfilling the needs of customers and collaborating with business partners. Business to business e-commerce is smart business. The opportunity for business to business e-commerce is even greater. A wholesaler may sell products to the retailer. There is advanced e-commerce software which support multi-tier pricing. This helps to set up online stores to offer preferred pricing to some vendors and shared price to others. This includes internet-enabled initiatives of an enterprise to form commercial linkages with another enterprise, dealer, warehouse or manufacturer. In this form of e-commerce, e paperwork and time-to-market get vastly reduced. Throughout the world, this e-commerce mode is the biggest.

In a B2B transaction, the interaction is between businesses. For example, a website that is catching for the steel industry might have facility for buyers and sellers to list their requirements and post their products. It helps them in quickly closing the transactions and the buyer can get quality, material and can choose from different suppliers.

B2B commerce is a growing business in the e-commerce arena- with the increasing use of the internet, more and more business are realizing the commercial advantage of giving business clients a streamlined and easy manner to order products or service online. It facilitates access to the ordering process to only those with whom a concern has a commercial relationship.

Business to Business e-commerce provides small and medium enterprises (SMES) with an excellent opportunity to access new markets, improve customer service and reduce costs. And while hurdles exist, they should be viewed more as speed breakers rather than road barriers. As a medium of information storage and dissemination, the internet has and is emerging a clear winner. Its rate of penetration has far outpaced the growth of other popular media such as newspaper, radio and television. B2B transactions are however relatively high value in nature and organizations are slow to change their traditional systems for the supply chain management. The reasons for the growth in B2B e-commerce are many. In an increasing competitive scenario, e-commerce offers highly attractive cost saving options. The shift to this process is often driven by the needs of buyers. Innovative methods of enhancing B2B and B2C levels of e-commerce include:

- CD-ROM catalogues that are linked to the user's online catalogue, enabling him to browse offline and order online.
- Kiosks placed at physical store locations or in shopping malls to introduce users to the easy online ordering options.
- Extranets to link businesses together that conduct regular business to .business transactions and
- Affiliate programmes to drive business to your commerce site from other content related sites.

B2B e-commerce is expected to be the largest mode of transacting e-business and is a global phenomenon. It involves taking internet enabled initiatives to form commercial links with other enterprises, dealers or manufacturers. In this form of e-commerce, a business firm places orders for supplies with another business firms directly over the Internet. Paperwork and time required for processing the order and delivery of the goods are thus reduced to a great extent.

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1.2.2 Business to Consumers E-Commerce (B2C)

It is for the customers to buy stores from the web. The problem to be recognized in this is to secure payment, using encryption, transaction integrity, quick response, time and reliability.B2C e-commerce involves selling of goods and services to consumers or end users. It allows them to browse the product catalogue, select products or services and complete the order online. In a B2C transaction, the interaction is between a consumer and the preferred business. For example, the most popular site is amazon.com, which is the first online bookseller who has proved a potential competitor to the traditional bricks and mortar booksellers such as Barrens and Noble. In this category of e-commerce, businesses use the internet to offer to consumers sales and services around the world 24 hours a day, seven days a week and 365 days a year, The sites Amazon, Rediff and Uphar are among those belonging to this category. These websites are meant for selling goods directly to consumers through the internet. The two-way accessibility of the internet enables operating companies to directly ascertain customer preference and buying trends. Businesses are using these consumer insights to formulate marketing strategies and offer to the customers what they want and when they want. E-business in this mode significantly reduces the costs associated with intermediaries, service centres and mass marketing campaigns. Since e-commerce makes just in time delivery possible, the supplier does not have to store the goods. He can procure them from the suppliers as and when he gets the order from the buyer through the internet.

B2C is the most popular form of e-commerce, wherein the individuals are directly involved in B2C e-commerce, and businesses use the internet for offering their products or services 24 hours a day through global access. The sites Amazon.com and Rediff are among these. These websites spell goods directly to consumers over the Internet. The two way accessibility feature of the internet enables operating companies to ascertain consumer preferences and buying trends directly.

1.2.3 Consumer to Consumer E-Commerce (C2C)

Here interaction is between consumers to consumer. For example, in sites like e-Buy Bid or Buy.com, Baazi.com which are auction sites, one can virtually sell and buy any goods (either used or new ones). This form of e-commerce is nothing but the cyber version of the good old auction houses. If anyone wants to sell anything, all one has to do is post a message on the site, giving details of the product and the expected price and wait for an interested customer to turn up and buy it. The buyer gets in touch with the seller through the Internet and the deal is crossed once the amount is finalized. Online message boards and barters are also examples of C2C e-commerce.

1.2.4 Consumer-to-Business E-Commerce (C2B)

E-commerce, by empowering the customer, has been strategically redefining business. An example of C2B model of e-commerce is the site Price line.Com, which allows prospective airline travelers, tourists in need of hotel reservations etc. to visit its websites and indicate their preferred price for travel between any two cities. If an airline is willing to issue a ticket on the customers offered price, the consumer can then travel to the mentioned destination at his terms.

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1.2.5 Business to Employees E-Commerce (B2E)

This is concerned more with marketing a corporation's internal processes more efficiently. Customer care and support activities also hold ground. The requirement is that are all self-service with applications on the web that the employees can use themselves.

2. WHY SECURITY PLAY MAJOR ROLE IN E-COMMERCE APPLICATIONS

Security is an essential part of any transaction that takes place over the internet. Customer will lose his/her faith in e-business if its security is compromised. Following are the essential requirements for safe e-payments/transactions –

- **Confidential:** Information should not be accessible to unauthorized person. It should not be intercepted during transmission.
- **Integrity:** Information should not be altered during its transmission over the network.
- **Availability:** Information should be available wherever and whenever requirement within time limit specified.
- **Authenticity:** There should be a mechanism to authenticate user before giving him/her access to required information.
- **Non-Reputability:** It is protection against denial of order or denial of payment. Once a sender sends a message, the sender should not able to deny sending the message. Similarly the recipient of message should not be able to deny receipt.
- **Encryption:** Information should be encrypted and decrypted only by authorized user.
- **Auditability:** Data should be recorded in such a way that it can be audited for integrity requirements.
- Major security measures are following:
- **Encryption:** It is a very effective and practical way to safeguard the data being transmitted over the network. Sender of the information encrypt the data using a secret code and specified receiver only can decrypt the data using the same or different secret code.
- **Digital Signature:** Digital signature ensures the authenticity of the information. A digital signature is an e-signature authentic authenticated through encryption and password.
- **Security Certificates:** Security certificate is unique digital id used to verify identity of an individual website or user.

3. E-COMMERCE THREATS

Threats: Anyone with the capability, technology, opportunity, and intent to do harm.Potential threats can be foreign or domestic, internal or external, state-sponsored or a single rogue element. Terrorists, insiders, disgruntled employees, and hackers are included in this profile (President's Commission on Critical Infrastructure Protection).

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Table 1.

Concern	2001	2000
Loss of Privacy/confidentiality, data misuse/abuse	28%	25%
Cracking, eavesdropping, spoofing, root kits	25%	20%
Viruses, Trojans, worms, hostile ActiveX and Java	21%	26%
System unavailability, denial of service, natural disasters, power interruptions	18%	20%

1. Intellectual property threats -- use existing materials found on the Internet without the owner's permission, e.g., music downloading, domain name (cyber squatting), software pirating
2. Client computer threats
    a. Trojan horse
    b. Active contents
    c. Viruses
3. Communication channel threats
    a. Sniffer program
    b. Backdoor
    c. Spoofing
    d. Denial-of-service
4. Server threats
    a. Privilege setting
    b. Server Side Include (SSI), Common Gateway Interface (CGI)
    c. File transfer
    d. Spamming

Countermeasure

A procedure that recognizes, reduces, or eliminates a threat:

1. Intellectual property protection
    a. Legislature
    b. Authentication
2. Client computer protection
    a. Privacy -- Cookie blockers; Anonymizer
    b. Digital certificate
    c. Browser protection
    d. Antivirus software
    e. Computer forensics expert
3. Communication channel protection
    a. Encryption
    b. Public-key encryption (asymmetric) vs Private-key encryption (symmetric).
    c. Encryption standard: Data Encryption Standard (DES), Advanced Encryption Standard (AES).
    d. Protocol

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4. Secure Sockets Layer (SSL)
5. Secure Hyper Text Transfer Protocol (S-HTTP)
    a. Digital signature.
    b. Bind the message originator with the exact contents of the message.
    c. A hash function is used to transform messages into a 128-bit digest (message digest).
    d. The sender's private key is used to encrypt the message digest (digital signature).
    e. The message + signature are sent to the receiver.
    f. The recipient uses the hash function to recalculate the message digest.
    g. The sender's public key is used to decrypt the message digest.
    h. Check to see if the recalculated message digest = decrypted message digest.
6. Server protection
    a. Access control and authentication
    b. Digital signature from user
    c. Username and password
    d. Access control list
    e. Firewalls
    f. International Computer Security Association's classification:
7. Packet filter firewall: checks IP address of incoming packet and rejects anything that does not match the list of trusted addresses (prone to IP spoofing).
8. Application level proxy server: examines the application used for each individual IP packet (e.g., HTTP, FTP) to verify its authenticity.
9. Stateful packet inspection: examines all parts of the IP packet to determine whether or not to accept or reject the requested communication.

4. SECURITY ISSUES IN E-COMMERCE APPLICATION

4.1 E-Commerce Security Threats

The direct threats to e-commerce servers can be classified as malicious code threats and transmission threats. (Gautam, 2014). Malicious or rogue programming code is introduced into the server in order to gain access to the system resources. Very often, the intent of malicious code attacks is to cause large scale damage to the e-commerce server. With transmission threats, the threats and risks can be classified as either as active or passive. With passive threats, the main goal is to listen (or eavesdrop) to transmissions to the server. With active threats, the intent is to alter the flow of data transmission or to create a rogue transmission aimed directly at the e-commerce server.

1. **Malicious Code Attacks: Viruses and Worms:** A virus attaches itself to executable code and is executed when the software program begins to run or an infected file is opened. However, a worm does not need a host to replicate. Rather, the worm replicates itself through the internet, and can literally infect millions of computers on a global basis in just a matter of hours. Worms by themselves do not cause damage to a system like a virus does. However, worms can shut down parts of the internet or ecommerce servers, because they can use up valuable resources of the internet, as well as the memory and processing power of servers and other computers.

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2. **Trojan Horses:** A Trojan horse is a piece of programming code that is layered behind another program, and can perform covert, malicious functions. For example, your e-commerce server can display a "cool-looking" screen saver, but behind that could be a piece of hidden code, causing damage to your system. One way to get a Trojan horse attack is by downloading software from the internet. Make sure that whatever software is downloaded comes from an authentic and verified source, and that all defense mechanisms are activated on your server.
3. **Logic Bombs:** A logic bomb is a version of a Trojan horse, however, it is event or time specific. For example, a logic bomb will release malicious or rogue code in an e-commerce server after some specific time has elapsed or a particular event in application or processing has occurred.
4. **Transmission Threats - Denial of Service Attacks:** With a denial of service attack, the main intention is to deny your customers the services provided on your e-commerce server. This happens when a massive amount of invalid data is sent to the server. Because the server can handle and process so much information at any given time, it is unable to keep with the information and data overflow. As a result, the server becomes "confused", and subsequently shuts down. Ping of death: With a ping of death attack, a massive data packet is sent to the server. As a result, the memory buffers of the e-commerce server are totally overloaded, thus causing it to crash. SYN flooding: A SYN flood is a form of denial-of-service attack in which an attacker sends a succession of SYN requests to a target's system in an attempt to consume enough server resources to make the system unresponsive to legitimate traffic Ip spoofing: The intent here is to change the source address of a data packet to give it the appearance that it originated from another computer. With ip spoofing, it is difficult to identify the real attacker, since all e-commerce server logs will show connections from a legitimate source.
5. **E-Commerce Security Tools Firewalls (For Software and Hardware):** A firewall is a system designed to prevent unauthorized access to or from a private network. Firewalls can be implemented in both hardware and software, or a combination of both. Firewalls are frequently used to prevent unauthorized internet users from accessing private networks connected to the internet, especially intranets. All messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria. Public key infrastructure: A pki (public key infrastructure) enables users of a basically unsecure public network such as the internet to securely and privately exchange data and money through the use of a public and a private cryptographic key pair that is obtained and shared through a trusted authority. Encryption software: Encryption software is software whose main task is encryption and decryption of data, usually in the form of files on (or sectors of) hard drives and removable media, email messages, or in the form of packets sent over computer networks. It is a very effective and practical way to safeguard the data being transmitted over the network. Sender of the information encrypts the data using a secret code and specified receiver only can decrypt the data using the same or different secret code. Digital signature: Digital signature ensures the authenticity of the information. A digital signature is a e-signature authentic authenticated through encryption and password. Security certificates: Security certificate is unique digital id used to verify identity of an individual website or user.
6. **Guidelines to Shop Online Safely Shop at Secure Web Sites:** A secure web site uses encryption and authentication standards to protect the confidentiality of information sent during web transactions. A secure web page can be identified using following guidelines:

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a. The url of a secure webpage begins with the letters https.
b. Ensure that the address bar has some element of green in it. Different browsers use different elements. Microsoft's internet explorer - background is shaded green. Apple's Safari and Google's Chrome - https is shaded green.
c. Look for a closed padlock. If that lock is open, you should assume it is not a secure site. Most web browsers display the 'lock' icon somewhere in the window of the browser. Microsoft's internet explorer displays a lock in the lower-right of the browser window. Mozilla's Firefox displays the lock icon in the lower-left corner of the window. The lock is not just a picture. You can click or double click on it to see details of the site's security. This is important because some fraudulent sites are built with a bar at the bottom of the page to imitate the lock icon of your browser.

7. **Investigate About the Web Site Before You Order:** Avoid doing business with unknown web sites. If you are going to deal with a web site for the first time, do your homework before buying their products. Start business with an unknown website by ordering something inexpensive. This will help you judge the authenticity of the web site. Reliable web sites should advertise their physical business address and contact number, either customer service or an order line. Call the phone number and ask questions to determine if the business is legitimate.
8. **Read the Web Site's Privacy and Security Policies:** Every reputable online web site offers information about how it processes your order. It is usually listed in the section entitled ——privacy policy (Shopping Online, 2014). Reputable companies will be open about how they collect data from you and what they do with it. Many now also belong to web-seal approval or trust mark programs that set out guidelines on the treatment of your information.
9. **Use Safe Payment Options:** Credit cards are generally the safest option because they allow buyers to seek a credit from the issuer if the product isn't delivered or isn't what was ordered (StaySafeOnline, n.d.) Also, unlike debit cards, credit cards may have a limit on the monetary amount you will be responsible for paying if your information is stolen and used by someone else. Never send cash through the mail or use a money-wiring service because you'll have no recourse if something goes wrong. Don't forget to review return policies. You want a no-hassle ability to return items.
10. **Use Virtual Credit Cards as Needed:** Virtual credit cards are temporary payment cards, and come in the form of a physical plastic card, or as a generated credit card number, and they're separate from your bank information (ITProPortal, n.d.). This type of disposable credit card payment method contains a pre-set spending amount, has a shorter-than-usual expiration date, and is equivalent to a regular credit card for most payments purposes. Virtual credit card payments are usually charged to your credit or debit card, rather than directly to your bank account, essentially offering an additional layer of protection. When you pay with a virtual credit card, your banking information remains separate from your individual purchase, thus ensuring if the card number is stolen, hackers cannot access your accounts or re-use the card fraudulently.
11. **Disclose Only the Bare Facts When You Order:** When making a purchase online, there is certain information that you must provide to the web merchant such as your name and address. Often, a merchant will try to obtain more information about you. They may ask questions about your leisure lifestyle or annual income. Be alert to the kinds of information being collected to complete the transaction. Make sure you think it is necessary for the vendor to request that information. Remember, you only need to fill out required fields on a vendors checkout form. Before providing personal or financial information, make sure you understand how your information will be stored

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and used. The information you provide is used to target you for marketing purposes. It can lead to "spam" or even direct mail and telephone solicitations. Don't answer any question you feel is not require to process your order. Often, the web site will mark which questions need to be answered with an asterisk (*).

12. **Keep Your Password Private:** You will usually be asked for a password before you make an online payment. This is to help keep your personal details private. (BBC, 2013). Make sure you use a strong password - one that is a combination of letters (upper and lower case), numbers and symbols. Never reveal your password to anyone. When selecting a password, do not use commonly known information, such as your birthdate, mother's maiden name, or numbers from your driver's license or social security number. Do not reuse the same password for other sites, particularly sites associated with sensitive information.
13. **Don't Fall for "Phishing" Messages:** Phishing is the process whereby someone attempts to obtain your confidential information, such as your passwords, your credit card number, your bank account details or other information protected by the data protection act. A phishing attack can be in the form of an official looking email or instant message, maybe directing you to an official looking website, or it could be an official sounding phone call. Recognizing a phishing attack There are number of clues that may indicate an email or website is not genuine such as:
    a. Suspicious email links. Try hovering your mouse over a link without clicking on it. If the address that pops up does not match the link address as it is written in the email, it's a clear indication of a phishing email.
    b. A link to a genuine website which takes you somewhere else.
    c. Spelling or grammatical mistakes, inappropriate use of capitals or exclamation marks, formatting errors.
    d. A generic email greeting.
    e. Claims that you need to act immediately to prevent something bad from happening (for example, your account will be deleted or your email will be lost).
    f. Requests for personal information, such as your password or bank account number However, you should always be wary as some phishing attacks may be sophisticated and difficult to spot. You should refuse to disclose confidential information until you have checked to your own satisfaction that the request is justified and legitimate and has been made by a genuine person or organization. There are various phishing filters, like smart screen filter in internet explorer, which will help protect you from phishing sites by warning you when it detects a distrustful website.
14. **Always Print or Save Copies of Your Orders:** Print and save records of your online transactions, including the product description, price, online receipt, terms of the sale, and copies of any email exchange with the seller. (StaySafeOnline, n.d.). If you cannot print one off, take a screenshot as a form of proof of purchase. We recommend you print out or save a copy of the web page(s) describing the item you ordered as well as the page showing company name, postal address, phone number, and legal terms, including return policy. Read your credit card statements as soon as you get them to make sure there aren't any unauthorized charges. If there is a discrepancy, call your bank and report it immediately
15. **Turn Your Computer Off When You're Finished Shopping:** Many people leave their computers running and connected to the internet all day and night. This gives scammers 24/7 access to your

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computer to install malware and commit cybercrimes. To be safe, turn off your computer when it's not in use.

16. **Find Out About Billing, Guarantees, Cancellation Policies, Shipping and Delivery Charges Before You Buy:** You can look for following information:
    a. Packaging costs, delivery costs etc.
    b. Whether you will be billed before or after delivery of the products.
    c. Whether you can track the item from the moment of purchase to arrival at your door - this will help alert you of any hiccups in the delivery.
    d. Whether the product comes with a guarantee or warranty for defects etc.
    e. How you can return the product if it doesn't work or meet your expectations - look for information on the site about cancellations, returns and refunds. Print off a copy for future reference.
    f. Who will bear the cost of returning the item (postage, fees etc.)
17. **Know How Online Auctions Operate:** Online auctions connect buyers and sellers, allowing them to communicate in a bidding process over items for sale (Privacy Rights Clearinghouse, 2000). For the most part, online auction sites are a safe way to exchange goods. But it makes sense to be cautious and aware. Online auctions can be a lot of fun and can also help you find good deals. They also attract scammers. Scammers will often try to get you to deal outside of online auction sites. They may claim the winner of an auction that you were bidding on has pulled out and offer the item to you. Once you have paid, you will never hear from them again and the auction site will not be able to help you. Following are the guidelines for participating safely in online auctions:
    a. Always conduct transactions within the auction website and avoid private contact with buyers or sellers-scammers will often use this ploy to 'offer a better deal'.
    b. Keep printed and/or electronic records of all bids, item descriptions, emails to and from the seller, and transaction records or receipts.
    c. If the website uses a feedback rating system, check all comments left by previous buyers and sellers.
    d. Use a secure payment method.
    e. Avoid money transfers and direct debit, because they can be open to abuse.
    f. Consider using the insurance offered by the auction facility.
    g. Check the information on auction websites to help potential buyers and sellers.
    h. Take the time to read the information about ways to reduce the risk on the auction site and the terms and conditions of contracts entered into by bidders and sellers.
    i. Learn a site's return policy, as it may be difficult to return merchandise bought at auction. It's critical to check the policy, because you may be required to follow the seller's refund policy, rather than that of the auction site.
18. **Be Aware of Dynamic Pricing:** Dynamic pricing is a blanket term for any shopping experience where the price of an item fluctuates frequently based on complicated algorithms (CSMonitor, n.d.). Some online retailers use dynamic pricing to engage in price discrimination by charging different prices to different consumers for identical goods or services. While online shopping enables consumers to easily compare prices, it also allows businesses to collect detailed information about a customer's purchasing history and preferences. Online stores can use that information to customize the prices they charge you. Online merchants can easily implement dynamic pricing by placing cookies on a customer's computer which will track the user's past interactions with the site. By using this information, sites can customize their interactions based on your past activities. Online

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stores can read the cookies on your browser to determine what products or services you searched for and bought and how much you paid for them. This information helps them to predict how much you might they visit the issuer‘s site. As a rule of thumb, assume all shared wi-fi networks are unsafe for your sensitive data. Everything from an online bank statement to a gmail account can be compromised when surfing the web on a shared wi-fi network. It’s nearly impossible to accurately gauge how secure a wi-fi network is, and thus it’s best to err on the side of caution. (Kamanec, 2013).

19. **Protect Your Online Identity on the Social Front:** Online purchasing is getting more and more social, with 50 per cent of web sales projected to occur via social media by 2015 (Kamanec, 2013). Each time you join a new site through the “login with face book” option, you’re extending your online identity further. In fact, an abundance of sites will first prompt you to become a member not by email, but by connecting a social media account. Is it a direct connection? Technically, no. Will it be used to shape your online identity? Absolutely. Your social media presence defines your digital footprint to the point where companies are looking to use your social media identity to combat online payment fraud and your social signals to tackle identity fraud in the near future. Once you realize that the majority of your online activity is interconnected, you can better defend yourself from making thoughtless choices that may endanger your data. Just like you shouldn’t post something you don’t want your employer to see on face book, you also shouldn’t post anything you don’t want a hacker to see, like a picture of your driver’s license or passport, anything with a home address and any snapshots that include a visible credit card or credit card number.

5. SECURITY PROTOCOLS IN INTERNET

Following are the popular protocols used over the internet which ensures security of transactions made over the internet.

5.1 Secure Socket Layer (SSL)

It is the most commonly used protocol and is widely used across the industry. It meets following security requirements –

- Authentication
- Encryption
- Integrity
- Non-reputability

“https://” is to be used for HTTP urls with SSL, where as “http:/” is to be used for HTTP urls without SSL.

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5.2 Secure Hypertext Transfer Protocol (SHTTP)

SHTTP extends the HTTP internet protocol with public key encryption, authentication and digital signature over the internet. Secure HTTP supports multiple security mechanism providing security to end users. SHTTP works by negotiating encryption scheme types used between client and server.

5.3 Secure Electronic Transaction

It is a secure protocol developed by MasterCard and Visa in collaboration. Thereoritically, it is the best security protocol. It has following components:

- **Card Holder's Digital Wallet Software:** Digital Wallet allows card holder to make secure purchases online via point and click interface.
- **Merchant Software:** This software helps merchants to communicate with potential customers and financial institutions in secure manner.
- **Payment Gateway Server Software:** Payment gateway provides automatic and standard payment process. It supports the process for merchant's certificate request.
- **Certificate Authority Software:** This software is used by financial institutions to issue digital certificates to card holders and merchants and to enable them to register their account agreements for secure electronic commerce.

5.4 How to Minimize Security Threats

1. Perform a risk assessment ⋄ a list of information assets and their value to the firm
2. Develop a security policy ⋄ a written statement on:
3. what assets to protect from whom?
4. why these assets are being protected?
5. who is responsible for what protection?
6. which behaviors are acceptable and unacceptable?
7. Develop an implementation plan ⋄ a set of action steps to achieve security goals
8. Create a security organization ⋄ a unit to administer the security policy
9. Perform a security audit ⋄ a routine review of access logs and evaluation of security procedures

5.5 Security Measures

1. **Secure Electronic Transaction (SET) Protocol:** Developed jointly by MasterCard and Visa with the goal of providing a secure payment environment for the transmission of credit card data.
   SET payment transaction:
   - A shopper makes a purchase and transmits encrypted billing information with his/her digital certificate to the merchant.
   - The merchant transfers the SET-coded transaction to a payment card-processing center.
   - The processing center decrypts the transaction.
   - A certification authority certifies the digital certificate as belonging to the shopper.
   - The processing center routes the transaction to the shopper's bank for approval.

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Table 2.

Features	*SSL*	*SET*
Encryption of data during transmission	Yes	Yes
Confirmation of message integrity	Yes	Yes
Authentication of merchant	Yes	Yes
Authentication of consumer	No	Yes
Transmission of specific data only on a "need know" basis	No	Yes
Inclusion of bank or trusted third party in transaction	No	Yes
No need for merchant to secure credit card data internally	No	Yes

- The merchant receives notification from the shopper's bank that the transaction is approved.
- The shopper's payment card account is charged for the transaction amount.
- The merchant ships the merchandize and transmits the transaction amount to the merchant's bank for deposit.

2. **Disposable Credit Numbers:** One-time-use credit card numbers (private payment number) are transmitted to the merchant
   a. Register with American Express or Discover
   b. Download software (a Private Payment icon tray will be displayed on the screen)
   c. Shop online
   d. Click on the Private Payment icon
   e. Log-in
   f. Select the credit card to be used
   g. View unique, one-time-use credit card number and expiration date
   h. Enter the one-time-used credit card number and expiration date into merchant's standard form

6. ONLINE BANKING APPLICATION (E-COMMERCE AND BANKING INDUSTRY)

Structure:

1. Objectives
2. Introduction to Electronic Commerce and Banking
3. Changing Dynamics in the Banking Industry
4. Home Banking Implementation Approaches
5. Open versus Closed System
6. Management Issues in Online Banking

6.1 Objectives

The motive of this chapter is to present an introduction to Electronic Commerce and Banking Industry and within that framework the key e-banking concepts, changing dynamics, implementation approaches, and management issues in the banking industry are discussed.

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After going through this lesson, you will be able to:

- Describe the concept of electronic banking.
- Explain the changing market structure and customer needs in banking industry.
- Differentiate between online banking and electronic banking.
- Discuss the management issues related to online banking.
- Describe some of the marketing and pricing related issues in online banking.

6.2 Introduction to Electronic Commerce and Banking

The decade of 90s has witnessed a sea change in the way of doing banking. The scenario has been improving at a very fast pace as electronic commerce (e-commerce) is receiving more and more attention in the banking industry. Technology has made a tremendous impact on this industry by reducing operating costs and also by providing adequate customer services. To some extent, the intense interest of bankers in electronic banking (e-banking) reflects a more general interest in the role of the internet as a vehicle for commercial activity. At its core, e-banking involves the collection, storage, transfer and processing of information assets and internet is an incredibly powerful and efficient tool for handling these information processes.

'Anywhere banking' and *'Anytime banking'* have become a reality. There is no specific online banking region to which the transactions are limited. Bookkeeping is simplified and automated and so is tax computation. Bills are paid with a minimum of effort. E-banking offers a wider outreach for banking institutions. E-banking is most useful when it saves the consumer time and money. It is particularly useful for those who have a lot of bills to pay and already use a personal financial program like Intuit's Quicken or Microsoft Money. The need for e-banking is continuously increasing as more and more consumers gain addiction to doing their banking transaction the quick and easy way. Moreover, since e-banking business is secure, many commercial concerns are also turning to doing their banking via the Internet.

E-banking makes use of electronic currency. Check cards or debit cards, smart cards or stored-value cards, digital cash and digital checks are the different types of electronic currency. If anyone uses a check card to make purchases, the funds are transferred immediately from his/her account to the company's account. Smart cards have a specific amount of credit embedded in it. The chip in the card contains both personal and financial information of the user. Digital cash is one way of allowing consumers make purchases over the Internet instead of using a credit card. Digital checks are used with electronic bill paying services. Consumers can use personal finance software packages or they can use software provided by a bank.

Loans are now marketed as products, with a number of value–added services attached to them. Banks are selling mutual funds, providing education loans, car loans, home loans, credit cards and debit cards. There have been associations with petroleum companies, airline companies, hospitality industry, and media houses to promote products and services.

Restructuring in the banking arena is already in progress. If banks are talking anytime, anywhere service for their customers, they are changing their organizations to fit in with the new reality of making them more productive and function driven. Public sector banks are also reorienting themselves to change their profile to be able to raise fresh capital from the market.

The Internet is an extremely efficient device for banks of all sizes to collect and to manage information in order to meet the various financial needs of individuals and businesses, in particular by integrat-

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ing services or "bundling" them together. On one hand, the Internet allows financial firms of different sizes to enter markets and reach customers previously out of reach to them. On the other hand, there are substantial economies of scale and scope in data storage and data processing, and larger banks are better positioned to exploit these scales and scope economies than smaller banks.

6.3 What Is E-Commerce and E-Banking?

E-commerce may broadly be defined as all the transactional commerce conducted electronically between businesses and other businesses (B2B), between businesses and their end-customers (B2C) and within an enterprise, over the internet, extranets and intranets (Kalakota & Whinston, 1996). E-commerce or online commercial transactions has emerged as a major economic force. It is not just the purchase of goods online, but also the electronic exchange of services, including information and knowledge, such as legal advice, archival data, design and financial services. Information, its provision and access, is as critical an issue in e-commerce as it always has been in any sort of commerce. Online access is already a requirement for full social, economic and educational participation in the light of stated government and private sector goals of electronic service delivery.

Electronic banking is using electronic means to transfer funds directly from one account to another. Electronic banking is a system that enables bank customers to access accounts and general information on bank products and services through a personal computer or other intelligent device.

Some electronic banking services are ATMs, direct deposit and withdrawal services, pay by phone systems, point-of-sale transfer terminals, Web banking or PC banking services, even banking from mobile phone. Electronic banking offers consumers the convenience of accessing and transferring funds between their accounts, paying their bills and other purchases, twenty-four hours a day, seven days a week.

A fully-integrated bank e-commerce system combines a powerful and flexible enterprise server with software and services that can take full advantage of already accumulated information such as consumer demographics, credit records, risk profiles and account histories to help exploit customer preferences, accelerate speed to market and improve the bottom line. Forward-looking banks are focusing on the need for e-banking, personalized data and customer service, and the highest possible network security. E-banking has had a noticeable impact on bank performance.

6.4 E-Commerce Banking: Technological Benefits and Barriers

New technologies offer unprecedented levels of communication and expanding possibilities for equal information access and independent living. Digital technologies can reduce the expense and difficulty of providing information.

The barriers to e-banking may be security and privacy concerns, particularly with credit cards, shipping and delivery costs, time consuming, difficulty of finding websites/products, complexity of ordering process. Trust and accountability are the main requirements. E-banking cannot be expected to suit all users, and may present serious access barriers to some people with disabilities, but for other people it represents independence and equality.

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6.5 Changing Dynamics in the Banking Industry

Globalization and liberalization of financial markets may have paved the way to increased access to cross-border banking, but the significant advances in electronic technology are what have accelerated access to anonymous and instantaneous cross-border banking. Even without the liberalization of financial markets, the new technologies have permitted this to occur.

With the development of technologies in the banking industry, there has been a major change in the banking system and in the way banks strive for increased profitability.

In the past, the banking industry was mainly concerned with asset quality and capitalization, but today performing well on asset quality and capitalization is not sufficient. A thorough understanding of competitive environment and the new ways to increase revenue are the basic desires of modern banks. and new competitors. E-banking can meet the customers' changing needs and a broad range of banking requirements by having:

- Available 24 hours a day, 7 days a week.
- Ability to access financial information.
- Query capability for finding particular payments or deposits.
- Customized account reporting options.
- Details of accrued interest and charges on individual accounts.
- Option to make payments directly from one's bank account to any other's account.
- Batch processing of credit card transactions.
- Transaction details in a file that can be interfaced with a variety of accounting packages.
- Capacity to group and process one-to many payments such as creditor payments, salaries etc.
- Ability to process direct debit transactions.
- Option to post-date payments for a future date.
- Features to create payments in external software packages, such as payroll and accounting packages, for processing by the bank.
- Provision of weekly market commentary and daily exchange rate information.

In addition, for international trading, e-banking may offer a full suite of international transactions including:

- Foreign Currency Account Transfers
- Telegraphic Transfers
- International Cheques (Bank Drafts)
- Letter of Credit Application and Amendment
- Guarantee and Shipping Company Guarantee
- Collections

6.6 E-Commerce and New Technology Based Banking Services

Imagine the convenience of everyday banking without having to leave the office. Imagine not having to write cheques, and post payments every month. With just a personal computer, a modem and bank of electronic banking, one can effectively

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Following are the distinct factors contributing to the new competitive environment:

- E-commerce and changing consumer needs – Absolute essentials for competitive banking
- E-commerce and new technology-based banking services
- Optimization of branch networks in order to reduce cost
- Banking and bank regulation - Potential challenges for regulatory policy
- E-commerce and trends in banking industry

6.7 E-Commerce and Changing Consumer Needs: Absolute Essentials for Competitive Banking

In this changing environment, consumers' requirements are changing substantially. Now Customers want to access account related information, download account data for use with personal finance software products, transfer funds between accounts, and pay bills electronically. The bank must be able to safeguard customer information and personal privacy. Consolidation of the banking industry and the expanding scope of products offered by financial service firms means that the industry will be responsible for maintaining and safeguarding huge databases containing extensive information on individuals.

In such an intensely competitive networked banking marketplace, the demands of e-commerce go far beyond simple interconnection. Competitive demands have made clear the need for banks to stay at the cutting edge of e-commerce technology so that they can provide high levels of service all the time, anywhere, over any communications channel. Banks need e-commerce systems that are integrated with the entire chain of back office and business decision processes for optimum flexibility, responsiveness to changing market requirements, and profitability. Now is the time for advanced e-commerce as no one want to be left behind by its traditional manage all monthly bills including payments to creditors, rates, power and all other invoices. The ability to transfer money between accounts, obtain transaction details and instant access to all financial records is more simple and easier. In fact, nearly all regular banking such as transfers, reconciliations and payments, paying wages and salaries from own office is quite possible through electronic banking. PC connects directly to the bank's computer for simple and convenient access whenever needed.

6.8 Optimization of Branch Networks in Order to Reduce Cost

The main aim of e-banking through the optimization of the branch networks is to tighten internal financial controls, reduce compliance costs, improve operational efficiency and organizational effectiveness, better capital management for significant savings of cash reserves, reduce capital costs from better risk management, improve strategic decision making, enhance perception and reputation among investor and client communities, and provide more flexibility.

With the widespread growth of the internet, customers want to use technology anywhere in the world to access a bank's network. The Internet, as an enabling technology, has made banking products and services available to more customers and eliminated geographic and proprietary systems barriers. With an expanded market, banks also have opportunities to expand or change their product and service offerings. Harnessing enabling technology to provide convenience and quality service through multiple channels at value for money price points is the bank's mission from inception in this electronic age. To this end the banks invested in a scalable architecture that allowed them to ramp up easily and handle the

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rapidly growing volume of customers, apart from reducing costs. To achieve and maintain an edge on its competition, a bank needs an open e-commerce platform that can:

- Integrate new e-commerce applications with existing applications to optimize IT investments and save on reprogramming and management costs
- Provide the power and scalability to handle multiple workloads, shift resources to match changing workloads, handle unpredictable peaks, and grow with the business
- Provide rock-solid security and advanced services availability for transactions all the time, around the world
- Exploit the value of customer and market data by deploying business intelligence (BI) and customer relationship management (CRM) software to help better anticipate, understand and respond to customer wants and needs
- Unify enterprise management chain with an open server platform that integrates purchase and sales processes with information on customers and product offerings for more timely, targeted and personalized customer service
- Integrate future technologies and new ways of doing business with customers

6.8 Banking and Bank Regulations: Potential Challenges for Regulatory Policy

For redistributing capital from areas of excess to areas of scarcity, the most strategic option are the banks and this is the interest of governments of all the countries to watch closely and regulate the financial services in order to control redistribution of capital. Many regulatory reforms have come in to action in the recent years for removing the competitive protections that banks enjoyed for a long time. To survive in the increasing competition from mutual funds, brokerage firms, and insurance companies, banks have to provide complete financial services. Regulatory reforms are expected to allow investment banks to broaden their financial product lines. E-banking has also to accelerate the ongoing process of "financial deepening" i.e. the widening applicability of more formalized financial markets in the economy.

Globalization and increased competition are trends that have shaped the banking industry for decades. The expansion of e-banking contribute to these trends in the same way that previous advancements in telecommunications and data processing did; i.e., by reducing barriers associated with geography and national boundaries. Not only will competition be enhanced by the reduction of geographical barriers, but also by the increased ability of bank customers to search for and locate new suppliers electronically.

There are several ways in which the development of e-banking generates potential challenges for regulatory policy.

1. E-banking and developing technology, more generally are changing the structure and function of financial institutions. The existing regulatory structure has been developed based on traditional lines of demarcation among different types of financial institutions, but these lines of demarcation are becoming less relevant over time.
2. E-banking may raise either new concerns or, more likely, accentuate or lessen concern about existing public policy issues. The most prominent example of a public policy concern accentuated by e-banking has been the issue of privacy.
3. E-banking challenges traditional methods of safety and soundness supervision by changing the nature and scope of existing risks, and possibly by creating new risks.

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4. Finally, the nature and scope of technological change may require authorities to rebalance their emphases on regulatory rules and industry discretion.

6.9 E-Commerce and the Trends in Banking Industry

With the entry of private banks, the competitive landscape changed significantly over the last few years. There has been one pervasive goal among the banks to increase market share. Banks are employing multiple ways such as increasing the number of branches, installing ATMs, and providing telephone and internet banking. Banks are also adopting new technology and offering new products and services which sometimes take banks beyond their traditional role as pure financial service providers. Banks have established e-shopping malls and portals for making business-to-commerce (B2C) transaction. Banks also are now providing advice on investments and mutual funds.

Financial matters are the most sensitive issue for the consumers all over the world and paid extremely careful attention about personal finances. The reduced level of job security and the need to plan for the future are major concerns over personal debt, saving, retirement planning, and tax planning for the consumers. These concerns can be seen in the trend of customer purchase of investment services like mutual funds, annuities, and trust services.

All over the world, bank's traditional business of taking deposits and lending out the proceeds is on a decline. With the spread of information technology, companies find it cheaper to raise money from capital market than from borrowing from banks and investors have other and often more attractive ways to invest their money than just putting into plain savings accounts offered by banks. These twin pressures compounded by the decline in interest rates have squeezed the net interest margins of the banking industry.

Along with the focus on new products and business opportunities, foreign banks are also developing the global processing centers by taking advantage of the infotech savvy staff and less expensive skilled labor.

7. HOME BANKING IMPLEMENTATION APPROACHES

Home banking services enable to perform banking tasks, pay bills and communicate with the creditors quickly and easily from any computer available which is equipped with internet access. Home Banking allows one to bank on his/her own time.

In the year of 1970s home banking was started via a telephone, which enabled customers to check their account balances, pay bills, transfer funds and general information etc. At that time, with telephone banking, customers use numeric password on telephone to access banking services and to check their account balances etc.

In the year of 1980s home banking was considered via two-way cable TV, which enabled customers to check their account balances, pay bills, transfer funds and general information etc.

In the last decades of the 20th century, computer technology transformed the banking industry. The wide distribution of automated teller machines (ATMs) by the mid-1980s gave customers 24-hour access to cash and account information. On-line banking through the internet and banking through automated phone systems now allow for electronic payment of bills, money transfers, and loan applications without entering a bank branch.

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Home banking in historical order, can be broadly classified into four main categories:

- Proprietary bank dial-up services
- Off-the shelf home finance software
- Online services-based banking
- World Wide Web-based banking

7.1 Proprietary Bank Dial-Up Services

The home banking service along with a personal computer and modem enables the customers to transfer funds or pay bills directly from their accounts to the creditors' account and the bank acts as an electronic gateway. Individual customers can subscribe for the dial-up service to maintain electronic checkbook registers and personal budgets, see account balances, transfer funds among accounts, and make electronic payments to other merchants. This type of home banking was very easy to use.

7.2 Off-the Shelf Home Finance Software

This type of service is provided through the software which contributes in cementing relationship between current customers and helping banks to gain new customers. Intuit's Quicken, Microsoft Money, and Bank of America's MECA are some of the popular software which provide home banking services and small business financial services for PC users and allow to organize, understand, and manage personal finances. The information entered once can be seen and analyzed using a set of reports and graphs. This software also helps users to reconcile their bank accounts, and track credit card purchases, investments, cash, and other assets and liabilities.

Online banking services can also be availed through these software as these allow users to download and automatically categorize savings and loan account activity, brokerage activity, and charge account activity, thereby reducing data entry and providing an easily accessible view of their financial assortment.

7.3 Online Services-Based Banking

In this type of home banking service, banks set up their retail branches and subscribe their online services such as Prodigy, Compuserve, and America Online. Although Off-the shelf home finance software allow customers to manage their money, information regarding their financial transactions gets managed two times, once by the customer and once by the banks and the financial banking software cannot reduce this duplication of efforts. Now some home banking financial services systems are emerging that make the bank an electronic gateway and reduce the monthly paper chase of bills and checks.

7.4 World Wide Web-Based Banking

As internet use is growing explosively, World Wide Web-based banking is also gaining popularity with the same pace. This form of banking provides a convenient and superior customer service in a secure electronic environment. Banks are setting up their websites to float their financial products on the internet.

Online banking and internet banking are the two terms which have different meanings in terms of their operational processes. In case of internet banking, no additional software is to be purchased for

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storing data on customers' computers or no backup of any information is required, or no wait for new versions of software as all transactions occur on a secure server over the internet and banking can be done anywhere and anytime if the customer has a computer and a modem whereas for online banking, it requires a software such as Quicken, Microsoft Money, or AOL which has to be installed onto the computer which limits the customer to banking only from that computer. The first internet bank to provide banking services electronically to internet users was Security First Network Bank (SFNB) and is available on the internet with the website http://www.sfnb.com. This bank offers highest interest rate in America for money market accounts. SFNB is offering joint accounts for multiple parties to access account information from various locations, full personal financial reports, and check imaging for internet banking customers to actually view scanned images of their checks online the day after they clear the bank.

8. OPEN VS. CLOSED SYSTEM

Open systems traditionally refer to a technology scheme that provides customers, external developers, or end-users to access the internal functions of a complex system via "public interfaces." In an open system, contents can be changed easily because of the use of standard technology and components. In simple words, a banking interface developed around the web is an open system that is easy to customize to a bank's changing needs. On the other hand, closed system cannot be changed since everything is proprietary. For example, Quicken cannot be modified unless a new version of this software is distributed by the vendor.

9. MANAGEMENT ISSUES IN ONLINE BANKING

Technology has thrown new challenges in the banking sector and new issues have started cropping up which are going to pose certain problems in the near future. The new entrants in the banking are with computer background. However, over a period of time they would acquire banking experience. Whereas the middle and senior level people have rich banking experience but their computer literacy is at a low level. Therefore, they feel handicapped in this regard since technology has become an indispensable tool in banking. Foreign banks and the new private sector banks have embraced technology right from the inception of their operations and therefore, they have adapted themselves to the changes in the technology easily.

The proliferation of technology-based systems offers tremendous opportunities for banks to communicate with and serve their customers. At the same time, the major challenge facing the banking industry is the optimum use of technology to provide customers with new financial products for satisfying their continually changing financial needs. Banks must deliver high quality products at the customers' convenience with high-tech, high-touch personal and affordable service taking into consideration the five key values: *simplicity, customized service, convenience, quality,* and *price*. In this competitive online banking environment, banks have to be willing to take risk and make strategic decisions about the products and services offered online, and about exploiting the service attributes that build customer retention for profitable customers.

The performance that customers believe is an excellent service, banks can and should deliver, is the true standard for assessing service quality. Therefore, gaining a good understanding of customers' service

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expectations, as well as variations in those expectations across different customer segments, are essential issues for the management of banks for improving service quality. Consistently delivering superior service quality is much more a matter of meeting and exceeding customers' expectations rather than simply conforming to banks defined specifications. One of the biggest shortcomings of service banks is a failure to understand accurately what is important to customers. Hence for the realization of the full potential of banking financial services following key points have to be considered:

- Attractive financial products and services have to be developed.
- Terminals at an affordable price are required for customers.
- Untapped needs of customers and new market segments have to be explored.
- Service quality on the part of banks has to be established for the customers.

9.1 Differentiation Between Financial Products and Services Strategies

The changing market structure requires the banks and software companies to take the strategic decisions to differentiate their products in the competitive online banking industry and exploit the service attributes that build customer retention for profitable customers.

The proliferation of internet web sites means there may be a substantial advantage for banks able to distinguish their products from those of other banks i.e. to engage in "branding". Doing so requires significant resources for advertising and marketing, a fact that is likely to work to the advantage of large firms. The internet provides a very effective searching device for consumers to choose the "best of breed" producers of specialized services. Intermediaries may play a role in helping users locate the "best" product given their individual preferences for quality, convenience, and price. These factors boost both the pace and scope of consolidation in the banking industry.

There are several significant strategic considerations that should be weighed in determining plans for developing an e-banking service and the type of services that should be offered.

1. Bank management must evaluate the degree to which current and future market demand for e-banking services warrant a change in their e-banking plans. The breakthrough in consumer usage of online banking may depend on developing new and better services rather than reducing the price of standard banking products. It also suggests that low demand for e-banking may be responsible for the "wait and see" posture of some banks toward offering e-banking.
2. Another consideration for banks in determining when, and how deep, to plunge into e-banking is the likely future competitive pressure generated by the development of the Internet. Banks face competition not only from their traditional rivals within the banking industry, but may increasingly find their market share threatened by banks from new, distant locations. In addition, non-bank firms (financial and non-financial) will increasingly contest banks for their most valuable customers.
3. A third strategic consideration in developing internet plans is the question of whether there are "early adopter" advantages. Some analysts point to the high market concentration of e-banking customers in a few large banks as evidence that there will be a few big winners and those laggards will have difficulty catching up. The early-adopter-advantage-view also argue that e-banking will increase the extent to which economies of scale and scope can be realized, and that early adopters will better position themselves to exploit them.

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Further, because of the rapid pace and broad scope of technological change in banking and payments, today's early adopter advantage in capturing customers using the current set of e-banking options may suddenly be undermined by the introduction of a new technology.

9.2 Pricing Issues in Online Banking

One of the most crucial areas of decision making for banking is financial product pricing. E-banking is a significant non-interest expense at banks today. There are cases of many banks whose annual costs for e-banking are higher than those for their core systems. Many banks signed their original e-banking and bill-pay contracts several years ago when usage volumes were quite low and many vendors were still incurring high development costs. These contracts included some kind of per-account charge, activity-based pricing e.g. per bill paid, or a combination of the two.

Now, as products have matured and volumes have increased significantly, those same pricing schedules no longer make sense. In fact, many banks have been so successful that the earlier pricing structure is now punitive. Limited use of a cash management product for higher-end business customers can be included, with some limit on the number of customers.

As customer is not interested in paying per month subscription for a service that is already consumed by him at no price, it is much expensive to implement and operate online banking services. However, once a user confronts high connect charges, high subscription fees or both, shows interest in online banking services though customers are very price sensitive. Pricing affects online banking at three levels:

1. **Initial Software Pricing:** Banks have to design strategies through which they can occupy a bigger market share and gain masses of customers. One way of achieving can be through bundling of personal finance products and services in the form of software services with new PCs for the potential customers.
2. **Financial Product Pricing:** The development costs (associated with the design, implementation, and commercialization of a financial product), marketing costs (including costs of launching and maintaining financial products throughout its initial stage), and support costs (including the costs of providing and delivering the product, and maintaining it via back office systems) are the three major costs which have to be balanced.
3. **Usage Pricing:** The volume of transactions in the bank decides this form of pricing. Banks have to offer incentives to attract customers to the service. If the target customers find new products costly, they will resist adopting them.

Pricing is a complex issue that has both long-term implications in terms of cost recovery and profitability, and short-term implications in terms of market penetration. While designing the pricing strategies for the financial products and services, banks must have to consider the above-mentioned issues and make a balance between the costs incurred in providing, delivering, maintaining and promoting their financial products and services.

9.3 Marketing Issues: Attracting Customers and Keeping Customers

While winning customers may be hard, keeping them is even harder. Customers really want quick response, instant information, and solutions to their problems. They want exceptional customer service. No

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organization can afford to lose customers because of poor service, but many do. Customers remember how they have been treated and spread the news. In today's high tech and demanding consumer market, customer service is mission critical. When customers are pleased, they are likely to spend more on product or service and will call again.

Customer expectations are higher than ever, particularly when it comes to online banking services. Bank operations need to become highly customer-centric in the area of Internet banking to ensure that the services they are delivering are the ones their users will actually use. Customers want access to their accounts anytime, from anywhere, using their preferred device or channel. They expect data that is accurate, up-to-date, and consistent across all channels. They take for granted that they will receive informed and timely support whenever they need it. In short, they want online banking to make managing their accounts and satisfying their financial needs simple and easy. The applications that serve them must be visually appealing, easy to use and learn, and support user personalization that meets individual customer requirements. If an application is difficult to navigate or understand, customers simply would not use it, and may take their business elsewhere.

Additionally, as enterprise customer relationship management evolves, e-banking solutions need to complement and integrate with a banks' customer relationship management strategy. It is no longer acceptable for channels to be independent of one another. A system or solutions must integrate with back-end systems, scale to meet the needs of a growing user population, and contribute to a customer relationship management strategy that will increase customer retention, revenue per customer, and subsequently overall bank revenues.

While meeting demanding customer expectations, banks also need to nurture their own bottom line by building on the profitable relationships they have. They must be able to identify and serve their most profitable customers well, and take advantage of opportunities to offer additional products and services to targeted customers at the most appropriate time. To compete with aggressive competitors, banks and other financial institutions need to be able to:

- Provide services tailored to meet the needs of specific, high-profit market segments, such as businesses. Business customers are often a bank's most profitable customers. The need to attract and retain these customers is critical to a financial institution's healthy bottom line.
- Use the data that they have to identify customer segments and present targeted cross-sell messages when appropriate.
- Consolidate information about a customer so that a customer receives informed, timely, and relevant service regardless of the channel that they use.
- Quickly bring new services to market without disruption to existing services.
- Keep up with emerging technologies while maximizing return on investment.
- Minimize total cost of ownership.

9.4 Managing Financial Supply Chains in Online Banking

The financial supply chain parallels the physical supply chain and represents all transaction activities related to the flow of cash, from the buyer's initial order through reconciliation and payment to the seller. Until recently, the financial supply chain went virtually unnoticed. The amount of time required to process transactions was unthinkably long because the manufacturing supply chain itself was fraught with inefficiencies.

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The supply chain financial flow is at a critical threshold of evolution. Current trends in supply chain and financial flow management clearly favor the use of automated payment solutions. Continued expansion in this area offers high potential for reducing significantly purchasing processing costs, accelerating payment and invoice reconciliation, reducing collections costs significantly, creating greater processing efficiencies in the procurement of goods, and enhancing visibility, which means less uncertainty in accounts receivable (A/R) and accounts payable (A/P) and a reduction in working capital needs. As the adoption of new automation solutions for financial flows becomes more widespread, the superior efficiencies gained from electronic payment technologies are becoming more measurable and substantial.

Today the typical financial supply chain remains somewhat fragmented, complex and not integrated with the physical supply chain. Goods move faster than money, and disparate parties are involved. Moreover, even in today's world, the financial supply chain is partially composed of paper-based processes. To stay competitive, "just-in-time" working capital management should be the goal. Financial supply chain solutions enable CFOs and treasury managers to accurately manage their receivables or payables, forecast their company's financial future, and reduce their working capital needs. By optimizing financial supply chains, banks can:

- Reduce their working capital needs by using better inventory control and cash flow management, potentially representing significant annual savings.
- Lower financing rates on required working capital through more effective management of their current asset position.
- Reduce the costs of risk management through greater cash flow predictability.
- Gain early warning into problems with any document in a commercial trade transaction that will likely cause payment to be delayed, then take corrective action to reconcile exceptions.
- Improve customers relations in this money-spinning market, to gain advantage, banks have to follow three strategies:
    - Powerful technology infrastructure, strong information architecture and lucrative online financial products and services have to be developed.
    - Form partnership to link customers, intermediaries, banks, and third-party service providers in the online financial supply chain.
    - Banks have to shift from mass production orientation to mass customization of financial products and services so as to capture the loyalty of the customers by providing simple, convenient, and customer-centered approach for services to the customers.

REFERENCES

Adam, N. R., & Yesha, Y. (1996). *Electronic Commerce*. Berlin: Springer-Verlag. doi:10.1007/3-540-60738-2

BankAmerica Corporation. (1998). *What is SET[tm] and How Does it Work?* Retrieved from http://www.bofa.com/spare_change/set_what_and_how.html

BBC. (2013). How to shop safely and securely online. *BBC*. Retrieved from: http://www.bbc.co.uk/webwise/0/22728224

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Beware of Phishing. (n.d.). Retrieved from http://www2.le.ac.uk/offices/ias/topics/phishing

Blumenthal, H. (Ed.). (1998). *The OBI standard gains momentum*. Retrieved from http://www.netscape-world.com/ned-12- 1997/ned-12-extranet.html

Christian Science Monitor. (n.d.). Everything you need to know about dynamic pricing. *Christian Science Monitor*. Retrieved from: http://www.csmonitor.com

Copeland & Hwang. (n.d.). *Electronic Data Interchange: Concepts and Effects*. Retrieved from http://www.isoc.org/isoc/whatis/conferences/inet/97/proceedings/C5/C5_1.HTM

Drummond, Janson, & Shih. (1998). *Requirements for Inter-operable Internet EDI*. EDIINT Working Group. Internet Draft.

E-Commerce (Electronic Commerce or EC). (n.d.). Retrieved from: http://searchcio.techtarget.com/definition/e-commerce

E-Commerce Security Systems. (n.d.). Retrieved from http://www.tutorialspoint.com/e_commerce/e_commerce_security.htm

EDICT Systems. (1999). Retrieved from http://www.edictsystems.com

ETHOS team. (1997). *Open Buying on the Internet (OBI) standard*. Retrieved from: http://www.tagish.co.uk/ethosub/lit5/c1aa.htm

Extensible Markup Language (XML). (1998). *W3C Recommendation*. Retrieved from: http://www.w3.org/TR/1998/REC-xml-19980210

Federal Supply Service (FSS). (n.d.). More About Electronic Data Interchange (EDI). *Federal Supply Service.* Retrieved from: http://www.fss.gsa.gov/edi_mae.html

Freibrun, E.S. (1993). *Electronic Data Interchange (EDI) and the Law*. Academic Press.

Gautam, R. (2014). Network Security Issues in e-Commerce. *International Journal of Advanced Research in Computer Science and Software Engineering*, *4*(3).

IT Pro Portal. (n.d.). E-commerce security tips: How to stay safe when shopping online. *IT Pro Portal.* Retrieved from: http://www.itproportal.com/2013/07/18/e-commerce-security-tips-how-to-stay-safewhen-shopping-online/

Kalakota, R., & Whinston, A. B. (1996). *Frontiers of electronic commerce*. Pearson Education.

Kamanec, K. (2013). E-commerce security tips. *IT Pro Portal.* Retrieved from: http://www.itproportal.com/2013/07/18/e-commerce-security-tips-how-to-stay-safe-when-shopping-online/

Mag, P. C. (n.d.). *E-Commerce Security Tips*. Retrieved from: http://www.pcmag.com/article2/0,2817,2421846,00.asp

Niranjanamurthy, M., & Chahar, D. D. R. (2013). The study of E-Commerce Security Issues and Solutions. *International Journal of Advanced Research in Computer and Communication Engineering*, *2*(7).

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Privacy Rights Clearinghouse. (2000). Fact Sheet 23: Online Shopping Tips: E-Commerce and You. *Privacy Rights Clearinghouse.* Retrieved from: https://www.privacyrights.org/online-shopping-tips-e-commerce-and-you

Shopping Online. (2014). How to shop online without a credit card. *Shopping Online*. Retrieved from: http://shoppingonline-tips.blogspot.in/2014_07_01_archive.html

Stay Safe Online. (n.d.). Online shopping. *Stay Safe Online.* Retrieved from: http://www.staysafeonline.org/stay-safe-online/protect-your-personal-information/online-shopping

Threats to E-Commerce Servers-Part I. (n.d.). Retrieved from: http://www.technologyexecutivesclub.com/Articles/security/artThreatstoEcommerceServers.php

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Chapter 5
Electronic Payment Systems in Electronic Commerce

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ABSTRACT

Technological advances and correspondingly the spreading usage of the Internet have significantly changed commerce, and also the concept of money has become more abstract. Customers with the help of the technological advances don't have the necessity of cash money, and consumers/firms tend towards alternative payment methods. At this point, electronic commerce (e-commerce) web sites have started to use block chaining payment methods. In this digital world, new payment technologies have started to spread far and wide thanks to fast improvements in payment technologies, and they offer different options in payment methods. Each electronic payment (e-payment) system has some advantages; however, each of them has some disadvantages as well. The aim of this study is to investigate the e-payment systems which are different from traditional payment methods.

INTRODUCTION

Almost 40 years ago, e-commerce started to come into our lives. As Miva (2011) suggests, e-commerce has allowed many new businesses to enter the online sector and it has still been growing with the advancements in science, new technologies and innovations. There are apparently two time periods for this sector: the first period from the 1960s to 1990s was based on Electronic Data Interchange (EDI)

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and the second the period was after 1990s when e-commerce was fostered by the emergence of World-Wide-Web (Yang, 2017).

E-commerce is sure to be one of the most leading services which showed up as a result of the spread of the common Internet users all across the world. With the advancements in technology, the attempts to design mobile devices with a high internet speed as well as mobile technology have made it possible for users to utilize those devices and services like reading e-mails and Web browsing wherever they are and whenever they wish for performing e-commerce transactions.

Throughout centuries, payment systems have undergone a change in a radical way, which include coins, papers and data. The reason why payment systems have continually evolved is that the new technologies included in these systems provide convenience and efficiency at a high speed. The advancements in global electronic payments have changed the humans' point of view. In today's world, many different e-payment systems are being used internationally in a common way and provide security and economic transparency as well as easiness for processes. The users throughout the world provide great benefits vie this payment network. Payments are the basic factors of the economies. With the common adoption of e-payment systems, sale of goods and services has continually been increasing. E-payment has also ruled out the obstacles of immediate liquidity and credit. Today, there are many different e-payment opportunities provided by financial institutions for the customers. As an example, ATM machines, credit cards, debit cards, online banking and mobile banking are among these e-payment systems. E-payment systems are relatively cost-saving over traditional paper-based payments.

In addition to those (Read, 1989) arguing that the use of cash will be removed in the near future, and a non-cash economy is not very far away, there are also approaches suggesting the exact opposite of this argument (Harrop, 1989). Furthermore, many studies in the relevant literature reach a consensus that as economies grow and globalize, physical money will be replaced in shopping by e-payment methods in various forms due to the developments experienced on the internet and e-commerce and the importance of physical money will decline. Accordingly, the more common use of e-payment methods instead of physical money in today's and future's commercial forms is inevitable.

Today, more companies have started performing their company operations through e-commerce. In this way, the purchase of the goods and services produced in any part of the world by consumers depends on the healthy and secure functioning of millions of e-payment processes performed on the internet every day. In this context, the subject of e-payment and e-payment systems, which are among the basic elements of uninterrupted and healthy functioning of the process in the e-commerce-related process, is an area of research coming into the forefront recently with its various aspects.

Each electronic e-payment system has some advantages; however, each of them has some disadvantages as well. The aim of this study is to investigate the e-payment systems which are different from traditional payment methods. In this sense, this paper presents a comprehensive explanation that aims to provide raising awareness regarding the development of e-payment systems. For this purpose, firstly, the concept of e-commerce and secondly, e-payment methods will be addressed. Lastly, the facts regarding e-payments in e-commerce practices will be explained.

E-Commerce in the World

E-commerce has reached to significant levels in all countries, particularly in developed countries. Dues to the increase in internet use and thus, e-commerce, changes that could only be imagined in the past have become a part of daily lives and e-commerce has become a new competition space for businesses.

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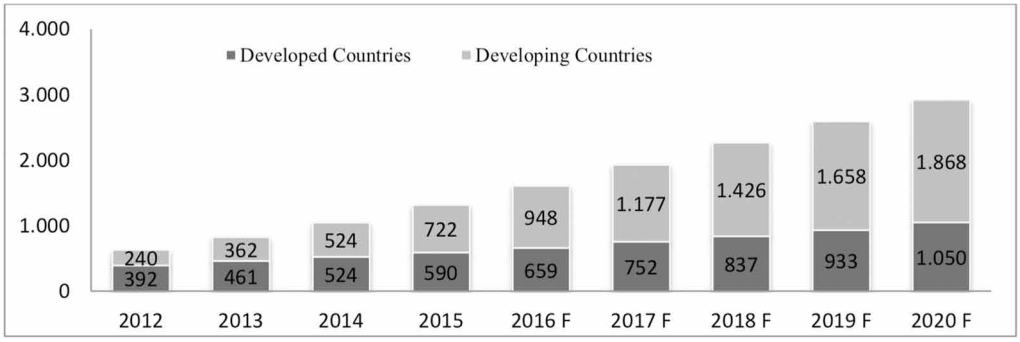
The main difference between e-commerce and other commercial activities is that customers have increased their purchasing power regardless of their location. E-commerce eliminates limitations for businesses and customers who need to wander markets and make purchases with certain limitations on locations. With online stores operating in the field of e-commerce, customers around the world can do shopping from their homes or businesses, compare prices of products or services they need, and access sellers' information without any limitations on location or time (Ersoy, 2002).

These characteristics made it inevitable for e-commerce to spread around the world. Additionally, commerce, production, marketing and advertisement applications reached a new dimension with e-commerce that makes collaborations and partnerships between businesses operating in different parts of the world easier. It is possible to suggest that there is a correlation between the increase in device penetration due to tablets and smartphones and the increase in the volume of e-commerce. Moreover, through mobile applications such as user interface designs that include current payment systems of e-commerce businesses, there is an increase on mobile device sales. With the increase on mobile penetration, it is expected that a certain population who has not participated in the process yet to be in the digital purchase process. This forces marketing plans to include all customer masses. These marketing plans should target accessing and influencing all users of devices that are connected to the Internet (Criteo, 2015).

According to data on e-commerce in the world from Turkish Industry and Business Association (TÜSİAD, 2017), it is seen that retail e-commerce has reached a trading volume of 1.6 trillion dollars in 2016 and that it is expected this growth rate will continue. Developing countries constituted 38% of e-commerce in 2012 while it's predicted as 63% for 2018. In 2020, it is expected that 64% of the total volume will consist of developing countries. Goldman Sachs, an investment bank, predicts a global trading volume of around 3 trillion dollars in 2020. Figure 1 present's data on e-commerce trading volumes around the world between 2012 and 2020. According to Figure 1, the volume of e-commerce in the world is 632 billion dollars in 2012 while the growth continued and reached 1.6 trillion dollars in 2016. While developing countries constitute 38% in 2012, this ratio increased to 59% and surpassed developed countries.

Figure 1. E-Commerce Volume in The World (Billions Dollars)
Source. TÜSİAD (2017). F:Forecasting



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E-Commerce in Turkey

The concept of online shopping emerged in the early 1990s with the opening of e-commerce businesses. As a result of this process, the trading volume of purchases through e-commerce reached 1 trillion dollars and the interest in the new shopping sector increased. E-commerce has been growing in Turkey as well. However, this growth has not positioned Turkey as a competitor in the international arena. The reason for not being able to reach the e-commerce potential is prejudice by customers due to lack of knowledge on e-commerce and lack of technological, regulational and financial infrastructure required for e-commerce (TÜSİAD, 2014, 58). Additionally, it is observed that all indicators of e-commerce's growth potential such as number of internet users, penetration, smartphone usage, young population, etc. are at competitive level (TÜSİAD, 2017, 41).

Financial sector was the pioneer of e-commerce in Turkey. With a broader scope, the first application of internet marketing understanding was performed by Turkish Republic Central Bank (TCMB) in 1992 with electronic fund transfer between banks. Access to the Internet by large masses such as commercial organizations and households occurred in 1996. In parallel to the developments in the world since 1997, the concept of internet and commerce became popular in Turkey.

BCG has conducted a study to analyze countries' internet densities in three dimensions – providing opportunities (infrastructure development), - expenses (consumers' expenditure on e-commerce and digital advertisement), and participation (frequency of internet use by businesses, government, and consumers). According to this e-density report published in 2016, Turkey is listed after developed countries in the index order but shows a similar performance with developing countries. In the e-density index, it is seen that Turkey has an important potential with its performance in developing countries (TÜSİAD, 2017, 41).

The internet penetration which was 45% in 2012 has grown rapidly and by 2016 it reached to 58% internet penetration with 46.2 million users in Turkey. The estimation for 2020 in Turkey is 62 million internet users with a 76% Internet penetrations. As a result of an increase in internet use, Turkey is the 17th country that has the most internet users in the world with its population of 80 million and 46.2 million internet users and 58% internet penetration. Although when the ratios of Turkey are compared to the 90% penetration rate in developed countries are low, it is similar to developing countries. While the smartphone penetration of 6% in 2010 was below the world average of 9.6%, it reached 65% penetration with the increase in smart phones in the past six years and went above the world average by five points.

Smartphone penetration and the use of mobile internet have become one of the important channels to accelerate e-commerce. As of 2016 in Turkey, about 19% of e-commerce operations have been carried out by smartphones and tablets while it is estimated to reach 49% by 2021. Given the present level of 44% in the world, Turkey is likely to quickly take the lead in mobile commerce with the effect of its young population and higher smartphone penetration.

Results of a study conducted by Deloitte (2017) show that Turkey's position in e-commerce can be determined by comparing to developed and developing countries in order to evaluate the current situation more accurately. Figure 2 represents a comparison of Turkey's e-commerce structure with the e-commerce structure of developed and developing countries. According to Figure 2, the size of market share in retail is obtained by dividing total retail size by online retail size which gave a result of 4.1%. This ratio is 9.8% in developed countries and 4.8% in developing countries. When the ratios of purchases in the last month are evaluated, Turkey has the least purchase ratio in developed and developing countries listed in Table 1.

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Table 1. E-Commerce 2017 Market Size

Country	Online Retail/ Total Retail (%)	Internet Penetration (%)	Mobile Broadband Penetration (%)	Online Shoppers (%)	Mobile Shoppers (%)	Per Capita Income PPP ($)	Population (Million)
UK	15,7	38,6	89,0	78	40	44,1K	66,0
USA	11,8	33,6	128,6	67	36	59,5	325,7
Germany	9,1	39,4	78,6	74	23	50,4	82,9
France	8,3	42,0	81,2	61	17	43,8	64,6
Japan	7,9	30,8	157,4	63	24	42,8	126,7
Spain	4,0	30,5	92,7	59	26	38,3	46,5
China	20,4	23,0	60,2	45	39	16,7	1.390,1
Poland	6,2	18,3	87,2	57	22	29,5	38,4
India	4,9	1,4	14,8	26	20	7,2	1.321,0
Brazil	6,3	12,9	94,0	45	27	15,6	209,3
Russia	4,8	19,1	82,0	46	23	27,8	144,5
Turkey/2016	3,5	13,0	64,8	43	31	24,9	79,8
Turkey/ 2017	4,1	14,7	69,9	43	30	26,9	80,8

Source. Deloitte,etid,TÜBİSAD (2017).

Source. Deloitte, etid, TÜBİSAD (2017).

When purchases made through mobile devices are examined, it is seen that Turkey has a higher ratio compared to countries such as France, Germany, Poland, Russia, and Brazil. Considering all the data, the fact that market share has not developed yet can be considered as a positive element towards ventures directed at e-commerce. Additionally, the level of purchases made through mobile devices being at the same level as developed countries is important in terms of ventures' e-commerce activities. However, fixed broadband and mobile broadband penetration which reflects Turkey's informatics infrastructure is below the ratios of developed and developing countries. This creates a disadvantage in e-commerce in terms of ventures.

Today, e-commerce activities are mostly done as B2C sales in Turkey. Practices around the world show that sales from business to business constitute a significant portion of e-commerce volume. In Turkey, it is seen that many organizations including big corporates moved transactions between their suppliers and distributors to the internet environment. An increase in the speed is expected over time. Due to e-commerce activities and the increase in gained income, many organizations own their own websites to not lose their customers and to access more customers. Many established brands opened their online stores and internet service providers rent online stores in virtual shopping platforms they

Figure 2. E-Commerce Volume in Turkey (Billions Dollars)
Source. TÜBİSAD (2017)

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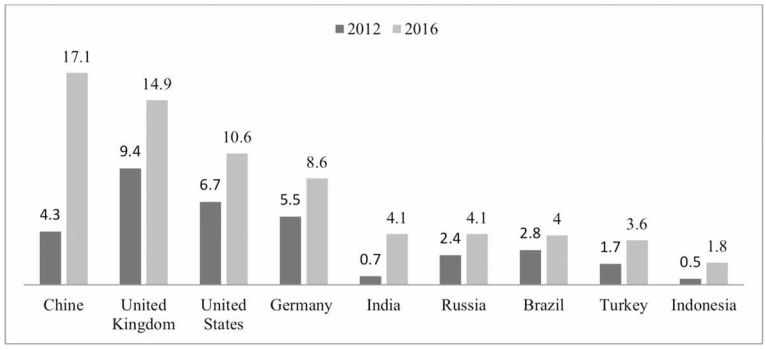
created. These developments will result in an increase in the number of companies providing consultant services on e-commerce. Retail portion of the market has grown with an average of 33% annually since 2013 and increased from 7.3 billion TL to 22.9 billion TL in 2017. Only online retail commerce was 14.7 billion TL (Figure 2).

Although there has been a significant growth lately in Turkey, this growth was not sufficient to increase the retail share. In terms of infrastructural processes, Turkey is not different from other developing countries, and it precedes countries such as South Africa, India and China in terms of smartphone use and internet penetration. However, its total share in e-commerce retail is relatively smaller. In the retail e-commerce sector in which China reached the level of 17.1%, England 14.9% and USA 10.5%, Turkey

Figure 3. The Share of EC in Total Trade (2012-2016,%)
Source. TÜSİAD (2017)



has still room for improvement (Figure 3).

As in ‘’the E-Commerce in Turkey’’ prepared by Twentify (2018), Turkey’s expectation for five years between 2018 and 2022 is that this figure will be more than 9.6%, which is the estimated global growth. The expectation for Turkey’s growth rate is 12%, which is more than the global growth rate. According to the survey in question, India is at the top of the list with 19.9% growth expectation.

Although Turkey is not different from other developing countries in terms of infrastructure, and that it precedes countries such as China, India, and South Africa in internet penetration and smartphone use, its share from total retail in e-commerce is relatively low. The share of 1.7% in e-commerce total retail in 2012 increased to 3.5% in 2016. As seen in Figure 3, in the retail e-commerce sector in which China has 17.1%, England 14.9% and USA 10.5%, Turkey has still room for improvement.

Despite its higher growth rate when compared to most of the other countries, it appears that Turkey’s e-commerce total retail and total share of trade volume remain low, which is based on the past and the future expectations for e-commerce in Turkey. The other important issue is that Turkey is a country which aims at the exportation of 500 billion dollars. If this target is achieved by 2023, it means that Turkey’s share of the world exports will be doubled and it will be one of the top 20 exporting countries. However, the current realizations indicate that it will be difficult to achieve this target. But, with the help of the opportunities that e-commerce presents, Turkey can increase its exportation more than before. Reducing the disadvantages caused by distance and even in some cases doing away with them are important advantages of e-commerce (TEPAV, 2014).[1]

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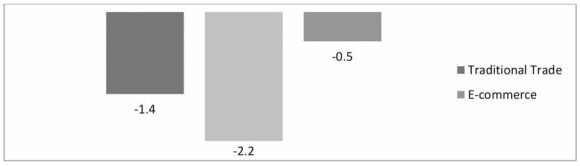
The studies indicate that trade carried out with traditional means between two countries has a negative impact on their trade as the distance between the two countries increases. When the export made by e-commerce is taken into consideration, it is stated that the negative effect of distance on trade volume decreases. For example, the negative effect of the distance on the trade with e-buy is 65% lower than that of traditional exports (Figure 4).

Figure 4. One Percent Increase in Distance Effect on Exports (%)
Source. TEPAV (2014)



E-Payment Systems

In modern societies, economic activities are only possible via payments and settlements. Therefore, payment systems could be stated as one of the most crucial and important factors of e-payments (Premchand & Choudhry, 2015). The developments of payment systems and technologies directly affect e-commerce. Globalization and advanced technology implications lead to very significant changes and developments in e-payments as well. In this context, payment methods continue on evolving and varying to meet the changing necessities of users (Qin, 2009).The salient tendencies regarding the e-payments are; faster payments, more mobile payments, new payments, new payment options, improved security implications, Apps and some other integrated payment options (The Future of Payments, 2016).

E-payment is a system that provides tools for payment of services or goods carried on the internet. It provides the ease of transaction processing in e-commerce between consumers and sellers. Using the e-payment systems have many benefits for payers, payees, e-commerce, banks, organizations and governments. These benefits can lead to widespread e-payment systems in the world . An efficient and reliable e-payment system enables faster payouts, better tracking, transparent transactions, reduced time use, cost savings and increased trust between sellers and buyers (Fatonah et.al, 2018). E-commerce is built upon e-payment system and with the increasing volume of e-commerce, e-payment system is becoming more crucial for both businesses and consumers. E-payment systems are used for the completion of e-commerce transactions and can be defined as any payment system facilitating more secure e-commerce transactions between organizations and individuals.

Linck, Pousttchi, and Wiedemann (2006) stated that for businesses that operate electronically, e-payment system**s** are one of the most essential determinants of success. Sales of goods and services have increased significantly with the use of e**-**payment system**s** so that electronic payments have become an increasingly important part of the payment system. E-payment systems have come to replace cash payment systems. However, the emergence of e-commerce has created new financial needs that are not seen within traditional payment systems.

Characteristics of E-Payment Systems There are numbers of concepts characterize the electronic payment systems. These are as follows:

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Anonymity

Anonymity means hiding the users' personal identity and the merchant only knows pseudonym of the user. Privacy means protecting the users' information from unauthorized parties (Tsiakis & Sthephanides, 2005). The user's information can be protected by technical activities or by not sharing with third parties. With the characteristics of anonymity and privacy, confidential payment information is not open for any party (Asokan et al., 1997; Neuman & Medvinsky, 1995; Tsiakis & Sthephanides, 2005). The payment system cannot trace the transections if these characteristics are provided. For instance; a customer makes his payment with a credit card; the purchase information is saved to the vendor's and bank's database. This allows other people/parties to find out the amount of the purchase and what the user has bought. Low et al. (1994) proposed a system like this and suggested an anonymous credit card to handle problematic scenarios. Wen (2010) proposed such a protocol to guarantee anonymity with complete security. The users' identity and the purchase information can be anonymized by applying the technical actions mentioned in the related standards. Such as holding the last four digits of the card but not the sensitive data. Securing the users' information can be provided by encrypting the data and registering it to the database that way.

Traceability

Traceability means tracking the flow of money, the sources of the money or the link between the money spent and the customer. (Harris et al., 2011). In e-payment systems, money can be traced using records acquired during payment activities. These records should be kept in a safe and secure system. As we have mentioned before, securing data or information can be ensured by a strong encryption. The information of the credit card used in the payment is kept by the bank or the payment gateway. Traceability is associated with anonymity and privacy of the payment system (Abrazhevich, 2004). Traceability is important for law enforcements for preventing, detecting and prosecuting financial crimes.

Securit

Internet is a wide area network with no centralised control, which means there is no authorization responsible for security. By nature, the infrastructure of the e-commerce and e-payment systems should be secure as a fort, means resistant to attacks over the internet (Neuman & Medvinsky, 1995). Kim et al. (2010) and Hanzaee and Alinejad (2012) shared an opinion that users information can be secured by technical protection, transaction procedure and security. Gupta and Johari (2011) have proposed another approach that using mutual authentication procedure between cardholder and merchant increases the credit card security.

Authorisation Type

Authorization type controls validity of the transaction made (Asokan et al., 1997). Authorization type is a part of security characteristic that can be offline or online. Offline authorization helps users to perform transactions even when the system is not connected to the network, without an authorization server. When we are talking about e-commerce systems, we expect that the payment should be online. But in some occations paper check and payment by conventional cash can also be an option as an example of

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offline authorization. Within authorisation type there is a model that consists of three parties: customer, merchant and payment authority. Each uses payment order integrity concept. This model includes a merchant agreement to verify payment order (Raghuwanshi et al., 2009).

Trust

Trust, which also can be defined as customer trust, refers to the level of confidence of a customer. This level can vary depending on the security system. The system should guarantee the users' information to be protected, not to be stolen. A high level of trust also ensures that personal information will not be misused, and all parties will act according to the agreement. Reputation and previous experience with the merchant are also another argument of the trust. A good reputation or positive experience will definitely increase trust and vice versa (Egger, 2003). Customer trust can be increased by the two dimensions; trust in the payment system provider and trust in the technology used that the merchant is providing via a web or mobile application.

Reliability

A reliable payment system depends on the infrastructure of e-commerce and the payment system. Uptime of the website is essential for reliability. It is also important for the merchant to provide an easy to use and well secured payment system to the customer. A user would not be happy to have a bad experience such as losing money due to a system crash (Asokan et al., 1997). Also, payment system would be expected to handle some threats, such as attacks from hackers. The payment service should quickly be restored if any failure occurs in the system. That can be done by a high-quality devops and security operations.

Convertibility

Modern banks and payment gateways provide users to make multi-currency payments. This is very important for the e-commerce websites which provide goods and service internationally. Also, customers can choose different payment systems according to their personal needs. It is also possible for each user to use different payment systems at the same time. To Neuman and Medvinsky, (1995), the electronic money in a payment system should be easily converted regarding the needs of the customer or the system that the merchant has. Conversion should be made without any limits. As Abrazhevich (2004) suggests, the multi-currency characteristic is considered as part of the convertibility.

Usability

Modern e-commerce systems provide users to save their payment information for their later purchases. This allows customers to make their payments with a free of effort as Davis (1989) suggested. According to Neuman and Medvinsky (1995), users should not be disturbed to provide payment information in each purchase. Payment process should be carried out automatically. That means the payment system should be user-friendly and easy to use. If not, the customers will probably not prefer to use it once more.

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Interoperability

Interoperability relies on inter-development of the payment system. It is also important to work together with an efficient integration between the different solutions. An interoperable system could get a customer base more quickly, which is required for the development in the future with a higher adoption rate. Because the users are already familiar with that kind of payment systems they make payments without any hesitation.

Scalability

For an e-commerce website, the primary aim is to increase their customer number. That means the payment infrastructure must also be able to answer the increasing number of new customers. Researches show that slow payment systems make the customers cancel the purchase and leave the website. Fort hat reason, payment systems should work successfully without having any problems. It is also important to serve with high uptime and a good quality of service, even when there are huge numbers of users (Medvinsky & Neuman, 1993; Neuman & Medvinsky, 1995).

Efficiency

Efficiency is important for SMBs due to the characteristic of their payment model. Generally, SMBs need for micropayments and small payments. According to Hauser et al. (1996), a payment system must be able to process small payments and micropayments without any performance problems and high costs.

Applicability

The payment system should be applicable to the e-commerce system. The e-commerce system can be a free or commercial solution. Regardless of the technology used for the e-commerce solution, the payment system should be integrated easily and work properly. Applicability is also important for the customers. They most probably will prefer making payments via debit and credit cards. That means, the payment system should have a very high level of applicability for that payment systems.

Assessment of E-Payment Systems

There are four aspects to consider in assessing e-payment systems that are; technological, economic, social, and regulatory.[2] In assessing the technological aspect of a payment system, it would be accurate to consider efficiency and security of transactions, the system's expandability, and compatibility with other payment methods as well as user-friendliness. There are requirements to fulfill for companies to ensure security. These requirements include privacy, authenticity, integrity, and non-repudiation. Privacy requirement is related to anonymity protection of customers during transactions and the prevention of unauthorized parties from accessing customer information. Authenticity refers to verification of identities involved in transactions in order to prevent unauthorized access to information. Integrity requirement deals with prevention of data tampering during transactions while non-repudiation requirement is to prevent denial of commitments made during transactions. Thus, it is important to record and verify details of transactions. Economical feasibility is an important factor in terms of designing, building,

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maintaining e-payment systems. Economical feasibility depends on widespread use by customers. The Economic needs of e-payment systems include transaction costs, atomic exchange, accessibility, value mobility, and financial risk. Direct and indirect costs involved in a transaction as well as fixed costs should be considered in e-payment systems. Additionally, whether a system is widely accessible or not is another consideration.

In addition to economical and technical aspects, electronic payment systems should also consider the requirements of social aspects which include anonymity, user-friendliness, mobility, and regulations. An e-payment system should ensure its customers of protection of anonymity which is a critical factor. Also, user friendly and mobile systems would be more likely to be preferred by customers. Customers prefer systems that are easy to use and that can be used from anywhere. Regarding regulations, e-payment systems should ensure to follow government regulations of the country where e-commerce activities take place. These regulations include but are not limited to digital signatures, customs and taxation, international agreements, etc.

Categories of E-Payment System E-payment is and sub-category of an e-commerce transaction which encompasses e-payment for buying and selling goods or services through the Internet. Although there are many other types of e-payment options are available[3], we generally assume that e-payments are online transactions on the Internet (Premchand & Choudry, 2015). Payments methods according to the systems mentioned are given in Table 2.

Table 2. Payment Methods[4]

Online Payment	The payment method is initiated by a user who has an access to the Internet.
Offline payment	The offline payment method is a method which mail/phone order or sales points or any other offline methods are used.
Mobile Payment	The mobile payment method is method which can be done via using the customer's cell phone or any other device's data function.

Source. İGEME (2009)

Some of these systems are discussed in the following section.[5] Although the related literature which is used in e-commerce payment methods is quite similar, there are different classificiations. Please see the other classifications in Premchand and Choudhry (2015), TÜSİAD (2014), Hidayanto et al. (2015), Yang (2017), Turban et al. (2018). The other global e-payment options are Cash-On-Delivery, Electronic Cheque, Credit Cards, Debit Card, Virtual Card, Mobile Payment, Electronic wallets and cryptocurrency.[6] The mentioned payment methods will be explained here:

Cash-On-Delivery

Cash-on-delivery system, which gives clients the opportunity to make payment at the door to the courier company, both supports e-trade and promotes online-sales by adopting conventional payment habits to technology. Cash-on-delivery is a payment system that does not need any integration. Cash-on-delivery can be used in payment by in cash or by credit card. Its advantage is that you do not have to reveal your

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financial information like debit card, credit card or account information to the seller and payment is occurred upon delivery. Another advantage is that it rules out the dependency on credit or other payment cards.

Cash-on-delivery, which is one of the alternative payment systems that e-trade clients use, comes forward as an application for the undertakings to differentiate themselves from the others in competition. Accordingly, e-trade undertakings create an important opportunity by providing payment options in cash or by credit card for the clients who still continue their old consumption habits.

Electronic Cheque

Electronic cheque (e-cheque) is a payment system for e-commerce websites to accept payments by cheques. E-cheques have been designed for clients who do not want to make payment in cash as a virtual equivalent of cheques used in real life. There is no difference between e-cheques and paper cheques (Oney et al., p. 397). As different from the paper cheques, a digital signature is used on the e-cheques. A Digital signature is an encryption system on a network, which has been created for security purposes in transactions that are not done face to face. In the e-cheque system, payments are made by entering only necessary bank account data to the e-commerce website. In other words, the user makes the payment by making out a cheque to the e-trade web site. Although it is an easy system, its use is not as widespread as the other mechanisms. For its more extensive use, it should be accepted by the financial sector.

In e-cheque system, there is a promise to buy a good with declaring a reason. Since the amount is fixed, there will be no transfer of any extra payment other than the fixed amount and if it is understood that the service will not be provided or badly done there is right to withdraw without making any payment. Therefore, it is a secure way for payment in e-commerce.

Credit Cards

Credit card systems are preferred more often than other e-commerce payment tools because they provide users several financial advantages such as insurance, bonuses, installment and security. While credit cards provide added value to customers, they incentivize businesses to meet the standards and reduce transaction costs through automated accounting.[7]

In addition to having a legal infrastructure that is standardized in the world and high security, credit cards are easy to use (Khan et al., 2017). The customer would only need to enter the credit card number and the expiration data on the website of the merchant. In order to improve security systems, several practices such as using card verification number (CVN) are implemented in online credit card payments. The CVN system helps identify fraud by comparing the CVN number with the information of the cardholder.[8]

When a customer makes a purchase with a credit card, the card issuer bank makes the payment on behalf of the customer which would allow the customer to have a time frame in which he can make the payment for the credit card. The actors involved in a credit card system are as follows:

Card holder – Customer **Merchant** – product seller who accepts credit card payments **Card issuer bank** – card holder's bank **Acquirer bank** – merchant's bank **Card brand** – such as Visa or Mastercard

Some of the companies that export and issue license of use credit card and card systems worldwide include Mastercard, Visa, American Express, Discover and JCB.

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Debit Card

Debit card is also known as a bank card (Oney, 2017, p. 397) and it's a payment tool used in e-commerce and several transactions. It is one of the most popular payment methods without using cash (Kim et al., 2010). As this card does not provide a credit option for cardholders, it's not considered as a credit card. Debit card, in this context, is a card without credit card characteristics that allows the owner to withdraw and deposit money to checkings account. Debit card holders can withdraw money from ATMs of the bank they have an account with for 24/7 and make purchases through POS machines. During shopping, the amount of purchase is withdrawn from the cardholder's checking account and transferred to the merchant's bank account. Bank cards can be used as credit cards in payments made online. However, as they are not credit cards, the payment takes place as a money transfer from the user's checking account to the merchant's bank account. In comparison to credit cards, debit card costs incurred are lower which allows them to be used for micropayments. Additionally, the level of security of debit cards is higher than credit cards as the required identification processes demanded by banks are more rigorous (Khan et al., 2017). There are two kinds of debit cards that are; online and offline debit cards.

Virtual Card

Virtual card, as the name suggests, is a virtual product to reduce the risks of online shopping. This card that does not have a physical form but has digital information of the card user's bank account. Virtual card has a different card number and pin number from the physical card (Çakırer, 2013, p. 153).

Virtual card practices are provided by banks in Turkey. Banks issue virtual card or virtual credit cards with multiple functions to provide a safe environment for commercial activities, and to incentivize e-commerce customers. The most important aspect of virtual credit cards is that it is a card type that can onlu be used for online shopping within the limits the card owner determines via internet banking and that it can't be used in pos devices in stores. These cards are not printed as other cards and transactions are made only through the number determined by the bank (Zerenler, 2013, p. 103).

Mobile Payment

Online payments made through cell phones in e-commerce are called mobile payments. This method of payment is easy to use and in this method a payment request is sent to service provider via text instead of credit card use or cash payments. Prior to each online purchase, the mobile user authorizes the payment and the purchase amount is reflected on the user's phone bill. Consumers who have pre-paid phones make their payments through their balance on their phone.

There are several methods for using mobile payment services. While most of these methods use advanced technologies, some methods are considered as processes used through current technologies. The "new field communication" (NFC) method, one of the newer mobile payment methods, is designed with a focus on mobile payment solely. Several other mobile payment methods are performed through mobile networks and use traditional communication models such as SMS.

This method which is being used for the past few years in online purchases provides a possibility for payments to be made from anywhere which is a reason for being considered as advantageous and preferred. Also, mobile payment can not only be used in online shopping but also in stores. Mobile payment systems are safe payment systems as they make payments possible by using customers' cell phone num-

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bers without sharing any card information or making cash payments. The concept of m-money emerged with mobile payment and it aims to replace cash for small transactions and removes disadvantages for cash use such as getting stolen or lost, or storing, etc.

Although there have been developments in current mobile payments during the past few years, payments are supported with SMS or e-mail with the 3D-secure system in terms of security. Along with payment models that center around banks in which mobile network service servers have the responsibility for secure communication, there are payment models that mobile network servers take on a bigger role. With the number increase in smartphone owners, the number of applications related to mobile payment services continue to increase. The number of mobile payment system users continue to increase worldwide. A study conducted by Gartner company showed that the number of mobile payment system users worldwide would be 200 million by 2012. This number increased to 245 million in the year 2013 and is expected to increase to 450 million by 2017 (McDermott, 2015, p. 6-7).

Mobile payments today are mostly used in the continents of Asia and Africa. Mobile applications that started with money transfer and mobile trade are being improved with applications that include invoices and pre-paid bank cards. Cell phones are not only communication devices anymore but also a small computer that's carried all the time. Today, all banking and payment transactions can be performed via cell phones. (Please see the other explanations of mobile payments; Bezhovski (2016); Kim, Mirsobit, and Lee (2010); Cabanillas and Rubio (2017).

Electronic Wallets

Electronic wallets are also referred to as digital wallets and provide the opportunity to store more than one credit cards, bank cards, and bank account numbers in a secure environment. Electronic wallets contain bank card numbers, electronic money, the owner's identity and communication information similar to an actual wallet. This removes the need to enter account information in every payment. Thus, entering card information to digital wallets one time and choosing the option of paying with e-wallet is sufficient rather than entering card information in every online purchase. Once the electronic wallet profile is created and saved, payments are made faster.

Electronic wallets are convenient for those who prefer to pay with a credit card Electronic wallets that make e-commerce faster and more practical are preferred mostly by consumers at the young age group. The number of e-wallet users increase in direct proportion with the number of e-commerce users which indicates that the digital wallet use will become even more frequent in the future. Amazon Pay, Google Pay, Apple Pay, Ali Pay, ByoWallet are among e-wallet providers that are mostly seen in international e-commerce activities.

Cryptocurrency

Cryptocurrency is a type of currency that draws on the cryptography science (Gandal & Halaburda, 2014). Cryptography is used in controling the processes of securing purchasing, selling, and payment activities as well as creating new currencies. Cryptocurrency (digital money) can be used both as an investment tool and as an alternative payment method which creates new opportunities for e-commerce companies. With its decentralized structure, it has characteristics such as being independent, low-cost, and fast transfer which attract more and more attention from users. Therefore, cryptocurrency is becoming a popular currency and a payment method. However, it is frequently mentioned that cryptocurrencies

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are still in the early adaptation phase which is why waiting for the industry to mature and technology to improve are recommended often. Despite different views, the number of companies accepting cryptocurrency in online payments is increasing every day.[9] Thus, the likelihood of cryptocurrency being a common payment method in e-commerce is very high.

Cryptocurrency was first introduced in 2009 through bitcoin which is positioned on a non-central architecture and it became a popular payment method in commerce with over 2000 types. Cryptocurrency is a kind of virtual money. The database algorythms that underlie the concept of cyrptocurrency and that are very different from traditional methods have been accepted. Banking sector has already started working on transitioning to this data base system. Commerce of a product occurs through transferring money from a digital wallet to another through electronic codes by eliminating mediators such as visa/mastercard and related commissions or costs. Within the frame of all these developments, the very first example of cryptocurrency application in the world is Bitcoin[4] and it's the most known cryptocurrency in the world.

The blockchain technology that provides high security due to cryptography method paved the way for cryptobased payment and money transfer as[10] well. Additionally, as cryptocurrency are not dependent on a central authority or an intermediary, it allows shopping to occur between the seller and the buyer only and thus, a faster payment. Within this context, unlike the slow speed of current payment methods and high costs, crypto payment methods provide a faster and less expensive way[11] for global payment activities. Despite the high potential and advantages it has, there are some negative aspects of cryptocurrency such as high price volatility, requirement of additional installment in order to accept crypto payments, and transactions in cryptocurrency being irreversible. Thus, it is important to be careful when making transactions and not saving personal information. Also, it should be known that legal infrastructure is not completed yet. Bitcoin constitutes 54% of the 220 billion dollar-cryptocurrency market.

In 110 countries out of 251, Bitcoin purchase/sales is free.[12] In the case of Bitcoin, the total currency units that can be in the market are limited to 21 million units (Ron & Shamir, 2013). From this aspect, it can be used in more than hundred countries as a payment method. Also, there are crypto payment gateways that allow the use, collection, and saving of several cryptocurrencies such as CoinPayments, PayCoiner. BitPAy, PumaPay, and Coingate.

Van Alstyne (2014) stated that the technical aspects of Bitcoin include that it can be used by its owner and one-time, the transaction fees are almost zero, that it is accepted as a payment method due to its success in identifying fraud with its open-access activity history. Additionally, the first day it was open by an online shopping portal, 125.000 USD-worth of transactions made. Churilov (2015) discusses the advantages and disadvantages of Bitcoin as a payment method, and its validity and taxation in international legal corporates. According to Churilov, Bitcoin is a currency unit that is immature and has high volatility. Thus, he warned companies using Bitcoin to be careful due to security problems and uncertainty in its legal status. Angel ve McCabe (2015) approached this from an ethical perspective and discussed the imbalance of power between the payer and the receiver. Within this context, they examined if reinforcement of Bitcoin as a payment method would be considered as misuse ethically and concluded that a potential misuse would not stem from the nature of Bitcoin.

Online Payment Gateway Model

Today's e-commerce world is less challenging then before. In the previous times of e-commerce, merchants have had to provide virtual POS services from each local banks of the base country. Now, there

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is a new and –relatively- better solution: Online Payment Gateways.This model is a service that sends credit card information from a website to credit card payment network to be processed and then sending transaction details and responses back to the website. If credit card payments are accepted online device, businesses need a payment network channel. This can be considered as the safe technology bridging for the customer and the business. In today's world where online shopping is popular, the use of online payments provides several advantages to both merchants and clients (customers). Online transactions are performed through a payment gateway during the process. Practically, payment gateways serve as a link between financial organizations and merchants' website. There are several factors involved in online payment processes during selling or purchasing products. Electronic Payment Gateway is fundamental for online transactions and they ensure reliable and safe exchange. An E-Commerce Payment Gateway is a part of infrastructure guaranteeing exchanges happen without any problems and electronic system security is maintained. A Payment Gateway is a point of access to national banking systems. Every online exchange takes place through a Payment Gateway which routes and confirms payment details securely between related banks and parties. Payment Gateway serves as an "encoded/encrypted" channel that sends transaction details from customers' online devices to banks for the purposes of authentication and countersignature. Once the approval is obtained, the Payment Gateway sends the data back to the merchant, completes the "order", and provides information of the payment process (Khan et al., 2017; Masihuddin et al., 2017). Stripe, Amazon Payments, Braintree, Authorize.Net, WePay, BlueSnap, Skrill, PayU, Dwolla, PaySimple, Paddle, PayPal, Payoneer, Yandex Checkout are among popular International Payment Gateways.[13]

FACTS AND TRENDS

Non-Cash Transaction

While the purchase of goods and services with cash payment is a traditional payment system reaching from past to present, e-payment systems have become a commonly used and preferred method instead of cash payment today. As a result of the evolvement of economies and commerce into a non-cash structure, e-payment systems instead of physical money come to the forefront in the commerce forms of the future. With the use of the internet, the system of payments has varied starting from the end of 1990s and although there was only one option as credit card before 1990, many payment systems are used today, and many payment systems are in the development process.

Within the context of our subject, the facts and trends regarding the usage density of domestic and foreign e-payment tools and systems are among the important issues to take into consideration for estimating the use of non-cash e-payment tools that are alternative to both cash and each other, healthy investment in terms of central banks, which are the determinants of monetary policies, as well as consumers and companies constituting the production and consumption side of goods and services in addition to making appropriate preferences.

According to World Payment Report (2018), during 2015-2016 global non-cash transaction volumes grew at 10.1% to reach 482.6 billion. Two regions fueled this growth: Emerging Asia (with 25.2% growth) and CEMEA(17.1%). Overall, the developing markets of Emercing Asia, CEMEA and Latin America recorded accelerated growth rate of 16.5% in 2016, driven by financial inclusion efforts and the adoption of mobile payments. It needs to be noted that overall volume of non-cash transactions grew significantly

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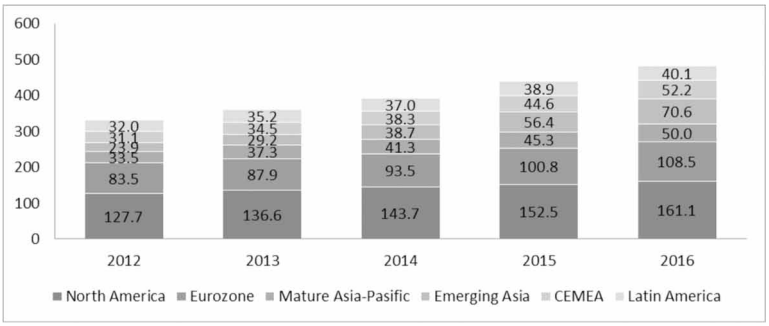
as shown below. All industry stakeholders will have to adopt e-payments and mobile payments channels as these channels are continuously driving growth of non-cash transactions. Following figure shows the Global number of non-cash transactions between 2012 and 2016 (Figure 5). As per World Payments Report 2018, by 2021, there will be a major shift in payments industry - banks may not be at the centre of payment governance. Non-bank organizations and retailers will be encouraged more to participate in the payment chain. Total number of non-cash transactions are predicted to touch 876 billion by 2021.

Figure 5. Non-Cash Transaction By Region (Billions Dollars)
Source. World Payments Report (2018), CEMEA (Cenral Europe, Middle East, Africa)



In the North America and Europe, payments market is dominating, however, in the following years it is possible for this situation to change since developing markets share can be half of total non-cash transactions by 2021. Key areas where changes are estimated to go on will undergo some fragmentations and consolidations. Consumer protection will be provided with more anti-fraud measures. Some data policies could be applied, and it could affect this process. Such new currencies as reward points, mobile air time and digital currencies (bitcoin) can make a change in the way in which the payments are being made. There can be used some identification methods in other industries to protect the consumers. These methods can affect banks, payment processors and retailers.

The realization of noncash payments in Turkey show parallelism to developments in the world. The most preferred payment method in 2015 and 2017 was credit card with 61% and 68%, respectively. The decrease in cash payments and the increase in using credit card as payment method show parallelism. While the use of cash payment method was 35% in 2015, it decreased to 27% in 2017. Additionally, considering the fact that there are over 20 million consumers without a bank account or credit cards, and that the percentage of individuals considering getting a credit card increased from 11% in 2015 to 37% in 2017, it can be predicted that noncash payments will increase in economic activities and e-commerce. For details on the advantages and disadvantages of transitioning to non-cash economy in Turkey, you can refer to Elgin, Erzan & Kuzubas (2013) and BKM (2017). Within this context, compatibility should be established related to systems with credit card and other methods of payment in Europe and Asia as the first step in transitioning to a noncash society.[14]

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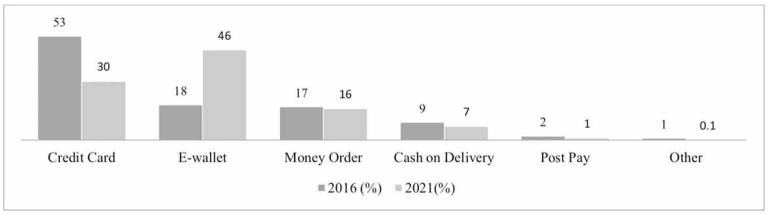
E-Payments

As economies grow and globalize, the need for non-cash payment tools has increased. For example, while paper-based payment tools such as checks were initially used, the difficulties brought by the incredible increase in the number and amount of transactions in the international payments and the opportunities offered by the technology in these areas have expanded the use of e-payment tools. In parallel with the aforementioned developments, national and international payment systems and tools alternative to each other have been developed in many countries and are still being developed. In this context, the use of alternative e-payment methods, which both replace cash and increase its efficiency by relieving the use of e-commerce, has become widespread in almost every country.

In the context of national and international e-commerce practices, how to use the e-payment technologies and systems as well as which payment tools will be used is the key of performing online purchase and payment. E-payment systems are increasingly used throughout the world in parallel with the developments emerging in the fields of commerce and technology.

The expectations with regard to the development in international e-payment methods for e-commerce could be seen in Figure 6. There are two elements coming forward in Figure 6. First, the expectation for the rise of the share of e-wallet usage, which is one of the outstanding elements of digitalism, in the international e-payment methods from 18% to 46% by 2021; secondly, the expectation for the fall of the share of credit card, bonus card and pre-pay cards usage from 53% to 30% in the international e-payment methods. Consequently, although the payment method has been changed, the goods which are being paid have not changed. Accordingly, the share of international e-payment methods by cards and e-wallet is expected to rise from 71% to 76% by 2021. It is because that the infrastructure of these payments is very appropriate for e-commerce. In this sense, the share of payment by cards is expected to be higher in the future.

Figure 6. E-Payment Methods (%)
Source. Global Payments Report (2017).



In Turkey, 85% of payments are made by cards. It is very remarkable, as the share of payments made by card in the world is 71% today. Therefore, the card ownership rate is quite high in Turkey and the rise in the use of e-wallet could be expected as a result of change in composition or other payment tools special to Turkey might come forward. The facts regarding e-payment in Turkey are shown in Figure 7. Since credit card is mainly preferred for purchasing in e-commerce in Turkey, the development of the e-payment systems that will provide secure shopping and easy payment is very important for the growth of the sector.

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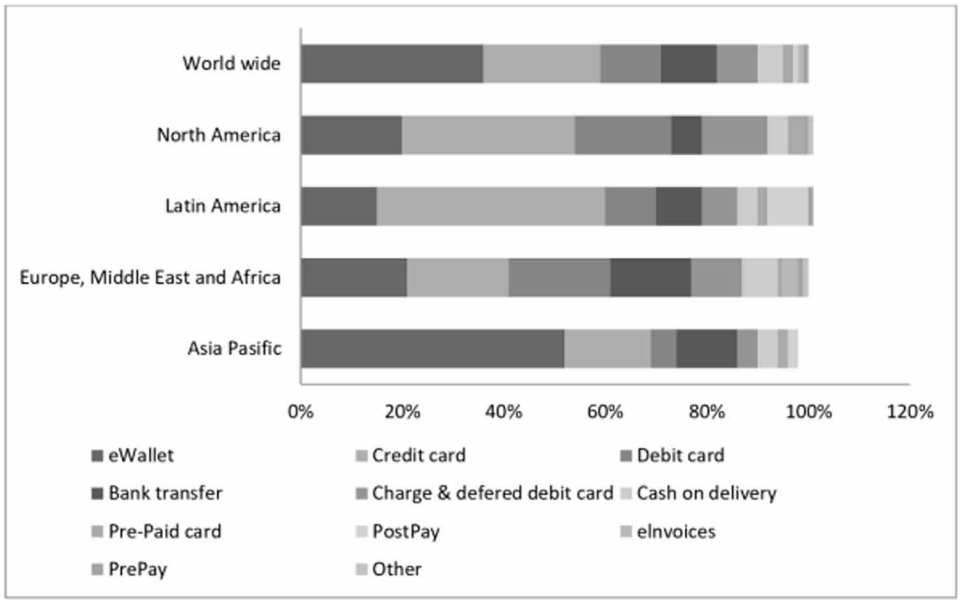
Figure 7. E-Payment Methods in Turkey (%)
Source. Global Payments Report (2017).

In the near future, the retail sector and thus e-commerce will have to undergo a significant transformation in the countries where alternative e-payment systems cannot be commonly used today but seen as an important opportunity. In this sense, it will be inevitable for socities to direct to alternative e-payment methods rather than the use of cash.

If the companies, which want to carry out e-commerce activities in different places of the world, have infrastructure supporting as many payment methods as possible, they will gain many advantages and in this way, they will optimize their online incomes thanks to the ability of making the transaction process as easy as possible for their customers. Figure 8 given below details the e-payment systems used in e-commerce according to the geographical regions in the world. Although many alternative e-payment methods frequently mentioned in the recent period show a great increase in every period compared to the previous period, their shares in the total composition are extremely low.

Figure 8. Preferred E-Payment Methods for E-Commerce (2018,%)
Source. Statista, https://www.statista.com/statistics/348004/payment-method-usage-worldwide/



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SOLUTIONS AND RECOMMENDATIONS

It is not possible to state that e-payment systems are the same in all continents or countries. Some of the important reasons for this include the demographic characteristics, the degree of financial literacy, the infrastructure provided by the financial system, the advantages and disadvantages of e-payments, the level of income of consumers and the extensity of e-commerce use. Therefore, it is a very natural situation that the e-payment methods preferred by consumers are different. In this context, having various e-payment options suitable for customers is crucial for companies in terms of not being devoid of important operations. Since the growth in global e-commerce significantly results from cross-border e-commerce, every company in e-commerce should aim at certain alternative payment systems and tools, which are popular in different countries or regions, for alternative e-payments. As e-commerce becomes widespread and develops, even the solutions that are seen as optimal today may not be permanent since e-payments will vary. Not integrating appropriate e-payment systems will cause companies to encounter problems in every field. The way of turning the problem into an advantage is to provide e-payment methods appropriate for customers.

FUTURE RESEARCH DIRECTIONS

With the rise of Industry 4.0, the concepts such as robots, artificial intelligence and artificial neural networks have started to be increasingly used in the production and sales process of goods and services. These developments will inevitably affect all sectors. The e-commerce sector will have the opportunity of using the big data constantly increasing in the digitalized world more effectively by benefitting from the artificial intelligence. Thanks to the artificial intelligence, e-commerce websites will be able to offer products special to the users who do shopping, make a voice call, their payment systems will be simpler and more user-friendly and there will be a more refined functioning logistically. The semantic web technologies of the past will give place to the web applications having artificial intelligence and with the use of developments such as artificial intelligence in e-commerce, significant returns will be achieved in terms of efficiency. This means that in the e-commerce of the future, more intelligent and self-learning shopping systems will be active thanks to machine learning. As a result, the involvement of Industry 4.0 and artificial intelligence, one of the basic elements of it, in e-commerce activities can affect many technological, economic and legal factors, it is important to conduct more studies on the field.

CONCLUSION

With the increasing interest in e-commerce, companies have started to look for alternative e-payment systems for themselves. In addition to this need, the widespread use of smart devices and Internet has diversified e-payment systems and extended them to a wide range and the use of alternative e-payment systems has become widespread in every country. The widespread of e-payment systems has increasingly caused economies to evolve into a non-cash structure. Considering the expectation that global e-commerce volume will reach 4 trillion dollars in 2020, the changes that will occur in e-payment systems, which are the most important elements for the healthy functioning of millions of online payment transactions to be made today and in the future, will affect the development of e-commerce directly. While having national

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and international different payment alternatives enables companies to reach more consumers from different sectors/geographies, it will also increase the chance of being preferred by the potential customers due to payment diversity. In this context, the relation between e-commerce companies and consumers enhances thanks to offering different payment alternatives. Today, many different e-payment methods such as payment with card, e-wallet, mobile payment, cryptocurrency etc. are offered by companies when purchase-sale is performed with e-commerce. Consumers' preference regarding alternative payment systems inland and abroad varies depending on many factors such as income level, demographic characteristics and financial literacy. While credit cards and debit cards are commonly used among the alternative e-payment tools, the use of e-wallet has outdistanced the use of credit card or they compete head to head in many countries. Mobile payments, which have a very high potential, have shown a significant progress, however, it is not possible for mobile devices to offer an experience similar to the one that consumers experience on WEB. The use of cryptocurrencies as a payment method is not possible today compared to mobile payments. Consequently, considering that the developing technology can change many things in the course of time, the determination of payment preferences is very important for the competitiveness of companies.

REFERENCES

Abrazhevich, D. (2004). *Electronic Payment Systems: A User-Centered Perspective and Interaction Design. Phd D*. Eindhoven: Eindhoven University of Technology.

Alstyne, M. V. (2014). Why Bitcoin Has Value, Association for Computing Machinery, 57(5), 30-32.

Angel, J., & McCabe, D. M. (2014). The Ethics of Payments: Paper, Plastic, or Bitcoin*? SSRN Electronic Journal, 132*(3). Retrieved From https://econpapers.repec.org/article/kapjbuset/v_3a132_ 3ay_3a2015 _3ai_3a3_3ap_3a603-611.htm

Asokan, N., Janson, P., Steiner, M., & Waidner, M. (1997). The State of The Art in Electronic Payment Systems. *Computer*, *30*(9), 28–35. doi:10.1109/2.612244

Bansal, S., Bruno, P., Denecker, O., Goparaju, M., & Niederkorn, M. (2018). *Global Payments 2018: A Dynamic Industry Continues to Break New Ground*. McKinsey&Company. Retrieved From https:// www.mckinsey.com/~/media/McKinsey/Industries/Financial%20Services/Our%20Insights/Global%20 payments%20Expansive%20growth%20targeted%20opportunities/Global-payments-map-2018. ashx.

Bezhovski, Z. (2016). The Future of The Mobile Payment as Electronic Payment System. *European Journal of Business and Management*, *8*(8), 127–133.

BKM. (2017). *Cashless Turkey by 2023*. Retrieved From https://www.burnmark.com/ uploads/reports/ Burnmark_Report_BKM_Turkey1.pdf

Cabanillas, F. L., & Rubio, J. L. (2017). Predictive and Explanatory Modelling Regarding Adoption of Mobile Patment Systems. *Technological Forecasting and Social Change*, *120*, 32–40. doi:10.1016/j. techfore.2017.04.002

Çakırer, M. A. (2013). *Elektronik Ticaret*. Bursa: Ekin Yayınları.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Churilov, A. (2015). *Practical Aspects of Bitcoin Usage in Business,* Retrieved From https://ssrn.com/abstract=2685646 or doi:10.2139srn.2685646

Coingape. (2018). *Jap based Yamada Denki Now Accepts Bitcoin Payments.* Retrieved From fhttps://coingape.com/japan-based-yamada-denki-now-accepts-bitcoin-payments/

Consuegra, R. A. A., & Garcia, M. A. Z. (2013). *A Study of Electronic Payments in B2C Ecommerce, Master of Science in Management Engineering*. Milano: Politecnico.

Criteo. (2015). *Criteo E-Commerce Industry Outlook 2015*, Retrieved From http://mobint.com.br/Downloads/criteo-ecommerce-industry-outlook-2015.pdf

Dapplife. (2019). *Switzerland's E-Commerce Giant Digitec Galaxus Accepts Bitcoin Payments.* Retrieved From https://dapplife.com/switzerlands-ecommerce-giant-digitec-galaxus-accepts-bitcoin-payments/

Davis, F. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *Management Information Systems Quarterly*, *13*(3), 319–340. doi:10.2307/249008

Egger, F. (2003). From Interactions to Transactions: Designing the Trust Experience for BusinessTo-Consumer Electronic Commerce, PhD thesis, *Eindhoven University of Technology*, The Netherlands.

Elgin, C., Erzan, R., & Kuzubaş, U. (2013). *Türkiye' de Nakit ve Kart Ödemelerinin Karşılaştırmalı Maliyeti*. Boğaziçi Üniversitesi Ekonomi ve Ekonometri Merkezi.

Ersoy, N. F. (2002). Finansal Hizmetlerde Müşteri İlişkileri Yönetimi (CRM) Kavramı. Pazarlama Dünyası Dergisi, Sayı:2002-03, İstanbul.

Fatonah, S., Yulandari, A., & Wibowo, F. W. (2018). A Review of E-Payment System in E-Commerce, IOP Conf. Series. *Journal of Physics: Conference Series*, *1140*, 012033. doi:10.1088/1742-6596/1140/1/012033

Finnegan, P., Kilmartin, J.(2002). Electronic Payment Systems: An Empirical Investigation of Customer and Merchant Requirements, *Managing Business with Electronic Commerce: Issues and Trends*, 151-166.

Gandal, N., & Hałaburda, H. (2014). Competition in the Cryptocurrency Market, *Bank of Canada Working Paper* 2014-33 August 2014, Retrieved From https://www.bankofcanada.ca/wp-content/uploads/2014/08/wp2014-33.pdf

Gupta, S., & Johari, R. (2011). A New Framework For Credit Card Transactions Involving Mutual Authentication Between Cardholder and Merchant, Proceedings of The CSNT. *11: International Conference On Communication Systems and Network Technologies*, 22–26.

Hanzaee, K. H., & Alinejad, S. (2012). An Investigation About Customers Perceptions of Security and Trust In E-Payment Systems Among Iranian Online Consumers. *Journal of Basic and Applied Scientific Research*, *2*(2), 1575–1581.

Harris, H., Guru, B. K., & Avvari, M. V. (2011). Evidence of Firms Perceptions Toward Electronic Payment Systems (EPS) in Malaysia. *International Journal of Business and Information*, *6*(2), 226–245.

Harrop, P. (1989). New Electronics For Payments, *IEE Review, IX*, 35-45. Retrieved From https://ieeexplore.ieee.org/xpl/tocresult.jsp?isnumber=5642&punumber=2188

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hauser, R., Steiner, M., & Waidner, M. (1996), *Micro-Payments Based on IKP, Technical Report 2791* (#89269) [online] http://www.researchgate.net/publication/2669783_Micro-Payments_ based_on_iKP/file/79e41507d2ec8a3a97.pdf (accessed 3 April 2013).

Hidayanto, A. N., Hidayat, L. S., Sandhyaduhita, P. I., & Handayani, P. W. (2015). Examinin the Relations of Payment System Characteristics and Behavioual Intention in E-payment Adoption: A Case of Indonesia. *International Journal of Business Information Systems*, *19*(1), 58. doi:10.1504/IJBIS.2015.069065

İGEME. (2009). *Yurtdışına E-Ticaret*. Ankara.

Information Technology Faculty. (2016). *The Future of Payment*, Retrieved From https://www.icaew.com/-/media/corporate/files/technical/information-technology/technology/185-the-future-of-payments.ashx

Kaur, K., Pathak, A. (2015). E-Payment System on E-Commerce in India, *Karamjeet Kau Int. Journal of Engineering Research and Alications*, 5(2-part1) 79-87.

Khan, B. I., Olanrewaju, R. F., Baba, A. M., Langoo, A. A., Assad, S. (2017). A Compendious Study of Online Payment Systems: Past Developments, Present Impact, and Future Considerations, *(IJACSA) International Journal of Advanced Computer Science and Applications*, Vol. 8, No. 5.

Kim, C., Mirsobit, M., & Lee, I. (2010). An Empirical Examination of Facctors Influencing the Intention to Use Mobile Payment. *Computers in Human Behavior*, *26*(3), 310–322. doi:10.1016/j.chb.2009.10.013

Kim, C., Tao, W., Shin, N., & Kim, K. S. (2010). An Empirical Study of Customers Perceptions of Security and Trust in E-Payment Systems. *Electronic Commerce Research and Applications*, *9*(1), 84–95. doi:10.1016/j.elerap.2009.04.014

Lee, Z. Y., Yu, H. C., & Kuo, P. J. (2001). An Analysis and Comparison of Differen Types of Electronic Payment Systems, *Portland Int. Conference on*, IEEE., 38-45.

Linck, K., Pousttchi, K., & Wiedemann, D. G. (2010). Security Issues in Mobile Payment From The Customer Viewpoint In: Ljungberg, J. (Hrsg.). *Proceedings of the 14th European Conference on Information Systems (ECIS 2006)*. Göteborg, Schweden 2006, S.1-11.

Low, S., Paul, S., & Maxemchuk, N. (1994). Anonymous Credit Cards, *Proceedings of The 2nd ACM Conference on Computer and Communications Security*. 108–117.

Manzoor, A. (2010). *E-Commerce an Introduction*. Lawbert Academic Publishing USA.

Masihuddin, M., Khan, B.U.I., Mattoo, M. M. I., & Olanrewaju, R. (2017). A Survey on E-Payment Systems: Elements, Adoption, Architecture, Challenges and Security Concepts. *Indian Journal of Science and Technology*, *10*(20), 1-19.

McDermott, K. (2015). The Mobile Payments Revolution, *Payvision BV,* Retrieved From http://boletines.prisadigital.com/The-mobile-payments-revolution-2015.pdf

Medvinsky, G., & Neuman, B. C. (1993). Netcash: a Design for Practical Electronic Currency on the Internet, *Proceedings of the 1st ACM Conference on Computer and Communications Security*, *pp.* 102–106. 10.1145/168588.168601

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Meral, Y. (2018). Documentary Risk in International Trade. In Strategic Design and Innovative Thinking in Business Operations. 413-431, Springer, Cham.

Miva. (2011) *The History of Ecommerce: How Did it All Begin.* Retrieved From https://www.miva.com/blog/the-history-of-ecommerce-how-did-it-all-begin/

Neuman, B. C., & Medvinsky, G. (1995). Requirements for Network Payment: Tthe Netcheque Perspective, *Proceedings of IEEE COMPCON'*95. 10.1109/CMPCON.1995.512360

OECD. (2006). *Online Payment Systems for E-commerce*, OECD Digital Economy Papers, No:117.

Öney, E., Öksüzoğlu, G. G., & Rizvi, W. H. (2017). The Determinants of Electronic Payment Systems Usage From Consumers' perspective. *Economic Research Journal*, *30*(1), 394–415.

Premchand, A., & Choudhry, A. (2015). Future of Payments – *E-Payments,* International Journal of Emerging Technology and Advanced Engineering, Website: www.ijetae.com (ISSN 2250-2459, ISO 9001:2008 Certified Journal, Volume 5, Issue 1, January 2015)

Qin, Z. (2009). *Introduction to E-Commerce*. Springer.

Raghuwanshi, S., Pateria, R. K., & Singh, R. P. (2009). *A New Protocol Model for Verification of Payment Order Information Integrity in Online E-Payment System. World Congress on Nature & Biologically Inspired Computing, NABIC 2009*, 1665–1668. 10.1109/NABIC.2009.5393641

Ray, A. (2017). *What are the different types of e-commerce payment systems?* https://services.amazon.in/resources/seller-blog/different-types-of-e-commerce-payment-systems.html

Read, R. J. (1989). *EFTPOS: Electronic Funds Transfer At Point Of Sale, Electronics & Communications Engineering Journal, I, 6* (pp. 17–25). Retrieved From; https://ieeexplore. ieee.org/ document/105349

Report W. P. (2018). Retrieved From https://worldpaymentsreport.com/wp-content/uploads/sites/5/2018/10/World-Payments-Report-2018.pdf

Ron, D., & Shamir, A. (2013). *Quantitative Analysis of the Full Bitcoin Transaction Graph, in Financial Cryptography and Data Security*, 17th International, FC 2013,(Ahmad-Reza Sageghi ed., 2013), Retrieved From https://eprint.iacr.org/2012/584.pdf

Şahbaz, U., Sökmen, A., & Aytaç, A. Türkiye' de E-İhracat: Fırsatlar ve Sorunlar, *Tepav,* 2014, Retrieved From https://www.tepav.org.tr/upload/files/haber/1415973180-5.Turkiyede _E_Ihracat _ Firsatlar_ve_Sorunlar.pdf

Steemit. (2018). *Bitcoin: E-Ticaret İçin 2 Saniyede Kripto Ödeme Çözümü.* Retrieved From https://steemit.com/ethereum/@ioseta/bitcoinus-e-ticaret-icin-2-saniyede-kripto-oedeme-coezuemue

Suberg, W. (2018). South Korea E-Commerce Giant to Add 12 Cryptocurrencies With Bithumb, Cointelligence Research & Analysis For The Crypto Economy. Retrieved from https://www.cointelligence.com/content/south-korea-e-commerce-giant-add-12-cryptocurrencies-bithumb/

Sumanjeet, S. (2009). Emergence of Payment Systems in The Age of Electronic Commerce: The State of Art. *Global Journal of International Business Research*, *2*(2), 17–36.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Tsiakis, T., & Sthephanides, G. (2005). The Concept of Security and Trust in Electronic Payments. *Computers & Security*, *24*(1), 10–15. doi:10.1016/j.cose.2004.11.001

TÜBİSAD. Deloitte, Etid, *Türkiye'de E-Ticaret 2017 Pazar Büyüklüğü,* Mayıs 2018, Retrieved From http://www.tubisad.org.tr/tr/images/pdf/tubisad_2018_e-ticaret_sunum_tr.pdf https://www2. deloitte.com/content/dam/Deloitte/tr/Documents/technology-media-telecommunications/turkiyede-2017-e-ticaret-pazar-buyuklugu.pdf

Turban, E., Whiteside, J., King, D., & Outland, J. (2018). *Electronic Commerce 2018, A Managerial and Social Networks Perspective*. Springer. doi:10.1007/978-3-319-58715-8

TÜSİAD. (2014). *Dijital Pazarın Odak Noktası E-Ticaret: Dünyada ve Türkiye' nin Yeri, Mevcut Durum ve Geleceğe Yönelik Adımlar*, Yayın No: TÜSİAD-T/2014-06/553, İstanbul, Retrieved From https://tusiad.org/tr/yayinlar/raporlar/item/7891-dijital-pazarin-odak-noktasi-e-ticaret-dunyada-turkiyenin-yeri-mevcut-durum-ve-gelecege-yonelik-adimlar-raporu

TÜSİAD. (2017). *Dijitalleşen Dünyada Ekonominin İtici Gücü: E-Ticaret,* Yayın No: TÜSİAD-T/2017, 04-587, İstanbul, Retrieved From https://tusiad.org/tr/yayinlar/raporlar/item/9675-dijitallesen-dunyanin-itici-gucu-e-ticaret

Twentyfy. (2018). Kripto Para Birimleri Algı & Güven Araştırması Türkiye'nin Sanal Cüzdanı, 2018, Retrieved From https://www.twentify.com/hubfs/Turkish_Reports/Twentify_Kripto-Para-Arastirmasi.pdf?hsCtaTracking=9c0%20cee2f-c64d-4d79-80cf-ce5a46cf46c3%7Ca4dbb8fe-29ab-4c7a-b1be-1536d9de794e

Twentyfy. (2018). *Türkiye'de E-ticaret: Çevrimiçi Alışverişte Tüketici Davranışları Araştırması ve Marka Karşılaştırması,* Retrieved From https://www.twentify.com/tr/raporlar/turkiyede-e-ticaret-cevrimici-alisveriste-tuketici-davranislari-arastirmasi-ve-marka-karsilastirmasi

WEF. (2018). *Addressing E-Payment Challenges in Global E-Commerce, White Paper*, Retrieved From http://www3.weforum.org/docs/WEF_Addressing_E-Payment_Challenges_in_Global_E- Commerce _clean.pdf

Wen, X. (2010). An E-Payment System Based on Quantum Group Signature. *Physica Scripta*, *82*(6), 065403. doi:10.1088/0031-8949/82/06/065403

Yang, W. (2017). Analysis On Online Payment Systems of E-Commerce. *Bachelor's Thesis, Business Information Technology Oulu University of Applied Sciences*, Retrieved From https://www.theseus.fi/bitstream/handle/10024/139600/Yang_Wenjing.pdf?sequence=1&isAllowed=y

Zerenler, M. (2013). *Dijital İş Yaşamı: Tüm Boyutlarıyla Elektronik Ticaret*. Ankara: Gazi Kitapevi.

KEY TERMS AND DEFINITIONS

Electronic Commerce: E-commerce is a concept covering the purchase and sales of any good or service by using information technologies, electronic communication channels and other relevant technologies through cyber space. According to a different definition, e-commerce refers to the traditional

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trade which is performed on a web environment or mobile. There is also another definition stating that e-commerce includes purchases-sales whose payment transaction is made through the internet. Contrary to the general view, e-commerce is not only performed through the internet, but also other wide networks as specified above with the term "cyber space".

Electronic Payment System: E-payment system is the means of making payment and/or transaction for goods and services on an e-commerce website or electronic environment without any need to use cash or check. E-payment system is also known as online payment system. It has many forms such as credit card, virtual card, mail order, e-wallet, mobile payment, cryptocurrency, etc.

Payment Gateway: Payment gateway is a system that facilitates payments in a strict sense. In a broad sense, it is a service that securely encypts confidential information regarding credit card, debit card and other electronic payment methods of users giving online order on e-commerce systems, conveys them to the e-commerce manager and to the bank or intermediary institutions from the e-commerce manager in compliance with the related standards (PCI DSS) and enables the processing of online transactions real-timely.

ENDNOTES

1 For risks in international trade see Meral (2018).

2 For more detailed information please see Lee, Yu, Kuo (2001).

3 Please see the comparative analysis regarding the chosen different characteristics of payment system OECD (2006), Consuegra and Garcia (2013), Turban et.al (2018), Sumanjeet (2009).

4 Please see the other features of payments Kaur and Pathak (2015), Masihuddin et.al (2017), Turban et.al (2019-8), Consuegra and Garcia (2013).

5 For more detailed information please see Manzoor (2010), Turban et.al (2018).

6 Please see the studies which are done to identify the preferences in e-payment systems of customers Oney, Oksuzoglu, Rizvi (2017), Kim, Tao, Shin, Kim (2010).

7 For advantages and disadvantages of credit card systems see Finnegan and Kilmartin (2002).

8 https://services.amazon.in/resources/seller-blog/different-types-of-e-commerce-payment-systems.html

9 The largest e-commerce website of South Korea, WeMake Price decided to integrate several cryptocurrency units into their payment system. https://www.cointelligence.com/content/south-korea-e-commerce-giant-add-12-cryptocurrencies-bithumb/.
Bic Camera and Yamada Denki, Japanese electronic retails, started to accept payments with Bitcoin https://coingape.com/japan-based-yamada-denki-now-accepts-bitcoin-payments/
E-commerce retail Digitec Galaxus in Sweden started to accept Bitcoin payments. https://dapplife.com/switzerlands-ecommerce-giant-digitec-galaxus-accepts-bitcoin-payments/.
Today, **Microsoft, CheapAir, Shopify, Bloomberg, Expedia ve Intuit**, accept payments with cryptocurrency.

10 Crypto-based payment methods function with a different logic from credit cards or other online payment systems. Instead of withdrawing money by the receiver upon authorization by card or account holder, money is transferred directly to the receiver. Documentation of each transaction and storage of this documentation across a network increases the safety of records which makes block chain technology a candidate for future payment and money transfer infrastructure.

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[11] For a detailed comparison of alternative payment methods, see https://steemit.com/ethereum/@ioseta/bitcoinus -e-ticaret-icin-2-saniyede-kripto-oedeme-coezuemue

[12] https://www.twentify.com/hubfs/Turkish_Reports/Twentify_Kripto-Para-Arastirmasi.pdf?hsCtaTracking =9c0 cee2f-c64d-4d79-80cf-ce5a46cf46c3%7Ca4dbb8fe-29ab-4c7a-b1be-1536d9de794e

[13] Please find the e-payment companies in developing and emerging economies, WEF (2018), Turban (2018).

[14] For various statistics on Global Payments see Bansal, Bruno, Denecker, Goparaju, Niederkom (2018).

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Chapter 6
Infrastructural Drivers of Online Shopping: An International Perspective

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ABSTRACT

While online shopping expenditures have been increasing in both developed and developing economies, they still account for a small share of total retail sales. Significant differences also exist across countries in the amount of money consumers spend on a per capita basis on online purchases. The authors utilize the conceptual foundations of infrastructural framework to examine the effects of infrastructural drivers on online shopping expenditures in 43 countries. Findings show that per capita telecommunications investments and per capita gross national income are significantly associated with per capita online shopping expenditures. Privacy protection, Internet penetration, and credit card penetration were not significant.

1. INTRODUCTION

The Internet has significantly transformed consumers' shopping experiences by expediting product search, facilitating price comparisons, and reducing transaction costs. Taking advantage of these conveniences, consumers have shifted some of their purchases to the online channel. However, while consumers' preference for the online channel has resulted in increasing online sales, data show that online sales across countries still account for a small share of total retail sales. In the U.S., for example, after more than four decades of the commercial launch of the Internet, e-commerce sales were about 5.8% of total retail sales in 2013, increasing from 5.2% in 2012 (U.S. Census, 2014). And in China, where the compound annual growth rate from 2003 to 2011 was 120%, the highest growth rate in the world, the share of e-commerce sales to total retail sales was only between 5 to 6 percent (McKinsey, 2013).

To explain online shopping activities, existing research has mostly focused on demographic characteristics (Akhter, 2003; Chang and Samuel, 2004) and attitudinal and motivational determinants such as beliefs, risk averseness, norms, intentions, and perceived value (Brashear et al., 2009; George, 2004;

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Lim, 2015). In contrast to the large body of research on demographic and psychological determinants, the literature on infrastructural drivers of online shopping is still in the early phase of development (Travica, 2002; Sheth and Sharma, 2005; Alqahtani et al., 2012). A review of the literature also shows a dearth of empirical studies on the effects of infrastructural drivers on online shopping expenditures across countries.

This study attempts to fill the above-mentioned gaps and contribute to the literature in three significant ways. First, it builds on the infrastructural frameworks developed in existing studies to formulate the hypotheses. Second, it tests the effects of three key infrastructural drivers (telecommunications, financial, and regulatory) on online shopping expenditures across countries. Third, it draws theoretical and strategic implications of the findings, adds to the existing knowledge on infrastructural drivers and online shopping, and guides strategic decision making.

To accomplish the research goals, the rest of the paper is organized into the following four sections. In Section 2, we discuss the theoretical frameworks and, in Section 3, we present the hypotheses. In Section 4, we discuss issues related to the sample and variables and present the results, and, in Section 5, we draw theoretical and managerial implications, discuss the limitations of the study, and suggest questions for future research.

2. THEORETICAL FRAMEWORKS

Existing research has delineated the linkages between infrastructural conditions and online transactions. Travica (2002), for example, conducted a field investigation to determine how infrastructural factors affect the diffusion of e-commerce. Interview and observation data showed that economic, telecommunications, and cultural factors favorably affect the potential for e-commerce. Simon (2004) also identified communication infrastructure and legal and societal factors such as privacy protection as critical success factors for facilitating electronic commerce in developing countries. Das et al. (2014) explored the effects of economic, legal/regulatory, and technological factors on music piracy and found that the primary factors that affect online piracy in a country are its economic status and regulatory status.

Sheth and Sharma (2005) classified countries based on their infrastructural development and proposed that the level of development in telecommunications and legislative bodies would affect e-marketing activities as well as consumer behavior. And Lawrence and Tar (2010) noted that underdeveloped states of telecommunications infrastructure, credit systems, and income would act as barriers to e-commerce activities in developing countries. In a recent report, the Euromonitor also emphasized the importance of developing adequate telecommunications and financial infrastructures to promote online shopping (Euromonitor International, 2012).

In addition to the roles of telecommunications and financial infrastructures, existing research provides meaningful insights into the role of privacy in influencing online shopping. A key conclusion from the current body of research is that while consumers appreciate the convenience of online shopping they remain apprehensive about the threat to privacy it poses. Privacy concern among consumers has been shown to be a significant determinant of online shopping and research shows that it negatively affects online purchases (Dubelaar et al., 2003; Zorotheos and Kafeza, 2009). What, however, is important to note about the privacy literature is that much of the scholarly attention has been applied to understanding the antecedents and consequences of privacy concern and not to examining the effects of the regulatory infrastructure that protects privacy.

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Wirtz et al. (2007, p. 344) have emphasized the importance of examining the differences in the privacy approaches and practices of businesses and governments to "protect consumer privacy" in the different geographical regions of the world. Erbschloe (2001) also identified cross-country differences in privacy regulations as one of the key trends impacting the use of the Internet. Existing literature reveals that although the influence of infrastructural drivers on online shopping has been proposed, not much has been done to test the conceptual linkages empirically. Sheth and Sharma (2005) and, more recently, Das et al (2014), while hypothesizing the effects of infrastructural drivers on online consumer behaviors, recommended that empirical studies should be conducted to test the proposed relations. Markus and Soh (2002) also suggested the importance of focusing on structural factors to explain differences in e-commerce activities across countries.

This study responds to the need for filling the gaps in the literature by examining the effects of three national level infrastructural drivers (telecommunications, financial, and regulatory) on online shopping expenditures in 43 countries. Findings from this study would contribute to our understanding of the effects of national-level infrastructural drivers on online shopping expenditures across countries. Below we present hypotheses related to the effects of regulatory (H1), telecommunications (H2 and H3), and financial (H4 and H5) drivers on online shopping expenditures.

3. HYPOTHESES

Privacy, as a psychological construct, is deeply embedded in the culture of a country. The desire to maintain privacy manifests itself in different types of behavior. In the online environment, for example, privacy concern has been shown to influence risk reduction behaviors (Phelps et al., 2000; Youn, 2009). Wirtz, et al. (2007) found that heightened privacy concern among consumers resulted in their engaging in different forms of risk reductions strategies such as fabricating personal information, using privacy-enhancing technologies, or even refusing to purchase. Besides influencing risk reduction behaviors, privacy concern also affects online transactional behaviors. When privacy concern increases, both the frequency of online transactions and online spending are negatively affected. Zorotheos and Kafeza (2009) found that when consumers were concerned about privacy, they were less likely to transact on websites that required personal information. Dubelaar et al. (2003, p. 70) summarized the linkages between privacy and shopping behavior by noting that the "perceptions of personal information privacy are directly linked to on-line purchasing behavior."

Privacy concern is salient because of the massive amount of personal data that businesses collect to construct consumer profiles and develop marketing strategies. The concern about privacy is exhibited in what consumers want to reveal about themselves and the control they want to exercise over how personal information is acquired and used (Westin, 1967). In a survey, about 92% of the respondents indicated that they worry about their online privacy, while 74% said that they are more concerned about privacy now than they were a year ago (Bachman, 2013). Surveys and polls also show the concern that consumers have about the loss of privacy. In a multinational poll, about 80% of consumers in the United States, 79% in Germany, and 68% in the United Kingdom agreed that consumers have lost control over how companies collect and use personal information (IBM, 1999). In a recent article in *The Wall Street Journal*, 86% of Internet users reported taking steps to remove or mask their digital footprints and 68% of Internet users felt that privacy laws did not adequately protect them (Dwoskin, 2014).

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In light of the concern that consumers have about privacy, many solutions have been proposed to protect privacy, including self-regulation by businesses, development of corporate business and ethical policies, as well as changes to public policy (Caudill and Murphy, 2000). While different proposals have been made to protect privacy, very little empirical work has been done to test their effectiveness (Caudill and Murphy, 2000). The growing concern about the invasion of privacy is also attributed to the lack of legal frameworks to counteract such invasions (Wijnholds and Little, 2001). When robust and adequate privacy protection regulations are in place, consumers would feel less concerned about interacting with a website (Wirtz et al. 2007). It has also been suggested that regulatory actions to protect privacy would be shaped by consumers' concerns within countries (Singh and Hill, 2003). Bellman et al. (2004) noted that the high level of privacy concern is reflected in the enactment of privacy legislations in several countries. It can thus be expected that in countries where privacy protection is enforced stringently, consumers would feel more comfortable in using the Internet for making online purchases. Therefore, the following is proposed.

H1: Higher privacy protection enforcement is associated with higher levels of online shopping expenditures.

An efficient telecommunications infrastructure is essential for the smooth conduct of online shopping activities. Simon (2004, p. 35) noted that a "country's readiness for e-commerce depends on network infrastructure." The underlying foundation of the Internet is technological and, therefore, online shopping expenditures would be high in countries where significant investments in telecommunications infrastructure have been made. Data also show that differences exist among countries in the level of e-commerce sales due to differences in telecommunications infrastructure (Ho et al., 2011). Countries that have invested in telecommunications infrastructure provide their citizens greater opportunities to move from the traditional bricks and mortar businesses to the online markets (Oxley and Yeung, 2001). In a more sophisticated telecommunications environment, consumers would be able to easily log on to the Internet, search for product information, compare price, read reviews, and purchase the product. Therefore, the following is proposed.

H2: Higher investments in telecommunications infrastructure are associated with higher levels of online shopping expenditures.

Consumers need to be able to access the Internet to conduct online transactions. Although the Internet seems ubiquitous, access to this technology is not universal. Significant digital access divide exists at the international level, as the Internet penetration varies widely across the developed and developing economies. Comparatively, Internet penetration rates are higher in the developed economies. Increased access to the Internet enables people to engage in different types of online activities including online shopping. The level of Internet penetration would thus represent the size of the e-commerce market in a country (Ho et al., 2011). Countries with higher Internet penetration rates will thus show higher levels of online shopping. Therefore, the following is proposed.

H3: Higher Internet penetrations are associated with higher levels of online shopping expenditures.

Income provides consumers the financial means to make a purchase. The level of income also influences the perception of the value of time. As income increases, the perceived monetary value of time also

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increases. Thus, people with different levels of income would value the time spent on making a purchase differently. As higher income people would place greater monetary value on time, the opportunity costs of the time spent on the different phases of the purchasing process will be higher for them. They will thus be more inclined to making purchases on the Internet to save time.

Although the purchasing power and opportunity cost arguments suggest a positive link between income and online buying, empirical data on the impact of income on online transactions show mixed results. Patwardhan and Yang (2003) found income to be not a significant predictor of online shopping, whereas Goldsmith and Flynn (2005), Hannah and Lybecker (2010), and Lohse et al. (2000) found income to be positively related to online shopping, frequency of online shopping, and spending. Taking into consideration the argument that the value of time increases with rising income and that the variety of purchases that consumers make also increases with rising income, we argue that as per capita income increases online shopping will also increase. Therefore, the following is proposed.

H4: Higher per capita gross national income is associated with higher online shopping expenditures.

The online shopping environment is especially suitable for the use of credit cards (Bulut and Koprulu, 2010). In the online environment, credit cards serve as a convenient mechanism for making a purchase (Oxley and Yeung, 2001). After the purchase decision has been made, consumers can provide credit card information to the firm and complete the transaction. The advantage of using credit cards is that payments for purchases are deferred to the next billing cycle when it can be paid in full or in reduced monthly installments. Research also shows that consumers enjoy the convenience of using credit cards and thus tend to overspend (Gan et al., 2008). While the availability of credit cards makes it convenient to conduct online transactions, data show that consumers do not enjoy the same level of access to this financial instrument across countries. Credit card penetration varies across countries and in countries where penetration is high it can be hypothesized that online shopping would also be high. Markus and Soh (2002) noted that availability of credit cards in the financial infrastructure can explain differences in e-commerce activities across countries. Kenny (2003) had also noted that lack of credit cards can restrict the use of the Web for transactional activities. Therefore, the following is proposed.

H5: Higher credit card penetration is associated with higher online shopping expenditures.

4. METHOD

The multiple regression technique was used to test the proposed hypotheses. The statistical procedure measures the degree to which each of the independent variables contributes to the prediction of the dependent variable. The dependent variable was per capita online shopping expenditures. The five independent variables were privacy protection enforcement, per capita telecommunications investments, Internet penetration, per capita income, and credit cards penetration. Privacy protection enforcement reflects the regulatory infrastructure driver. Per capita telecommunications investments and Internet penetration reflect the telecommunications infrastructure drivers. Per capita income and credit cards penetration reflect the financial infrastructure drivers.

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4.1. Sample

In conducting international research involving secondary data, researchers generally end up working with the sample of countries on which data are available. They, thus, confront two key questions, one dealing with sample size and the other dealing with the appropriateness of the data for testing the hypotheses. For this study, the size of the sample was determined by the availability of data on all six variables. Data on all six variables were available for 43 countries, which constituted this study's sample size (see Appendix A for the list of countries). The sample size of 43 is considered appropriate for conducting regression analysis.

4.2. Variables

Privacy enforcement rankings for the sampled countries came from Privacy International, an organization created jointly by US-based Electronic Privacy Information Center and the UK-based Privacy International (Privacy International, 2007). The data that Privacy International provides is based on a comprehensive survey of global privacy enforcement and has been used in existing research (Bellman et al., 2004). The international ranking of privacy enforcement in each country is based on the following criteria:

- Is there a regulatory body with sufficient powers to investigate privacy infractions?
- Can the regulator act proactively?
- Does the regulatory body act in an effective way?
- Have cases been taken through the administrative and legal systems?

Each of the above-mentioned criteria relates directly to the ability and willingness of governments and policy makers to enforce privacy within their countries. Privacy International measures the level of enforcement in each country on a scale of 1 through 5, with 1 representing lax privacy enforcement and 5 representing stringent privacy enforcement. The data provided by Privacy International was used in this study.

For telecommunications infrastructure drivers, the two variables were telecommunications investments and Internet penetration. Telecommunications investment was measured as the expenditures associated with acquiring the ownership of telecommunication equipment infrastructure, which include land, buildings, and computer software. The expenditure included both new installations and additions to existing installations. Total investment was divided by population to obtain per capita investment in telecommunications infrastructure. Internet penetration was measured as the percentage of population with access to the Internet.

For financial infrastructure drivers, the two variables were per capita national income and credit card penetration. Per capita income data was obtained by dividing the gross national income of the country by its population. Credit card penetration was calculated as the number of credit cards per thousand people in each country.

The dependent variable was per capita online shopping expenditures which included sales generated through pure e-commerce websites and through sites operated by store-based retailers. Sales data is attributed to the country where the consumer is based, rather than where the retailer is based. It thus represents online shopping within each country. Data on the dependent variable and telecommunications and financial drivers were obtained from Euromonitor International (2014).

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Table 1. Regression Model Coefficients

Variables	B	Std. Error	β	t-value	Sig.
(Constant)	-31.342	45.806		-.684	.498
Privacy Enforcement	-15.934	14.498	-.122	-1.099	.279
GNI Per Capita	.004	.002	.523	2.514	.016
Percent of Net Users	.776	1.120	.118	.693	.492
Credit Card Penetration	-.004	.029	-.016	-.136	.892
Telecomm Infrastructure	.293	.144	.291	2.040	.049

Dependent Variable: Per capita online shopping expenditures

4.3. Results

Results from the multiple regression analysis show the significance of telecommunications and financial infrastructures in explaining per capita expenditures on online shopping. The significant variable in telecommunications infrastructure drivers was per capita telecommunications investments and the significant variable in financial infrastructure drivers was per capita income. Results also show that privacy protection regulations, Internet penetration, and credit card penetration were not significant (see Table 1 for parameters estimate and significance level). The overall R-square for the proposed model was .699.

5. CONCLUSION

Findings support the hypotheses of positive influence of per capita telecommunications investments and per capita income on online shopping expenditures. A developed telecommunications infrastructure creates a transactional environment that is conducive to the growth of online shopping. As the ease of using the Internet for transactional purposes increases, consumers tend to spend more money on online shopping. Expenditures on online shopping also increase as consumers' income increases. Consumers with higher per capita income spend more on online shopping.

This study also hypothesized positive association between privacy protection regulations and online shopping. It was argued that with more stringent privacy enforcement regulations, consumers would feel more confident about privacy protection and thus would be less inhibited in making online purchases. Although this line of reasoning led to the above stated hypothesis, the result did not support the proposed linkage. However, what should be noted is that the non-significance of privacy regulations does not mean that consumers do not value privacy. This would not be a justifiable conclusion as the finding of this study is not based on whether people knew about the regulations or how they perceived them. What can be concluded, based on the finding, is that the stringency of privacy protection regulations did not significantly influence per capita expenditures on online shopping.

Internet penetration, the proportion of people with access to the Internet, was non-significant in explaining per capita expenditures on Internet shopping. What this could suggest is that the ability of people to access the Internet does not make them more inclined to spend more on online purchases. Credit card penetration was also non-significant. The proposal of positive association between credit card penetration and online shopping expenditures was based on the argument that consumers would

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find the convenience of using credit cards to make online purchases appealing. Therefore, the higher the credit card penetration, the higher would be the expenditures on online shopping. The lack of significant relation between credit card penetration and online shopping can be traced to consumers' preference for using cash rather than credit cards (Slyke, et al. 2005). Studies show that Germans and Belgians, for example, do not like to use credit cards for making payments (Harrison-Walker, 2002).

5.1. Theoretical Implications

Existing research has focused mostly on demographic characteristics and psychological variables to understand consumers' online shopping behavior. Our research objective was to add to this literature by examining the role of infrastructural drivers in influencing per capita expenditures on online shopping. Per capita telecommunications investment was found to be a significant facilitator of online shopping expenditures. Online transactions are conducted on the telecommunications infrastructure, and thus the more advanced this infrastructure is the easier it is for consumers to make online purchases. When consumers can search product related information, compare product offerings, and make and execute purchase decisions easily and quickly, they become more likely to make purchases and spend more. An efficient telecommunications infrastructure, resulting from investments in its development, serves as a digital highway for the smooth flow of information, facilitating interactions between consumers and online businesses. Thus, differences across countries in investments made in the telecommunications infrastructure would explain variations in per capita online shopping expenditures.

With respect to the financial driver, per capita income was found to be a significant facilitator of online shopping expenditures. As per capita income increases, online shopping expenditures also increase. The significant finding supports the argument that higher levels of income give people the discretionary purchasing power that results in higher levels of expenditures on online shopping. The finding also supports the argument that as income increases, the opportunity costs of time spent on making a purchase increase. People with higher income would thus find the convenience of buying online appealing and, furthermore, as they make a variety of purchases due to higher income, the amount of money they spend on online shopping would also increase.

5.2. Managerial Implications

Managerial implications of findings from this study relate to two key strategic decisions that firms make: how to select international markets and how to develop them. For firms wanting to succeed internationally, the selection of markets plays a decisive role. The growth of international sales is predicated on how well a firm is able to analyze and select country markets. Among the different steps of the international market selection process, market analysis occupies a key position, acting as a bridge between the decision to internationalize and the selection of markets. Thus, the knowledge of the variables that affect online sales potential in different country markets would be considered highly valuable to firms. Findings from this study show that countries that have invested more on telecommunications infrastructure and have high per capita income will have higher levels of online sales relative to countries that have invested less and have low income.

Higher levels of telecommunications infrastructure and income are linked with more developed and competitive markets. In these country markets, not only the propensity to spend more on online purchases but also competitive intensity would be high. In contrast, countries which have embarked on developing

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their telecommunications infrastructure and are expected to increase per capita income would experience an increase in online sales in the future. Thus, the managerial implication relates to selecting a country market that is either developed or has the potential to develop.

Another implication, although not directly flowing from the findings, covers the issue of market development. After a market is selected, firms face the difficult question of market development. For online businesses, this involves the development and continuous enhancement of websites to increase sales. Quelch and Klein (1996, p.72) noted that firms will have to strategize on how to "maintain, grow, and manage their sites." The recommendation is that firms need to develop country-specific websites if they wish to exploit the differential international marketing opportunities. Although English is considered the global language of commerce, its exclusive use would make some international consumers feel that they are not welcomed. In addition, when developing the websites, firms need to understand that there are cross-cultural differences that influence how consumers may respond to the different elements of a website such as color, font, logos, and images (Harrison-Walker, 2002).

5.3. Limitations and Future Study

The limitation of this study relates to the sample size, as the analysis was conducted on a small sample of countries. While this limitation can affect the validity of findings, it is generally unavoidable in international studies that are based on secondary data. With respect to this study, however, the sampled countries cover two key characteristics that allay the concern about the validity of findings. First, they come from different regions of the world and, second, they include countries that are at different stages of economic development (see Appendix A). These two characteristics enhance confidence in the validity of the study's findings.

This study opens several avenues for future research. However, the three areas that seem promising are the following. First, future research can examine the level of awareness among people about the different aspects of privacy-related regulations and how this awareness affects online behaviors. Second, future research can explore whether consumers trust that privacy regulations are there to protect their interests and how this trust shapes their online behaviors. Third, future research can focus on the tradeoffs between privacy and convenience, that is, how much privacy people are willing to sacrifice to enjoy the convenience of using the Internet for transactional purposes.

REFERENCES

Akhter, S. H. (2003). Digital divide and purchase intention: Why demographic psychology matters. *Journal of Economic Psychology*, *24*(3), 321–327. doi:10.1016/S0167-4870(02)00171-X

Alqahtani, M. A., Al-Badi, A. H., & Mayhew, P. (2012). The enablers and disablers of e-commerce: Consumers' perspectives. *The Electronic Journal on Information Systems in Developing Countries*, *54*(1), 1–25.

Bachman, K. (2013), Consumer confidence in online privacy hits 3-year low, most afraid of businesses, not government, *Adweek*. Retrieved from: http://www.adweek.com/news/technology/consumer-confidence-online-privacy-hits-3-year-low-155255

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Bellman, S., Johnson, E. J., Kobrin, S. J., & Lohse, G. L. (2004). International differences in information privacy concerns: A global survey of consumers. *The Information Society*, *20*(5), 313–324. doi:10.1080/01972240490507956

Brashear, T. G., Kashyap, V., Musante, M. D., & Donthu, N. (2009). A profile of the internet shopper: Evidence from six countries. *Journal of Marketing Theory and Practice*, *17*(3), 267–281. doi:10.2753/MTP1069-6679170305

Bulut, Y., & Koprulu, O. (2010). Credit card market and socio-economic background of card holders: A case study from Turkey. *International Journal of Economic Perspective*, *4*(4), 623–633.

Caudill, E. M., & Murphy, P. E. (2000). Consumer online privacy: Legal and ethical issues. *Journal of Public Policy & Marketing*, *19*(1), 7–19. doi:10.1509/jppm.19.1.7.16951

Census, U. S. (2014). *U.S. Census Bureau News*. Washington, D.C.: U.S. Department of Commerce.

Chang, J., & Samuel, N. (2004). Internet shopper demographics and buying behavior in Australia. *Journal of American Academy of Business*, *5*(1/2), 171–176.

Das, S., Mukhopadhyay, A., & Bagchi, K. K. (2014). National-level determinants of global music piracy and online music sales: An exploratory study. *Journal of Global Information Technology Management*, *17*(1), 6–25. doi:10.1080/1097198X.2014.910988

Dubelaar, C., & Jevons, C. (2003). Personal information privacy and shopping behavior on the Internet. *Journal of Asia-Pacific Marketing*, *2*(1), 65–74.

Dwoskin, E. (2014), Give me back my privacy, *The Wall Street Journal*, March 24, p. R1.

Erbschloe, M. (2001). Ten trends that will impact the Internet over the next five years. *Information Systems Management*, *18*(3), 25–29. doi:10.1201/1078/43196.18.3.20010601/31287.4

Euromonitor International (2012), Online shopping in emerging markets: Long term growth opportunities in BRIC countries, *Euromonitor International*, May.

Euromonitor International. (2014). *Passport*. Chicago: Euromonitor International.

Gan, L. L., Maysami, R. C., & Koh, H. C. (2008). Singapore credit cardholders, ownership, usage patterns, and perceptions. *Journal of Services Marketing*, *22*(4), 267–279. doi:10.1108/08876040810881678

George, J. F. (2004). The theory of planned behavior and Internet purchasing. *Internet Research*, *14*(3), 198–212. doi:10.1108/10662240410542634

Goldsmith, R. E., & Flynn, L. R. (2005). Bricks, clicks, and pix: Apparel buyers use of stores, internet, and catalogs compared. *International Journal of Retail & Distribution Management*, *33*(4), 271–283. doi:10.1108/09590550510593202

Hannah, B., & Lybecker, K. M. (2010). Determinants of recent online purchasing and the percentage of income spent online. *International Business Research*, *3*(4), 60–71. doi:10.5539/ibr.v3n4p60

Harrison-Walker, L. J. (2002). If you build it, will they come? Barriers to international e-marketing. *Journal of Marketing Theory and Practice*, *10*(2), 12–20. doi:10.1080/10696679.2002.11501912

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Ho, S. C., Kauffman, R. J., & Liang, T.-P. (2011). Internet-based selling technology and e-commerce growth: A hybrid growth theory with cross-model reference. *Information Technology Management*, *12*(4), 409–429. doi:10.100710799-010-0078-x

IBM. (1999, October). IBM multi-national consumer privacy survey. Retrieved from http://www.ibm.com/services/files/privacy_survey_oct1991.pdf

Kenny, C. (2003). Developments false divide. *Foreign Policy*, (Jan/Feb): 76–77. doi:10.2307/3183524

Lawrence, J. E., & Tar, U. A. (2010). Barriers to ecommerce in developing countries, *Information*. *Social Justice (San Francisco, Calif.)*, *3*(1), 23–35.

Lim, W. M. (2015). Antecedents and consequences of e-shopping: An integrated model. *Internet Research*, *25*(2), 184–217. doi:10.1108/IntR-11-2013-0247

Lohse, G. L., Bellman, S., & Johnson, E. J. (2000). Consumer buying behavior on the internet: Findings from panel data. *Journal of Interactive Marketing*, *14*(1), 15–29. doi:10.1002/(SICI)1520-6653(200024)14:1<15::AID-DIR2>3.0.CO;2-C

Marcus, M. L., & Soh, C. (2002). Structural influences on global e-commerce. *Journal of Global Information Management*, *10*(1), 5–12. doi:10.4018/jgim.2002010101

McKinsey. (2013). China's e-tail revolution: Online shopping as a catalyst for growth.

Oxley, J. E., & Yeung, B. (2001). E-commerce readiness: Institutional environment and international competitiveness. *Journal of International Business Studies*, *32*(4), 705–723. doi:10.1057/palgrave.jibs.8490991

Patwardhan, P., & Yang, J. (2003). Internet dependency relations and online consumer behavior: A media system dependency theory perspective on why people shop, chat, and read news online. *Journal of Interactive Advertising*, *3*(2), 57–69. doi:10.1080/15252019.2003.10722074

Phelps, J. E., Nowak, G., & Ferrell, E. (2000). Privacy concerns and consumer willingness to provide personal information. *Journal of Public Policy & Marketing*, *19*(1), 27–41. doi:10.1509/jppm.19.1.27.16941

Privacy International. (2007). Surveillance Monitor 2007 - International country rankings. Retrieved from https://www.privacyinternational.org/reports/surveillance-monitor-2007-international-country-rankings

Quelch, J. A., & Klein, L. R. (1996). The Internet and international marketing. *Sloan Management Review*, *37*(3), 60–75.

Sheth, J. N., & Sharma, A. (2005). International e-marketing: Opportunities and issues. *International Marketing Review*, *22*(6), 611–622. doi:10.1108/02651330510630249

Simon, S. J. (2004). Critical success factors for electronic services: Challenges for developing countries. *Journal of Global Information Technology Management*, *7*(2), 31–53. doi:10.1080/1097198X.2004.10856371

Singh, T., & Hill, M. E. (2003). Consumer privacy and the Internet in Europe: A view from Germany. *Journal of Consumer Marketing*, *20*(7), 634–651. doi:10.1108/07363760310506175

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Slyke, C. V., Belanger, F., & Sridhar, V. (2005). A comparison of American and Indian consumers perceptions of electronic commerce. *Information Resources Management Journal*, *18*(2), 24–40. doi:10.4018/irmj.2005040102

Travica, B. (2002). Diffusion of electronic commerce in developing countries: The case of Costa Rica. *Journal of Global Information Technology Management*, *5*(1), 4–24. doi:10.1080/1097198X.2002.10856317

Westin, A. F. (1967). *Privacy and freedom*. New York: Atheneum.

Wijnholds, H. B., & Little, M. W. (2001). Regulatory issues for global e-tailers: Marketing applications. *Academy of Marketing Science Review*, (9): 1–12.

Wirtz, J., Lwin, M. O., & Williams, J. D. (2007). Causes and consequences of consumer online privacy concern. *International Journal of Service Industry Management*, *18*(4), 326–348. doi:10.1108/09564230710778128

Youn, S. (2009). Determinants of online privacy concern and its influence on privacy protection behaviors among young adolescents. *The Journal of Consumer Affairs*, *43*(3), 389–417. doi:10.1111/j.1745-6606.2009.01146.x

Zorotheos, A., & Kafeza, E. (2009). Users' perception on privacy and their intention to transact online: A study on Greek internet users, *Direct Marketing*. *International Journal (Toronto, Ont.)*, *3*(2), 139–153.

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APPENDIX

Exhibit 1: Countries Sampled

Argentina
Australia
Austria
Belgium
Brazil
Bulgaria
Canada
China
Czech Republic
Denmark
Estonia
Finland
France
Germany
Greece
Hungary
India
Ireland
Israel
Italy
Japan
Latvia
Lithuania
Malaysia
Netherlands
New Zealand
Norway
Philippines
Poland
Portugal
Romania
Russia
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Chapter 7
Development of E-Commerce: Factors Influencing Online Impulse Shopping in China

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ABSTRACT

This article describes how in the modern era e-commerce is growing exponentially and the consumers are more likely to shop online. The purpose of this article is to assess the relationship between website quality and the online impulse buying behavior (OIBB). This article further explores the moderating role of sales promotion and online impulse purchasing. Data were collected from 704 online shoppers from two cities, Beijing and Tianjin. Structure equation modeling (SEM), reliability, and validity were employed to test the proposed hypotheses. Findings show that all exogenous factors i.e. website quality, urge to buy, positive effect of emotions, significantly influence online impulse buying; whereas the effects of negative emotions have failed. Sales promotions and the use of credit cards positively moderates the relationship between website quality and online impulse buying. Theoretical and practical implications for managers and academic practitioners are discussed.

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INTRODUCTION

Internet plays a vital role in everyone's life. In China, a massive population buys online to conserve time and efforts, and to espouse the individuality culture (Pei et al., 2016; Wang, 2017). According to the 2015 China online shopping report, the Chinese GMV (Gross merchandise volume) amounted to 2.8 trillion Yuan in 2014, jumping up by 47.4% on a YoY (year on year) basis. This growth was more than 4 times faster than the total retail sales of consumer goods. Moreover, its penetration in total retail sales of consumer goods also exceeded 10% for the first time in Chinese history, which serves a healthy opportunity for the online retailers to focus on online shoppers. A huge sum of shoppers purchased products spontaneously. With the growing significance of online shopping, a deeper understanding of impulse buying on the internet has become a necessity (Floh & Madlberger 2013). According to some studies, almost 40% of the online shopping's are counted as impulse purchases (Verhagen & van Dolen 2011; Liu et al., 2013). Hausman, (2000) argued that 30-50% of all retail sales are triggered by impulse purchases, while 90% of consumers buy goods impulsively on occasions. Many online retailer setups are working on online impulse buying to exploit greater opportunities to attract and retain the consumers.

The China Internet Network Information Center's (CNNIC) January 2017 report discloses that with an annual increase of 42.99 million Internet users China's Internet user population has reached 731 million, with a penetration rate of 53.2%, up 2.9 percentage points from the end of 2015. China has now become the largest Internet market in the world. Millions of netizens are surfing the Internet to acquire information about products and services, and are often even spending more time on online purchases than their genuine requirements. According to CNNIC report, direct messaging is very often used mobile apps among Chinese internet users in 2016. Furthermore, finding shows that 79.6% of Chinese internet users use WeChat app that is the very big figure as compare to netizens who used QQ 60.6%. Taobao 24.1%, mobile Baidu 15.3%, and Alipay 14.4% are the third, fourth and fifth rank of Chinese internet users.

Impulse Buying behavior is very common amongst the consumers around the world. Dawson and Kim, (2010) argued that 50 percent of consumers buy goods impulsively. To boost the impulse purchases, retailers readily focus on product displays, store designs, and package designs to attract and hold the shoppers' attention (Lee and Kacen, 2008). Existent research shows that almost any items might be purchased on impulse (Rook and Fisher, 1995; Kacen and Lee, 2002). Although impulse buying is a phenomenon that is most likely to hold for inexpensive items, the expensive items may also be dealt with (Rook and Fisher, 1995).

In principle, impulse shoppers may usually not control their inherent behaviors to visit online stores (Wells, Parboteeah, & Valacich, 2011). Online shoppers are involved in discrete psychological states of unplanned and sudden behaviors towards a buying decision process, which is very difficult to understand for retailers (Floh & Madlberger 2013). For the Internet user perspectives, online shoppers/ consumers are website users for executing all functions of an electronic store towards finding and searching the information of the related product, tracking product delivery and complete payment system. Therefore, the usage of website technology and belief trust on e-stores are two significant concerns for online impulse buying (Wu, Li, & Fu, 2011; Wu, 2013). These concerns are very important to determine for online impulse buying shoppers.

The growing veered of online shopping has motivated the need to study OIBB under recent trends (Floh & Madlberger 2013). Previous researchers have recommended several perspectives to better un-

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derstand the online impulse buying behavior. Some studies have suggested shopping enjoyment effect as a mediator to direct the OIBB from the website's interaction experience (affective) and websites' usefulness for shopping task (cognitive) (Koufaris, 2002; Parboteeah, et al., 2009). Other studies have focused the importance of electronic store characteristics (design, content, and navigation) as the antecedents of repelling online impulse buying behavior through a mediator of shopping enjoyment and effective perception (Floh & Madlberger 2013).

A number of studies conducted to examine decision-making mechanisms of consumer's impulse in online environments. For instance, a few studies have found the utilization of environmental psychology to investigate how website attributes, such as site's ease of use, visual appeal, and information fit-to-task affect personality and consumers' emotions causing online impulse shopping decisions (Parboteeah, et al., 2009; Verhagen & van Dolen 2011; Wells, et al., 2011). These studies recommended that IS wisdom and integration of marketing would increase the knowledge on online impulse buying (Verhagen & van Dolen 2011; Wells, et al., 2011). Earlier IS studies investigated how three factors of perceived website attribute namely product availability, website's ease of use and visual appeal, interact with consumers' personalities to seduce impulse buying. In the technical perspective, former studies have mainly emphasized upon the user' interaction with the website, such as the navigation ability, pleasantness, visual attraction, and the security (Luo, Ba, & Zhang, 2012; Floh & Madlberger, 2013). The said features can broadly be explained as website design/ quality. Shen & Khalifa, (2012) described that perceived usefulness, shows the degree to which online consumers believe that shopping productivity can be increased by using a specific website.

Although largely available researches have addresses this issue, little is known about it in Chinese context. China is known as having the world's largest number of netizens. Considering this fact, present study provides an in-depth understanding of the primary motivations, attitudes, and behaviors of Chinese online shoppers. To address the rapid trends of ecommerce in China, retailers need recommendations to cater future endeavors and expansions. This very need is expected to be met by this study which analyzes the relationship of OIBB with website quality by incorporating the moderating effect of sales promotion and use of credit card. In specific, those who want to conduct research on China's B2C Internet market with the perspective of online impulse buying by affecting the website attributes may be the direct beneficiaries of this study. A lot of Chinese retailers attracting more consumers who purchased goods online by growing e-commerce platforms that are repelling B2C online retailing market growth (Su, 2009).

Although a voluminous research can be found on impulse buying behavior, these studies do not embrace the emerging face of impulse buying i.e. OIBB. Moreover, all of these studies have been conducted on developed economies, leaving behind the need to investigate this issue in an emerging economy like China which houses the largest number of netizens ever. The objective of this study is to fourfold: (a) to examine the relationship between website quality and OIBB (b) to assess the impact of positive and negative emotions on OIBB (c) to identify how sales promotion and use of credit card moderate the relationship between website quality and OIBB? (d) to investigate the impact of the urge to buy on OIBB.

With the aforementioned relevance, firstly this manuscript provides the literature review by contributing to the hypothesized relationship between the variables adopted by research methodology and study analysis. Then the later parts associated with results and discussions, implications for managers are demonstrated. And finally, the last part deals with conclusions, limitations and future directions.

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HYPOTHESES DEVELOPMENT

Online Impulse Buying Behavior

Impulse purchase happens when a consumer experiences sudden, habitually powerful and insistent urge to buy something immediately (Liu et al., 2013; Akram et al., 2017). Impulse buying occurs during shopping from a particular stimulus (Floh & Madlberger, 2013). Impulse buying as an unplanned purchasing decision is influenced by several factors (Ozen & Engizek 2013; Akram et al., 2017). The stimulus can be an extrinsic characteristic of the product or actual product itself, such as searching instruments or the information about the product. Yu & Bastin, (2010) mentioned that several factors e.g. personality, time pressure, location, cultural factors and variety of economic positions influences on impulse buying behavior. From a Psychological perspective consumer's impulse buying behavior is occasionally irresistible because the inception of a psychological impulse buying often occurs not just spontaneously but also suddenly (Sharma et al., 2010). Usually, high tendency of impulse consumers probably go through spontaneous buying behavior and their shopping lists have space for unexpected buying intention (Park, et al., 2012).

When consumers make a decision to buy online, they often act impulsively and are triggered by easy purchasing, easy access to product e.g., click ordering, painless delivery, and absence of social pressures (Jeffrey & hodge, 2007). In specific, few researches have focused on the role of impulsive buying in online buying (Floh & Madlberger, 2013; Liu et al., 2013). Liu et al., (2013) investigated how website characteristics (ease of use, product availability, visual appeal etc.) effect consumers' individual traits, including instant gratification, normative evaluation and impulsiveness.

In the online context, innovations and improvements in the field of e-commerce are causing a surge in online shopping. According to Dittmar et al., (2004) the reason why many shoppers overspend in online transactions is that the virtual procedure does not feel like spending high money on shopping. Online transaction plays a vital role for online retailers as well as organizations because they make strategies to motivate the consumers buy more products. Many of the previous studies on impulse buying behavior focused on brick and mortar stores (Jeffrey & hodge, 2007). Only a few studies actually discoursed on consumer's impulse buying in an online setting - and that too with different angles. For instance, Zhang et al., (2008) explored the influence of consumers' general tendency to buy impulsively based on Technology Acceptance Model (TAM) and observed small yet significant direct effects. Park et al., (2012) typically investigated impulse purchasing for clothing products in the internet context. Verhagen & Van Dolen, (2011) studied the influence of online store beliefs on consumer's online impulse buying behavior.

Website Quality

Advent literature suggests various attributes of website that may enhance its quality. Wolfinbarger and Gilly, 2003) highlighted the significance of website design and contents that may enhance its quality to attract more online customers. Contents presents the services offered and design means how to present that content in attractive way to customers (Huizingh, 2000). Website features visual appeal, transaction safety and navigation are all special signs that can directly influence to attract the consumers experience impulse purchases (wells et al., 2011). Childers et al., (2001) suggested a term called "web atmospherics" in online setting, which includes website design features as graphics, frames, pop-up windows, search engine configuration, text, hypertext links, "one click" purchase procedures or check-out, site layout

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dimensions and media dimensions. These attributes of web design may lead to triggering online impulse buying to a different level. Loiacono et al., 2007 presented four distinct types of website quality; usefulness, ease of use, entertainment and complementary relationship. Ranganathan and Ganapathy, (2002) contemplated design, privacy, information content and security of website as four important dimensions of B2C website. Likewise, Elliott and speck (2005) examined that consumer's attitudes towards retail website is significantly affected by five website elements i.e., product information, ease of use, currency trust and entertainment.

Several studies found that website quality attributes effect significantly on consumer's online impulse buying behavior. For instance, Turkyilmaz et al., (2015) reveal that three dimensions of website quality including entertainment, ease of use and usefulness have positive effects on consumers online impulse purchase whereas complimentary relations have no influential impact. Well-designed interface enhances the probability of consumers' impulse buying (Hoffman and Novak, 1996, Wolfinbarger and Gilly 2003, Shergill and Chen, 2005). Turkyilmaz suggested that Online retailers, who want to strengthen their customer base and retain it, must emphasize and improve the quality of website, failure to which may lead to breaking up customers (Turkyilmaz et al., 2015).

Aforementioned discussion leads us to formulate following hypothesis:

H1: There is a positive relationship between website quality and online impulse buying behavior.

Sales Promotion

Sales promotions, as a collection of various motivational tools, are designed to stimulate consumers to purchase numerous products or services within short periods of time (Kotler, 2012). Sales promotions intend to stimulate consumers' needs and urges customers to buy product immediately of a specific brand. Battberg and Neslin (1990) emphasized on significant promotions objectives which include; (1) enhancing store image, (2) generating store traffic, (3) creating price image and (4) moving excess inventory. Sales promotion is very important and considerable part in an online shopping environment and in advertising strategy.

Many studies have identified the sales promotion as a mean to increase customer base gradually. For instance, in the US number of homes that use online coupons for shop online has been increasing abruptly (Forrester, 2014). Additionally, studies have recommended that internet connectivity has provided a means for mass customization of sales promotions by targeting individual buyers on seller's website (Kannan and Kopalle 2001). Sales promotions stimuli and online store design features are very important antecedents of consumers online impulse purchase. Sales promotion stimuli, sales (e.g., markdown. clearance), promotions (e.g., cash rebates, buy one get one free, gifted certificated), suggestions (e.g., bundling), and purchase ideas (e.g., new arrival products and one-stop shopping) that can persuade consumers to buy impulsively (Dawson & Kim, 2010). Dawson and Kim (2010) also investigated that consumers' online impulse buying is related with e-retailer's sales promotion stimuli which can therefore be regarded as another factor influencing this behavior. Sales promotion influences the consumer's online impulse buying behavior positively (Badgaiyan et al., 2015).

Contrary to well established positive relationship of OIBB with sales promotion, Blattberg et al., (1981) found that sales promotion, particularly price discount has negative affect sales due to purchase acceleration and stockpiling, and negatively impact brand image and reference price (Grewal et al., 1998).

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Nevertheless, if customers of the product under sales promotion are resellers instead of consumers, such this negative effect could be slightly decreased.

According to the above studies we proposed two hypotheses sales promotion as direct effect and moderation effect between website quality and online impulse buying behavior.

H2: There is a positive relationship between sales promotion and online impulse buying behavior.

H3: Sales promotion positively moderate the relationship between website quality and online impulse buying behavior. Such that the relationship is stronger when the sales promotion is higher, the relationship is weaken when the sales promotion is lower.

Use of Credit Card

Credit card is the kind of plastic money, which is rapidly used among consumers. In Psychological perspective, credit card is a trigger of spending behavior. Feinberg (1986) provided evidence those college students who use credit cards, purchase more and prompt as compares to students who use cash. The use of credit card stimulates the consumers spending as compared to cash transactions. For instance, credit cards increase the sales of fast-food restaurants and the transactions that are 50 to 100% larger than cash dealings in US. Hayhoe et al., (2005) studied on college students in southern states of the USA, concluded that credit card is very important for young shoppers, they prefer to buy through this medium than their non-user counterparts to money as a symbol of power. Extensive use of credit cards imitates the shoppers' partialities regarding prearranged list of credit, with the help of technological advancements make it easier for consumers to offer revolving credit (Durkin, 2000). Soman (2001) argued that those consumers usually used credit card, they always spend extra on purchasing.

Credit card use is also one of major contributor in online shopping, but only sparse studies have taken it into their consideration and there is also need to analyze its role in online impulse buying behavior. Credit card use play a vital role to buy impulsively, Badgaiyan (2015) found that the credit card use has a positive influence on impulsive purchase; it should have been advocated rise up the chances of impulse buying behavior. Importantly, credit card use results in buying online impulsively (Roberts and Jones, 2001; Kim, 2006). Karbasivar, (2011) found that credit card use positively relates with consumers IBB in the setting of apparel products. Easily accessible credits cards eradicate the abrupt need for money to purchase something, since overspending of consumers (George, 1998) and enhance the advancement of impulse purchase (Robert and Jones, 2001).

In the light of above studies, we proposed two hypotheses credit card use with online impulse buying behavior.

H4: There is a positive relationship between use of credit card and online impulse buying behavior.

H5: Use of credit cards among Chinese consumers positively moderate the relationship between website quality and online impulse buying behavior. Such that the relationship is stronger when the use of credit card is higher, the relationship is weaken when the use of credit card is lower.

The Influence of Emotions on Online Impulse Buying

Browsing is in-store examinations of a retailer's merchandise for informational and recreational objectives without a sudden intention to purchase. Positive emotions were discovered positive impact on browsing

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setting such as spend more time on buying; this kind of behavior leads to online impulse buying. Many emotional kinds effected assessment decisions and determined that online setting generate pleasure explorations (Huang, 2005). Additionally, she recommended that negative emotions such as monotony will drive away customers and negative impact on assessment behavior (Verhagen and van Dolen, 2011). Many scholars found that affect influences on impulse shopping: when shoppers encounter the positive affect, the incline of shopper is more likely to engage in process than avoidance behavior. According to (Verplanken and Herabadi, 2001) highly positive emotion felt by a shopper leads to impulse buying and overspending. Therefore, we proposed following hypotheses:

H6a: Positive emotion positively influence on online impulse buying.
H6b: Negative emotion negatively influence on online impulse buying.

Urge to Buy Impulsively

The impact of browsing has been contended to be a central component in the spontaneous shopping procedure. In the event that shoppers browse longer, the will experience high stimulus, expanding the probability of impulsive buying (Park et al., 2012). According to Verhagen and van Dolen, (2011) urge to buy is a major predictor of online impulse buying and significantly and positively influence on impulsive buying in online setting. Therefore, we proposed following hypothesis:

H7: Urge to buy positively influence on online impulse buying.

Mathematical Model:

$$OIBB = \beta_0 + \beta_1 (WQ) + \beta_2 (USFN) + \beta_3 (EOU) + \beta_4 (ENT) + \beta_5 (CR) + \beta_6 (SP) + \beta_7 (UTB) + \beta_8 (PA) + \beta_9 (NA) + \beta_{10} (UCC) + \varepsilon$$

RESEARCH DESIGN AND METHODOLOGY

Procedure

This manuscript intends to investigate how website quality affects the online consumer's impulse buying behavior with moderator variables such as, sales promotion and use of credit card. To identify the qualified respondents (having exposure of online buying) in this environment was needed, we used a questionnaire that was originally developed in English,but converted into Chinese and then back translated into English to cross check the validity of translation; after that ICTC, BUPT (International Chinese Training Center, Beijing University of Posts and Telecommunications) compared it with the original questionnaire. ICTC selected 10 students at master's and PhD level for pretesting and to ensure the accuracy of the translation, after that these students discuss interpretation and clarity with the two Chinese teachers (who taught Chinese language to the international students) and with research team to discuss and suggest improvements.

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Data was collected from two ways; first, online survey and second; paper questionnaire. In an online survey, random sampling survey problem is always there, because many studies have used the self-selected sampling procedure for non-probability sampling e.g., convenience-sampling technique. This study tries to mitigate this problem by selecting the participants randomly from many online community sources and select the different time slots for every community. Online survey was conducted for various bigger online communities at the same time, such communities includes, Wechat, facebook, linked in, Weibo, and QQ as all Chinese consumers use one of these or more social network applications. Additionally, 12 distinct time slots were used in this study in terms of a two hours' interval on daily basis. We haphazardly selected time slots on daily basis from each community to be the response sample. This research conducted online survey between the time periods October-December 2016. This study covers the large and wider data sources to make the sample true representative of population. We offered a reward system for respondents. We randomly selected 60 participants from the sample size and give the reward 10 RMB after the survey.

Online survey has also some demerits, for instance data errors, questions complexity issues, limited respondents, and technical issues. Considering all these issue, we also collected data through paper questionnaire. Two metropolitan and demographically diversified cities of China named (Beijing & Tianjin) were targeted for data collection. Most of the respondents of this study were university student. In order to motivate the online shoppers, after collecting the data from each respondent we give one packet of chocolate as a reward which costs 10 RMB.

Questionnaire was distributed among 900 online shoppers and received 856 back from both online and offline sources, out of which 152 were not valid that further reduces our sample size to 704. Out of 900 questionnaires, 400 were distributed through paper questionnaire and 500 by online.

Instrumentations

This study used existing authenticated scales: Online impulse buying (Verhagen and van Dolen, 2011), website quality (Loiacono et al., 2007), positive and negative effect (Verhagen and van Dolen, 2011), urge to buy impulsively (Verhagen and van Dolen, 2011), sales promotion (Badgaiyan and Verma, 2015), and use of credit card (Badgaiyan and Verma, 2015). This study instrumentation comprised of two parts questionnaires (1) nominal scale (2) five point Likert scale (i.e., 1 = strongly disagree to 5 = strongly agree).

DATA ANALYSIS AND RESULTS

The current study has significant results analyzed by different tools to explore how website quality affects OIBB with two moderators; sales promotion and use of credit card. Unrotated factor analysis to identify the common method bias, convergent validity, discriminant validity, measure the reliability by Cronbach's alpha, minimum to maximum item loading, Average Variance Extracted and minimum item to total correlations were examined before employing (CFA) analysis for authenticating the measurements values. (Table 3 and 4). Moreover, moderation hypotheses were tested using three steps moderation regression analysis (Table 6 and 7).

Table 1 shows the demographic information of respondents of survey. All participants contributed voluntarily in survey. Demographic characteristics include gender, age, education, occupation and Online

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Table 1. Respondents characteristics with online impulse experience, (n=704)

No.	Characteristics	Category	Frequency	%
1	AGE	18-25	285	40.6
		26-30	246	34.9
		31-35	126	17.9
		36-40	28	3.9
		above 40	19	2.7
2	Gender	Male	304	41.8
		Female	400	58.2
3	Education Level	Intermediate/High School	81	12
		Bachelors	289	41
		Masters	267	38
		Doctoral/PhD	32	4
		Others Diplomas	35	5
4	Occupation	Student	515	73.1
		Employee	104	14.8
		Managerial level	45	6.4
		Business	40	5.7

impulse experiences. Results demonstrated that majority of respondents were female (58.2%), and most of the respondents are younger consumers (age, 18-25, 40.6%). Almost all participants were students (3.1.7%) belonging to bachelors and masters level.

Table 2 showed the common method bias from unrotated factor analysis. In a data set, which has issue of common method bias, we do identify a single factor that explains majority of the variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Several scholars addressed the common method variance issue by using Harman's single factor test technique (Podsakoff et al., 2003). We included all items from all of the constructs in the relationship structure for an unrotated factor analysis to determine whether the majority of the variance cannot be accounted for by one general factor (i.e., more than 50% variance accounted for). The unrotated factor analysis may extract many factors (variables) from all measured items and suggest the variance explained by each of these factors. The results of unrotated factors analysis shows that dependent variables and independent variables extracted the dissimilar factor from results of this analysis. Table 2 showed no single factor having variance more than 50%. The first factor is impulse buying behavior (IBB) with 29.2% of variance explained. Therefore, results showed that there is no issue regarding common method bias. Confirmative factor analysis was utilized to assess the measurement model. The findings show outstanding model fit indices CMIND/df: 2.543, CFI = 0.987, GFI = 0.921, AGFI = 0.976, NFI = .0954, RMSEA = 0.031. All values of CFA analysis meet the threshold value and show the satisfactory properties.

Multicollinearities were examined in this study by using Variance Inflation Factor (VIF) analyzed by SPSS. The value of VIFs are 3.40 (impulse buying behavior), 2.34 (sales promotion), 3.11 (urge to buy), 3.76 (positive affect), 2.33 (negative affect), 2.12 (use of credit card), 3.35, 2.54, 4.53, 3.60 (usefulness, ease of use, entertainment, and complimentary relation for website quality); all values are below threshold

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Table 2. Outcomes of common methods bias from unrotated factor analysis

Factor	Eigenvalue	% of Variance	Cumulative %
IBB	2.42	25.5	25.5
SP	2.5	10.5	36
UTB	2.1	9.2	45.2
PA	2	12.5	57.7
NA	1.89	8.2	65.9
UCC	1.81	7.8	73.7
USFN	1.67	7	80.7
EOU	1.19	6.3	87
ENT	1.11	8.4	95.4
CR	0.70	4.6	100

10 (Diamantopoulos & siguaw, 2006). Further, Validity and reliability were calculated in the measurement model. Cronbach's alpha and composite reliability were used for examining the reliability. According to Chin, (1998) the acceptable values for both should be ≥ 0.80. Convergent validity and discriminant validity were used to assess the validity of scales. Convergent validity is evaluated from three criteria: (1) item loading (λ) higher than 0.70 and it should be significance, (2) composite reliability for every construct and it should be higher than 0.80 and explain same like cronbach'α reliability, (3) should be larger than .50 (Hair et al., 2010). Finally, discriminant validity is evaluated by using the comparison between square root of average variance extracted (AVE) for each construct and its squared correlations with all construct. The value of (AVE) should be larger than its correlations (Hair et al., 2010).

Table 3 shows the values of reliability (α) and convergent validity. First the values of item loadings of all constructs are higher than 0.70, the value of composite reliability is higher than 0.8 and it ranges from 0.81-0.9 and the value of Cronbach' α is larger than 0.80 and it ranges from 0.80-0.90 and all values

Table 3. Descriptive statistics, reliability and convergent validity, (n= 704)

Constructs	Items	Mean	S.D.	Item Loading	Composite Reliability	AVE	Cronbach'α
Impulse Buying Behavior (OIB)	5	3.7282	.62760	0.80-0.91	0.80	0.88	0.90
Store Promotion (SP)	3	3.5446	1.03508	0.81-0.94	0.91	0.83	0.86
Urge to Buy (UTB)	4	3.2322	.876523	0.82-0.91	0.94	0.87	0.87
Positive Affect (PA)	4	4.3232	.546323	0.79-0.87	0.82	0.83	0.81
Negative Affect (NA)	3	2.2232	.543522	0.85-0.94	0.88	0.79	0.86
Use of Credit Card (UCC)	3	3.5487	.86688	0.78-0.88	0.81	0.81	0.84
Usefulness (USFN)	12	3.5136	.92397	0.78-0.91	0.87	0.80	0.81
Ease of Use (EOU)	6	3.4301	1.00340	0.81-0.91	0.88	0.72	0.88
Entertainment (ENT)	9	3.5675	.83409	0.88-0.95	0.92	0.72	0.80
Complimentary Relation (CR)	9	3.6270	.79801	0.76-0.88	0.92	0.69	0.89

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Table 4. Discriminant validity, (n = 704)

Scale	OIB	SP	UTB	PA	NA	UCC	USFN	EOU	ENT	CR
OIB	1									
SP	0.77 CI_{90} [.70;.84]	1								
UTB	0.81 CI_{90} [.75;.81]	0.12 CI_{90} [.06;.29]	1							
PA	0.87 CI_{90} [.86;.95]	0.16 CI_{90} [.07;.33]	0.09 CI_{90} [.04;.23]	1						
NA	0.78 CI_{90} [.66;.74]	0.81 CI_{90} [.75;.81]	0.12 CI_{90} [.07;.25]	0.65 CI_{90} [.56;.77]	1					
UCC	0.68 CI_{90} [.55;.63]	0.07 CI_{90} [.04;.22]	0.78 CI_{90} [.66;.74]	0.80 CI_{90} [.75;.89]	0.78 CI_{90} [.72;.81]	1				
USFN	0.05 CI_{90} [.03;.15]	0.66 CI_{90} [.50;.75]	0.68 CI_{90} [.55;.63]	0.81 CI_{90} [.74;.84]	0.21 CI_{90} [.11;.22]	0.09 CI_{90} [.04;.23]	1			
EOU	0.65 CI_{90} [.54;.74]	0.11 CI_{90} [.06;.23]	0.11 CI_{90} [.06;.23]	0.57 CI_{90} [.46;.68]	0.72 CI_{90} [.66;.80]	0.12 CI_{90} [.07;.25]	0.08 CI_{90} [.04;.22]	1		
ENT	0.11 CI_{90} [.01;.26]	0.74 CI_{90} [.63;.81]	0.81 CI_{90} [.74;.84]	0.08 CI_{90} [.06;.23]	0.18 CI_{90} [.08;.28]	0.16 CI_{90} [.06;.28]	0.55 CI_{90} [.76;.84]	0.52 CI_{90} [.38;.67]	1	
CR	0.77 CI_{90} [.69;.85]	0.12 CI_{90} [.06;.29]	0.57 CI_{90} [.46;.68]	0.04 CI_{90} [.05;.18]	0.43 CI_{90} [.28;.48]	0.68 CI_{90} [.58;.77]	0.15 CI_{90} [.06;.29]	0.09 CI_{90} [.05;.28]	0.67 CI_{90} [.56;.77]	1

of AVE is larger than 0.50 and rages from 0.72-0.88. Over all the results of Table 3 reported high level of reliability and outstanding convergent validity AVE >.05, CR >0.80, α >0.80. For the assessment of sampling adequacy Kaiser-Meyer-Olkin (KMO) test was utilized. The value of Kaiser-Meyer-Olkin (KMO) is 0.9 it is valid with threshold value (>0.5) for KMO test (Hair et al., 2010). To examine the discriminant validity, we used Heterotrait-monotrait (HTMT) technique suggested by Henseler et al., (2015) because this technique counters the good results of AVE-SE (Voorhees et al., 2016). Table 4 indicated the results of discriminant validity to ensure that every variable in model is really distinct with $HTMT_{inference}$ and $HTMT_{0.90}$.

Hypotheses Testing Results

The results of SEM: CMIN/DF: 2.111, $p < 0.001$, CFI = 0.98, GFI = 0.88, AGFI = 0.97, NFI 0.98 and RMSEA = 0.032 and the results of structure model shows outstanding goodness-of-fit. The structure model depicts that all hypotheses were supported. This study has some interesting results while testing hypotheses. usefulness, ease of use, entertainment and complimentary relations were indicated as important antecedents of website quality ($\beta = 0.165_{UFLN}$, $\beta = 0.214_{EOU}$, $\beta = 0.153_{ENT}$, $\beta = 0.360_{CR}$). H1,

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H2, H4, H6a, H6b and H7 were all substantiated. First we elucidate direct effects hypotheses with online impulse buying behavior. Website quality with four combined antecedents has significant positive impact on online impulse buying $R^2 = .490$ with $\beta = .718_{(WQ \rightarrow OIBB)}$, $p < .05$ which means 49% of variance in dependent variable online impulse buying behavior is due to website quality, Hypothesis 1 is thus supported. Before using the sales promotion and credit cared as moderators, we checked their direct effect on OIBB. Sales promotion showed a significant effect on online impulse buying $R^2 = 0.510$, $\beta = 0.316_{(SP \rightarrow OIBB)}$, $p < .000$. Hypothesis 2 is also supported. H4 was also supported as used of credit card were found to have positive and significant impact on online IBB $R^2 = .525$, $\beta = .119_{(UCC \rightarrow OIIBB)}$, $p < .05$. Overall model R^2 was amounted 0.67 (67%).

Table 5. Hypotheses results

Hypotheses	Path	β	Sig.
H1	website Quality → online impulse buying	0.718	<0.001
H2	Sales Promotion → Online Impulse Buying	0.316	<0.001
H4	Use of Credit Card → Online Impulse Buying	0.119	<0.001
H6a	Positive Affect → Online Impulse Buying	0.34	<0.05
H6b	Negative Affect → Online Impulse Buying	-0.29	0.01
H7	Urge to Buy → Online Impulse Buying	0.45	<0.001

Table 6. The moderation analysis of sales promotion

	β	*t*-Value	*F*	R^2	Adjusted R^2	ΔR^2
WQ	0.718***	13.221	1114.38**	0.490	0.490	0.490***
SP	0.316***	4.568	603.72***	0.510	0.514	0.020***
WQ × SP	0.230***	2.261	405.61***	0.513	0.522	0.003***

Notes: *F*- statistics are for overall models. WQ = website quality, SP = sales promotion, Dependent variable = Online impulse buying behavior. Control variables are age, gender, education and occupation. *$p < 0.05$, **$p < 0.001$, ***$p < 0.0001$

Table 7. The moderation of analysis use of credit card

	β	*t*-Value	*F*	R^2	Adjusted R^2	ΔR^2
WQ	0.718***	13.221	1114.38**	0.490	0.490	0.490***
UCC	0.119**	1.870	642.94**	0.526	0.525	0.036**
WQ × UCC	0.434***	3.894	438.69***	0.532	0.531	0.006***

Notes: *F*- statistics are for overall models. WQ = website quality, UCC = use of credit card, Dependent variable = Online impulse buying. Control variables are age, gender, education and occupation. *$p < 0.05$, **$p < 0.001$, ***$p < 0.0001$

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The results of moderation effect are showed in Tables 6 and 7. The value of R^2 of website quality was .490. The coefficient value of sales promotion is ($\beta = .316$) which means sales promotion has a significant and positive relationship with online impulse buying behavior. In third step $\mathbf{\Delta}R^2$ identified from integration term (website quality × sales promotion) was .003. It Means website quality and sales promotion explained additional 3% of variance in online impulse buying behavior. The total effect of interactional term was ($R^2 = .513$) which means both variables jointly explained 51.3% variance in online impulse buying behavior ($\beta = .230$). Hypothesis 3 is accepted (see Table 5). Table 7 reports the moderation effects of use of credit card. Use of credit card is an important variable to effect on online impulse buying behavior ($\beta = .119$). The significant interaction effect between website quality and use of credit card ($\beta = .434$) on OIBB was found. The interactional term (website quality × use of credit card) ($\mathbf{\Delta}R^2 = 0.006$) which means website quality and use of credit card both explained additional 6% of variance in OIBB, thus the total effects of interactional term and website quality jointly explained 53.2% of variance in dependent variable online impulse buying behavior *(*$R^2 = .532$*)* and ($\beta = .434$). Hypothesis 5 is supported (see Table 7). Above discussion and statistics indicate the full moderating role of sales promotion and use of credit card in achieving online IBB.

FINDINGS AND DISCUSSIONS

Major Findings

This section discusses the findings obtained by empirically analyzing the data along with their alignment with previously conducted studies in other countries. First determinant of OIBB in our research is website quality. Literature considers it as one of the most important factors in driving OIBB particularly in advent of technology era. Results of our study also support the findings of earlier studied conducted on website features in relation with online impulse buying. Results find that website quality is positively related with OIBB. The results of this study are more or less similar with (Wells, et al., 2011; Turkyilmaz et al., 2015; Verhagen & Van Dolen, 2011; Liu et al., 2013; Wu et al., 2016 among others).

Urge to buy, positive and negative affect significantly influence online impulse buying. The results of present study confirm the finding of (Verhagen and van Dolen, 2011). Sales promotion came out to be an important factor to enhance online IBB as consumers buy goods spontaneously with immediate effect from sales promotion. The results disclose that sales promotion has a positive relationship with OIBB; the results of this study are similar with findings from (Badgaiyan et al., 2015; Hultén and Vanyushyn, 2014; Lo Yi-shih, 2016 among others). This study further found that sales promotion, as active moderator, strongly influences the relationship between website quality and OIBB. Developing influential online sales promotion is highly advised for e retailers in China. Use of credit card facilitates the consumers to buy goods immediately. This study reported that use of credit card positively and significantly influences the online impulse purchases. Our findings are also supported by previously conducted studies (e.g., Badgaiyan and Verma, 2015; Roberts & Jones, 2001; Karbasivar & yarahmadi, 2011 among others). In china, customers are encouraged to buy products through credit card and third party payments over cash. Moreover, results indicate that use of credit card significantly moderates the relationship between website quality and online impulse purchases.

Realizing the steep increase in trend of buying online, present study has explored the role of website quality in triggering online impulse buying behavior. Main thesis of research was to analyze above

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stated relationship after augmenting with sales promotion and use of credit card as moderators in model. Study was conducted in China, world's leading emerging economy, having largest number of netizens and online shoppers. Previously conducted studies on said purpose have lacked of sales promotion and use of credit card as moderators for impulse buying behavior from the defined drivers. Present research has employed well-established SEM after conducted reliability and validity tests to validate the scale.

Generally, the proposed theoretical model was well supported empirically. At first, study presented a higher proportion (more than 90%) of online shoppers in China. Study is concluded by following major findings; OIBB is influenced by website quality at large scale; sales promotions and use of credit cards are found to be efficient triggering elements to enhance OIBB. Empirical analysis lead us to conclude that effect of website quality becomes robust when it is supplemented with sales promotion and use of credit card as moderators. Further, present study presents the clear conclusion that online shopping portals can influence the credit card holder visitors' consciousness to buy impulsively when websites exhibit higher quality features accompanying by sales promotion strategies.

Implications

Previous researches on online impulse buying have not described clearly how website quality, sales promotion, use of credit card, positive and negative effects of emotion and urge to buy affect online impulse buying behavior. The present study gives an integrated approach to examine the impact of website quality, sales promotion, use of credit card, positive and negative affect and urge to buy on online impulse buying in the context of Chinese e-commerce environment. The findings of this study contain both theoretical and practical implications. All factors of this study show significant impact on OIBB in either an individual or an integrated approach. The effect of website quality on OIBB in Chinese e-commence setting is the new knowledge added in the field of e-commerce. Although some previously established studies have analyzed the role of sales promotion and credit card in offline impulse buying setting, identifying their role as moderators is still needed. Moreover, online buying is replacing the trend of offline shopping. Findings added new knowledge in the body of e-marketing and e-retailing. In summary, this study has strengthened the theoretical knowledge in the field of e-commerce and related literature by identifying a gap between previous studies.

Significant practical implications are also found from the results. The attributes of website quality facilitate the consumers spending more time on web browsing. Therefore, online retailers should recognize the importance of website related attributes in online store. Online retailers need to improve web design (user friendly, visual appealing, enhance product category with attractive, rich information about products, minimum response time and build trust) in order to increase the impulse buying. Online retailers may provoke the impulsive buying by refining the attributes of website and their retail performance. Specifically, they should focus on user-friendly interface strategy for motivating the impulsive consumers in creating their own product searching process conveniently. Online retailers should design a flexible navigating featured website by providing a rich product category with attractive variety and add visually appealing factors related with their products, such as fonts, colors, graphics and appetitive picture for eatables. Online retail managers should focus on the contents of the web stores with regard to providing enough information about their products and provide big variety of products category comparatively their competitors for encouraging the online shoppers to buy impulsively. Finally, online retail managers who wish to enhance the impulsive consumer should achieve high profit by improving their website attributes and services.

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The primary guideline obtained from the study is that the firms trading in hedonic products should provoke the effects of positive emotions rather than diminishing its negative effects. Online retailers should create positive emotions by making shopping encounters excitement, inspiring and enthusiastic; this phenomenon leads towards impulsive buying. Sales promotion positively affects online impulse buying, e-tail managers should design different promotional strategies (e.g., discounted price, cross selling and up selling) on their website for encouraging the impulsive shoppers. They can create specific web page and links for promotional products for visitors. Finally, they are advised to develop their promotional policy differently for heavy and normal users for motivating them. Use of credit plays a significant moderating role between website quality and online impulse shoppers. Chinese e-tail managers can provide different payment method with regard to target audience. They should facilitate to their impulsive consumers in terms of providing the facility of credit card payment. In order to encourage the impulsive buyers, they should device strategies offering discounts to customers based upon frequency of their buying. Providing the facility of credit card is not enough because privacy and security concerns are there. Online retail firms should design a fully protected system integrated with third party like banks to create the shoppers' trust. Findings are helpful for the e-retailers (e.g., Jd.com, taobao.com, amazon.cn, tmal.com, vip.com, bj.jumei.com, dangdang.com, gome.com, suning.com, etc.) that are operating in China. Although study was conducted in Chinese context, implications are not limited to China only and can be extended to other cultural contexts and regions.

Limitations and Future Opportunities

This manuscript has identified some significant understandings about online impulse buying, but still there are some limitations. Convenient sampling was used for this study; other sampling technique (e.g. quota sampling, stratified sampling and simple random sampling) may produce some more valuable insights. The current study was carried out in two big cities of china; future researches may be conducted in smaller cities and results can be compared subsequently. This study employs only cross sectional estimation techniques. Respondents of our study were mainly females. This may raise concerns about evenly gender distribution biasness in study finding. However, women are more likely to shop online and this fact validates our findings.

This research can be extended with additional factors such as personal traits, cultural and situational factors to understand online IBB. Some technology based conception such like success model and flow experience (Wu et al., 2016) can be used as alternatives to extend the present study. Future scholars can use technology based theory e.g., technology acceptance model (TAM) and other important theories e.g. cognitive emotion theory, prospect theory, reactance theory, reflective-impulsive model and S-O-R frame work. Finally, study can report different results if it is conducted exclusively on big shopping Chinese festivals (e.g., 6.18 6 June, Double Eleven and Double Twelve). Social commerce platforms can also be targeted for future endeavors because they have different features as compared to shopping websites (Xiang et al., 2016; Chen et al., 2016).

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REFERENCES

Adelaar, T., Chang, S., Lancendorfer, K. M., Lee, B., & Morimoto, M. (2003). Effects of media formats on emotions and impulse buying intent. *Journal of Information Technology*, *18*(4), 247–266. doi:10.1080/0268396032000150799

Akram, U., Hui, P., Khan, M. K., Saduzai, S. K., Akram, Z., & Bhati, M. H. (2017). The plight of humanity: Online impulse shopping in China. *Human Systems Management*, *36*(1), 73–90. doi:10.3233/HSM-171768

Badgaiyan, A. J., & Verma, A. (2014). Intrinsic factors affecting impulsive buying behaviour—Evidence from India. *Journal of Retailing and Consumer Services*, *21*(4), 537–549. doi:10.1016/j.jretconser.2014.04.003

Badgaiyan, A. J., & Verma, A. (2015). Does urge to buy impulsively differ from impulsive buying behaviour? Assessing the impact of situational factors. *Journal of Retailing and Consumer Services*, *22*, 145–157. doi:10.1016/j.jretconser.2014.10.002

Blattberg, R. C., Eppen, G. D., & Lieberman, J. (1981). A Theoretical And Empirical Evaluation Of Price Deals For Consumer Nondurables. *Journal of Marketing*, *45*(1), 116–129. doi:10.2307/1251725

Blattberg, R. C., & Neslin, S. A. (1990). *Sales Promotion: Concepts, Methods, and Strategies*. Upper Saddle River, NJ: Prentice-Hall.

Bressolles, G., Durrieu, F., & Giraud, M. (2007). The Impact of Electronic Service Quality's Dimensions on Customer Satisfaction and Buying Impulse. *Journal of Customer Behaviour*, *6*(1), 37–56. doi:10.1362/147539207X198365

Chen, J. V., Su, B. C., & Widjaja, A. E. (2016). Facebook C2C social commerce: A study of online impulse buying. *Decision Support Systems*, *83*, 57–69. doi:10.1016/j.dss.2015.12.008

Childers, T. L., Carr, C. L., Peck, J., & Carsoni, S. (2001). Hedonic and Utilitarian Motivations for Online Retail Shopping Behavior. *Journal of Retailing*, *77*(4), 511–535. doi:10.1016/S0022-4359(01)00056-2

Chin, W. W. (1998). Issues and opinion on structural equation modeling. *Management Information Systems Quarterly*, *22*(1), 7–16.

CNNIC. (2015). China online shopping market survey report. Retrieved from http://www1.cnnic.cn/IDR/ReportDownloads/201601/P020160106496544403584.pdf

Forrester Consulting. (2014). The State of Digital Coupons. Retrieved October 2014 from http://www.retailmenot.com/corp/gui/pdf/digital.pdf

Dawson, S., & Kim, M. (2010). Cues on apparel web sites that trigger impulse purchases. *Journal of Fashion Marketing and Management*, *14*(2), 230–246. doi:10.1108/13612021011046084

Denscombe, M. (2006). Web-based questionnaires and the mode effect: An evaluation based on completion rates and data contents of near identical questionnaires delivered in different modes. *Social Science Computer Review*, *24*(2), 246–254. doi:10.1177/0894439305284522

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Diamantopoulos, A., & Siguaw, J. (2006). Formative versus reflective indicators in organizational measure development: A comparison and empirical illustration. *British Journal of Management*, *17*(4), 263–282. doi:10.1111/j.1467-8551.2006.00500.x

Dittmar, H., Long, K., & Meek, R. (2004). Buying on the Internet: Gender Differences in Online and Conventional Buying Motivations. Sex Roles, 50(5-6), 423–444.

Dubé, L., & Morin, S. (2001). Background music pleasure and store evaluation: Intensity effects and psychological mechanisms. *Journal of Business Research*, *54*(2), 107–113. doi:10.1016/S0148-2963(99)00092-2

Durkin, T. A. (2000). Credit cards: Use and consumer attitudes 1970-2000. *Federal Reserve Bulletin*, *86*, 623–634.

Elliott, M. T., & Speck, P. S. (2005). Factors that affect attitude toward a retail web site. *Journal of Marketing Theory and Practice*, *13*(1), 40–51. doi:10.1080/10696679.2005.11658537

Feinberg, R. A. (1986). Credit cards as spending facilitating stimuli: A conditioning interpretation. *The Journal of Consumer Research*, *13*(3), 348–356. doi:10.1086/209074

Flight, R. L., Rountree, M. M., & Beatty, S. E. (2012). Feeling the urge: Affect in impulsive and compulsive buying. *Journal of Marketing Theory and Practice*, *20*(4), 453–466. doi:10.2753/MTP1069-6679200407

Floh, A., & Medlberger, M. (2013). The Role of Atmospheric Cues In Online- Impulse Buying Behavior. *Electronic Commerce Research and Applications*, *12*(1), 45–439.

Foroughi, A., Buang, N. A., Senik, Z. C., & Hajmisadeghi, R. S. (2013). Impulse buying behaviour and moderating role of gender among Iranian shoppers. *Journal of Basic and Applied Scientific Research*, *3*(4), 760–769.

George, D., & Schor, J. B. (1998). *The Overspent American: Up scaling*. Downshifting, and the New Consumer.

Grewal, D., Krishnan, R., Baker, J., & Borin, N. (1998). The effect of store name, brand name and price discounts on consumers' evaluations and purchase intentions. *Journal of Retailing*, *74*(3), 331–352. doi:10.1016/S0022-4359(99)80099-2

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: a global perspective*. New Jersey: Pearson Education Inc.

Hausman, A. (2000). A multi-method investigation of consumer motivations in impulse buying behavior. *Journal of Consumer Marketing*, *17*(5), 403–426. doi:10.1108/07363760010341045

Hayhoe, C. R., Leach, L., Allen, M. W., & Edwards, R. (2005). Credit cards held by college students. *Financial Counseling and Planning Education*, *16*(1).

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135. doi:10.100711747-014-0403-8

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hoffman, D. L., & Novak, T. P. (1996). Marketing in Hypermedia Computer-Mediated Environments: Conceptual Foundations. *Journal of Marketing*, *60*(3), 50–68. doi:10.2307/1251841

Huizingh, E. K. (2000). The content and design of web sites: An empirical study. *Information & Management*, *37*(3), 123–134. doi:10.1016/S0378-7206(99)00044-0

Hultén, P., & Vanyushyn, V. (2014). Promotion and shoppers' impulse purchases: The example of clothes. *Journal of Consumer Marketing*, *31*(2), 94–102. doi:10.1108/JCM-06-2013-0603

Jeffrey, S. A., & Hodge, R. (2007). Factors Influencing Impulse Buying During an Online Purchase. *Electronic Commerce Research*, *7*(1), 367–379. doi:10.100710660-007-9011-8

Kacen, J. J., & Lee, J. A. (2002). The influence of culture on consumer impulsive buying behavior. *Journal of Consumer Psychology*, *12*(2), 163–176. doi:10.1207/S15327663JCP1202_08

Kannan, P. K., & Kopalle, P. K. (2001). Dynamic Pricing on the Internet: Importance and Implications for Consumer Behavior. *International Journal of Electronic Commerce*, *5*(3), 63-83. doi:10.1080/10864415.2001.11044211

Karbasivar, A., & Yarahmadi, H. (2011). Evaluating effective factors on consumer impulse buying behavior. *Asian Journal of Business Management Studies*, *2*(4), 174–181.

Kim, M., Kim, J. H., & Lennon, S. J. (2006). Online service attributes available on apparel retail web sites: An ES-QUAL approach. *Managing Service Quality: An International Journal*, *16*(1), 51–77. doi:10.1108/09604520610639964

Kotler, P. (2012). *Marketing management* (2nd ed.). Harlow, England; New York: Pearson.

Koufaris, M. (2002). Applying the technology acceptance model and flow theory to online consumer behavior. *Information Systems Research*, *13*(2), 205–223. doi:10.1287/isre.13.2.205.83

Lee, J. A., & Kacen, J. J. (2008). Cultural influences on consumer satisfaction with impulse and planned purchases. *Journal of Business Research*, *61*(3), 265–272. doi:10.1016/j.jbusres.2007.06.006

Liu, Y., Li, H., & Hu, F. (2013). Website Attributes in Urging Online Impulse Purchase: An empirical Investigation on Consumer Perceptions. *Decision Support Systems*, *55*(3), 829–837. doi:10.1016/j.dss.2013.04.001

Lo, L. Y. S., Lin, S. W., & Hsu, L. Y. (2016). Motivation for online impulse buying: A two-factor theory perspective. *International Journal of Information Management*, *36*(5), 759–772. doi:10.1016/j.ijinfomgt.2016.04.012

Loiacono, E. T., Watson, R. T., & Goodhue, D. L. (2007). WebQual: An Instrument for Consumer Evaluation of Web Sites. *International Journal of Electronic Commerce*, *11*(3), 51–87. doi:10.2753/JEC1086-4415110302

Lu, X., & White, H. (2014). Robustness checks and robustness tests in applied economics. *Journal of Econometrics*, *178*, 194–206. doi:10.1016/j.jeconom.2013.08.016

Luo, J., Ba, S., & Zhang, H. (2012). The effectiveness of online shopping characteristics and well-designed websites on satisfaction. *Management Information Systems Quarterly*, *36*(4), 1131–1144.

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Madhavaram, S. R., & Laverie, D. A. (2004). Exploring impulse purchasing on the internet. *NA-Advances in Consumer Research*, *31*, 59–66.

Mattila, A. S., & Wirtz, J. (2001). Congruency of scent and music as a driver of in-store evaluations and behavior. *Journal of Retailing*, *77*(2), 273–289. doi:10.1016/S0022-4359(01)00042-2

Mehta, N., & Chugan, P. K. (2013). The impact of visual merchandising on impulse buying behavior of consumer: A case from Central Mall of Ahmedabad India. *Universal Journal of Management*, *1*(2), 76–78.

Ozen, H., & Engizek, N. (2014). Shopping online without thinking: Being emotional or rational? *Asia Pacific Journal of Marketing and Logistics*, *26*(1), 78–93. doi:10.1108/APJML-06-2013-0066

Parboteeah, D. V., Valacich, J. S., & Wells, J. D. (2009). The influence of website characteristics on a consumer's urge to buy impulsively. *Information Systems Research*, *20*(1), 60–78. doi:10.1287/isre.1070.0157

Park, E. J., Kim, E. Y., Funches, V. M., & Foxx, W. (2012). Apparel product attributes, web browsing, and e-impulse buying on shopping websites. *Journal of Business Research*, *65*(11), 1583–1589. doi:10.1016/j.jbusres.2011.02.043

Pei, Y., Xue, W., Li, D., & Su, Y. (2016). Models of Customer Experience for B2C E-Commerce Enterprises. *Journal of Electronic Commerce in Organizations*, *14*(1), 24–33. doi:10.4018/JECO.2016010103

Piron, F. (1991). Defining impulse purchasing. *Advances in Consumer Research. Association for Consumer Research (U. S.)*, *18*, 509–514.

Podsakoff, P. M., MacKenzie, S., Lee, J., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, *88*(5), 879–903. doi:10.1037/0021-9010.88.5.879 PMID:14516251

Ranganathan, C., & Ganapathy, S. (2002). Key dimensions of business-to-consumer web sites. *Information & Management*, *39*(6), 457–465. doi:10.1016/S0378-7206(01)00112-4

Roberts, J. A., & Jones, E. (2001). Money attitudes, credit card use, and compulsive buying among American college students. *The Journal of Consumer Affairs*, *35*(2), 213–240. doi:10.1111/j.1745-6606.2001.tb00111.x

Rook, D. W., & Fisher, R. J. (1995). Normative influences on impulsive buying behavior. *The Journal of Consumer Research*, *22*(3), 305–313. doi:10.1086/209452

Sharma, P., Sivakumaran, B., & Marshall, R. (2010). Impulse buying and variety seeking: A trait-correlates perspective. *Journal of Business Research*, *63*(3), 276–283. doi:10.1016/j.jbusres.2009.03.013

Shen, K. N., & Khalifa, M. (2012). System design effects on online impulse buying. *Internet Research*, *22*(4), 396–425. doi:10.1108/10662241211250962

Shergill, G. S., & Chen, Z. (2005). Web-based shopping: Consumers attitude towards online shopping in New Zealand. *Journal of Electronic Commerce Research*, *6*(2), 78.

Solomon, M., Russell-Bennett, R., & Previte, J. (2012). *Consumer behaviour*. Pearson Higher Education AU.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Soman, D., & Gourville, J. T. (2001). Transaction decoupling: How price bundling affects the decision to consume. *JMR, Journal of Marketing Research*, *38*(1), 30–44. doi:10.1509/jmkr.38.1.30.18828

Stern, H. (1962). The significance of impulse buying today. *Journal of Marketing*, *26*(2), 59–62. doi:10.2307/1248439

Su, H. (2009). IResearch: 09Q3 Online Shopping Market Size Reaching 65.85 Billion Yuan. Retrieved from http://english.iresearch.com.cn/views/E_Commerce/DetailNews.asp?id=9071

Summers, T. A., & Hebert, P. R. (2001). Shedding some light on store atmospherics: Influence of illumination on consumer behavior. *Journal of Business Research*, *54*(2), 145–150. doi:10.1016/S0148-2963(99)00082-X

Turkyilmaz, C. A., Erdem, S., & Uslu, A. 2015). The effects of personality traits and website quality on online impulse buying. Procedia-Social and Behavioral Sciences, 175, 98-105.

Verhagen, T., & van Dolen, W. (2011). The influence of online store beliefs on consumer online impulse buying: A model and empirical application. *Information & Management*, *48*(8), 320–327. doi:10.1016/j.im.2011.08.001

Verplanken, B., & Herabadi, A. (2001). Individual differences in impulse buying tendency: Feeling and no thinking. *European Journal of Personality*, *15*(1), 71–83. doi:10.1002/per.423

Voorhees, C. M., Brady, M. K., Calantone, R., & Ramirez, E. (2016). Discriminant validity testing in marketing: An analysis, causes for concern, and proposed remedies. *Journal of the Academy of Marketing Science*, *44*(1), 119–134. doi:10.100711747-015-0455-4

Wang, E. S. T. (2017). Creating Utilitarian and Hedonic Value from Website Quality and Online Retail Performance. *Journal of Electronic Commerce in Organizations*, *15*(3). doi:10.4018/JECO.2017070101

Wells, J. D., Parboteeah, V., & Valacich, J. S., (2011). Online impulse buying: understanding the interplay between consumer impulsiveness and website quality. *Journal of the Association for Information Systems, 12*(1), 32-56.

Wolfinbarger, M., & Gilly, M. C. (2003). eTailQ: Dimensionalizing, measuring and predicting etail quality. *Journal of Retailing*, *79*(3), 183-198. doi:10.1016/S0022-4359(03)00034-4

Wu, I. L. (2013). The antecedents of customer satisfaction and its link to complaint intentions in online shopping: An integration of justice, technology, and trust. *International Journal of Information Management*, *33*(1), 166–176. doi:10.1016/j.ijinfomgt.2012.09.001

Wu, I. L., Li, J. Y., & Fu, C. Y. (2011). The adoption of mobile healthcare by hospital's professionals: An integrative perspective. *Decision Support Systems*, *51*(3), 87–596. doi:10.1016/j.dss.2011.03.003

Wu, L., Chen, K. W., & Chiu, M. L. (2016). Defining key drivers of online impulse purchasing: A perspective of both impulse shoppers and system users. *International Journal of Information Management*, *36*(3), 284–296. doi:10.1016/j.ijinfomgt.2015.11.015

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Xiang, L., Zheng, X., Lee, M. K., & Zhao, D. (2016). Exploring consumers' impulse buying behavior on social commerce platform: The role of parasocial interaction. *International Journal of Information Management*, *36*(3), 333–347. doi:10.1016/j.ijinfomgt.2015.11.002

Yu, C., & Bastin, M. (2010). Hedonic shopping value and impulse buying behavior in transitional economies: A symbiosis in the Mainland China market place. *Journal of Brand Management*, *18*(2), 105–114. doi:10.1057/bm.2010.32

Zhang, X., Prybutok, V. R., & Koh, C. E. (2008), "The role of impulsiveness on a TAM-based online purchasing behavior model", *Innovative Technologies for Information Resources Management,* 334.

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Chapter 8
Influences and Intention of Consumer's Online Shopping Decision: Jordan as a Case

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Abstract

Many researchers in Jordan tried to study customers' behavior in the domain of online shopping to understand consumers' attitudes and behaviors towards the adoption process. Still, a lot of work is to be done as customers real usage and adoption level is low which entails more research to be done to investigate the main reasons behind such behavior. In response, this article aims to shed light on consumers' attitudes towards online shopping decisions and extends the technology acceptance model ease of use, perceived usefulness) of the technology acceptance model (TAM) with four factors (trust, security, privacy, and risk). As such, 200 undergraduate and postgraduate students from Yarmouk University formulate the sample of this study. Findings indicate that the six factors are significantly impact consumers' intention to adopt online shopping. Additionally, the F-test of this study indicates that a linear relationship exists between the model's variables and consequently they can be utilized to study this process.

INTRODUCTION

Online shopping has been usually accepted as a mean of buying products and services. It has grown to be a new accepted means in the Internet world (Bourlakis, Papagiannidis & Fox, 2008). In addition, it

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provides consumers additional information and selections to evaluate price and product, more selection, easier to locate everything online (Butler & Peppard, 1998). There are several explanations why people go online for shopping. For instances, customers be able to buy products at any time instead of going to the physical market; they can locate the similar product or service with low price through comparing multi websites at one time and customers want to keep away from traffics.

These factors could be categorized into three categories: efficiency of cost and time (Prasad & Aryasri, 2009), product and information availability (Lim and Dubinsky, 2004), convenience (Wang, 2005), and disintermediation (Gupta, 2014) in which suppliers and buyers interact with each other without intermediaries which achieves a good level of transparency. As a result of that all information about products and services is in the hands of customers. In this environment, many factors are considered important in the eyes of consumes when they intend to adopt electronic commerce transactions. Some of these factors are related to the website and its content like accuracy, usefulness, usability and quality (Huang & Benyoucef, 2013; Al-Dwairi & Kamala, 2010; Al-Dwairi & Kamala, 2009) whereas some other factors are related and perceived by the consumer like trust, risk, security and privacy (Kim, Ferrin & Rao, 2008; Al-Dwairi & Kamala, 2009).

Under the umbrella of e-commerce, many applications like e-learning, e-government, online banking, e-payments, online shopping, etc. are exist (Turban, King & Lang, 2011, p. 51). Online shopping is performed according to the availability of electronic means in which information and service could be exchanged electronically. Online shopping is conducted based on web technology like e-commerce web sites and communication tools such as internet as a transformation channel (Galant, Jakubczyc & Paprzycki, 2002). The diffusion of online shopping as a modern approach in customers' daily life changes consumer lifestyle and accelerates the way consumers transfer their services online. Internet shopping as new business model uses web technology that enables companies to have a competitive advantage and good return when it is used properly (Al-Madi, Al-Zawahreh & Al-Qawasmi, 2013). In addition, customers' satisfaction will increase when they decide to use online shopping instead of conventional shopping due to savings in time, efforts, and money (Andersone & Sarkane, 2015). Yannopoulos (2011) pointed that buyers can benefit from online shopping by entering to worldwide e-markets anytime and anywhere with new chances for fast search, comparing prices and getting special offers. In addition, sellers can benefit by accessing international markets and increasing their revenues and earnings.

The extensive use of internet and web 2.0 increased the experience of people in using new ICT tools and push them to conduct online shopping transactions. As a result of that, the rate of using internet shopping transactions is increasing rapidly. Dabrowski & Acton (2013) mentioned that there was a quick growth in online shopping where it exceeded $279 billion in 2015. In addition, the wide spread and use of social media enable consumers to share and post products and services information over the web. Consequently, customers are able to make good relations and collaborate easily with firms, which in turn boost the level of trust between them which finally leads to increase customer's intention to adopt online shopping (Zhang, Cheung & Lee, 2014).

Jordan as a small country in the Middle East has enhanced and improved the use of information and communication technologies (ICT) and web 2.0 tools to enhance the way of life for people who live in Jordan. For example, the use of e-government facilities to provide Jordanian citizens with online services will increase e-participations and enhance the spread of utilizing online business transactions (Abu-Shanab & Khasawneh, 2013). Despite the high penetration rate of ICT tools among Jordanians and the good knowledge and experience in using computers and internet websites, yet traditional shopping still the dominant (Al-Madi et al., 2013). Based on this, customers' intentions and behaviors to adopt online

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shopping is not clear which calls for more research in this field. In response this study offers a real opportunity to close this gap by conducting a study to investigate the main factors that affect customers' adoption of online shopping in Jordan.

LITERATURE REVIEW

Al-Jabari, Othman and Mat (2012) examined the factors that promote the formation of the actual online shopping behavior among Jordanian customers. The findings of their study pointed that subjective norm and perceived behavioral control have significant positive effects on Jordanians intention to shop online. In addition, attitude showed no direct significant impact on online shopping intention. Halaweh (2011) focused on the security challenge in the online shopping environment in Jordan from a customer and an organizational perspective. The study recommends that this factor is important and should be considered from online marketers.

Alsmadi (2002) conducted study to investigate the factors that affect consumers' attitudes towards online shopping in Jordan. Results of his study showed that Jordanians have good skills and knowledge to use online shopping but they are doubt about the security measures of online transactions. Hence, security is a major factor that restricts customer's willingness to make a better use of online shopping. Altarifi, Al-Hawary and Al Sakkal (2015) conducted an empirical study to examine electronic commerce drivers and their impact on customers' online purchasing decisions. Their findings showed that cultural and technological factors had significant influence on consumer buying decision. Their study recommends to deploy some strategies to protect the Internet as a medium of transactions and to conduct intensive awareness programs to encourage consumers to use online shopping services. Al-Azzam & Mahmoud (2014) proposed and implemented a framework to understand Jordanian Youth attitudes towards online shopping and their intention to shop online. The results of their study revealed that perceived ease of use; perceived behavioral control, attitude, and perceived usefulness are important antecedents in determining online customers behavior. However, the study found no significant impact of trust on online purchasing behavior. Nuseir, Arora, Al-Masri and Gharaibeh (2010) examined a proposed model to test the effect of e-commerce web site presentation on online shopping customers and discovered that promotion security were the most influential factors on consumer purchase intentions. In addition, the Internet infrastructure and product and service characteristics had moderately impacted the consumers' decision process.

On the other side, many scholars have proposed conceptual models and conducted variety empirical studies in the developing countries aiming to shed light on consumers' behaviors towards online shopping. For example, Al-Salamin & Al-Hammad (2015) presented a study of measuring the attitude of Saudi consumers towards online shopping. The study pointed that company risk, financial risk, and privacy are significant factors that affect consumer's intention to use online shopping. In addition, the study pointed that the technical infrastructure is not sufficient to offer the required security measures for online transactions. Alemu, Bandyopadhyay and Negash (2015) investigated ATM customers' opinions towards technology adoption in Ethiopia and found that women perceived themselves to be more susceptible to fraud and other security risks.

AlGhamdi, Nguyen, Nguyen and Drew (2012) conducted a research to identify and discover key issues that positively or negatively influence Saudi retailers towards the adoption of the online shopping. Their research showed that the most important inhibitors of online shopping are habits of people in Saudi

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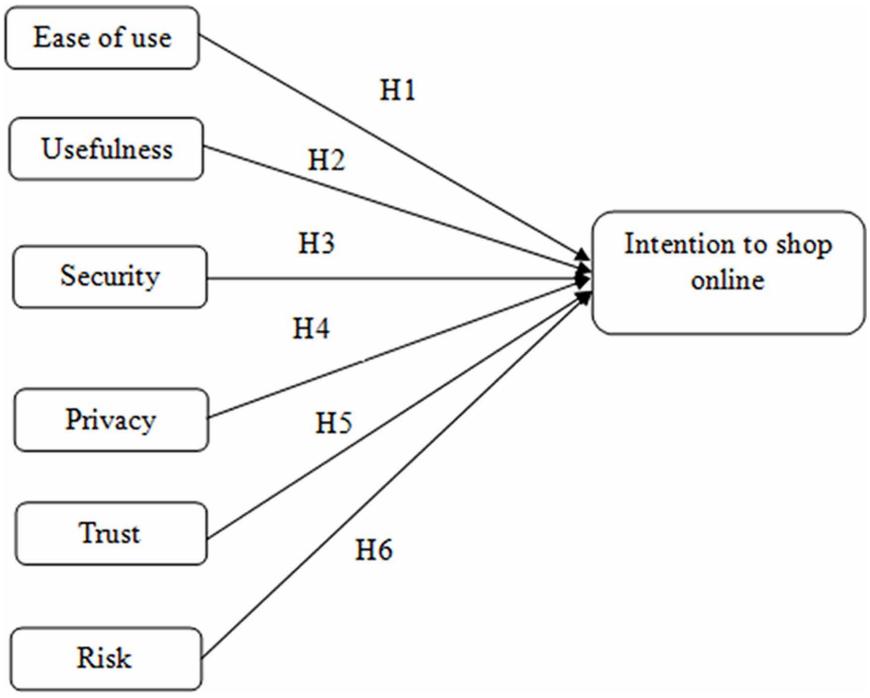
Arabia, lack of clear legislations and rules of e-commerce, and lack of online shopping experience. Liat & Wuan (2014) conducted a research in Malaysia in a trial to understand consumers' intentions towards online shopping by examining the impact of some factors on intention. Findings of their research have discovered that trust, perceived usefulness and subjective norm are the most significant factors on online purchase intention. However, perceived ease of use and perceived enjoyment are not significantly impacted consumers intentions. Stephens & McGowan (2015) suggested a model to compare the students' convenience perceptions between who is purchasing books online and who is purchasing books using the traditional method. Results of their study validated the SERVCON model in the e-service environment. Zeba & Ganguli (2016) conducted an empirical study to test the impact of Word-of-mouth, trust, and Perceived risk on online shopping by proposing a model based on TAM. Their findings showed a positive Would-of-Mouth and perceived risk significantly impacted online purchase intention.

RESEARCH MODEL AND HYPOTHESES DEVELOPMENT

Figure 1 depicts the conceptual design for the proposed model. This model is proposed based on the Technology Acceptance Model (TAM) (Davis, 1989). Rigopoulos et al. (2008) argued that TAM has been extensively deployed as a tool to measure users' attitudes towards technology adoption like online shopping. In essence, many scholars were used TAM to investigate and predict user's acceptance of information technology (Taylor & Todd, 1995; Gefen & Straub, 2003). In addition to the two factors of TAM (perceived ease of use [PEOU] and Perceived usefulness [PU]), our model incorporated four independent variables (Perceived security, Perceived privacy, Perceived trust, and Perceived risk) and one dependent variable (online shopping intention to use) as shown in Figure 1.

Figure 1. The research model



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Ease of Use

Davis (1989) defined PEOU as the degree to which the user expects the system to be used with no difficulties or with less effort. Amaro & Duarte (2015) mentioned that technologies that are supposed to be easier to use and not difficult have a greater opportunity of acceptance and use by consumers. Online shopping uses ICT tools, therefore, the good application and interface which are easy to use will affect consumer's intention to use online shopping (Chiu, Wang, Fang & Huang, 2014; Al-Dwairi, 2013; Fang & Huang, 2014). Based on this, the following hypothesis can be addressed:

H1: Perceived ease of use has a significant positive impact on consumer's intention to use online shopping.

Usefulness

Davis (1989) defined PU as the degree to which using of particular information technology will increase the user's performance. Consumer's performance of using online shopping depends on how much users can benefit from buying their needs online. Rose & Dhandayudham (2014) pointed that the usefulness of online shopping depends on the characteristics of the products and how they are useful for users. If consumers feel that such products or services are useful, then the usefulness is achieved, consequently consumers' intention to use online shopping will be increased (Bagdoniene & Zemblyte, 2009; Zaidi, Gondal, Yasmin, Rizwan & Urooj, 2015). Based on this, the following hypothesis can be addressed:

H2: Perceived usefulness has a significant positive impact on consumer's intention to use online shopping.

Security

Consumers usually are aware about their personal and financial information. Therefore, they pay more attention to use online shopping if they feel that their online transactions and their personal data is safe (Akbar & James, 2013; Al-Dwairi, 2013). Security and fulfillment are important in the intention to use online shopping. Therefore, providing accurate information about security and the payment type give good motivation to users to use online shopping. Moreover, e-retailers must give accurate information about products, services, and payments (Lu, Chang & Yu, 2013). Any weaknesses in the security measures of e-commerce systems will put consumers under risk. Consequently, their financial and personal information might be misused by external parties (Bagdoniene & Zemblyte, 2009). Based on this, the following hypothesis can be addressed:

H3: Perceived security has a significant positive impact on consumer's intention to use online shopping.

Privacy

In order to proceed with online shopping transactions, consumers should reveal their personal and financial information to merchant's web sites. In this environment, customers' lack of familiarity with merchants makes consumers reluctant to reveal their information to online shopping web sites. Providing high security measures and assurances from merchants about consumer's personal and financial information

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will help consumers to proceed with their online transactions (Al-Khasawneh, 2014; Ariff, Sylvester, Zakuan, Ismail & Ali, 2014; Al-Dwairi, 2013). Based on this, the following hypothesis can be addressed:

H4: High privacy measures have a significant positive impact on consumer's intention to use online shopping.

Risk

Perceived risk is well-defined as the possibility for loss in the environment of online shopping. In this vein, it is obvious that risk is a major factor that negatively impacted consumer's intention towards online shopping. Consumers usually expose to some level of risk. Such a matter is established because consumers should deal with digital companies using the Internet. As a result of that, consumers are uncertain about the actions and promises fulfillment of digital firms (Kim et al., 2008) and the possibility of hacking. Based on this, the following hypothesis can be addressed:

H5: Perceived risk has a significant negative impact on consumer's intention to use online shopping.

Trust

Trust is concerned as one of most important factors that affect use and adoption of online shopping; it is mainly concerned with a consumer's belief about the purchased product or service that is ordered via the Web whether is it meets user's expectation or not (Kim et al, 2008). People who are intended to adopt the online shopping may have low trust in such means of shopping since they don't have the ability to touch or recognize the products which are presented via the web site (Al-Dwairi & Kamala, 2009). This generates a lack of trust for consumers which ultimately could affect their intention to use the online shopping. As a result of that, trust is a crucial factor that encourages consumers to take a decision to shop online in a risky environment. Based on this, the following hypothesis can be addressed:

H6: Perceived trust has a significant positive impact on consumer's intention to use online shopping.

RESEARCH METHODOLOGY

The Instrument and the Sample of the Study

The main aim of this research is to focus on Jordanian behavior toward the online shopping by investigating the expected drivers that affect consumers' intentions and final decisions to use online shopping. To this end, a quantitative approach is utilized by collecting data utilizing university students as they are young, educated and use this type of technology. The survey questionnaire was developed based the previous literature.

Questions of the perceived ease of use and perceived usefulness were adapted from Sentosa & Mat (2012). Questions of the security item were adapted from (Abu-Shanab & Al-Azzam, 2013). Privacy questions were adapted from Masoud (2013). Risk questions were adapted from (Abu-Shanab & Al-Azzam, 2013; Abu-Shanab, 2014). Trust questions from (Masoud, 2013) and intention's questions adapted from

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Table 1. Demographic profile

variable	category	Response information N (198)
gender	male female	54 (27.3%) 144(72.7%)
age	less than 25 25-45 46-60	174 (87.9%) 23 (11.6%) 1 (0.5%)
education	diploma bachelor master	4 (2%) 182 91.9%) 12 (6.1%)
Total		198 (100%)

(Sentosa & Mat, 2012). A 5-point Likert scale was used for measuring the variables with 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree. In this study 200 undergraduate and postgraduate students were selected randomly. Outlier analysis is a measure that is used to check if some data in the collected dataset significantly different from the remaining data. Hair, Jr., J. F., Black, W. C., Babin, B. J., Anderson, R. E., and Tatham, R. L., (2006) pointed that outliers should be removed from the dataset because they can affect the research results. The SPSS software automatically deleted two outlier records. As a result of that, the final sample size that is used for analysis is 198. The sample demographics are shown in Table 1.

Reliability Analysis

Cronbach's alpha (Cronbach, 1951) was used to estimate the internal consistency for the items of the study. This measure is known as coefficient alpha which widely used as a measure of reliability. It measures how well a set of factors describe a single latent construct. The recommended value of this measure is to be above 0.80 while the lowest value is 0.70. In some cases, 0.60 could be acceptable (Hair et al., 2006). Table 2 shows the reliability values of the items of the study.

Table 2. Individual items reliability

Construct	Cronbach's Alpha	Number of items
PEOU	0.759	3
PU	0.794	4
Trust	0.616	4
Security	0.744	5
Privacy	0.841	5
Risk	0.621	4
ITU	0.889	3
All Constructs	0.814	28

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RESEARCH RESULTS

Analysis of the collected data was performed using via descriptive statistics, correlation, and multiple linear regression tests. Mean values analysis show how respondents in the study perceived the constructs of the study or the proposed model. Hence, this test gives an indication about the importance of the used constructs. Table 3 shows the mean values of the study constructs. According to Abu-Shanab (2014) mean values are considered high if the exceeds 3.67 out of 5 and moderate if the mean values are from 2.33 to 3.57. Based on this, perceived ease of use construct is highly perceived by online shoppers. In addition, perceived usefulness, trust, security, privacy and risk have a moderate consideration by customers.

Table 3. Mean values of the constructs

	N	Mean
PEOU	198	3.8670
PU	198	3.6692
TRUST	198	3.1667
SEC	198	2.9967
PRIV	198	3.1023
RISK	198	3.2879
ITU	198	3.3047
Valid N (listwise)	198	

In addition to the mean test, Pearson correlation is used in this study to examine the strength of the associations that exist between the factors of this study. A rule of thumb is to consider the correlation value as weak from 0 up to 0.29, medium from 0.30 – 0.49, and strong if its values are 0.50 or more. Multicollinearity can be observed when two or more constructs in the proposed model are correlated with a redundant correlation value that exceeds (0.9). In this study, the correlation matrix that is presented in Table 4 shows no redundant correlation. Hence, the problem of multicollinearity does not exist. In addition, the multi-collinearity for the proposed model as shown in Table 4 was checked and found that variance inflation factors were below the acceptable threshold which are less than 10 (Kennedy, 2003).

Table 4. Coefficients

Model		Collinearity Statistics	
		Tolerance	VIF
1	PEOU	.866	1.155
	PU	.846	1.182
	Trust	.980	1.020
	Security	.910	1.099
	Privacy	.875	1.142
	Risk	.966	1.035
a. Dependent Variable: ITU			

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The correlation values that exist between respondents' perceived ease of use, perceived usefulness, trust, privacy, security, and intention to shop online are all significant. However, the correlation between risk and intention to shop online is not significant. This means that the impact of risk in comparison with the other factors on intention is low. The correlation between risk and trust is negative. The correlation value reflects the negative impact of risk on trust. Table 5 shows the correlation matrix for the variables of the study.

Table 5. Items correlation matrix

		PEOU	PU	Trust	Security	Privacy	Risk	ITU
PEOU	Pearson Correlation	1						
	Sig. (2-tailed)							
PU	Pearson Correlation	.349**	1					
	Sig. (2-tailed)	.000						
Trust	Pearson Correlation	.015	-.043-	1				
	Sig. (2-tailed)	.835	.546					
Security	Pearson Correlation	.042	.174**	.134	1			
	Sig. (2-tailed)	.555	.014	.060				
Privacy	Pearson Correlation	.251**	.296**	.089	.523**	1		
	Sig. (2-tailed)	.000	.000	.212	.000			
Risk	Pearson Correlation	.111	.128	-.035-	.003	.101	1	
	Sig. (2-tailed)	.118	.072	.627	.965	.156		
ITU	Pearson Correlation	.294**	.363**	.419**	.366**	.434**	.163**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.021	

**. Correlation is significant at the 0.01 level (2-tailed).

Multiple regression analysis was utilized to answer the related hypotheses. Hair et al. (2006) defined regression analysis as a statistical technique which is used to analyze the association between more than one independent variables and one dependent variable. According to Asfour & Haddad (2014), the value of R^2 depicts the strength of the relationship that exists between the dependent and independent variables. Table 6 shows R2 Model's summary.

Table 6. Multiple linear model summary

Model Summary[b]					
Model		**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
dimension0	1	**0.673**[a]	0.452	0.435	0.43118

a. Predictors: (Constant), PEOU, PU, Trust, Privacy, Security, Risk

b. Dependent Variable: ITU

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Table 7. ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.328	6	4.888	26.292	.000[a]
	Residual	35.510	192	.186		
	Total	64.838	198			

a. Predictors: (Constant),), PEOU, PU, Trust, Privacy, Security, Risk

b. Dependent Variable: ITU

As shown in Table 6 and 7, the results indicate a significant prediction level, where the six constructs explained 67.3% of the variance of students' intention to use online shopping. The F test ($F6,192 = 26.292$, $p < 0.001$) indicates that the proposed model is fit and powerful in explaining such value of variance.

Table 8. Multiple regression analysis-coefficient results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Result
		B	Std. Error	Beta			
1	(Constant)	-.066-	.292		-.227-	.821	
	PEOU	.084	.036	.138	2.361	.019	significant
	PU	.146	.038	.230	3.887	.000	significant
	TRUST	.473	.066	.391	7.198	.000	significant
	SECURITY	.116	.045	.163	2.560	.011	significant
	PRIVACY	.128	.042	.200	3.008	.003	significant
	RISK	.082	.040	.112	2.053	.041	significant

a. Dependent Variable: ITU

Results that are presented in Table 8 show that the P values of PEOU, PU, PU security, privacy, trust, and risk are less than 0.05 which, means that hypotheses H1, H2, H3, H4, H5, and H6 are all supported. The above table shows a two-sided p values. In this study, the relationship that exists between dependent variable (Intention to shop online) and every independent variable (PEOU, PU, trust, security, privacy, and risk) is one side relationship. The one-tail P value is half the two-tail P value.

DISCUSSION AND RESEARCH IMPLICATIONS

Online shopping is conceptualized as a process that ultimately leads a consumer to decide whether to buy or not based on a particular behavior. In essence, such behavior can be studied from different points of view. As such, many factors can contribute in establishing a positive or negative behavior towards the usage of this new technology (Davis, 1989). Past studies broadly focused on many factors like web page design, security, risk, trust, etc. This study offers a good opportunity to shed light over such factors by studying its impact on the intention and behaviors of Jordanian consumers. The purpose of this

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empirical study is to investigate the reality of online shopping adoption in Jordan and determine the main drivers that contribute in shaping a consumer's positive behavior towards the usage of this new business channel. Indeed, this will lead us to expose to various limitations and barriers of adopting this new business model.

Findings of the study indicated that Jordanians decisions and intentions towards the usage of online shopping are affected by the ease of use of online shopping technology. This means that Jordanian consumers have a positive behavior regarding the adoption on using online shopping as they found it to be easy to use and does not need a big effort to accomplish the tasks of such process (sig. value of PEOU= 0095 < P= 0.05). This finding is in line with (Al-Azzam & Mahmoud, 2014, Al-Dwairi & Kamala 2009), Al-Dwairi, 2013). Additionally, if consumers perceive that using online shopping can increase their performance by getting many benefits like saving time and money; then they will have a positive behavior and intention to use the online shopping. In this study Jordanian consumers found that they can achieve many benefits like saving their time, money, and efforts by using the online shopping. Also, the Web offers a competitive environment to consumers to purchase items with low prices and having special offers. Hence consumers' performance is increased (sig. value of PU= 0.000, < P= 0.05). This finding is in line with (Al-Azzam & Mahmoud, 2014, Al-Dwairi & Kamala 2009, Al-Dwairi, 2013).

In addition, findings of the study indicated that Perceived security has a significant impact on Jordanian consumers ' intention to adopt online shopping (sig. value of Security= 0.0.005, < P= 0.05). As a result, Jordanian respondents feel that the security measures which are offered by the Internet and the digital companies are sufficient and safe enough and positively impacted their intentions to proceed with their online transactions. Additionally, consumers are ready to use the online shopping Web sites' that are endorsed with security seals. As a result of that, their online transactions, personnel, and financial data cannot be exposed. Thus, Jordanian consumers "perceived security" has a significant effect on their future decisions to use online shopping. These findings are matches the findings of (Halaweh, 2011, Nuseir et al., 2010, Alsmadi, 2002).

In order to proceed with online transactions, consumers should disclose their personal and financial information to the digital companies. As a result of that, consumers may be become more reluctant to reveal such sensitive data to commercial Web sites because their privacy may be misused. Findings of this study show that Jordanians are aware about their privacy (sig. value of privacy = 0.0015, < P= 0.05). This indicated that privacy of online consumers has played a significant role in impacting their intention toward online shopping. This finding matches the findings of (Al-Khasawneh, 2014; Ariff et al., 2014; Al-Dwairi, 2013).

In this research, perceived risk is the possibility of loss in the domain of online shopping. Hence, it is obvious that risk is a major factor that negatively impacted consumer's intention towards online shopping. Findings of this study show that Jordanian consumers are aware about the possibility of being under many kinds of threat or risks and agreed about its negative impact on their intention to shop online (sig. value of PU= 0.0205 < P= 0.05). For example, consumers are aware about their credit card information. In addition, consumers are not able to check and test the purchased items during the online purchasing process. So that consumers have a concern about the quality of the shipped items. In this critical situation, the role of consumers' trust raise as a moderated factor which bridge the gap between risk and consumers intention to proceed with consumers' online transactions in risky situations. Findings of this research revealed that consumers trust has a significant impact toward their final decisions (sig. value of PU= 0.000, < P= 0.05). This result agree with the findings of (Liat & Wuan, 2014; Al-Dwairi, 2013).

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This research has many implications. Firstly, this study can be considered as one of the important studies that focuses on the importance of deploying information technology in providing customers with variety of e-services like online shopping and e-tailing. Findings of this study highlight the significant role of technology acceptance in the adoption of online shopping. Indeed, results imply that TAM with its salient factors (PEOU & PU) is still used as one of the main theories which gage user's acceptance of a particular technology and its significant impact on the adoption of that technology. As such, Jordanian consumers will be able to adopt online shopping if it is easy to use and offer good benefits for them. This finding also implies that IT developers should design high quality e-commerce web sites that achieve the requirements of TAM to increase consumers' online shopping adoption level. Second, the findings of this study value the significant role of security and privacy factors in adopting online shopping. As a result of that, digital companies should deploy the latest technology standards to protect consumers' personnel and financial data as well as online transactions by using strong cryptographic protocols and sealing their Web sites with security seals. This will boost consumers' impression about the security measures that are used in such e-commerce Web sites. Finally, results imply that telecommunication companies should continue enhancing their networks and the related infrastructure which is needful to offer more Web services to Jordanian consumers.

LIMITATIONS AND FUTURE RESEARCH

This study is restricted by some limitations. For example, the sample of this study has been taken from Yarmouk University students which may affect the generalizability of the results. In addition to this, the proposed model can be extended with more factors that are related to the consumer as a human who will ultimately decide to proceed with the online transaction or not based on a formulated behavior. Taking such limitations into account motivate us to do some future research to fill such gaps. For example, utilizing the Web based questionnaire may be a good mean to allow different types of consumers in different locations and cities in Jordan to participate in such research which enrich the sample with more opinions and enlarge the sample of our future study to bridge the problem of generalizability of the results.

Moreover, extending the proposed model to check the impact of consumers demographic factors like age, gender, education, and income on intention to adopt online shopping will offer valuable opportunity to have a look at the adoption process from different points of view and may draw a big picture for Jordanian's adoption behaviour.

CONCLUSION

This study offered a true opportunity to study and investigate consumer's behavior towards the use of online shopping in Jordan by validating and testing a conceptual model. The study model extends TAM with some factors utilized from the domain of this field. 200 undergraduate and postgraduate students formulate the sample of this study. The findings of this study show a strong support for the proposed model. Additionally, the F-test is highly significant which means that the selected factors of the proposed model have a linear relationship and can successfully gauge such phenomenon.

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REFERENCES

Abu-Shanab, E. (2014). Antecedents of trust in e-government services: an empirical test in Jordan. *Transforming Government: People*. *Process and Policy*, *8*(4), 480–499.

Abu-Shanab, E., & Al-Azzam, A. (2012). Trust dimensions and the adoption of e-government in Jordan. *International Journal of Information Communication Technologies and Human Development*, *4*(1), 39–51. doi:10.4018/jicthd.2012010103

Abu-Shanab, E., & Khasawneh, R. (2013, May). E-government adoption: A digital divide perceptional view. In *The 6th International Conference on Information Technology (ICIT 2013)* (pp. 8-10).

Akbar, S., & James, P. T. (2014). Consumers' attitude towards online shopping Factors influencing employees of crazy domains to shop online. *Journal of Management and Marketing Research*, *14*(3), 1–11.

Al-Azzam, A.F.M. (2014). Evaluating the antecedents of online consumer purchasing behavior: An Empirical study based on theory of planned behavior. *International Journal of Economics*, *Commerce and Management*, *2*(4), 1–18.

Al-Dwairi, R. M. (2013). E-commerce web sites trust factors: An empirical approach. *Contemporary Engineering Sciences*, *6*(1), 1–7. doi:10.12988/ces.2013.13001

Al-Dwairi, R. M., & Kamala, M. A. (2009, September). An Integrated Trust Model for Business-to-Consumer (B2C) E-Commerce: Integrating Trust with the Technology Acceptance Model. In *International Conference on CyberWorlds CW'09* (pp. 351-356). IEEE.

Al-Dwairi, R. M., & Kamala, M. A. (2009, September). Determination of the Factors that Influence Consumers' Trust in Business-to-Consumers Electronic Commerce: An Empirical Approach. In *International Conference on CyberWorlds CW'09* (pp. 345-350). IEEE.

Al-Dwairi, R. M., & Kamala, M. A. (2010, February). Business-to-consumer e-commerce Web Sites: Vulnerabilities, Threats and quality evaluation model. In *2010 20th International Conference on Electronics, Communications and Computer (CONIELECOMP)* (pp. 206-211). IEEE.

Alemu, T., Bandyopadhyay, T., & Negash, S. (2015). Electronic Payment Adoption in the Banking Sector of Low-Income Countries. *International Journal of Information Systems in the Service Sector*, *7*(4), 27–47. doi:10.4018/IJISSS.2015100102

AlGhamdi, R., Nguyen, A., Nguyen, J., & Drew, S. (2012). Factors influencing E-commerce Adoption by Retailers in Saudi Arabia. arXiv:1211.2799

Al-Jabari, M. A., Othman, S. N., & Mat, N. K. N. (2012). Actual online shopping behavior among Jordanian customers. *American Journal of Economics*. doi:10.5923/j.economics.20120001.28

Al-Khasawneh, A. (2014). Looking Beyond Technology: Barriers of E-Commerce Privacy in Building E-Loyalty Intention on Internet Banking. *International Journal of Software Engineering and Its Applications*, *8*(8), 65–72.

Al-Madi, F., Al-Zawahreh, A., & Al-Qawasmi, S. (2013). Determinants of consumer's attitudes to electronic marketing in Jordan. *International Journal of Management*, *30*(2), 536–455.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Al-Salamin, H. A., & Al-Hammad, A. A. (2015). Attitude of Saudi consumers towards online shopping with special reference to Al-Hassa region (KSA). The 2015 WEI International Academic Conference Proceedings Barcelona, Spain pp. 87-104.

Al-Smadi, S. (2013). Consumers attitudes towards online shopping in Jordan: Opportunities and challenges. In *Conference on marketing in Arab Countries*, Sharjah, UAE (pp. 131-144).

Altarifi, S., Al-Hawary, S. I. S., & Al Sakkal, M. E. E. (2015). Determinants of E-Shopping and its Effect on Consumer Purchasing Decision in Jordan. *International Journal of Business and Social Science*, *6*(1).

Amaro, S., & Duarte, P. (2015). An integrative model of consumers' intentions to purchase travel online. *Tourism Management*, *46*, 64–79. doi:10.1016/j.tourman.2014.06.006

Andersone, I., & Gaile-Sarkane, E. (2015). Behavioral differences in consumer purchasing behavior between Online and traditional Shopping: Case of Latvia. *Economics and management*, (14), 345-352.

Ariff, M. S. M., Sylvester, M., Zakuan, N., Ismail, K., & Ali, K. M. (2014). Consumer perceived risk, attitude and online shopping behaviour; Empirical evidence from Malaysia. *IOP Conference Series. Materials Science and Engineering*, *58*(1), 1–10.

Asfour, H. K., & Haddad, S. I. (2014). The Impact of Mobile Banking on Enhancing Customers' E-Satisfaction: An Empirical Study on Commercial Banks in Jordan. *International Business Research*, *7*(10), 145–169. doi:10.5539/ibr.v7n10p145

Bagdoniene, L., & Zemblyte, J. (2015). Online shopping motivation factors and their effect on Lithuanian Consumers. *Economics and Management*, (14), 367-374.

Bourlakis, M., Papagiannidis, S., & Fox, H. (2008). E-consumer behaviour: Past, present and future trajectories of an evolving retail revolution. *International Journal of E-Business Research*, *4*(3), 64–67. doi:10.4018/jebr.2008070104

Butler, P., & Peppard, J. (1998). Consumer purchasing on the Internet: Processes and prospects. *European Management Journal*, *16*(5), 600–610. doi:10.1016/S0263-2373(98)00036-X

Liat, C. B., & Wuan, Y. S. (2014). Factors influencing consumers' online purchase intention: A study among university students in Malaysia. *International Journal of Liberal Arts and Social Sciences*, *2*(8), 121–133.

Chiu, C. M., Wang, E. T., Fang, Y. H., & Huang, H. Y. (2014). Understanding customers' repeat purchase intentions in B2C e-commerce: The roles of utilitarian value, hedonic value and perceived risk. *Information Systems Journal*, *24*(1), 85–114. doi:10.1111/j.1365-2575.2012.00407.x

Dabrowski, M., & Acton, T. (2013). The performance of recommender systems in online shopping: A user-centric study. *Expert Systems with Applications*, *40*(14), 5551–5562. doi:10.1016/j.eswa.2013.04.022

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Quarterly*, *13*(3), 319–340. doi:10.2307/249008

Galant, V., Jakubczyc, J. A., & Paprzycki, M. (2002). Infrastructure for E-Commerce. *Prace naukowe-akademii ekonomicznej imienia oskara langego we wroclawiu*, *931*, 32–47.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *Management Information Systems Quarterly*, *27*(1), 51–90. doi:10.2307/30036519

Rigopoulos, G., Psarras, J., & Askounis, D. T. (2008). A TAM Model to Evaluate User's Attitude Towards Adoption of Decision Support Systems. *Journal of Applied Sciences (Faisalabad)*, *8*(5), 899–902. doi:10.3923/jas.2008.899.902

Gupta, A. (2014). E-Commerce: Role of E-Commerce in Today's Business. *International journal of Computing and Corporate Research, 4(1).*

Hair, J. F. Jr, Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Upper Saddle River, New Jersey: Pearson Education, Inc.

Halaweh, M. (2011). Adoption of E-commerce: Understanding of Security Challenge. *The Electronic Journal on Information Systems in Developing Countries*, *47*(3), 1–13. doi:10.1002/j.1681-4835.2011.tb00331.x

Huang, Z., & Benyoucef, M. (2013). From e-commerce to social commerce: A close look at design features. *Electronic Commerce Research and Applications*, *12*(4), 246–259. doi:10.1016/j.elerap.2012.12.003

Kennedy, P. (2003). *A Guide to Econometrics* (5th ed.). Cambridge, MA: MIT Press.

Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, *44*(2), 544–564. doi:10.1016/j.dss.2007.07.001

Kim, H. W., Xu, Y., & Gupta, S. (2012). Which is more important in Internet shopping, perceived price or trust? *Electronic Commerce Research and Applications*, *11*(3), 241–252. doi:10.1016/j.elerap.2011.06.003

Lim, H., & Dubinsky, A. J. (2004). Consumers' perceptions of e-shopping characteristics: An expectancy-value approach. *Journal of Services Marketing*, *18*(7), 500–513. doi:10.1108/08876040410561839

Lu, L. C., Chang, H. H., & Yu, S. T. (2013). Online shoppers' perceptions of e-retailers' ethics, cultural orientation, and loyalty: An exploratory study in Taiwan. *Internet Research*, *23*(1), 47–68. doi:10.1108/10662241311295773

Masoud, E. Y. (2013). The effect of perceived risk on online shopping in Jordan. *European Journal of Business and Management*, *5*(6), 76–87.

Nuseir, M. T., Arora, N., Al-Masri, M. M., & Gharaibeh, M. (2010). Evidence of Online Shopping: A Consumer Perspective. *International Review of Business Research Papers*, *6*(5), 90–106.

Prasad, C. J., & Aryasri, A. R. (2009). Determinants of shopper behaviour in e-tailing: An empirical analysis. *Paradigm*, *13*(1), 73–83. doi:10.1177/0971890720090110

Rose, S., & Dhandayudham, A. (2014). Towards an understanding of Internet-based problem shopping behaviour: The concept of online shopping addiction and its proposed predictors. *Journal of Behavioral Addictions*, *3*(2), 83–89. doi:10.1556/JBA.3.2014.003 PMID:25215218

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Sentosa, I., & Mat, N. K. N. (2012). Examining a theory of planned behavior (TPB) and technology acceptance model (TAM) in internetpurchasing using structural equation modeling. *Researchers World*, *3*(2 Part 2), 62–77.

Stephens, P., & McGowan, M. (2015). Service Convenience: On-Line versus Brick and Mortar Bookstores. *International Journal of Information Systems in the Service Sector*, *7*(3), 1–14. doi:10.4018/IJISSS.2015070101

Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research*, *6*(2), 144–176. doi:10.1287/isre.6.2.144

Turban, E., & King, D. (2011). *Introduction to electronic commerce* (3rd ed.). Prentice Hall.

Wang, C. L., Zhang, Y., Ye, L. R., & Nguyen, D. D. (2005). Subscription to fee-based online services: What makes consumer pay for online content? *Journal of Electronic Commerce Research*, *6*(4), 304–311.

Yannopoulos, P. (2011). Impact of the Internet on marketing strategy formulation. *International Journal of Business and Social Science*, *2*(18), 1–7.

Zaidi, S. D. A., Gondal, B. J., Yasmin, A., Rizwan, M., & Urooj, M. (2015). Antecedents of Online Shopping Intention: A Study held in Pakistan. *Journal of Sociological Research*, *5*(1), 231–247. doi:10.5296/jsr.v5i1.6564

Zeba, F., & Ganguli, S. (2016). Word-Of-Mouth, Trust, and Perceived Risk in Online Shopping: An Extension of the Technology Acceptance Model. *International Journal of Information Systems in the Service Sector*, *8*(4), 17–32. doi:10.4018/IJISSS.2016100102

Zhang, K. Z., Cheung, C. M., & Lee, M. K. (2014). Examining the moderating effect of inconsistent reviews and its gender differences on consumers' online shopping decision. *International Journal of Information Management*, *34*(2), 89–98. doi:10.1016/j.ijinfomgt.2013.12.001

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Section 2

Development and Design Methodologies

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Chapter 9
E-Commerce Business Model

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ABSTRACT

This chapter provides an overview of the e-commerce business model, the history of e-commerce, the scope of e-commerce, the difference between e-commerce and traditional commerce, issues related to e-commerce, electronic data interchange, value chain, and supply chain, and the pros and cons and limitations of e-commerce.

INTRODUCTION: E-COMMERCE

E-commerce is made of two word electronic and commerce:

- **Electronic:** Means of electronic in term of e-commerce is doing any activity (related to business, marketing, payment, communication) online.
- **Commerce:** Commerce is a branch of business. it is concerned to buying or selling of products and goods. It includes all those activities, which directly or indirectly related to business. An interchange of goods or commodities between different nations or between areas of the same nation (Hanson & Kalyanam,2009).

In this way we can say E-commerce is shifting or changing the way of doing business. It is a dot com revolution. It transfers all the business activity over the internet. so, today e-commerce is changing the way of human life. E-commerce takes place between organization, between organization and customers, or between organization and public administrative. This concept shown in Figure 1.

There are several definition of electronic commerce. Some of them are.

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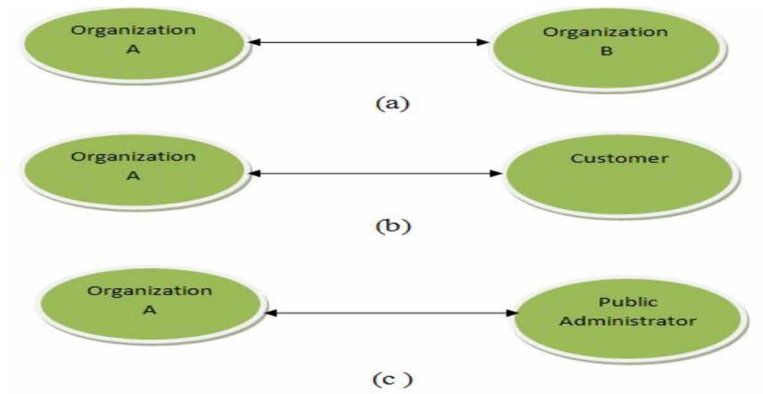
Figure 1. A transaction (a) Between organization (b) Between organization and company (c) Between organization and public administrator



According to world trade organization – " The Production, distribution, marketing, sales or delivery of goods and services by electronics means".

Kalakota and Whintons defined the term E-commerce from different perspectives. These perspectives are:

- Communication
- Business Process
- Service
- Online
- **Communication Perspective:** According to this perspective, E-commerce is the delivery of information, product/services or payments over tele-communication channels, computer networks or any other electronic mode of communication.
- **Business Process Perspective:** This says that E-commerce is the application of technology towards the automation of business transactions and work flow.
- **Service Perspective:** E-commerce is defines as a tool that addresses the desire of firms, consumers and management to cut service cost while improving the quality of goods/services and increasing the speed of service delivery.
- **Online Perspective:** Electronic commerce provide opportunity of buying and selling products and information on the internet and other online services.

According to Lou Gerstner, IBM's CEO, "E-commerce is all about time cycle, speed, globalization, enhanced productivity, reaching new customers, and sharing knowledge across institutions for competitive advantage." Zwass (1996) defines e-commerce as:

The sharing of business information, maintaining business relationships, and the conducting business transactions by means of telecommunications networks.

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HISTORY OF E-COMMERCE

In 1970 introduce a term electronic fund transfer, whereby funds could be transfer or routed electronically from one company to another company. Generally these application was used only few organization like banks, large corporations. In banks are electronic transmission of account exchange information over private networks. After some year electronic data interchange occur when one business transmit computer readable data in standard format to another business. It means sending business documents such as purchase order and invoice electronically (Schneide P.G.,2007).

The standard formats used in EDI contain the same information that business have always included in their standard paper invoices, purchase order and shipping documents. Some farms such as general electric(GE) and wal-mart have been pioneer in using EDI to improve their purchasing process and their suppliers. One major problem with EDI faced is the high cost of implementation because it used private or value added network. A VAN is an independent firm that after connection and transaction forwarding services to buyers and seller engaged in EDI. When the internet become commercialized and users began to participate in the world wide web. In early 1990, the term electronic commerce was introduced. A large number of dot coms or internet based business started rapidly. One reason for this rapid expansion was the development of new networks, protocol and electronic commerce software. The other reason was increase in competition and other business pressures (Dennis P.,2004).

In starting year of 1995, most of medium and large size organization in world has a web site. Many of these web sites contain thousand of page and links. In 1999, the emphasis of electronic commerce shifted from B2C to B2B and in 2001 from B2B to B2E, e-government, e-learning, M-commerce.

Scope of Electronic Commerce

There are some main areas where scope of E-commerce. These are:

- EDI on the Internet
- Exchange of digitized information
- Direct marketing, selling and service.
- Online banking and billing.
- Secure distribution of data.
- Shopping on the World Wide Web.
- Product sales and services on the web.

In E -Commerce there are some steps for purchasing the products and take some services from the e- commerce, starting from the requirement identification, searching the web sites for purchasing, and then analyzing that product then place it for payment and complete this cycle of purchasing by receiving the product shown in Figure 2.

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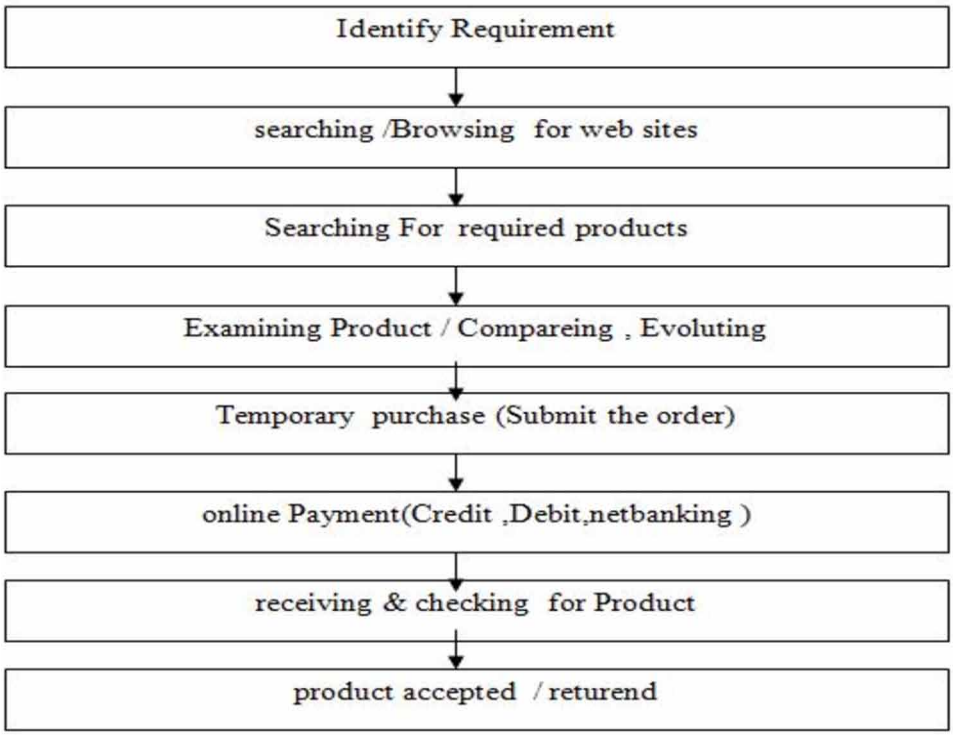
Figure 2. Process flow in e-commerce



Differences Between Electronic Commerce and Traditional Commerce

Face to Face Interaction

Traditional commerce based on face to face interaction. the consumer has a chance to ask questions frequently and satisfy before purchasing a product. On the other hand, E-commerce doesn't based on face to face interaction.

Real Estate Cost

Traditional commerce relies on physical store space that needs to be rented. It is too much costly while e-commerce there is no cost for real estate.

Reach

With an online shop you can do business with anybody living on a country you are able and willing to send mail to, unlike traditional commerce where you are restricted to people who actually come to your shop. This also opens the door to many other forms of marketing that can be done entirely online, which often results in a much larger volume of sales and even foot traffic to the store. An online store has no capability limits, and you can have as many clients as your stock can serve.

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Returns Rate

In a traditional store, the customer will be purchasing the product in person, which has some benefits for both the him and the store. The customer will be able to touch and check the items, to make sure they are suitable, and even try them on, which reduces the number of returned items or complaints due to an item not being as advertised on a catalogue. or promotional leaflet. Expect a significantly higher rate of returns if you start trading online, as many will just order and try the items at home, and won't hesitate to return them as they can do it by post without having to talk with anybody in person (Greenstein & Feinman, 2001).

Credit Card Fraud

The remote nature of E-commerce makes much more difficult to detect fraud, which means stores can lose money due to fraud. While traditional commerce is not totally secure, it's easier for a sales attendant to verify that the person buying something is actually the owner of the credit card, by asking for photographic ID. However, the fight against card fraud is well underway and banks and responsible e-Commerce owners work together to verify that all card use is legitimate.

Availability

E-commerce based online store available for purchasing any item every time. It means you can do business 24/7. In Traditional commerce do not provide such type of facility.

E-COMMERCE ARCHİTECTURE

E-commerce is based on the client –server architecture. A client can act as an application, which follows a Graphical User Interface (GUI) for sending request to server for certain services. The server is used to provide the services upon the request of client. In E-commerce, a client refers to a customer that sends a requests to a server for a service then that request is further transferred to business applications which helps in providing the service. The business application is mainly dependent on Web Server. Web server is a program that deliver services to other computer programs and serves the Hyper Text Mark-up Language pages or files. In client server architecture, a machine behave like client and a server. There are two types of client-server architecture: Two – Tier and Three-Tier.

Two –Tier Architecture

In two tier architecture there is two level that is presentation layer and data layer.

The client handles the user interface part and provide an interface for the customer that gather and present the data on the computer of customer. This part of application is known as presentation layer. The application logic can be run on the client or the server. It allows the separation of client processes from server processes on different computer. The database is stored on the server. This part of application is known as data layer. The data validation, monitors security permissions and performs other business rules done by business logic can be kept on the client or the server.

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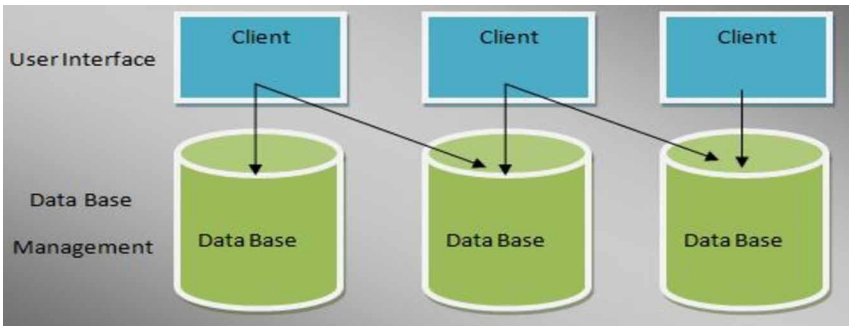
Figure 3. Two –tier architecture



Three-Tier Architecture

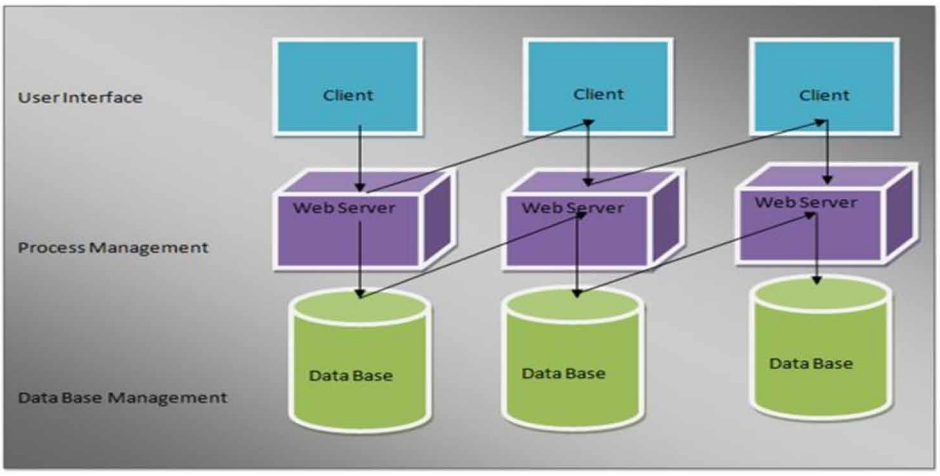
This architecture emerged in 1990's to overcome the limitation of two tier .In three tier there is an independent module for user interface and business application logic. The three tier include the three tier: top tier, middle tier and third tier.

The top tier acts as a presentation layer which provides services as session, text input, dialog and display management reside.

The middle tier provides services of process management such as process development, process resourcing and process monitoring that are shared by multiple applications. It also has centralized process logic which makes administration easier by localizing the system functionality.

The third tier provides database management functionality. The component ensures that data is consistent throughout the environment.

Figure 4. Three –tier architecture



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TYPES OF E-COMMERCE MODEL

There are four major segments under the category of e-commerce model. These are:

- Business to business e-commerce (B2B).
- Business to consumers e-commerce (B2C).
- Consumers to consumers e-commerce (C2C).
- Consumer to business e-commerce (C2B).

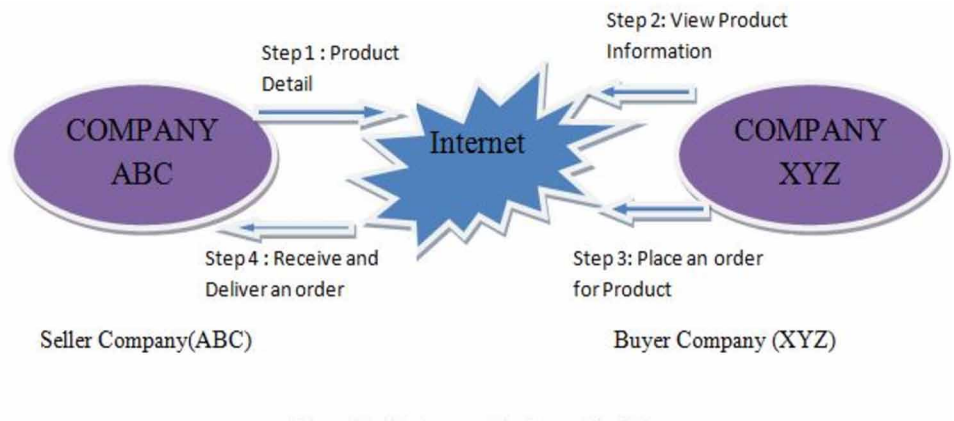
Business to Business (B2B)

Business-to-business implies the selling of products and services between corporations and the automation of systems via integration. This category of commerce typically involves suppliers, distributors, manufacturers, stores, etc. On the other hand The B2B model involves electronic transactions for ordering, purchasing, as well as other administrative tasks between organizations. It includes trading goods, such as business subscriptions, professional services, manufacturing, and wholesale dealings. Sometimes in the B2B model, business may exist between virtual companies, neither of which may have any physical existence. In such cases, business is conducted only through the Internet (Rajaraman V.2009).

Let us look at the same example of amazon.com . As you know, amazon.com is an online bookstore that sells books form various publishers including TMH, PHI, O'Reilly, Wrox, and so on. In this case, the publishers have the option of either developing their own site or displaying their books on the amazon site, or both. The publishers mainly choose to display their books on amazon at it gives them a larger audience. Now, to do this, the publishers need to transact with amazon, involving business houses on both the ends, is the B2B model.

Consider a hypothetical example. ABC company sells electronic parts and XYZ company assembles these part and then sells the electronic item to customers. XYZ company comes across the web site of ABC and finds it suitable. XYZ company, requests for more information about ABC and finally, decides to purchase electronic parts from ABC. To do this, XYZ places an order on the web site of ABC. After ABC receives the order details, it validates the information. As soon as the order is confirmed, the pay-

Figure 5. Business to Business Model



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ment procedures are settled. Finally, ABC sends an acknowledgement of payment to XYZ and delivers the goods as per the shipment details decided between the two organizations. Figure 5 show Business to Business Model.

Majorly there are four step involve when one business communicate to another Business. These are:

Step 1: Seller Company make a website and display all the product detail. For example electronic company give detail all the product related to all electronic product.

Step 2: Buyer Company view a product and find a information about the product on a seller company website.

Step 3: Buyer Company place a order to seller company over the internet for assembling a product. For example buyer company make Laptop or computer, so it place order like electronic circuit, SMPS, Fan, motherboard, processor, hard disk etc.

Step 4: Receive a order from buyer company and the settlement of payment between seller and buyer company. Seller Company delivers a product to the buyer company.

Business to Consumers E-Commerce

When a consumer purchase a product form a e-store over the internet and fully transaction is carried out electronically, we call it business to consumer e-commerce or business to consumer e-commerce. Business to consumer involves interaction and transaction between a business and its end consumer and so it create electronic storefronts that offer information, services, product between business and consumer in a retailing transaction. It applies to any business organization that sells its products or services to consumers over the Internet. These sites display product information in an online catalog and store it in a database. The B2C model also includes services online banking, travel services, and health information. Business to consumer model include virtual malls, which are website, host may placed order online virtual malls (Joseph P.T. & S.J.,2009).

Consider a hypothetical example in which a transaction is conducted between a business Company and a consumer. A Company, XYZ Department Store, displays and sells a range of products on their Web site, www.xyz.com. The details information of all their products is contained in the huge catalogs maintained by xyz Department Stores. Now, a consumer, ABC wants to buy a gift for his wife. He therefore, logs on to the site of XYZ Department Stores and selects a gift from the catalog. He also gets the detailed information about the gift such as, the price, availability, discounts, and so on from their catalog. Finally, when he decides to buy the gift, he places an order for the gift on their Web site. To place an order, he needs to specify his personal and credit card information on xyz company. This information is then validated by XYZ Department Store and stored in their database. On verification of the information the order is processed. Therefore, as you can see, the B2C model involves transactions between a consumer an done or more business organizations. Figure 6 show Business to consumer model.

Majorly there are four step involve between business and customer transaction. These are:

Step 1: Seller Company make a website and display all the product detail. Details information of all their products is contained in the huge catalogs maintained by Company Store. For example electronic company give detail all the product related to all electronic product i.e cost, availability, discount, technical feature of product .

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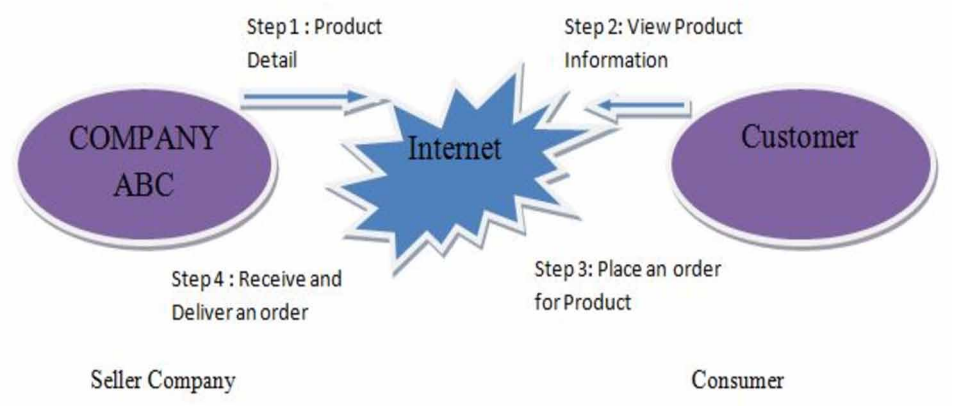
Figure 6. Business to Consumer Model



Step 2: Customer view a product and find and analysis a information about the product on a seller company website.

Step 3: Customer place a order to seller company over the internet. For example purchase Laptop or computer, so it place order to seller company.

Step 4: Receive a order and payment from customer. Seller Company delivers a product to customer.

The example of the amazon site also involves the B2C model in which the consumer searches for a book on their site and places an order, if required. This implies that a complete business solution might be an integration solution of more than one business model. For example, amazon includes the B2B model in which the publishers transact with amazon and the B2C model in which an individual consumer transact with the business organization.

Table 1. Difference between B2B and B2C model

Subject	B2B	B2C
Commerce Activity	Transaction between Organization	Transaction between organization and company
Business Models	The business models in B2B are much more defensible than in B2C. In B2B, buyers and suppliers are made more efficient, competitive and profitable.	The B2C models are based on optimizing the ability to directly attract, manage and support the individual customer, thus eliminating the traditional middleman.
Order size	Order size is large	Order size is small
Customer Relationships	Relationships are much more complex, long-term, often contractual and involve bigger dollar amount. They involve intricate procurement models, supply chain automation, engineering and planning collaboration.	B2C relationships are usually one-sided, where businesses define and control the relationship with the consumer.
Example	SalesForce,Ripple,Replyup	Apple, Microsoft, Ebay, Walmart, Disney, Coca-Cola,

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The B2C model of e-commerce is more prone to the security threats because individual consumers provide their credit card and personal information on the web site of a business organization. In addition, the consumer might doubt that his information is secured and used effectively by the business organization. This is the main reason why the B2C model is not very widely accepted. Therefore, it becomes very essential for the business organizations to provide robust security mechanisms that can guarantee a consumer for securing his information.

Customer to Business Model (C2B)

The C2B model involves a transaction that is conducted between a consumer and a business organization. It is similar to the B2C model, however, the difference is that in this case the consumer is the seller and the business organization is the buyer. In this kind of a transaction, the consumers decide the price of a particular product rather than the supplier. This category includes individuals who sell products and services to organizations (Wbiteley D.,2005). For example, monster.com, naukari.com is a job related Web site on which a consumer can post his bio-data for the services he can offer. Any business organization that is interested in deploying the services of the consumer can contact him and then employ him, if suitable .

Majorly there are five step involve between customer and business transaction. These are:

Step 1: Post the product or information on the portal. This portal manages by third company not related to seller and buyer. This company provide a facility to seller consumer and Buyer Company make a business.

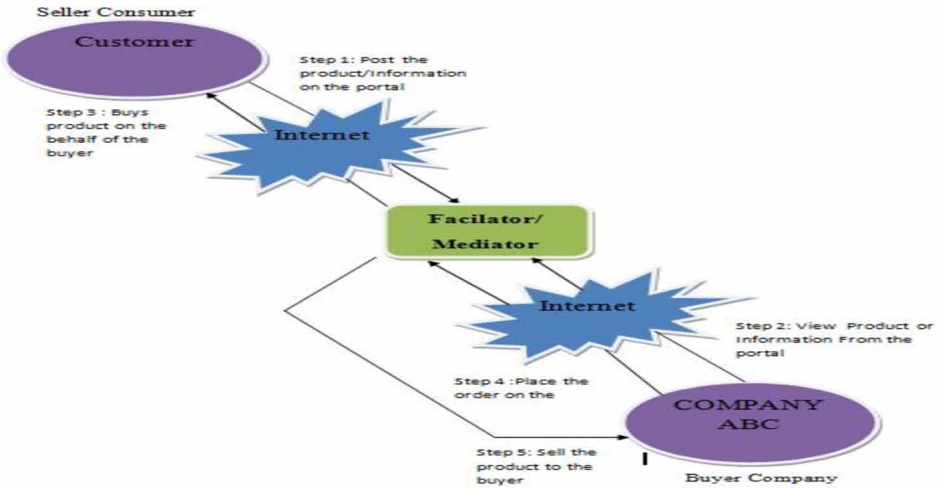
Step 2: Buyer company view a product or information from the portal.

Step 3: After analysis a product or information, buyer company place a order on portal.

Step 4: Facilator or mediator Company give a information to seller, buyer company purchase your product or information.

Step 5: Consumer give a confirmation to Facilator or mediator company. This company sell a product or information to the buyer company.

Figure 7. Consumer to Business Model



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Let us look at another example of the C2B model. Rohan needs to buy an airline ticket for his journey from New Delhi to Bombay. Rohan needs to travel immediately. Therefore, he searches a Web site for a ticket. The Web site offers bidding facility to people who want to buy tickets immediately. On the Web site, Rohan quotes the highest price and gets the ticket.

Customer to Customer Model

The C2C model involves transaction between consumers. Here, a consumer sells directly to another consumer. eBay, QUCKIER and OLX, are common examples of online auction Web sites that provide a consumer to advertise and sell their products online to another consumer. However, it is essential that both the seller and the buyer must register with the auction site. While the seller needs to pay a fixed fee to the online auction house to sell their products, the buyer can bid without paying any fee. The site brings the buyer and seller together to conduct deals (Chan H. et al, 2008).

Let us now look at the previous figure with respect to eBay. When a customer plans to sell his products to other customers on the Web site of eBay, he first needs to interact with an eBay site, which in this case acts as a facilitator of the overall transaction. Then, the seller can host his product on www.ebay.com, which in turn charges him for this. Any buyer can now browse the site of eBay to search for the product he interested in. If the buyer comes across such a product, he places an order for the same on the Web site of eBay. eBay now purchase the product from the seller and then, sells it to the buyer. In this way, though the transaction is between two customers, an organization acts as an interface between the two organizations. Figure 8 shows a Consumer to Consumer Model.

Majorly there are five step involve between customer and customer transaction. These are:

Step 1: Post the product or information on the portal. This portal manages by third company not related to seller consumer and buyer consumer. This company provide a facility to seller consumer and Buyer consumer make a business.

Step 2: Buyer Consumer view a product or information from the portal.

Figure 8. Consumer to Consumer Model

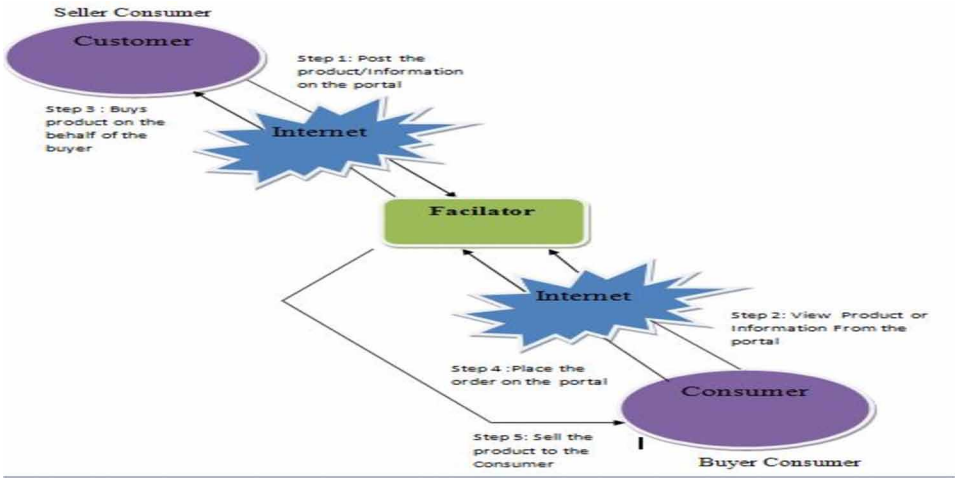

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Table 2. Difference between C2B and C2C

Subject	C2B	C2C
Commerce Activity	transaction between consumer and business organization	transaction between consumers
Business Models	In this case the consumer is the seller and the business organization is the buyer. consumers decide the price of a particular product rather than the supplier	a consumer sells directly to another consumer
Example	monster.com, naukari.com	eBay, QUCKIER and OLX

Step 3: After analysis a product or information, buyer consumer place a order on portal.

Step 4: Facilator or mediator Company give a information to seller Consumer, a buyer consumer purchase your product or information.

Step 5: Seller consumer give a confirmation to Facilator or mediator company. This company sell a product or information to the buyer consumer.

ADVANTAGES AND DISADVANTAGES

Proper implementation of E-commerce can increase the sell of business. Every technology have own advantage or disadvantage. Some of them are.

Advantages

Business is Open 24 x 7 x 364 7/8

We can also sell any time, night or day, 365 days a year. Even while we are resting, it works while you play or sleep. They are open for business every hour of the day, every day of the week, every week of the year.

Choice of Product

Electronic commerce provides buyers with a wider range of choices than traditional commerce.

Tax Benefit for Government

Electronic payments can be easier to monitor than payments are made by cheques/cash. All the transaction online so it is benefit for government and there are no chances of stealing a tax.

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Worldwide Market Space

Advertising on the web can make a big or small firm's promotional message reach out to potential customers all over the world quickly and small cost as an online marketing strategy.

Decrease Transaction Costs

If we buy from online store, we spend low operational cost, we have better quality of service, and we can cut the many unnecessary costs. For example, if our goods or services downloadable, we will have transport costs completely cancel.

Conduct a Business Easily

In electronic commerce, we do not need to physical company setups or there are not any crowds to deal with. We can buy from our house comfortable; users can easily choose goods from various procedures without moving around physically.

Comparison in Prices

Everyone can easily compare fees among the various web sites. We can usually earn discounts on fees when compared with normal shop fees.

The Decrease of the Functioning Costs

These costs may be drastically diminished by the automatics of the orders process. There is also the possibility of a total automatics by the integration with the administration system thus leading to the increase of the general productivity of the company.

International Markets Penetration Facilities

The world network is not limited by borders, it does not belong to anyone and the access and publication costs are extremely low. The communication with a customer positioned to the opposite pole of the world is as easy as the communication with someone in the next room. Any producer now can sell his products in any country by the means of the web site and no contacts with local companies or large investments are necessary anymore(Lawrence E., 2000).

Disadvantages

The Security

Security is a main problem in electronic commerce. Everyone good or bad can easily open a web site, and there are many bad sites, which their aim is fool user's and earn money (Kalakota R. & Andrew B. Whinston,1997).

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Guarantee

There is no guarantee for product quality. Our orders might be damage in the post or things may look different online to what you actually receive for example, slightly different colours and feel of clothes or the freshness of vegetables and fruits.

Social Relationships

Electronic commerce allows to users that buying and selling goods and services without geographic limitations but in this method we have not any contacts and relationships with other persons and loss our social contacts.

Inability to Feel the Physical

It is nearly impossible to sell things like furniture and tires online. Furniture is something people like to sit on and know the feel. Tires need to be installed once purchased. The old tires also need to be disposed of. In both instances, there is a need for real actions to fulfil the reason for the purchase. That's why things like food, jewellery, antiques etc. can never turn to E-commerce.

Economics

In industry world, managers must encourage and conduct employees to devise plans to take advantages of new economic opportunities. Electronic commerce is creating new opportunities to the global economic, for example in global travel and tourism industry. Transforming from traditional business method to electronic commerce method is hard and there were many different factors for companies to adapt them with electronic commerce factors. For this work, they must used Internet and many other online networks, because for grow and use from new economic opportunities in each industry it is necessary to be match with new technologies.

FINANCE AND ACCOUNTING

Two decades of progress in information technology and development of its applications in the field of economic and social to form a new chapter of relations between people, institutions, companies and governments and new concepts are emerging on literature of economic and trade. Internet as a global network, as well as prerequisite of electronic commerce, for reason flexibility, attractive, ease for use, low cost access and ubiquity, is changing the traditional business moreover, electronic commerce had a significant impact on finance and accounting that include saving time, disinflation, increase productivity, reduce the demand for money (reduce the cost of publishing) and etc.

Limitations

There are some barriers for electronic commerce setup, which include:

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- Lack of knowledge and necessary information for use of electronic commerce and Internet network.
- Protection of consumer rights in electronic commerce.
- Lack of legal infrastructures in electronic commerce such documents that are not acceptable and electronic signature.
- Low security of electronic funds transfer in some countries.
- Lower speed and limitations on the use of Internet.
- Lack of information intermediary institutions and manufacturing companies of the benefits of Internet business.
- The security and confidentiality of information exchanged.

Case Study on Online Marketing (Amazon)

In 1994 when Amazon was launched it just a small book store and now that become a big name in e-commerce world. In USA, it is the top online retailer, helps for distribution of all products and services. Its popularity has aroused a question as how it has become popular and the answer is its effective business policies and marketing plans.

So the purpose of this case study is to discuss the ideas that lies behind the successful business of the Amazon. So the ideas are:

1. **Name Selection:** At initial stages the name of the company was "Cadabra" which is more similar to abracadabra. The owner of the company "Jeff Bezos" changed its name to "Amazon" to make it unique. The reason behind that was as "A" is the first alphabetical letter among other 26 letters. Secondly, The name depicts a biggest river "Amazon" like that he wants to make his store a bigger store. In an interview "Jeff Bezos" said, "There's nothing about our model that can't be copied over time. But you know, McDonald's got copied. And it still built a huge, multibillion-dollar company. A lot of it comes down to the brand name. Brand names are more important online than they are in the physical world."
2. **Product Planning Should be Best:** In a report it has been stated that in future e commerce will develop upto 2300%. Jeff Bezos at that time selected a list of product to be put online for sell. He narrowed these upto 20 products and later upto 5 books, videos, computer software, hardware, and compact discs and then at last selected Books. Their result of good planning and innovative thinking was achieved in first two months with sales rise upto $20,000/week.
3. **Logo Name:** After 2000, Amazon has changed his logo with a curve showing a smile sign and an arrow from A to Z, it means that Amazon has all a to z products in its store. This make its logo unique(Amazon Web Services, n.d.).
4. **Initial Growth:** During earlier phases of Amazon was bit slow and its stockholders thought that this will bring less profit in the future .In 2001, it has started gaining profit. The strong business plan that helped in survival from dot-com bubble.
5. **Partnerships:** The company has done different partnerships with types of companies like ToysRus, Borders bookstores, Marks & Spencer, Mothercare, and Lacoste etc. which helped in the stability.
6. **Expansion of Business:** The company is now focused on the expansion of services. In this respect, Amazon has started its store in 2014 in India. Along with it it is also focused on the festival season by giving their services like Diwali Dhamaka Week sale that helped in its popularity.

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7. **Membership:** The membership program has started in which the members are paying $79 per month .The features provided is the purchased product will be delivered within two days with some discount. Another membership benefits are free access to instant videos streaming and TV shows, Kindle Owners' Lending Library.
8. **Consumer Services and Use of Technology:** The main focus is on providing best services to their customers. In regards to that for e book readers, the Amazon Kindle was introduced in 2007, for book download and then reading through proper display. Amazon has introduced its tablet computer series followed by second generation tablet in 2011 along with other products such as Fire TV and smart phone.
9. **Separate Website for Each Country:** Each country has different preference and prospective so Amazon has a separate website for each country like:
    a. amazon.in for India
    b. amazon.fr for France
    c. amazon.de for Germany
    d. amazon.it for Italy
10. **Third Party Selling:** Along with the items that are available in store, Amazon provides an opportunity to other store to sell their products. The product must be unique. This also provides opportunity for other businesses and the biggest source of profit for the Amazon. There are about 900,000 members' with their product available on Amazon.

What Amazon Is Doing Right That Others Are Not?

E-commerce website involve many element. Even the smaller detail can make a huge impact. With the increase in competition user experience has been playing an important role. If user experience has not good then they will switch on to other site. Digital user experience is the experience a user undergoes, while he is searching for company product until making a payment. For any website to stand in the competition the focus will be on user experience and maximization of information about the product. The Amazon focuses heavily on the points such a s Customer Delight & Experience, Technology, Metrics and Analytics, Complete focus on customer experience even at a low cost of margins. Amazon has innovated a lot in terms of technology, products, services and marketing. Here are some live case examples:

1. **Amazon's Login Page:** Sign in -If you see closely Amazon uses "Sign in using our secure server" button for Login rather than just using "sign in" text on the button. They are reinforcing that sign in process is secure and safe to grab a user's attention.
2. **Product Pages:** In the product pages, they provide maximum details by using same product name as that of title and same name in the meta description along with product code.
3. **FAQ's Section:** has been started where customers can put up their queries for their response. Users can also search if his question has already been asked and answered; if not then the user can post a question for the response. There also an option of up vote and down vote the answer to signify that whether you were satisfied with the response. Almost all products has FAQs this helps the users in a great way as their doubts are answered which increases the chances of a purchase from consumer.
4. **Mail Tracking:** Track package details in Email: Amazon is one of the few E-Commerce companies which uses email schema markup to the fullest. So when user orders something, an email is sent

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Figure 9. FAQ's section

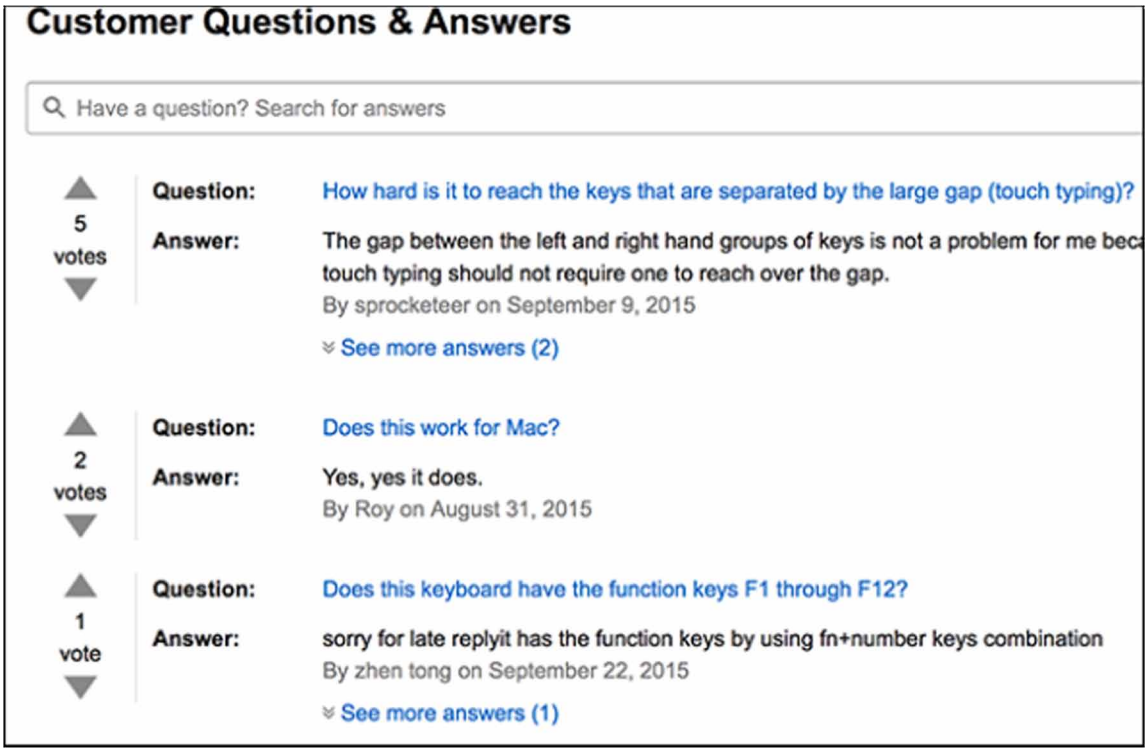
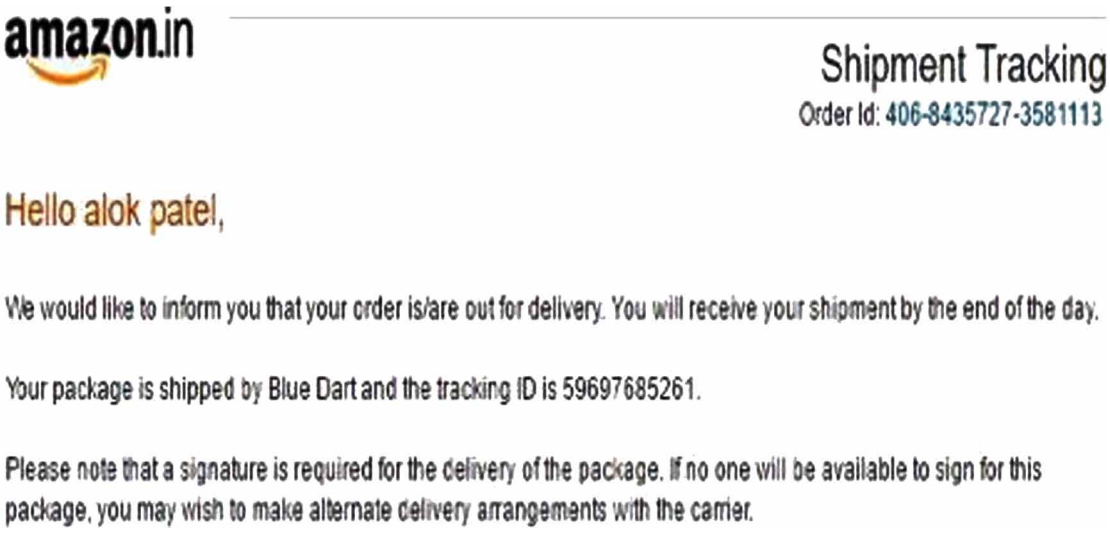


Figure 10. Mail tracking



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to the customer telling about the details about the order and the delivery stage along with a link to see the status of delivery. The email schema is also provided in which they do not have to open the email.

5. **Amazon Customer Care:** Amazon does have significant customer base and sometimes these customers wants to connect with the customer care of Amazon. Many customer search google so as to reduce the effort of the customer, Amazon uses schema markup to let search engines know what their customer care number is. The searching for customer care for service oriented company has lot of search traffic.
6. **Amazon Device Adaptability:** Amazon.in site has device adaptability for all most browsers. It supports right from IE6 to latest IE, Chrome, Mozilla. if you see flipkart.com, it doesn't support any browsers less than IE7.

What to Learn?

Every person who want to make their business successful can adapt the following things:

- Unique and Planned selection of name .
- Planning of product should be long term. The products which are frequent should be sold which is a long term planning.
- A logo with a small graphic through which whole business can be explained .
- Don't be afraid of failures, work hard till success.
- Partnerships helps in popularity so on share basis do partnership.
- Focus the expansion in one country then take it to another slowly.
- Offer various services like membership packages for the customers and give them promising advantage so that they start trusting you.
- High speed technology to add latest features will help in gaining popularity.
- Depending on the places make separate websites so that preference should be clear. Personalization of Website should be done according to the preferences.
- Give opportunity to others after you have become stable.

SUMMARY

All the above ideas are implemented by Amazon. So, you can adopt these ideas without any worry.

There are different types of web sites on the World Wide Web for various types of services or transaction.

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Table 3. Different types of web sites on web for transaction

Type of Product	Web Sites for Search	Services by Web Sites
Finance	1. Money Control.com 2. Rediff Money.com 3. Yahoo Finance.com 1. Jagoinvestor.com 2. Subramoney .com 3. The Financial Literates .com 4. Basu Nivesh.com 5. One Mint.com 1. Safal Niveshak .com 2. Fundoo Professor.com 1. www.screener.in 2.MoneyWorks4Me.com 3. ResearchBytes.com	News/Updates News/Updates News/Updates Personal Finance Blogs Personal Finance Blogs Personal Finance Blogs Personal Finance Blogs Personal Finance Blogs Value Investing Value Investing Stock Analysis Stock Analysis Stock Analysis
Automobiles	1.team-bhp.com 2.automartindia.com 3.overdrive.in 4. autoportal.com	New & Used Auto Mobiles in India New & Used Auto Mobiles in India Cars Prices in India New & Used *Auto* Mobiles in *India*
General Shopping	Paytm.com ebay.in Myntra.com Shopclues.com Pepperfry.com Homeshop18.com	All type of Goods All type of Goods Clothing All type of Goods All type of Goods
Job Searching	www.naukri.com www.indeed.co.in www.shine.com	Jo Placement
Books/Music	Open Library Google Books Smashwords Blurb Scribd Hungama.com Youtube.com	Books Songs
Art	Artstall.com Art.com	Buying and selling painting
Ticket Booking	Irctc.co.in Yatra.com	Seats Reservation
Eduction	Nptl.ac.in Edx.org Shiksha.com	On-Line Tuitions
Free Services	Way2sms Gmail.com Yahoo.com	SMS Mailing

CONCLUSION

E-commerce has now become a key component for many organizations for daily running their business. In actually E-commerce is buying and selling of goods on the internet known as E-Business, making a lot of opportunities for profit and advancements for businesses, whereas making a lot of choices for shoppers. However, similar to anything, e-commerce has its disadvantages as well as client uncertainties, however, nothing which will not be resolved or avoided by smart decision-making and business practices.

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There are many factors associated variables that require to be thought of and set upon once beginning an e-commerce business. A number of these include: kinds of e-commerce, selling ways, and myriad a lot of. If the right strategies and practices are followed, a business can prosper in associate e-commerce setting with abundant success and profit.

REFERENCES

Amazon Web Services. (n.d.). *Customer Success*. Reterieved from https://aws.amazon.com/solutions/case-studies/

Chan, H., Lee, R., Dillon, T., & Chang, E. (2008). *E-Commerce Fundamental and Applications*. New Delhi: WILEY.

Colin, J. (2001). *The Amazon Case Study Analysis*. Retrieved from http://www.ecommerce-digest.com/amazon-case-study.html

Dennis, P. (2004). *E-Commerce Principles and Introduction Technology*. New Delhi: Tata McGraw Hill Publication.

Greenstein, M., Feinman, T., & Vasarhelyi, M. (2001). *Electronic Commerce: Security, Risk management, and Control with Powerweb Passcode Card (E-Commerce)*. New Delhi: Tata McGraw Hill Publications.

Hanson, W., & Kalyanam, K. (2009). *E-Commerce Web Marketing*. New Delhi: Cengage Learning.

Joseph, P. T., & S. J. (2009). E-Commerce: An Indian Perspective. New Delhi: PHI.

Kalakota, R., & Whinston, A. B. (1997). *Electronic Commerce: A Manager's Guide.* Addison-Wesley.

Lawrence, E. (2000). *Internet Commerce: Digital Models for Business*. New Delhi: Wiley.

Minoli, D., & Minoli, E. (1997). *Web Commerce Technology Handbook*. McGraw Hill.

Rajaraman, V. (2009). *Essentials of E-Commerce Techonology*. New Delhi: PHI.

Schneide, P. G. (2007). *E-Commerce: Strategy, Technology and Implementation*. New Delhi: Cengage Learning.

Whiteley, D. (2005). *E-Commerce: Strategy, Technologies and Application,Information System Series*. New Delhi: TMH.

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Chapter 10
Strategizing SCM-M Interface Using DeLone and McLean Model of IS Success and Fuzzy Cognitive Maps:
Perspectives on E-Commerce Success

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ABSTRACT

The article presents a unique approach to explore and evaluate the critical factors of supply chain management-marketing (SCM-M) interfaces in e-commerce. This article systematically identifies the critical factors of SCM-M interface in e-commerce using DeLone and McLean (D&M) Model of IS Success. The critical factors identified are used to form the dynamic scenarios based on Fuzzy Cognitive Maps (FCM) for strategizing the e-commerce success. To understand and evaluate the proposed research methodology, some scenarios were developed based on the critical factors of SCM-M interface in e-commerce. The analysis of these scenarios aid in identifying the improvement areas as well as strategizing and improving those areas of SCM-M interface in e-commerce for enhanced customer satisfaction and leveraging organizational success.

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INTRODUCTION

According to Forbes (Forbes, 2014), Walmart stands at the top in terms of its sales and as the 18th most valuable brand. This success of Walmart is often attributed to its highly efficient Supply Chain Management (SCM) and marketing integration (Kozlenkova, Hult, Lund, Mena, & Kekec, 2015). However, its prime competitor K-mart has struggled financially over the last few decades which is mostly attributed to its weak congruence of SCM and marketing practices (Bogenrief, 2012). In this paper, we focus on understanding the synergetic aspects of SCM and Marketing in e-commerce that act as a source of leveraging strategic and competitive benefits for firms.

An important imperative of Marketing is to deliver values like customer satisfaction, customer support etc. to the end users. Efficient supply chains allow firms to pass along benefits like optimized costs, timely delivery etc. to the end users; thus, generating an increased value for these customers (Kozlenkova et al., 2015). This makes the role of SCM very important and at the very core of Marketing Success.

On the other hand, success of SCM relies on both intra and inter organizational relationships. Logistics, Purchase, Operations and Marketing Channels broadly form the functional domains of SCM. Marketing Channels form the last fragment of SCM but are very important in determining the needs of the end customer for whom the entire supply chain is co-ordinated and adjusted as required. Thus, using Market Research for collecting valuable information of environment, competitors, customers, suppliers etc. can help in better implementation of SCM (Min & Mentzer, 2000). This makes Marketing very impactful in determining the success of SCM.

SCM-Marketing (SCM-M) are very closely linked processes and concepts intertwined with each other. Thus, it has become immensely important to harness the benefits of SCM-M interface. This synergetic value of SCM-M interface has also been identified and applauded in several research works (Ellinger, 2000; Martin & Grbac, 2003; Min & Mentzer, 2000; Svensson, 2002). Esper (Esper, Ellinger, Stank, Flint, & Moon, 2010) highlight the fact that a focus on individualistic SCM or Marketing domain and negligence of SCM-M interface often leads to suboptimal benefits for the firms. Noci (Noci, 2019) in his work provides a deep insight to how business processes and organizational changes be directed to harness the utility of SCM-M interface. Copley (Copley, 2018) demonstrates the experiential learning in an entrepreneurial setting for practical benefits of SCM-M interface. SCM-M coordination (Samatli-Pac, Shen, & Hu, 2018) has also been studied from the point of view of loss aversion, customer utility and reverse logistics. Some other research works (Flint, 2004; Piercy, 2008) identify the potential of synergies of SCM-M interface in providing competitive advantage.

However, in the changing dynamics of global business environment (from traditional to digital); customers no longer simply plan for and shop at the nearest retailer; rather they pick up the nearest digital device. Neilson (Neilson, 2012) cited in its report that online retail sales through e-commerce would double between 2015 and 2019. E-commerce has created a revolution in global businesses by increased customer base, streamlined Supply Chains, enhanced customer value, increased profits, reduced costs and entry in the new markets (Karavdic & Gregory, 2005).

Thus, it is important to study the impact of strategizing SCM-M interface for E-commerce success which is one of the important and transformational means of business. Lee and Wang (Lee & Whang, 2001) in their work identified, that e-businesses/e-commerce have a humungous potential to reap benefits of SCM-M interface. They mention that e-businesses can integrate SCM empowered with the factors of Information Integration, Planning Synchronization, Workflow Coordination and Alternate Business Models. This will drive better marketing intelligence in terms of utilizing data sources captured through

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online transactions and interactions to make marketing decisions like Assortment, Pricing, Promotional Offers, and Demand Estimation etc. The scientific methods based on statistical analysis, optimization, business intelligence etc. can help for the cause. Avlonitis and Karayanni (Avlonitis & Karayanni, 2000) also mention the scope that e-commerce has in utilizing synergies of SCM and Marketing for added customer services and enhanced customer relationship. Ardito et al. (Ardito, Petruzzelli, Panniello, & Garavelli, 2018) highlighted the role of advanced technologies to support SCM-M integration from the view point of information processing. IoT based technological innovation (Chkoniya & Mateus, 2019) are also explored to understand a better demand and supply side collaboration and automation.

The humungous investments and revenue of firms from e-commerce has attracted researchers and practitioners to increase the efficacy of these systems and evaluate their Information System (IS) success (DeLone & Mclean, 2004). Keen (Keen, 1980) highlighted in his noted work Management Information System Research that it is important to measure the "effectiveness" or "success" of IS to encourage firms for investments in technology. Information System success evaluates the ease of creation, distribution and usage of information enabled with technology. However, there is an uncertainty on which factors to be considered best for measuring the IS success of systems (Rai, Lang, & Welker, 2002).

DeLone and McLean (DeLone & McLean, 1992) initially came up with an IS success model which was open to validation and development. Several researchers came up with their re-specification and validation of this model (McGill, Hobbs, & Klobas, 2003; Molla & Licker, 2001; Rai et al., 2002; Seddon & Kiew, 1996) and suggested different re-specifications to DeLone and McLean (D&M) IS success model. However, a continuum of ever-increasing factors was translated into a single impact or factor or benefit category known as "Net Benefits" by DeLone and McLean (DeLone & McLean, 2003) in an updated model.

D&M IS success model that is an IS success model based on communication theory syncs well with the structural and functional aspects of e-commerce (DeLone, McLean, & others, 2016) and thus is best for identifying factors that attribute to e-commerce success. The strong theoretical similarity between e-commerce and D&M promotes us to use D&M IS success model to identify those critical factors which impact the SCM-M interface of e-commerce.

Once these critical factors of success of e-commerce from SCM-M interface are identified, they are subjected to a scenario-based analysis. Scenarios are developed primarily in situations where (Kok, 2009):

- There is uncertainty in the factors shaping the future;
- It is important to understand a long term and broad view of the possible future.

We need to model a complex situation where components are connected through chains and loops or components are a mixture of quantitative and qualitative factors. Fuzzy Cognitive Maps (FCM) can be used to model such complex situations and develop scenarios. These scenarios can encapsulate human understanding and notations due to their graphical representation and capture the vagueness or uncertainty of factors using Fuzzy Logic. Dynamic scenarios proposed by the stakeholders based on FCM help in the strategic planning of SCM-M interface for e-commerce success.

This paper aims to serve as a linkage between the theoretical and the practical aspects of harnessing benefits of SCM-M interface in e-commerce businesses. This is done by synergetic power of D&M IS success model and FCM in order to explore and evaluate planning and decisions for SCM-M interface to provide strategic advantage to e-commerce.

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The results of this analysis at its face value clearly manifest at least in the following three important aspects:

- It allows a decision makers and stakeholders to express their understanding of SCM-M factors to strategize e-commerce in a qualitative fashion which is acceptable and understandable;
- It will help the decision maker model specific situations of SCM-M interface to impact e-commerce success;
- It will help he decision maker understand the impact of factors to the strategic goal as well as dynamics of these factors among themselves.

Thus, the primary research premise of the problem to identify SCM-M interface key determinants for e-commerce success provide basis for empirical research that contributes to the theory of similar academic/business research in anticipation as follows:

- This work acts as a basis for experimenting the importance of determinants of SCM-M based on scenario analysis;
- This is a new dimension to explore the avenues for empirical research incorporating both qualitative and quantitative inputs of stakeholders;
- And most importantly, this scenario-based analysis forms a strong reference for any academic or business research in terms of flexibility using Fuzzy Cognitive Maps and acceptability using D&M IS Success Model.

The rest of the paper is structured into the following sections. Next four sections present the basic ideas and concepts around the primary topics of this work like SCM-M interface, D&M IS success model and E-commerce, Critical SCM-M factors of E-commerce using D&M Model and Scenario Planning and FCM respectively. Next, we present the research methodology in a unified format. Later, we discuss an illustrative example of the Scenario-based analysis for the strategic planning of SCM-M interface in e-commerce set up and results obtained from this analysis. Finally, we present concluding remarks and some limitations and scope for future research related to our work.

SCM-M INTERFACE

Marketing is primarily concerned with effective decision making for market segmentation, targeting and positioning of products based on promotions, pricing and distribution (Kotler & Armstrong, 2007). These activities in turn are connected to creating superior customer value in terms of customer satisfaction, serviceability etc. (Kozlenkova et al., 2015). Supply chains are primarily composed of four functional units namely: Logistics, Purchase, Operations and Marketing channels where inter and intra communications among these units play a vital role for efficient SCM (Min & Mentzer, 2000). Apart from the fact that Marketing helps to provide significant information to SCM for maintaining its efficiency, specific stances of Marketing like Relationship Marketing also come in handy for effective co-operation and communication in Supply Chains (Palmatier, Scheer, Houston, Evans, & Gopalakrishna, 2007).

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According to PwC report (PwC, 2014), SCM and Marketing concepts and processes are intertwined with each other and act as a strategic tool in unison. Marketing creates demand for a firm's product and services and SCM helps in fulfilling that demand (Esper et al., 2010).

With the advancements like big data and concepts of just in time delivery the interplay of SCM and Marketing has become even more prominent but there is still a substantial gap in harnessing the synergies of SCM-M interface (Golgeci, Golgeci, Gligor, & Gligor, 2017). It is highly imperative for the success of firms to understand and alleviate the synergies of SCM and Marketing by bridging the disconnect between them (Juttner, Christopher, & Baker, 2007; Juttner, Christopher, & Godsell, 2010). Lee (Lee, 2001) identified some prominent dimensions on which SCM and Marketing interact and can affect business efficacy and decisions. The detrimental effect of individualistic focus on SCM leads to the problem of stock-outs and diminished service levels (Campo, Gijsbrechts, & Nisol, 2000; Emmelhainz, Stock, & Emmelhainz, 1991; Fitzsimons, 2000; Gruen & Corsten, 2007) leading to less customer satisfactions (Mollenkopf, Russo, & Frankel, 2007; Van Woensel, Van Donselaar, Broekmeulen, & Fransoo, 2007). On the other hand, if individualistic focus is on Marketing, then SCM suffers with suboptimal performance in factors like delivery time, supply chain costs and other factors that need the supply side intelligence (Day, 1994; Lamberti & Noci, 2010). Deloitte Research (Deloitte Research, 2002) in a survey conducted with 249 executives across 28 countries; found that only 17% firms have linked their SCM and Marketing domains. Another interesting outcome of this survey is the outperformance of these 17% firms, which have integrated their SCM-M domains in performance parameters like sales growth, customer satisfaction, market share etc. Another industry-wide survey of more than 800 companies (Aberdeen Group, 2008) published in their report that SCM-M interface is a strategic differentiator for firms in a variety of domains like customer service, profit making.

Further, differentiating functional aspects of an organization give rise to short term conflicts and also pose a situation of difficulty for organization to achieve its long-term goals (Stephens & Archambault, 1998).

Although the concept of integration of different functional units of organization has its roots in organizational theory and design (Galbraith, 1994; Lawrence & Lorsch, 1986; Mintzberg, 1983; Thompson, 1967, 2003), the concept has been widely used in harnessing the synergies of SCM and Marketing to possess a strategic leverage in the present scenario of fierce competitive environment among firms.

This synergetic usage of SCM-M interface to benefit businesses has been identified in several research works (Ellinger, 2000; Martin & Grbac, 2003; Min & Mentzer, 2000; Svensson, 2002). Some recent works have specifically highlighted how unique value propositions can be offered to businesses by harnessing the benefits of SCM-M interface. Sale et al (Sale, Mesak, & Inman, 2017) demonstrated an integration of New Product Marketing and Lot-Sizing Modelling of SCM to showcase the larger profits and higher market penetration pace of new product in the marketplace. Rapp (Rapp et al., 2017) provides a fresh insight on how to best meet evolving customer demands using synergies and demand and supply.

However, there is a serious lack of research concerning e-commerce and impact of synergies of SCM-M interface on it.

We present a conceptual framework of how SCM, Marketing domains should ideally move to provide a strategic advantage to firms. The present state of individualistic approach in which most firms stand need to move to a convergent approach where both domains of SCM, Marketing can together provide competitive advantage. However, prioritizing a domain and making another a subset of it by full inclusion, is also a detrimental approach, which might hamper prospects of the other domain. A flow diagram (Figure 1) showcases the present and the future desired states of SCM and Marketing Domain.

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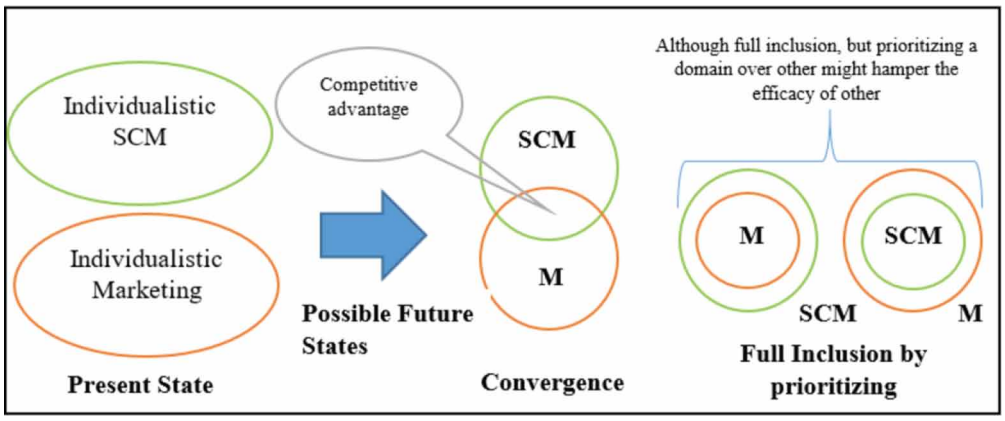
Figure 1. Flow diagram for expected stance of SCM, marketing domains

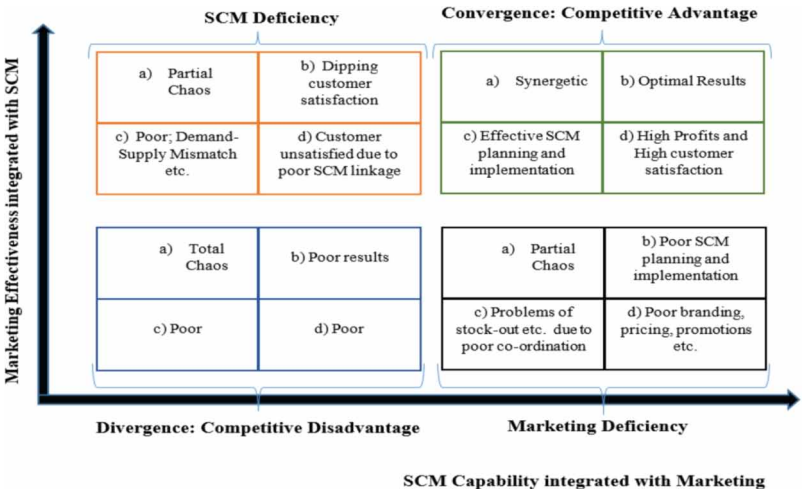


Lee (Lee, 2001; Lee & Whang, 2001) identifies SCM-M interface as the cause for competitive advantage in the 21st century for e-businesses. The work highlights the importance of how working closely with customers for demand estimation; usage of appropriate Marketing tools and providing it as an input to SCM will be a value-creating arena for firms.

We present a 2*2 matrix based conceptual framework to understand the SCM-M interface from an E-commerce perspective where each box of this matrix contains the following factors with labels as mentioned with the factors:

- **System Entropy (a):** This represents the functional coherence and stability in the organization;
- **System Value (b):** This represents the value that is offered to the end customers;
- **SCM State (c):** A measure of efficiency of SCM in the organization;
- **Marketing State (d):** A measure of effectiveness of marketing efforts in the organization.

Figure 2. Conceptual framework for SCM-M interface



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These intrinsic factors will help in judgement of each interface in a detailed and rational way to give a clear purview of each situation.

Lee highlights the case of Volvo in 1990's. Excess inventory of green cars was cleared by marketing department through promotions, which made the production department think of high demand of these cars. They kept producing batches of these cars leading to a huge unsold inventory of green cars. On the other hand, Barilla a leading pasta manufacturer in Italy issued special discounts for customers with truckload quantities. However, supply chain costs were so high that they had to take down the special discount.

It is important to identify the parameters of demand creation like promotions, pricing, assortment etc. and next is the co-ordination of these parameters with SCM parameters like production, delivery time, and manufacturing cost etc. There is very less research that has focussed on impact of strategizing SCM-M interface on e-commerce. This understanding of SCM-M interface will help us to identify the critical SCM-M interface factors for exploring and evaluating them for e-commerce success.

DELONE AND MCLEAN MODEL OF IS SUCCESS AND E-COMMERCE

Keen (Keen, 1980) firstly questioned the lack of scientific basis for IS research and what would be the dependent variables for IS research. Since then, there is a lot of research work held in this direction. Research work on themes of technology acceptance (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989), Frameworks to benefit IS systems (Kohli & Grover, 2008; Mueller, Viering, Legner, & Riempp, 2010; Peppard, Ward, & Daniel, 2007; Shang & Seddon, 2002) and assessing the business value associated with IT (Sambamurthy & Zmud, 1994; Soh & Markus, 1995) are prominently explored areas. Other prominent works in the area of determination of dependent variable for IS success is presented by DeLone and McLean (DeLone & McLean, 1992, 2003) based on Shannon and Weaver's (Shannon & Weaver, 1949) classical communication theory which was considered robust for measuring IS success. Originally, D&M IS success model came up with the following six constructs:

- System quality
- Information quality
- Use
- User satisfaction
- Individual impact and
- Organizational impact

However, the model presented was open to validation and development. Several researchers came up with their re-specification and validation of this model (McGill et al., 2003; Molla & Licker, 2001; Rai et al., 2002; Seddon & Kiew, 1996). A number of researchers suggested different re-specifications to DeLone and McLean (D&M) IS success model that can effect IS success ranging from individual, organizational, national, economic etc. factors. However, a continuum of ever-increasing factors was translated into a single impact or factor or benefits category known as "Net Benefits" by DeLone and McLean (DeLone & McLean, 2003) in an updated model with proposed enhancements to measure IS success of systems. The differentiating point between the original and updated model were primarily threefold:

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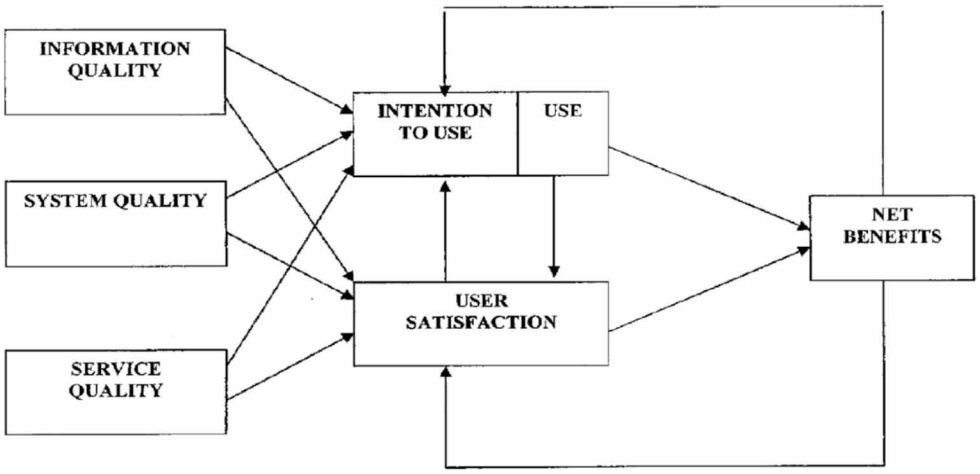
1. Inclusion of concept of Service Quality to reflect the importance of parameters like customer support in the modern-day business venues like e-commerce;
2. Addition of Intention to Use as an alternative measure of use to measure he customer attitude;
3. Merging individual impact and organizational impact into a more parsimonious *Net Benefits* construct.

With above modification, the updated D&M IS success model imparts the following rationale behind its structure: Service Quality, System Quality and Information Quality of a system will affect the Intention to use or User Satisfaction. However, usage of the system will impart some Net Benefits perceived by user and will satisfy (User Satisfaction) him/her in a positive or negative way. These Net Benefits will induce Intention of Use in Users for further IS usage. Even after adding suitable modifications to original D&M IS Success model, the proposers have kept the model open for further exploration and validation.

The visual representation of updated D&M IS Success Model (DeLone & McLean, 2003) contains arrows to showcase connections among different dimensions in process sense but doesn't depict any positive or negative sign to keep the causal sense at discretion of problem situation. The following Figure 3 represents the updated D&M IS success model.

Figure 3. Updated D&M IS success model (adapted from (DeLone & McLean, 2003))



DeLone and McLean (DeLone & McLean, 2003) also explained the applicability of their proposed model in the context of e-commerce. In case of e-commerce, suppliers and customers are the primary agents who use the system to make selling or buying decisions, respectively. The transactional decisions made by these agents will eventually impact e-commerce and thus the economy at large. The applicability of e-commerce in D&M IS success model is explained below:

- **System Quality:** Measures of desired quality of an e-commerce system like usability, reliability, adaptability, response time etc.;
- **Information Quality:** Measures the content availability and security. Personalized content, easy to interpret, choosing support and security are some of the desired features;

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- **Service Quality:** Measures important parameters like customer support, delivery time etc.;
- **Usage:** Measures everything from visit to website, navigation within the website, translation to execution of a transaction;
- **User Satisfaction:** Measures the entire customer experience cycle from purchase, payment, delivery and post sales service;
- **Net Benefits:** Measures the net positive or negative impact of e-commerce on our customers, suppliers, organizations, economy at a large scale and even to our society.

Wang (Wang, 2008) has re-specified the updated D&M IS success model and pointed out some improvement directions in the model. He suggested mainly four difficulties with the updated D&M IS success model. Firstly, the measure of Net Benefit is too broad to be defined appropriately. Researchers/Practitioners need to carefully identify the stakeholders to define the net benefit for them. Secondly, the measure of Intention to use can be reconciled with (Seddon & Kiew, 1996) perceived usefulness construct to provide theoretical richness for the model. Thirdly, the measures of usage and intention to use can be reconciled more appropriately w.r.t the marketing literature of customer satisfaction and loyalty. Finally, DeLone and McLean (DeLone & McLean, 2003) have kept their model open for validation and updating through empirical methods which keeps the model prone to uncertainty in using a concrete approach for measuring IS success for e-commerce. However, with highlighted weaknesses; Wang (Wang, 2008) also identifies D&M IS success model as a strong basis for identification of critical success factors/measures for IS success.

IS researchers also developed, tested and applied IS success models for e-commerce systems (D'Ambra & Rice, 2001; DeLone & Mclean, 2004; Liu & Arnett, 2000; Molla & Licker, 2001; Palmer, 2002; Teo & Choo, 2001). E-commerce primarily revolves around communication and transactions between suppliers and customers. D&M IS success model that is an IS success model based on communication theory syncs well with the structural and functional aspects of e-commerce (DeLone et al., 2016) and thus is best for identifying factors that attribute to e-commerce success. The theoretical underpinning of e-commerce and D&M IS success model promotes us to use D&M IS success model to identify those critical factors which impact the SCM-M interface of e-commerce and attribute to e-commerce success.

CRITICAL SCM-M INTERFACE FACTORS OF E-COMMERCE USING D&M MODEL

The updated D&M IS success model was used to explore critical factors of e-commerce success (DeLone & Mclean, 2004) and customer intentions for online purchase (Chen & Cheng, 2009). Petter (Petter, DeLone, & McLean, 2013) identified around 43 critical variables of e-commerce success using the D&M IS success model that were later classified into different functional categories. Repurchase intentions of customers in a group –buying setting were analysed and antecedents or critical factors corresponding to better re-purchase were identified using the D&M IS success model (Hsu, Chang, Chu, & Lee, 2014). The D&M IS success Model was also used to identify the Big Data Analytics perspectives in e-commerce (Akter & Wamba, 2016). Chen et al. (Chen, Su, & Widjaja, 2016) explored the constructs or critical factors that lead to impulsive buying behaviour from customers in an online purchase environment with Facebook acting as an advertising instigator. D&M IS success model was amalgamated with Self-Determination Theory (Samar & Mazuri, 2019) to for success in internet banking. Research

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identifies D&M IS success model to be one of the main models to estimate and measure user intention for continues usage of technology (Antonopoulou & Kotsilieris, 2019). E-governance success constructs were also identified using the D&M IS success model (Scott, DeLone, & Golden, 2016). Based on research work performed by synthesizing the D&M IS success model and the E-commerce/Online business venues, we identify a list of metrics that can impact e-commerce success.

We do not claim this list of metrics for different dimensions of their model to be exhaustive, but they are certainly illustrative. Based on the metrics identified for factors of D&M model given that can be visualized in Figure 1, we will classify them into the categories of SCM, Marketing and SCM-M interface with a rationale of classification. Let us take these metrics for each dimension one by one (Tables 1 to 3).

Table 1. System quality metrics classification

Metrics	Reference	Classification	Rationale
Response Time	(Molla & Licker, 2001)	Marketing	Drives customer experience
Scalability	(Palmer, 2002)	SCM	Depends on SCM capabilities
Ease of navigation	(Molla & Licker, 2001), (Palmer, 2002)	Marketing	Drives customer experience
Security	(Molla & Licker, 2001)	SCM-M	Drives brand image as well as collaboration with Suppliers

Table 2. Information quality metrics classification

Metrics	Reference	Classification	Rationale
Customer Preference Information	(Molla & Licker, 2001; Peppers & Rogers, 1998)	Marketing	Drives customer experience
Completeness	(Palmer, 2002)	SCM-M	Possible with synergies of SCM-M
Competitive Intelligence	(Teo & Choo, 2001)	SCM-M	Possible with synergies of SCM-M
Variety of information	(Palmer, 2002)	Marketing	Drives customer experience

Table 3. System use metrics classification

Metrics	Reference	Classification	Rationale
Processing Customer Orders	(Young & Benamati, 2000)	SCM	Depends on SCM capabilities
Processing Purchase Orders	(Young & Benamati, 2000)	SCM	Depends on SCM capabilities
Customer Service request	(Young & Benamati, 2000)	SCM	Depends on SCM capabilities

Net benefits are classified into four categories of Individual benefits, Group Benefits, Organizational benefits and Industry benefits. Useful metrics from each category is analysed in Tables 4 through 7.

Now, with these identified critical factors under the dimensions of D&M IS success model for classes of SCM, Marketing and SCM-M interface, we use scenario-based planning to strategize on leveraging the SCM-M interface for the success of e-commerce.

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Table 4. Individual benefits metrics classification

Metrics	Reference	Classification	Rationale
Customer Support	(Raghunathan & Madey, 1999)	SCM	Depends on SCM capabilities
Enhanced customer knowledge	(Loftus, 1997)	Marketing	Drives customer experience
Enhanced customer experience	(D'Ambra & Rice, 2001)	Marketing	Drives customer experience
Reduced costs	(D'Ambra & Rice, 2001)	SCM-M	Possible with synergies of SCM-M
Real-time marketing	(D'Ambra & Rice, 2001)	Marketing	Drives customer experience

Table 5. Group benefits metrics classification

Metrics	Reference	Classification	Rationale
Selling Team Coordination	(Loftus, 1997)	SCM-M	Depends on synergies of SCM-M

Table 6. Organizational benefits metrics classification

Metrics	Reference	Classification	Rationale
Increased Sales, Market-Share and Profits	(Griffith & Krampf, 1998; Teo & Too, 2000)	Marketing	One primary intent of Marketing domain
Competitive advantage	(Takacs & Freiden, 1998)	SCM-M	Possible with synergies of SCM-M
Productivity efficiency	(Barua, Konana, Whinston, & Yin, 2001)	SCM	Depends on SCM capabilities
Operational excellence	(Morash & Clinton, 1998)	SCM	Depends on SCM capabilities
Reduced Cycle Time	(Hoogeweegen & Wagenaar, 1996)	SCM	Depends on SCM capabilities
Brand Awareness	(Teo & Too, 2000)	Marketing	Success measurement metric for marketing
Customer Responsiveness	(Hoogeweegen & Wagenaar, 1996)	Marketing	Success measurement metric for marketing
Market Responsiveness	(Teo & Too, 2000)	Marketing	Success measurement metric for marketing

Table 7. Industry benefits metrics classification

Metrics	Reference	Classification	Rationale
Supply Chain Efficiency	(Baron, Shaw, & Bailey, 2000)	SCM	Depends on SCM capabilities
Supply Chain integration and synchronization	(Morash & Clinton, 1998)	SCM	Depends on SCM capabilities

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SCENARIO PLANNING AND FUZZY COGNITIVE MAPS

Scenarios help us to outline some situation of the future. *Webster's New Collegiate Dictionary* defines a scenario as "An imagined sequence of events, especially a synopsis of possible events, actions or possibilities". Van der Heijden (Van der Heijden, 1996) presented the following five conditions for a scenario:

- At least two scenarios are needed to reflect uncertainty;
- Each scenario must be plausible;
- Consistent;
- Relevant;
- Produce some new and original perspective on issue of concern.

Porter (Porter, 1991) identified two main categories of scenarios, namely:

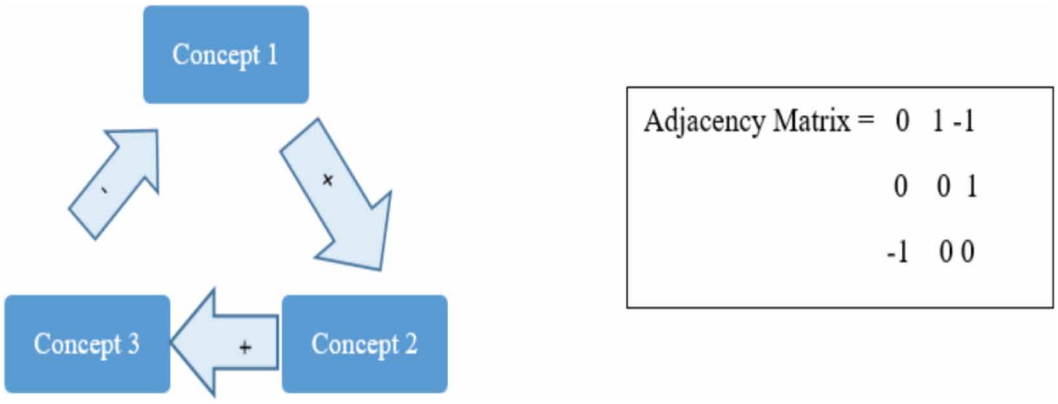
- Normative (planning and attaining desired goals);
- Descriptive (present a range of future alternatives).

A scenario-based planning brings a coherent, plausible, systematic and comprehensive plot in dispersed and complicated elements (Coates, 2000). The main purposes of scenario planning (Coates, 2000; Porter, 1991) are identified as follows:

- Scenario stimulates thinking by story-telling about a future event, condition or generate choices and alternatives;
- Establishes consequences/impacts of a particular choice;
- Forms a basis for further research.

Cognitive Maps capture diverse mental models for scenario development to identify key concepts or critical factors of the problem at hand and explore alternatives for future (A. Jetter & Schweinfort, 2011). Cognitive maps are directed graphs consisting of nodes (concepts) with positive or negative relationship (weights on edges/arrows) (Kosko, 1986). These relationships express dependencies between concepts

Figure 4. Causal cognitive map (adapted from (Shukla, Mohanty, & Kumar, 2018))



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and hence establishing a causality relationship. A simple illustration for causal map with its adjacency matrix is shown in Figure 4.

Figure 4 presents the adjacency matrix describing the crisp (either positive, negative or neutral) relationship between each concept of causal cognitive map. Kosko (Kosko, 1986) proposed Fuzzy Cognitive Maps (FCM) which are extensions to the cognitive maps (Axelrod, 1976); that help in analysing dynamically changing causal map representing real time situations with fuzzy weights assigned to relationships. Fuzzy Cognitive Maps (FCM) is a technique based on the concepts of an Artificial Neural Networks and Fuzzy Logic.

As mentioned above, most simulation methods revolve around simple rule-based scenarios (Vascak & Madarasz, 2010) or narrative storylines that are linked to dynamic models in an iterative process (Kok, 2009). But such methods cannot model complex situations where components are connected through chains and loops or components are a mixture of quantitative and qualitative factors. Fuzzy Cognitive Maps (FCM) can be used to model such complex situations and develop scenarios which can encapsulate human understanding and notations due to their graphical representation. A key tenet of FCMs is their additional capability of modelling complex relationship between concepts with appropriate weights on the edges (Kosko, 1997) which are fuzzily defined. A decision maker's perspective is understood in a realistic way with the usage of Fuzzy Logic (Jetter, 2003). In addition, a structural similarity of FCM and neural networks is the application in modelling complex systems (Kandasamy & Smarandache, 2003). FCM also helps decision makers to rationally involve all key factors of a problem situation and analyse different decision alternatives (Jetter, 2006). A decision maker can analyze inference patterns in a more realistic way (Kosko & Dickerson, 1994) using FCM. FCM are used in a variety of domains ranging from Forecasting (Li, Cheng, & Lin, 2008; Salmeron, 2012), Strategic planning (Kardaras & Karakostas, 1999; Lee, Lee, Kwon, Han, & Yu, 1998; Shukla et al., 2018) Decision Making (Iakovidis & Papageorgiou, 2011; Yu & Tzeng, 2006), Explanation (of actions already made) (Chen & Zhang, 2004), etc.

The problem addressed in this paper of strategizing SCM-M interface for e-commerce success can be systematically handled using FCM. A graphical map is formed by the collection of SCM-M interface critical factors and causality between these concepts/factors is defined vaguely or fuzzily. Dynamic scenarios proposed by the stakeholders based on FCM help in strategic planning of SCM-M interface for e-commerce success.

Now we discuss some basic concepts centred on FCM based on the foundational work of Kosko (Kosko, 1986) on FCMs. Let us assume that there are n concepts in a FCM namely: $C_1, C_2, C_3, \ldots, C_n$. The amount of causality imparted by any concept C_i to C_j is $e_{ij}=e(C_i, C_j)$, which represents the fuzzy weights allocated for each relationship. E is the adjacency matrix where $E = e_{ij1 \le i,j \le n}$ which represents a matrix containing weights of causal relationships of FCM. E contains all one-edge paths on cognitive map. $E^2 = E*E$ which represents all two-edge paths of cognitive map. Similarly, other matrices like $E^3, E^4, E^5, \ldots\ldots, E^{n-1}$ list indirect effects of three, four, five, ……, n-1 edge paths respectively.

FCMs are acyclic so no more than n-1 edges can exist in a path.

The total effect matrix also known as reachability matrix is defined as:

$$T = \sum_{i=1}^{n-1} E^i$$

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T is nothing but the powered sum of matrices E^i. Acyclic nature of E can be determined to be positive if the main diagonal elements of T are all zero. To determine centrality of a concept in FCM, we define the following terms:

$$IN\left(C_i\right)=\sum_{k=1}^{n} e_{ik}$$

and:

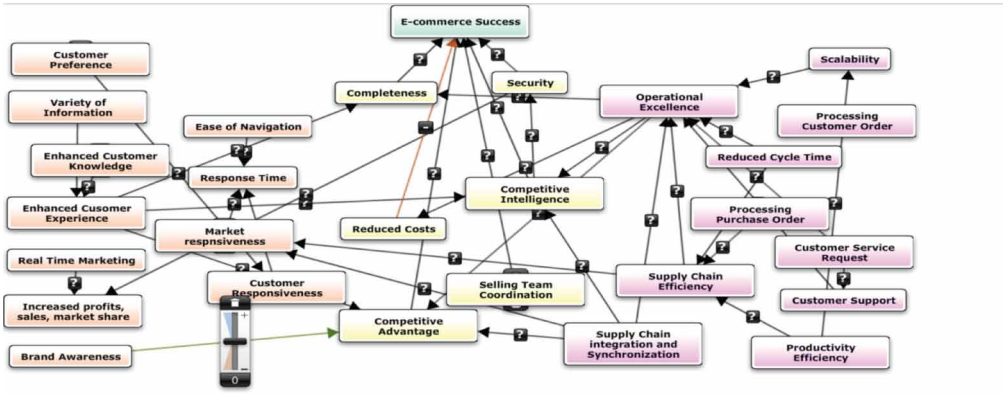
$$OUT\left(C_i\right)=\sum_{k=1}^{n} e_{ki}$$

where $IN(C_i)$ is the number of concepts casually impinging on concept C_i and $OUT(C_i)$ is the number of concepts C_i casually impinged upon. The conceptual centrality of a node C_i representing the importance of this node in causal map is thus defined by:

$$CEN(C_i) = IN(C_i) + OUT(C_i)$$

A concept might have more causal centrality if it is heavily connected to its connections although it might be connected to a lesser number of nodes. After explaining the basic concepts of FCM, we enumerate it using an illustration of the problem addressed in this paper (Figure 5).

Figure 5. Fuzzy causal cognitive map



Each connecting arrow with a question mark represents the input required from stakeholder, which is a confidence rating or fuzzy weights of one concept driving another. These fuzzy weights are nothing but the representation of understanding of stakeholders about the influence of one factor on another in a qualitative fashion (Nyaki, Gray, Lepczyk, Skibins, & Rentsch, 2014). These qualitative values that represent the understanding of the stakeholders which are then transformed into a quantitative value for FCM modelling which is elaborately shown later in the paper. The stakeholder or decision maker for a

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specific problem situation at hand should provide these unattended weights. The arrow between Brand Awareness driving Competitive Advantage shows how we can allocate a fuzzy weight between -1 to 1.

The relationship of each concept can be expressed as a negative (high, medium, low), neutral, positive (high, medium, low) edge relationship. Gray et al., (Gray, Gray, Cox, & Henly-Shepard, 2013) developed openly available web-based mental modeler software to convert these qualitative relationships in mind of a decision maker to convert them into fuzzy approximates between -1 and 1. Once the Decision Maker fixes his mind on the relationship between these critical factors of SCM, Marketing and SCM-M interface identified through D&M IS success model, the relationship is converted into the fuzzy weights and thus into a response matrix. Variations in one concept help to determine the impact on the other concepts, E-commerce success and system as a whole.

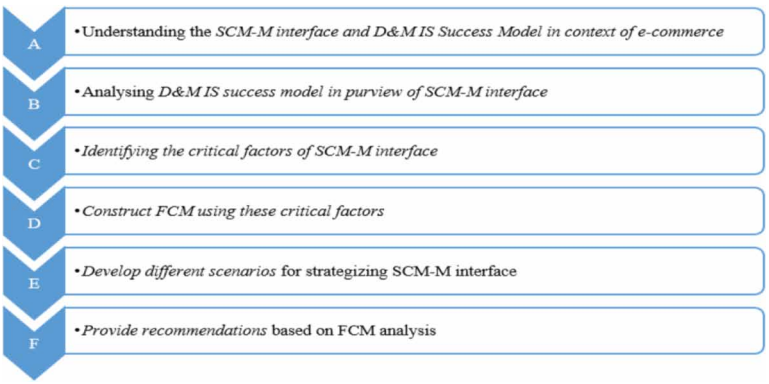
RESEARCH METHODOLOGY

We propose an integrated mechanism to identify the critical SCM-M interface, Marketing and SCM factors in e-commerce using D&M IS success model (DeLone & McLean, 2003) and explore and evaluate dynamic scenarios between these factors. These scenarios are based on FCM, which help to strategize e-commerce success using critical factors of SCM-M interface, SCM and Marketing. The following main modules constitute the research methodology:

1. Understanding the SCM-M interface and D&M IS Success Model in context of e-commerce;
2. Analysing the different dimensions of D&M IS success model in purview of SCM-M interface;
3. Identifying the critical factors of SCM-M interface, SCM and Marketing using D&M IS success model for strategizing e-commerce success;
4. Construct FCM using these critical factors;
5. Develop different scenarios for strategizing SCM-M interface for e-commerce success to aid situational decision making;
6. Provide recommendations based on FCM analysis.

Based on the work presented in previous sections of this research paper, we present a systematic illustration of each section of this flow diagram.

Figure 6. Flow diagram of proposed the research methodology



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1. Understanding the SCM-M Interface and D&M IS Success Model in Context of E-Commerce.

In section 2 and 3, we presented an in-depth review of previous research works to better understand the SCM interface and D&M IS success model in the context of e-commerce.

2. Analysing D&M IS Success Model in Purview of the SCM-M Interface.

In section 4, we explored different dimensions of D&M IS success model and related the important metrics of each dimension to the SCM-M interface, SCM and Marketing.

3. Identifying the Critical Factors of the SCM-M Interface.

We derived a set of critical factors important for SCM-M interface, SCM and Marketing for e-commerce success using the work by (DeLone & Mclean, 2004). The set of identified critical factors are presented in Table 8 with their classification in SCM-M interface, SCM or marketing with appropriate abbreviations to be used later in our work.

4. Construct FCM Using These Critical Factors.

The critical factors identified using D&M IS success model help in constructing FCM. These critical factors form integral components of FCM known as concepts and the decision/problem situation at hand helps to define the relationship between them. FCM also enables decision makers to allocate their understanding on strength and direction of relationship in form of fuzzy weights. After defining these relationships and weights, FCM is subjected to scenario generation and analysis.

5. Develop Different Scenarios for Strategizing SCM-M Interface.

We develop different scenarios based on FCM in the section 7 and analyze them.

6. Provide Recommendations Based on FCM Analysis.

We provide recommendations based on scenario analysis in section 7. The results of these scenarios help a decision maker to strategize e-commerce success using the critical factors of SCM-M interface identified using the D&M IS success model.

STRATEGIC PLANNING TO LEVERAGE SCM-M INTERFACE FOR E-COMMERCE SUCCESS

The FCM of critical factors of the SCM-M interface, SCM and Marketing identified through the D&M IS success model is presented in Figure IV. However, the fuzzy weights need to be assigned for representing the relationship strength between concepts. The decision maker can qualitatively classify these weights into seven values: positive relationship (high, medium, low), neutral or negative relationship (high, medium, low). These weights represent a fuzzy membership degree of (0.33, 0.66, and 1) for a

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Table 8. Critical factors with classification and abbreviation

Critical Factors/Concept of FCM	Abbreviation	Classification
Response Time	RT	Marketing
Ease of navigation	E	Marketing
Customer Preference Information	CP	Marketing
Variety of information	VoI	Marketing
Enhanced customer knowledge	CK	Marketing
Enhanced customer experience	CE	Marketing
Real-time marketing	RTM	Marketing
Increased Sales, Market-Share and Profits	ISMP	Marketing
Brand Awareness	BA	Marketing
Customer Responsiveness	CR	Marketing
Market Responsiveness	MR	Marketing
Scalability	SC	SCM
Processing Customer Orders	CO	SCM
Processing Purchase Orders	PO	SCM
Customer Service request	CSR	SCM
Customer Support	CS	SCM
Productivity efficiency	PE	SCM
Operational excellence	OE	SCM
Reduced Cycle Time	RCT	SCM
Supply Chain Efficiency	SCE	SCM
Supply Chain integration and synchronization	SCIS	SCM
Security	SE	SCM-M
Completeness	CO	SCM-M
Competitive Intelligence	CI	SCM-M
Reduced costs	RC	SCM-M
Selling Team Coordination	STC	SCM-M
Competitive advantage	CA	SCM-M

positive relationship while a negative relationship is represented as a negative value (-0.33,-0.66,-1) of these fuzzy membership degrees. The neutral relationship is represented with membership degree zero. These fuzzy weights are nothing but the representation of understanding of stakeholders about the influence of one factor on another in a qualitative fashion (Nyaki et al., 2014). Hence, a Decision Maker can assign the following qualitative values to each relationship.

HP, MP, LP, N, LN, MN, and HN: Representing Highly Positive, Medium Positive, Low Positive, Neutral, Low Negative, Medium Negative or Highly Negative. It is very important to have a rationale for assigning these fuzzy weight values to relationships between concepts. Two types of relationships primarily exist between the concepts or critical factors identified for SCM-M interface, SCM and

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Marketing. First type of relationship is the one that exist directly between a concept and e-commerce success, which is the strategic goal of FCM. The second type of relationships are those that exist between a concept and other concept.

We present a tabular representation (Table 9) of those concepts/critical factors, which directly affect the e-commerce success, and the fuzzy weights assigned to their relationship with the strategic goal of e-commerce success. In our case, we have identified that only SCM-M interface critical factors will directly impact the e-commerce success to emphasise on the synergies between SCM and Marketing. However, this choice is dependent completely on the stakeholders and problem situation at hand. The concept names are presented in their abbreviated form as mentioned in Table 8.

Table 9. Relationship of concepts with e-commerce success

Critical Factors/Concept of FCM	Fuzzy Weight/Value
SE	HP
CO	LP
CI	MP
RC	LP
STC	HP
CA	HP

Now, we present a tabulated visual of interrelationships among concepts or critical factors (Table 10). These relationships are in the form of antecedent-consequent where the prior concept drives the later one. We use abbreviated form of concepts to represent these relationships.

The rationale behind qualitative values assigned by the decision maker in case of both types of relationships expressed in Tables 9 and 10 needs to be understood. We have considered all the critical factors or concepts considered in FCM to possess a positive impact on e-commerce success, so all the fuzzy weights assigned are primarily positive. Let us explain the rationale of fuzzy weights for a couple of entries in both the tables. In Table 9, we consider Security (SE) and Competitive Advantage (CA) to bear a highly positive (HP) relationship with e-commerce success. In case of interrelationships between critical factors/concepts given in Table 10, Customer Experience (CE) drives Competitive Intelligence (CI) in medium positive (MP) manner whereas drives Competitive Advantage (CA) in a highly positive (HP) manner. Based on the fuzzy relationship weights given above in Tables 9 and 10, a scenario is generated as shown in Figures 7-10.

Figure 10 represents FCM in the default state where we have the relationship of concepts and strategic goal with their weight values provided by the Decision Maker. In order to study the impact of variations of a particular concept on the strategic goal, we vary the concept values. There are primarily four main functions available for these variations in concept values based past research work and offered by Mental Modeller (Boutalis, Kottas, & Christodoulou, 2009; Gray et al., 2013; Kosko & Dickerson, 1994). These functions are:

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Table 10. Interrelationship among concepts

Critical Factors/Concept of FCM	Fuzzy Weight	Fuzzy Value
CP-CR	LP	0.3-0.4
VoI-CE	LP	0.3-0.4
CK-CE	MP	0.6-0.7
CE-CO	LP	0.3-0.4
CE-CI	MP	0.6-0.7
CE-CA	HP	1
RTM-ISMP	MP	0.6-0.7
SE-ISMP	HP	1
CK-E	LP	0.3-0.4
E-CE	HP	1
E-RT	LP	0.3-0.4
MR-RT	LP	0.3-0.4
CR-RT	LP	0.3-0.4
RT-CA	LP	0.3-0.4
SCE-MR	HP	1
SCIS-MR	HP	1
BA-CA	MP	0.6-0.7
CI-BA	HP	1
SC-OE	LP	0.3-0.4
PE-SC	HP	1
CO-SCE	LP	0.3-0.4
RCT-OE	MP	0.6-0.7
RCT-SCE	MP	0.6-0.7
PO-SCE	LP	0.3-0.4
CSR-OE	MP	0.6-0.7
CSR-CS	MP	0.6-0.7
CS-OE	LP	0.3-0.4
PE-SCE	MP	0.6-0.7
SCE-OE	HP	1
SCIS-OE	HP	1
OE-CO	LP	0.3-0.4
OE-CI	MP	0.6-0.7
OE-CA	HP	1
OE-RC	HP	1
SCIS-CA	HP	1
SCIS-CI	LP	0.3-0.4

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Figure 7. FCM with relationship weights for E-commerce

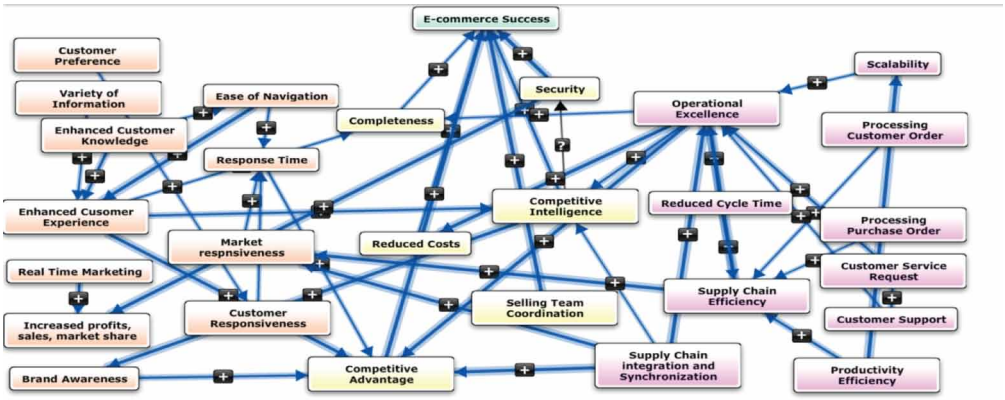

Figure 8. A partial view of adjacency matrix for FCM

	E-commerce Success	Response Time	Security	Scalability	Ease of Navigation	Customer Preference	Variety of Information	Enhanced Customer Knowledge	Enhanced Cusomer Experience	Real Time Marketing	Increased profits, sales, market share	Brand Awareness	Market respnsiveness	Customer Responsiveness
E-commerce Success														
Response Time														
Security	1										1			
Scalability														
Ease of Navigation		0.33							1					
Customer Preference														0.31
Variety of Information									0.33					
Enhanced Customer Knowledge					0.31				0.64					
Enhanced Cusomer Experience														
Real Time Marketing											0.67			

Figure 9. A partial view of model state and its metric information

Total Components	28
Total Connections	43
Density	0.0568783069
Connections per Component	1.5357142857
Number of Driver Components	12
Number of Receiver Components	2
Number of Ordinary Components	14
Complexity Score	0.1666666667

Component	Indegree	Outdegree	Centrality	Preferred State	Type
E-commerce Success	4.33	0	4.33	-	receiver
Response Time	1.02	0.33	1.35	-	ordinary
Security	0	2	2	-	driver
Scalability	1	0.33	1.33	-	ordinary
Ease of Navigation	0.31	1.33	1.6400000000000001	-	ordinary
Customer Preference	0	0.31	0.31	-	driver
Variety of Information	0	0.33	0.33	-	driver
Enhanced Customer Knowledge	0	0.95	0.95	-	driver
Enhanced Cusomer Experience	1.9700000000000002	1.9700000000000002	3.9400000000000004	-	ordinary
Real Time Marketing	0	0.67	0.67	-	driver
Increased profits, sales, market share	1.67	0	1.67	-	receiver
Brand Awareness	1	0.62	1.62	-	ordinary
Market respnsiveness	2	0.33	2.33	-	ordinary
Customer Responsiveness	0.31	0.36	0.6699999999999999	-	ordinary
Completeness	0.66	0.33	0.99	-	ordinary

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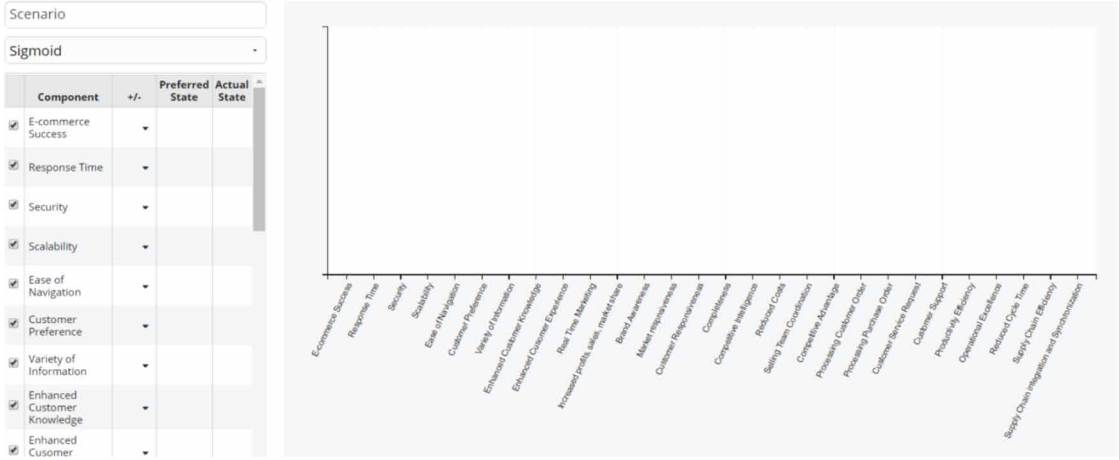
Figure 10. Default state to perform variations in concepts



- **Bivalent:** The usage of this function allows measurement of variation in two crisp value of either 0 (concept activated) or 1 (concept not activated);
- **Trivalent:** The usage of this function allows measurement of variation in three crisp values: either 0 (concept stable), -1(concept decreased) or 1(concept increased);
- **Sigmoid:** The usage of this function squashes the variation between two saturation levels 0 and 1 to create continuous state FCM;
- **Hyperbolic Tangent:** The usage of this function squashes the variation between two saturation levels -1 and 1 to create continuous state FCM.

We have used Hyperbolic Tangent Function for defining these changes over the already existing fuzzy membership of concepts as shown in Figure 9. Hyperbolic Tangent Function ensures that concepts can take variation values between -1 and 1 to express the strength and nature of their relationship appropriately (Bueno & Salmeron, 2009).

These variations will help us better understand the impact of changing concept on the strategic goal of e-commerce success. The following variations are performed:

- We start the scenario-based analysis by decreasing the Security (SE) by 0.1. We observe a tragic fall of 0.15 in e-commerce success and the profitability concept (IPSM) being hampered by 0.15;
- In the next step, we further worsen the situation by decreasing the Supply Chain efficiency (SCE) by 0.3. We find that the impact of decrease in both the Security (SE) and the Supply Chain efficiency (SCE) brings a highly negative impact on whole system. Strategic goal of e-commerce success along with factors like the Response Time (RT), Market Responsiveness (MR), Reduced Cost (RC), Operational Excellence (OE) etc. receive a big dip on their performance;
- Next a positive movement of the Supply Chain efficiency (SCE) from -0.01 to 0.1 recovers major losses to e-commerce success; brings back all the critical factors to a positive performance except the profitability concept (IPSM);

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- Further, a positive movement of the Sales Team Co-ordination to 0.1 gives the entire e-commerce system an increased positive momentum. However, this change is unable to affect the ISMP (Increased Sales, Market Share and Profits);
- Lastly, we make a positive movement of Security (SE) from -0.01 to 0.1 which highly affects the e-commerce success as wells as brings the profitability concept (IPSM) to a positive state of contribution for e-commerce success.

Figures 11-15 give a visual representation of these variations.

Figure 11. Visual representation of variation in scenarios (variation in security) SE decreased by 0.1

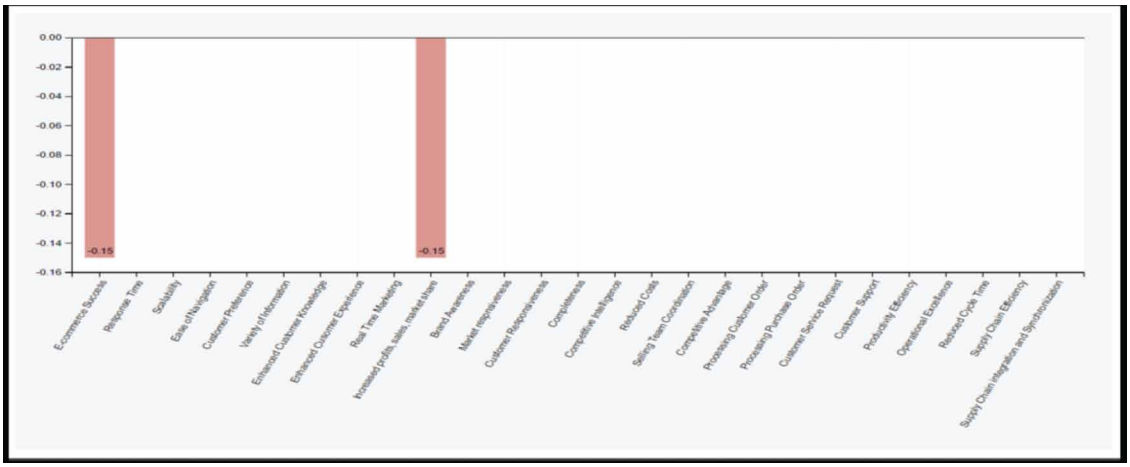

Figure 12. Visual representation of variation in scenarios (decrement in supply chain efficiency) SCE decreased by 0.3

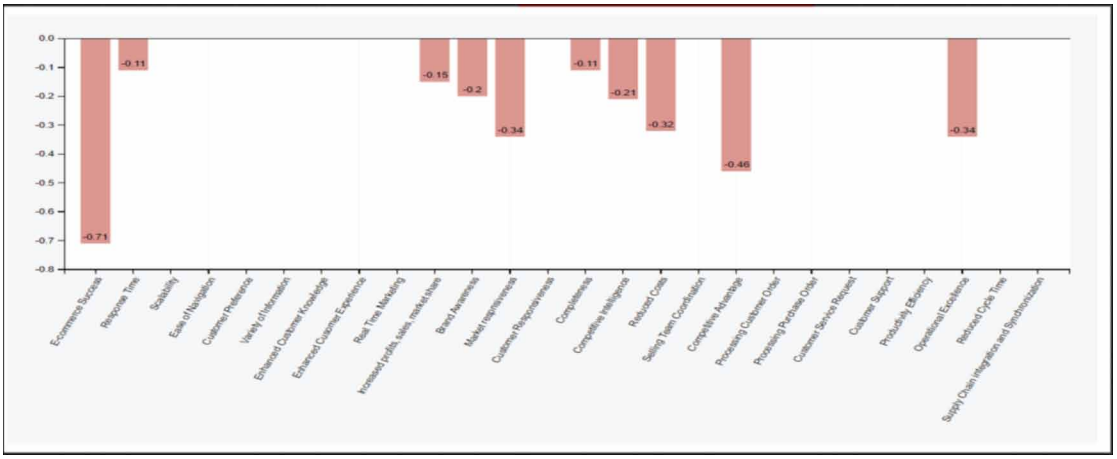

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Figure 13. Visual representation of variation in scenarios (increment in supply chain efficiency) SCE increased by 0.1

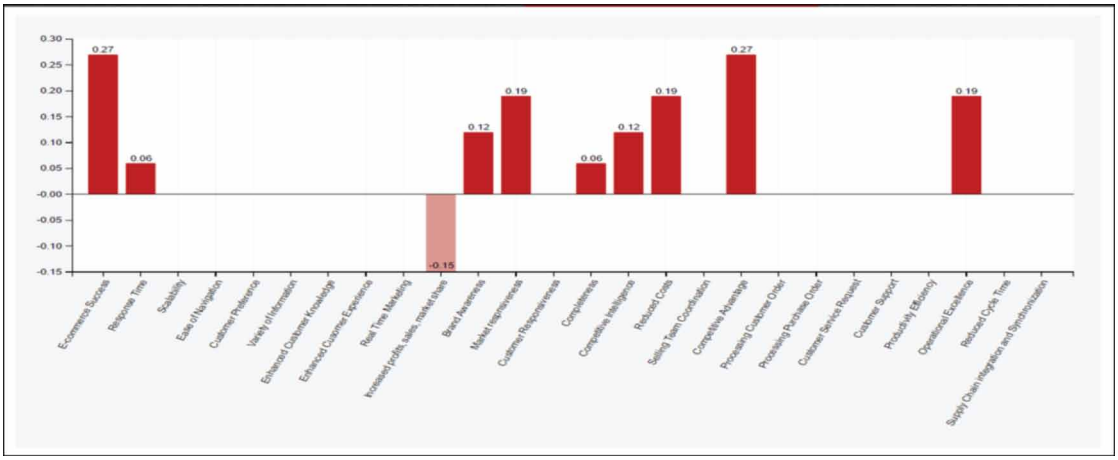


Figure 14. Visual representation of variation in scenarios (increment in sales team coordination) STC increased by 0.1

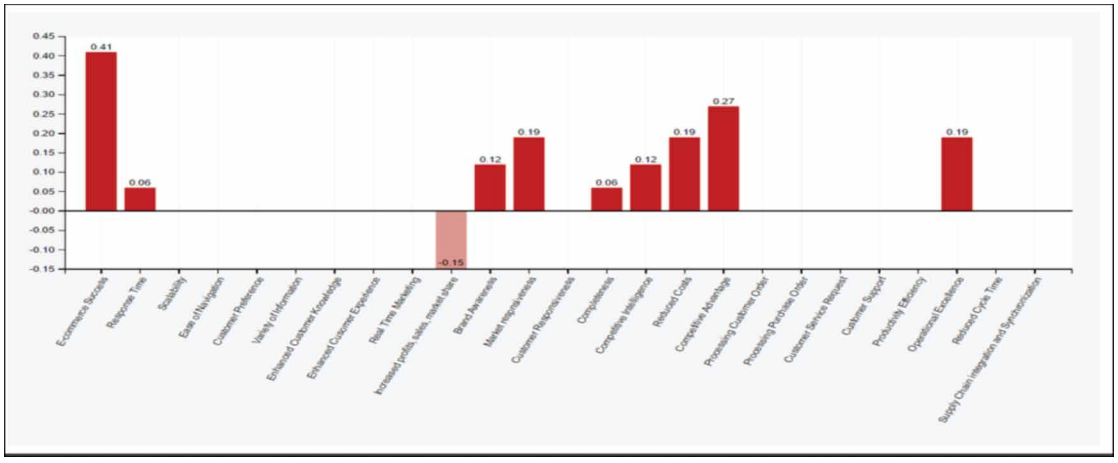
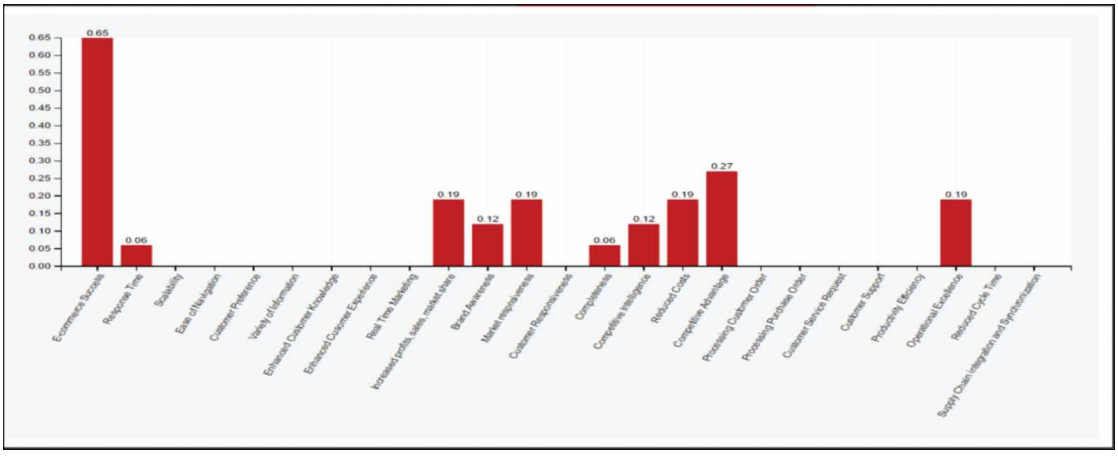


Figure 15. Visual representation of variation in scenarios (increment in security) SE increased by 0.1



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The results of this scenario analysis based on FCM is presented in the next section along with the highlights from the results.

RESULTS OF SCENARIO-BASED ANALYSIS

The results of scenario-based analysis performed for strategizing SCM-M interface for e-commerce success are presented in Table 11.

Table 11. Results of scenario-based analysis

Steps of Variations	Variations of Concepts	Variation Strength and Direction		Undesirable Changes	Desirable Changes
		Variation	New Level		
1	Security	.1(Decrease)	-.01	Profitability decreased, E-commerce Success decreased	
2	Supply Chain Efficiency	.3(Decrease)	- .01	Response Time, Market Responsiveness, Reduced Costs, Operational Excellence, Profitability, E-commerce Success are all decreased	
3	Supply Chain Efficiency	.2(Increase)	+.01	Profitability still negative	Response Time, Market Responsiveness, Reduced Costs, Operational Excellence, E-commerce Success are all at same positive level
4	Sales Team Co-ordination	.1(Increase)	+0.1	No effect	No effect
5	Security	.2(increase)	+0.1		Profitability increases

The above results of the scenario-based analysis using FCM provide the following fresh insights into the problem of strategizing the SCM-M interface for e-commerce success (as well as other related business problems):

- An important observation from these variations in critical factors for the given scenario is the identification of security (customer value related) and supply chain efficiency as a key factor to influence the e-commerce success and profitability. (Scenario Specific) The business implication that draws from this scenario-based fact is that security being a concern for both demand and supply side should always be maintained at an optimum level;
- Fuzzy weights assigned to the relationships for a FCM play a key role in defining the impact of variations of a particular concept on other related concepts as well as the strategic goal;
- The fundamental concepts are linked to the strategic goal of sustainability as well as inter-connected with each other. The variation in a fundamental concept in purview of the improved attainment of the strategic goal might negatively or positively affect other related concepts;

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- A decision maker with different rationale for relationships between the concepts might attain a different set of results as per the case description.

CONCLUSION AND IMPLICATIONS

This paper presents a unique and practical approach that helps to identify the critical factors affecting e-commerce success using the D&M IS success model, and the scenario-based analysis of FCM helps to measure the impact of these factors on the strategic goal of e-commerce success. This information can be useful to decision makers or stakeholders in prioritizing alternatives in decision making under business situations at hand.

This research also has some significant managerial implications:

- This paper discusses a complex problem of strategizing the SCM-M interface of e-commerce success. The proposed framework can help practitioners to view a complete picture of this problem and invoke them for better decision making;
- FCM provides different decision makers or stakeholders with an opportunity to express their understanding of the different concepts driving SCM-M interface and each other in a qualitative fashion, which is largely acceptable and understandable;
- The visual appeal of the scenario-based analysis provides the ability for an easy understanding and handling of the model for the decision makers and stakeholders with all backgrounds. The decision makers who lack the knowledge of the complex modeling methods or the other artificial intelligence and soft computing techniques can easily adopt this approach;
- We can also construct multiple FCMs for the viewpoint of multiple stakeholders and draw conclusions for community-based decisions;
- Lastly and most importantly, using the D&M model of IS success for identifying the fundamental concepts of e-commerce success by the stakeholders ensures the acceptability of this approach in a particular decision situation. Further, the usage of FCM by stakeholders to express their understanding for relationships among concepts ensures the flexibility part of this approach.

LIMITATIONS AND SCOPE OF FURTHER RESEARCH

One of the important limitations of our work is classification of the critical factors identified primarily through work of (DeLone & Mclean, 2004) and other past research works. We have considered a self-defined rationale to classify the identified critical factors in the domains of SCM, Marketing and SCM-M interface. In addition, we do not expect this list of critical factors in our work to be exhaustive for all possible factors possible in these domains. However, we have tried to incorporate as many critical factors as possible and identifiable through appropriately connected research works.

The research methodology presented in this work is based on attaining the strategic goal of e-commerce success by harnessing the SCM-M interface. We have used FCM to model the critical factors affecting e-commerce success. The relationships identified and the values assigned to the relationships are based on the stakeholder choice. An important extension to this work can be the testing and validation of this methodology with some actual data and business situations. The test with actual data and business situ-

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ation might help in improvisation of this methodology and lead to better understanding, analysis and results in an updated model.

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REFERENCES

Aberdeen Group. (2008). *The Supply Chain Executive's Strategic Agenda 2008*.

Akter, S., & Wamba, S. F. (2016). Big data analytics in E-commerce. *Electronic Markets*, *26*(2), 173–194. doi:10.100712525-016-0219-0

Antonopoulou, M., & Kotsilieris, T. (2019). A Literature Review of User Satisfaction Models Towards Information System Success. *International Journal of E-Services and Mobile Applications*, *11*(2), 71–87. doi:10.4018/IJESMA.2019040105

Ardito, L., Petruzzelli, A. M., Panniello, U., & Garavelli, A. C. (2018). Towards Industry 4.0. *Business Process Management Journal*.

Avlonitis, G. J., & Karayanni, D. A. (2000). The impact of internet use on business-to-business marketing. *Industrial Marketing Management*, *29*(5), 441–459. doi:10.1016/S0019-8501(99)00071-1

Axelrod, R. (1976). The mathematics of cognitive maps.

Baron, J. P., Shaw, M. J., & Bailey, A. D. Jr. (2000). Web-based e-catalog systems in B2B procurement. *Communications of the ACM*, *43*(5), 93–100. doi:10.1145/332833.332845

Barua, A., Konana, P., Whinston, A., & Yin, F. (2001). Measures for e-business value assessment. *IT Professional*, *3*(1), 47–51. doi:10.1109/6294.899933

Bogenrief, M. (2012). Three Things That Kmart Needs To Fix If It Wants To Survive - Business Insider.

Boutalis, Y., Kottas, T. L., & Christodoulou, M. (2009). Adaptive estimation of fuzzy cognitive maps with proven stability and parameter convergence. *IEEE Transactions on Fuzzy Systems*, *17*(4), 874–889. doi:10.1109/TFUZZ.2009.2017519

Bueno, S., & Salmeron, J. L. (2009). Benchmarking main activation functions in fuzzy cognitive maps. *Expert Systems with Applications*, *36*(3), 5221–5229. doi:10.1016/j.eswa.2008.06.072

Campo, K., Gijsbrechts, E., & Nisol, P. (2000). Towards understanding consumer response to stock-outs. *Journal of Retailing*, *76*(2), 219–242. doi:10.1016/S0022-4359(00)00026-9

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Chen, C. W. D., & Cheng, C. Y. J. (2009). Understanding consumer intention in online shopping. *Behaviour & Information Technology*, *28*(4), 335–345.

Chen, J. V., Su, B., & Widjaja, A. E. (2016). Facebook C2C social commerce. *Decision Support Systems*, *83*(Supplement C), 57–69. doi:10.1016/j.dss.2015.12.008

Chen, S., & Zhang, D. (2004). Robust image segmentation using FCM with spatial constraints based on new kernel-induced distance measure. *IEEE Transactions on Systems, Man, and Cybernetics. Part B, Cybernetics*, *34*(4), 1907–1916. doi:10.1109/TSMCB.2004.831165 PMID:15462455

Chkoniya, V., & Mateus, A. (2019). Digital Category Management. In Smart Marketing With the Internet of Things (pp. 139–163). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-5763-0.ch008

Coates, J. F. (2000). Scenario planning. *Technological Forecasting and Social Change*, *65*(1), 115–123. doi:10.1016/S0040-1625(99)00084-0

Copley, P. (2018). The experiential learning process on the small enterprise marketing/logistics and supply chain management interface–a conceptual model for the practical classroom. In *CABS Learning, teaching and student experience conference*, April 24-25, Glasgow, UK. Academic Press.

D'Ambra, J., & Rice, R. E. (2001). Emerging factors in user evaluation of the World Wide Web. *Information & Management*, *38*(6), 373–384. doi:10.1016/S0378-7206(00)00077-X

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Quarterly*, *13*(3), 319–340. doi:10.2307/249008

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology. *Management Science*, *35*(8), 982–1003. doi:10.1287/mnsc.35.8.982

Day, G. S. (1994). The capabilities of market-driven organizations. *Journal of Marketing*, *58*(4), 37–52. doi:10.1177/002224299405800404

Deloitte Research. (2002). Consumer Business Digital Loyalty Networks.

DeLone, W. H., & McLean, E. R. (1992). Information systems success. *Information Systems Research*, *3*(1), 60–95. doi:10.1287/isre.3.1.60

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success. *Journal of Management Information Systems*, *19*(4), 9–30. doi:10.1080/07421222.2003.11045748

DeLone, W. H., & Mclean, E. R. (2004). Measuring e-commerce success. *International Journal of Electronic Commerce*, *9*(1), 31–47. doi:10.1080/10864415.2004.11044317

DeLone, W. H., & McLean, E. R. (2016). Information systems success measurement. *Foundations and Trends in Information Systems*, *2*(1), 1–116.

Ellinger, A. E. (2000). Improving marketing/logistics cross-functional collaboration in the supply chain. *Industrial Marketing Management*, *29*(1), 85–96. doi:10.1016/S0019-8501(99)00114-5

Emmelhainz, M. A., Stock, J. R., & Emmelhainz, L. W. (1991). Consumer responses to retail stock-outs. *Journal of Retailing*, *67*(2), 138–148.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Esper, T. L., Ellinger, A. E., Stank, T. P., Flint, D. J., & Moon, M. (2010). Demand and supply integration. *Journal of the Academy of Marketing Science*, *38*(1), 5–18. doi:10.100711747-009-0135-3

Fitzsimons, G. J. (2000). Consumer response to stockouts. *The Journal of Consumer Research*, *27*(2), 249–266. doi:10.1086/314323

Flint, D. J. (2004). Strategic marketing in global supply chains. *Industrial Marketing Management*, *33*(1), 45–50. doi:10.1016/j.indmarman.2003.08.009

Forbes. (2014). Wal-Mart Stores on the Forbes Global 2000 List.

Galbraith, J. R. (1994). *Competing with flexible lateral organizations*. MA: Addison-Wesley Reading.

Golgeci, I., Golgeci, I., Gligor, D. M., & Gligor, D. M. (2017). The interplay between key marketing and supply chain management capabilities. *Journal of Business and Industrial Marketing*, *32*(3), 472–483. doi:10.1108/JBIM-05-2016-0102

Gray, S. A., Gray, S., Cox, L. J., & Henly-Shepard, S. (2013). Mental modeler. In *Proceedings of the 2013 46th Hawaii International Conference On System Sciences (HICSS)* (pp. 965–973). IEEE.

Griffith, D. A., & Krampf, R. F. (1998). An examination of the Web-based strategies of the top 100 US retailers. *Journal of Marketing Theory and Practice*, *6*(3), 12–23. doi:10.1080/10696679.1998.11501801

Gruen, T. W., & Corsten, D. S. (2007). A comprehensive guide to retail out-of-stock reduction in the fast-moving consumer goods industry.

Hoogeweegen, M. R., & Wagenaar, R. W. (1996). A method to assess expected net benefits of EDI investments. *International Journal of Electronic Commerce*, *1*(1), 73–94. doi:10.1080/10864415.1996.11518277

Hsu, M.-H., Chang, C.-M., Chu, K.-K., & Lee, Y.-J. (2014). Determinants of repurchase intention in online group-buying. *Computers in Human Behavior*, *36*(Supplement C), 234–245. doi:10.1016/j.chb.2014.03.065

Iakovidis, D. K., & Papageorgiou, E. (2011). Intuitionistic Fuzzy Cognitive Maps for Medical Decision Making. *IEEE Transactions on Information Technology in Biomedicine*, *15*(1), 100–107. doi:10.1109/TITB.2010.2093603 PMID:21095874

Jetter, A., & Schweinfort, W. (2011). Building scenarios with FCM. *Futures*, *43*(1), 52–66. doi:10.1016/j.futures.2010.05.002

Jetter, A. J. (2006). Fuzzy cognitive maps. Technology Management for the Global Future, 2006. *PICMET*, *2*, 498–512.

Jetter, A. J. M. (2003). Educating the guess. In *Management of Engineering and Technology 2003 PICMET'03* (pp. 261-273). IEEE.

Juttner, U., Christopher, M., & Baker, S. (2007). Demand chain management-integrating marketing and supply chain management. *Industrial Marketing Management*, *36*(3), 377–392. doi:10.1016/j.indmarman.2005.10.003

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Juttner, U., Christopher, M., & Godsell, J. (2010). A strategic framework for integrating marketing and supply chain strategies. *International Journal of Logistics Management*, *21*(1), 104–126. doi:10.1108/09574091011042205

Kandasamy, W. V., & Smarandache, F. (2003). Fuzzy cognitive maps and neutrosophic cognitive maps. Phoenix AZ: Infinite Study.

Karavdic, M., & Gregory, G. (2005). Integrating e-commerce into existing export marketing theories. *Marketing Theory*, *5*(1), 75–104. doi:10.1177/1470593105049602

Kardaras, D., & Karakostas, B. (1999). The use of fuzzy cognitive maps to simulate IS strategic planning process. *Information and Software Technology*, *41*(4), 197–210. doi:10.1016/S0950-5849(98)00125-6

Keen, P. G. (1980). MIS research.

Kohli, R., & Grover, V. (2008). Business value of IT. *Journal of the Association for Information Systems*, *9*(1), 23–39. doi:10.17705/1jais.00147

Kok, K. (2009). The potential of Fuzzy Cognitive Maps for semi-quantitative scenario development, with an example from Brazil. *Global Environmental Change*, *19*(1), 122–133. doi:10.1016/j.gloenvcha.2008.08.003

Kosko, B. (1986). Fuzzy cognitive maps. *International Journal of Man-Machine Studies*, *24*(1), 65–75. doi:10.1016/S0020-7373(86)80040-2

Kosko, B. (1997). *Fuzzy Engineering, 1997*. New Jersey: Prentice Hall.

Kosko, B., & Dickerson, J. (1994). Fuzzy virtual worlds. *AI Expert*, *9*(7), 24–31.

Kotler, P., & Armstrong, G. (2007). *Principles of Marketing* (12th ed.). New Jersey: Prentice Hall.

Kozlenkova, I. V., Hult, G. T. M., Lund, D. J., Mena, J. A., & Kekec, P. (2015). The role of marketing channels in supply chain management. *Journal of Retailing*, *91*(4), 586–609. doi:10.1016/j.jretai.2015.03.003

Lamberti, L., & Noci, G. (2010). Marketing strategy and marketing performance measurement system. *European Management Journal*, *28*(2), 139–152. doi:10.1016/j.emj.2009.04.007

Lawrence, P. R., & Lorsch, J. W. (1986). *Organization and environment: managing differentiation and integration*. Harvard Business School Classics.

Lee, H. L. (2001). Ultimate enterprise value creation using demand-based management. *Stanford Global Supply Chain Management Forum*.

Lee, H. L., & Whang, S. (2001). E-business and supply chain integration. *Stanford Global Supply Chain Management Forum*.

Lee, K. C., Lee, W. J., Kwon, O. B., Han, J. H., & Yu, P. I. (1998). Strategic Planning Simulation Based on Fuzzy Cognitive Map Knowledge and Differential Game. Simulation, 71(5), 316-327. doi:10.1177/003754979807100503

Li, S.-T., Cheng, Y.-C., & Lin, S.-Y. (2008). A FCM-based deterministic forecasting model for fuzzy time series. *Computers & Mathematics with Applications (Oxford, England)*, *56*(12), 3052–3063. doi:10.1016/j.camwa.2008.07.033

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Liu, C., & Arnett, K. P. (2000). Exploring the factors associated with Web site success in the context of electronic commerce. *Information & Management*, *38*(1), 23–33. doi:10.1016/S0378-7206(00)00049-5

Loftus, B. S. (1997). The impact of an emerging technology on the early buyer-seller relationship. *Journal of Marketing Theory and Practice*, *5*(2), 20–30. doi:10.1080/10696679.1997.11501762

Martin, J. H., & Grbac, B. (2003). Using supply chain management to leverage a firm's market orientation. *Industrial Marketing Management*, *32*(1), 25–38. doi:10.1016/S0019-8501(01)00192-4

McGill, T. J., Hobbs, V. J., & Klobas, J. E. (2003). User developed applications and information systems success. *Information Resources Management Journal*, *16*(1), 24–45. doi:10.4018/irmj.2003010103

Min, S., & Mentzer, J. T. (2000). The role of marketing in supply chain management. *International Journal of Physical Distribution & Logistics Management*, *30*(9), 765–787. doi:10.1108/09600030010351462

Mintzberg, H. (1983). Power In and Around Organizations. Englewood Cliffs, NJ: Prentice Hall.

Molla, A., & Licker, P. S. (2001). E-commerce systems success. *Journal of Electronic Commerce Research*, *2*(4), 131–141.

Mollenkopf, D., Russo, I., & Frankel, R. (2007). The returns management process in supply chain strategy. *International Journal of Physical Distribution & Logistics Management*, *37*(7), 568–592. doi:10.1108/09600030710776482

Morash, E. A., & Clinton, S. R. (1998). Supply chain integration. *Journal of Marketing Theory and Practice*, *6*(4), 104–120. doi:10.1080/10696679.1998.11501814

Mueller, B., Viering, G., Legner, C., & Riempp, G. (2010). Understanding the economic potential of service-oriented architecture. *Journal of Management Information Systems*, *26*(4), 145–180. doi:10.2753/MIS0742-1222260406

Neilson. (2012). Global Connected Commerce.

Noci, G. (2019). The evolving nature of the marketing–supply chain management interface in contemporary markets. *Business Process Management Journal*, *25*(2), 379–383. doi:10.1108/BPMJ-07-2018-0202

Nyaki, A., Gray, S. A., Lepczyk, C. A., Skibins, J. C., & Rentsch, D. (2014). Local-scale dynamics and local drivers of bushmeat trade. *Conservation Biology*, *28*(5), 1403–1414. doi:10.1111/cobi.12316 PMID:24975683

Palmatier, R. W., Scheer, L. K., Houston, M. B., Evans, K. R., & Gopalakrishna, S. (2007). Use of relationship marketing programs in building customer–salesperson and customer–firm relationships. *International Journal of Research in Marketing*, *24*(3), 210–223. doi:10.1016/j.ijresmar.2006.12.006

Palmer, J. W. (2002). Web site usability, design, and performance metrics. *Information Systems Research*, *13*(2), 151–167. doi:10.1287/isre.13.2.151.88

Peppard, J., Ward, J., & Daniel, E. (2007). Managing the realization of business benefits from IT investments. *MIS Quarterly Executive*, *6*(1).

Peppers, D., & Rogers, M. (1998). *Enterprise one-to-one: tools for building unbreakable customer relationships in the interactive age*. Piatkus.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Petter, S., DeLone, W., & McLean, E. R. (2013). Information Systems Success. *Journal of Management Information Systems*, *29*(4), 7–62. doi:10.2753/MIS0742-1222290401

Piercy, N. (2008). *Market-led strategic change*. Routledge. doi:10.4324/9780080949475

Porter, A. L. (1991). *Forecasting and management of technology* (Vol. 18). New York: John Wiley & Sons.

PwC. (2014). Global supply chain survey 2013.

Raghunathan, M., & Madey, G. R. (1999). A firm-level framework for planning electronic commerce information systems infrastructure. *International Journal of Electronic Commerce*, *4*(1), 121–145. doi :10.1080/10864415.1999.11518360

Rai, A., Lang, S. S., & Welker, R. B. (2002). Assessing the validity of IS success models. *Information Systems Research*, *13*(1), 50–69. doi:10.1287/isre.13.1.50.96

Rapp, A. A., Bachrach, D. G., Flaherty, K. E., Hughes, D. E., Sharma, A., & Voorhees, C. M. (2017). The Role of the Sales-Service Interface and Ambidexterity in the Evolving Organization. *Journal of Service Research*, *20*(1), 59–75. doi:10.1177/1094670516679274

Sale, R. S., Mesak, H. I., & Inman, R. A. (2017). A dynamic marketing-operations interface model of new product updates. *European Journal of Operational Research*, *257*(1), 233–242. doi:10.1016/j.ejor.2016.07.051

Salmeron, J. L. (2012). Fuzzy cognitive maps for artificial emotions forecasting. *Applied Soft Computing*, *12*(12), 3704–3710. doi:10.1016/j.asoc.2012.01.015

Samar, R., & Mazuri, A. G. (2019). Integration of DeLone & McLean and Self-Determination Theory in internet banking continuance intention context. *International Journal of Accounting and Information Management*, *27*(3).

Samatli-Pac, G., Shen, W., & Hu, X. (2018). The Impact of Consumer Loss Aversion on Returns Policies and Supply Chain Coordination. *International Journal of Operations Research and Information Systems*, *9*(4), 1–20. doi:10.4018/IJORIS.2018100101

Sambamurthy, V., & Zmud, R. W. (1994). *IT management competency assessment: A tool for creating business value through IT*. NJ: Financial Executives Research Foundation Morristown.

Scott, M., DeLone, W., & Golden, W. (2016). Measuring eGovernment success. *European Journal of Information Systems*, *25*(3), 187–208. doi:10.1057/ejis.2015.11

Seddon, P., & Kiew, M.-Y. (1996). A partial test and development of DeLone and McLean's model of IS success. *AJIS. Australasian Journal of Information Systems*, *4*(1). doi:10.3127/ajis.v4i1.379

Shang, S., & Seddon, P. B. (2002). Assessing and managing the benefits of enterprise systems. *Information Systems Journal*, *12*(4), 271–299. doi:10.1046/j.1365-2575.2002.00132.x

Shannon, C. E., & Weaver, W. (1949). *The mathematical theory of communication*. University of Illinois press.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Shukla, S., Mohanty, B. K., & Kumar, A. (2018). Strategizing sustainability in e-commerce channels for additive manufacturing using value-focused thinking and fuzzy cognitive maps. *Industrial Management & Data Systems*, *118*(2), 390–411. doi:10.1108/IMDS-03-2017-0122

Soh, C., & Markus, M. L. (1995). How IT creates business value. In *ICIS 1995 Proceedings*. Academic Press.

Stephens, J. A., & Archambault, J. (1998). Cross-functional Interface of Marketing and Accounting. *American Journal of Business*, *13*(1), 31–40. doi:10.1108/19355181199800003

Svensson, G. (2002). Supply chain management. *European Business Review*, *14*(6), 426–436. doi:10.1108/09555340210448785

Takacs, S. J., & Freiden, J. B. (1998). Changes on the electronic frontier. *Journal of Marketing Theory and Practice*, *6*(3), 24–37. doi:10.1080/10696679.1998.11501802

Teo, T. S., & Choo, W. Y. (2001). Assessing the impact of using the Internet for competitive intelligence. *Information & Management*, *39*(1), 67–83. doi:10.1016/S0378-7206(01)00080-5

Teo, T. S., & Too, B. L. (2000). Information systems orientation and business use of the Internet. *International Journal of Electronic Commerce*, *4*(4), 105–130. doi:10.1080/10864415.2000.11518381

Thompson, J. D. (1967). *Organizations in action*. Transaction publishers.

Thompson, J. D. (2003). Organizations in action.

Van der Heijden, K. (1996). Scenarios: the art of strategic conversation.

Van Woensel, T., Van Donselaar, K., Broekmeulen, R., & Fransoo, J. (2007). Consumer responses to shelf out-of-stocks of perishable products. *International Journal of Physical Distribution & Logistics Management*, *37*(9), 704–718. doi:10.1108/09600030710840822

Vascak, J., & Madarasz, L. (2010). Adaptation of fuzzy cognitive maps-a comparison study. *Acta Polytechnica Hungarica*, *7*(3), 109–122.

Wang, Y.-S. (2008). Assessing e-commerce systems success. *Information Systems Journal*, *18*(5), 529–557. doi:10.1111/j.1365-2575.2007.00268.x

Young, D., & Benamati, J. (2000). Differences in public web sites. *Journal of Electronic Commerce Research*, *1*(3), 94–105.

Yu, R., & Tzeng, G.-H. (2006). A soft computing method for multi-criteria decision making with dependence and feedback. *Applied Mathematics and Computation*, *180*(1), 63–75. doi:10.1016/j.amc.2005.11.163

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Chapter 11
Strategies to Predict E-Commerce Inventory and Order Planning

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ABSTRACT

This study examines the characteristics of a prediction model for businesses in the online marketplace by considering the market trend, prior sales and decision maker's preference on potential demand estimate. With the rapid growth of the electronic market, the main challenge for online sellers is the ability to analyze customer expectation, market data, and sales information to make the accurate procurement decision. The proposed model integrates a mathematical structure for a target season sale comprising upcoming demand projection by seller's internal team, data from past sales and the overall trend of seller's e-brand to determine the online customer demand. The study proposed a newsvendor model as a tool for sellers to make the instantaneous decision of ordering merchandise from the supplier when the quick response to the customer order is a priority for electronic market. Results of the study provide insights into the procurement dynamics and implications of the e-commerce inventory plan.

INTRODUCTION

The advance of e-commerce made the online shopping popular among the users. E-commerce brought a trade revolution by providing an information platform for all levels of firms to participate in the online market with the scope of instant communication. The visibility of transaction, abundant information, low investment and low manpower, quick start-up and reduced inventory are the main attraction for the e-commerce growth. The accurate prediction of e-commerce merchandise plays an important role in business success. In particular, demand prediction in the e-commerce market has the task to efficiently

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decipher the rhythm of the popularity, market trend and customer expectation. As evident, the businesses use networks for buying and selling goods and services, share information, transfer data and funds on the web system. E-commerce provides many benefits to both sellers and buyers and due to these advantages of the online business model over the traditional physical retailers, the expectations on e-commerce are increasing (Lee et al., 2007). On time delivery- and cost-intensive inventory set-up processes in the e-commerce industry provide the major motivation for customers to purchase their goods online in a more continuous way.

The challenge in e-commerce business is to find applicable inventory management policy to replenish items to meet consumer expectation. Technology is a key enabler to create real-time inventory demand pattern and replenishment policy by transforming traditional inventory practices to strategic point-of-sale e-commerce function. As technology advances, e-commerce business policy should be robust to replenish inventory at right time and at right quantity to keep the business growth effective. The service activities of all delivery requirements upheld on time, whereby priorities for customer orders can be achieved. Several ways e-commerce plays an important role as a business medium. E-commerce operations involve four major markets segments: business to business (B2B), business to consumer (B2C), consumer to consumer (C2C), and consumer to business (C2B). It has allowed firms to establish a market presence by providing a cheaper and more efficient distribution chain for their products or services. However, the central focus of this study is the business-to-customer e-commerce, as defined by Grandon and Pearson (2004): the process of buying and selling products or services using electronic data transmission via the Internet and the www. The study refers to the actual prediction process specific to the consumer demand and therefore falls in the area of operational decisions.

Many e-commerce businesses have successfully achieved tangible improvements in operational efficiency and financial revenue by integrating e-commerce into their value chain activities (Brynjolfsson & Kahin, 2000). However, not all firms have been uniformly successful (Barua & Mukhopadhyay, 2000). A vital practice to have in place in order to be successful in e-commerce is the ability to use prediction model to determine the stock level properly. If there is no standard process in place to predict for future business, the business will never be able to grow. There are several aspects of macro level emphasize on demand forecast ratio to be considered in order to maintain the proper inventory for e-commerce. A major aspect is knowing is knowing the sales and demand data of the product line in the past years. Understanding the customer demand pattern to able to predict what they will want and how much they will need is a breakthrough for success. In order to stock properly for e-commerce, the company should know the current inventory levels, sell-through rates, seasonal peaks, gross margin, product gaps, cash flow and product similarity (Roggio, 2015). Building a relationship and brainstorming between company's policy makers, designers, and the supplier (or manufacturer) representatives can have a significant impact on proper stocking with e-commerce. Popularity information effects online sales. For example, if a product is displayed on the hit list, product sales increase by an average of 1.3 units per day (Yoo et al., 2016). Their research identified the effects of popularity information on product sales through an analysis of the customer category and price. These representatives can project the impact of new design, the new style of customers, current business trend as well as the negotiated terms with delivery times, issues and allocations as necessary. Logistics evaluation and user-centric information systems provide a comprehensive platform to examine the latest strategies and methods for creating technological systems with end users as the focal point of the e-commerce design process (Saeed et al., 2017). E-commerce platform provides small businesses and individuals to launch online storefronts quickly with minimal start-up costs, although competition is intense. E-merchants must build customer trust if they are to sur-

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vive and grow in a marketplace where transactions are usually among strangers and sellers' reputations have a strong, positive impact on consumer trust and subsequent purchase intentions, price premiums, and sales volumes (Bente et al., 2012; Utz et al., 2012; Zhang, 2006). Successful practices of human-centered system design on e-commerce platform provides special attention to improve practices and designs, as well as the successful implementing Information and Communication Technologies (Saeed et al. 2014). Compared with traditional retail, online markets present lower entry barriers and higher profitability (McKinsey, 2013).

Over the past three years, global online sales have increased more than 20 times, while the US over and China's online sales have increased over 12 times and 12 times, respectively, amounting to global 2.6 trillion (US $595.1 billion, China $766.5 billion) in 2015 (Global B2C E-commerce Report 2016). In e-commerce, both large corporates such as Alibaba, Amazon, Apple and professional organizations, retail chains, banks, investing and rentals use the e-commerce market to their advantage. Small local businesses such as photographers, hair and nail salons, and fashion goods sellers also benefit from e-commerce platform to sell their products and services. It makes it easier for business to reach and allow interaction with their customers as well as facilitate online advertising and marketing. The leading online marketplaces of the Alibaba Group have annually 255 million active buyers, eight million active sellers, and 12.7 billion orders (Alibaba Group Holding Limited, 2014). In 2013, Amazon's sales reached US$74.4 billion, while Taobao.com, the biggest C2C website in China, exceeded US$179.2 billion. Obviously, in such an active market, producer and sellers have difficulties in keeping pace with new products, contemporary fashion and customer demand pattern.

E-commerce success includes performance issues, such as response time, international procurement lead time, or large demands in a small-time frame, order completeness and traceability of product delivery. Although a premium or express shipping service is available to major e-retailers, the delivery time may perceive a limitation compared to purchase in a store. E-commerce uses Internet information for order management, inventory management, and demand forecasting, and thereby the production scheduling and transportation. A challenge for sellers is to analyze customer data gathered during the online pre-sales, sales, and after-sales services process, i.e., master data mining (Jelassi and Leenen, 2003). The collaborative planning on the Internet, communication, and understanding of the consumer behavior are important to process information. Additionally, a supply chain network, internal communications within the e-commerce supply chain ensure the customer orders commitment and product delivery promise.

E-commerce business platform offers a quick response to customer needs to be based on distribution channel to forecast market demand and order management. The procurement of e-business is critical as the demand is uncertain, varies with time. The traditional retail chain inventory replenishment and planning is not suitable to manage e-commerce distribution channels. When sale starts, customer demand seen to be stochastic. The added challenge to this prediction that e-merchandise quantity must be decided prior to selling season since the design and manufacturing the times take time. Often, the demand of e-commerce such as casual dress, shoe, and fashionable products is highly seasonal, which makes more difficult to predict and require a unique process to identify procurement quantity and manage inventory. In order to satisfy the customer needs and expectations, an integrated sales data assessment is the key to improving the e-commerce chain of suppliers, systems, and processes to achieve the goal.

The paper is organized as follows: Section 2 literature review, Section 3 research methodology, Section 4 empirical study, and Section 5 conclusions. Section 2 reviews the benefit of e-commerce on commodity market and trend. Section 3 outline the research framework. Section 4 describes the data analysis and the details of the empirical analysis for building a prediction model, based on which some

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managerial implications will be derived. Finally, Section 5 presents the conclusions and explain the future directions of this research.

E-Commerce on Commodity Market

The idea of commerce has expanded to electronic commerce to conduct the trade globally. The scheme allows individuals, consumers and corporates to exchange value for goods and services with little to no barriers. As a segment of a larger business system, e-commerce operates in all four major markets segments (B2B, B2C, C2C, and C2B. It has allowed firms to establish a market presence by providing a cheaper and more efficient distribution chain for their products or services. The power of e-commerce is the facility to conduct the transaction via social media, e-mail, online catalogs, and other services. Many companies capitalize on e-commerce through social media, digital couponing, and targeted advertising.

Most large e-commerce corporates are multi-level companies that sell all kind of products such as books, DVDs, electronic items online. Amazon runs 7 websites to support their business globally, and offer over 20 million items for sale. They use a multi-tier inventory model where the flow takes place from the Amazon distribution center (Tier-1) to the vendors, manufacturers (Tier-3) and physical flow takes place from Tier-3 to Tier-1. These corporates use search engine integrated with advertising strategies that companies use online to promote their products and services and generate steady traffics and incredible return on investment (ROI). Unlike traditional ads, it has proven to be more an effective audience acquisition strategy and gained popularity among business owners and retailers for the opportunity to connect with new customers with search engines. It is common that customers to follow a link from a search engine results pages and reach to an e-commerce website that they never knew before.

There are many examples of e-commerce success including firms offering products/services that are standardized or can be delivered electronically, such as the success of software companies, information providers, or bookshops (Poon & Joseph, 2000). E-commerce, however, with all its advantages has a fair amount of limitations. There is a difficulty to standardize and deliver products online because of their inherent intangibility, simultaneity, intimacy and perishability (Metters, King-Metter, & Pullman, 2004). Another limitation of e-commerce is the lack of personal touch and day-to-day collective buying. Many retailers value the human relationship, gives them personal connectivity with consumers, which in turn allows further collaboration and cooperation.

Online B2B allows companies to cut costs in three ways. First, it reduces procurement costs by making it easier to find the cheapest supplier, and it cuts the cost of processing the transactions. Second, it allows better supply-chain management. For example, more than 75 percent of all Cisco orders now occur online, up from 4 percent in 1996. This connection to the supply chain allowed Cisco to reduce order cycle time from six to eight weeks to one to three weeks and to increase customer satisfaction as well. Third, it makes possible tougher inventory control. It can provide less out-of-stock situations, the ability to make rapid inventory adjustments, and reduced ordering and processing costs can make a very efficient company. Mobile e-commerce, m-commerce is the term used to describe the growing trend of using networks that interface with wireless devices, such as laptops, handheld computers or mobile phones to initiate or complete online electronic commerce transactions (Niranjanamurthy et al., 2013).

Managing inventory is one of the most critical tasks for the e-commerce business success. Coordinating with wholesale suppliers and independent producers to make sure items are available to customers at the right time or as soon as possible. The impact of Amazon, Dell computer, eBay, and others, on traditional retailing, caused a lot of new retailers to implement websites to reach commodity globally.

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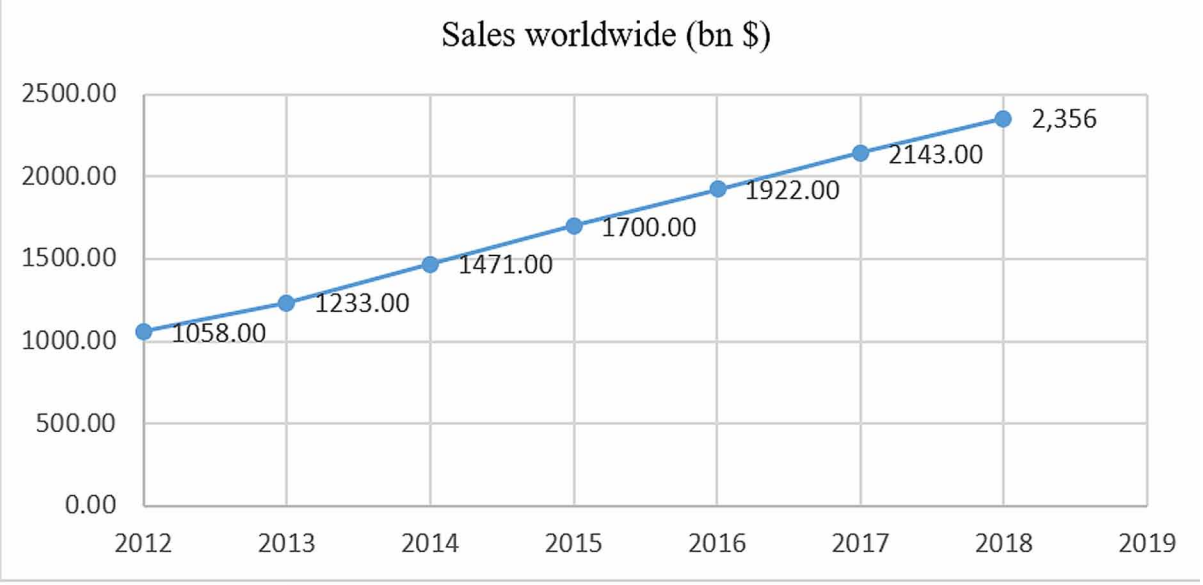
Although delivery of goods is a challenging task in web sales, there are premium examples of sustaining the challenge. In Japan, the 7dream program at 7-Eleven stores has the pick-up option in stores for web orders. This system now has been implemented throughout. FedEx, UPS, and other delivery packages in the same method in the US and offering parallel services to foreign customers. The major advantage of e-commerce on capturing customer taste, inventory procurement and order management are the following:

- Ability to navigate past behavior patterns of consumers, allows frequent analysis of consumer preferences and perceptions of purchases and sales
- Control on inventory replenishment policy and information on the value of the inventory·
- Visibility on quantities on hand, quantities order and quantities sold
- Collaborative and coordinated supply chain to reduce response time to demand changes
- Removal of unnecessary use of warehouse space used by unneeded part of inventory with advanced information of quantity, size and shape of merchandizing inventory.
- Information transparency to reduce excess inventory stock and costs.

E-Commerce Trend

E-commerce also has an impact on operations. The logistics behind large-scale e-commerce platforms are complex, the economies of scale are becoming progressively important, and it is now relatively easy for smaller firms to sell online because sophisticated e-commerce software is broadly available. The impact of the easy handling and on-going trends will change traditional distribution and marketing systems. Key impacts of e-commerce on marketing includes the marketing strategies of differentiation, which makes it easier to reach niche markets online. Although the product life cycles are shortened, the effectiveness

Figure 1. B2C e-commerce sales worldwide (2012 – 2018) (in billion $)



(Source: Global B2C E-commerce Report 2016)

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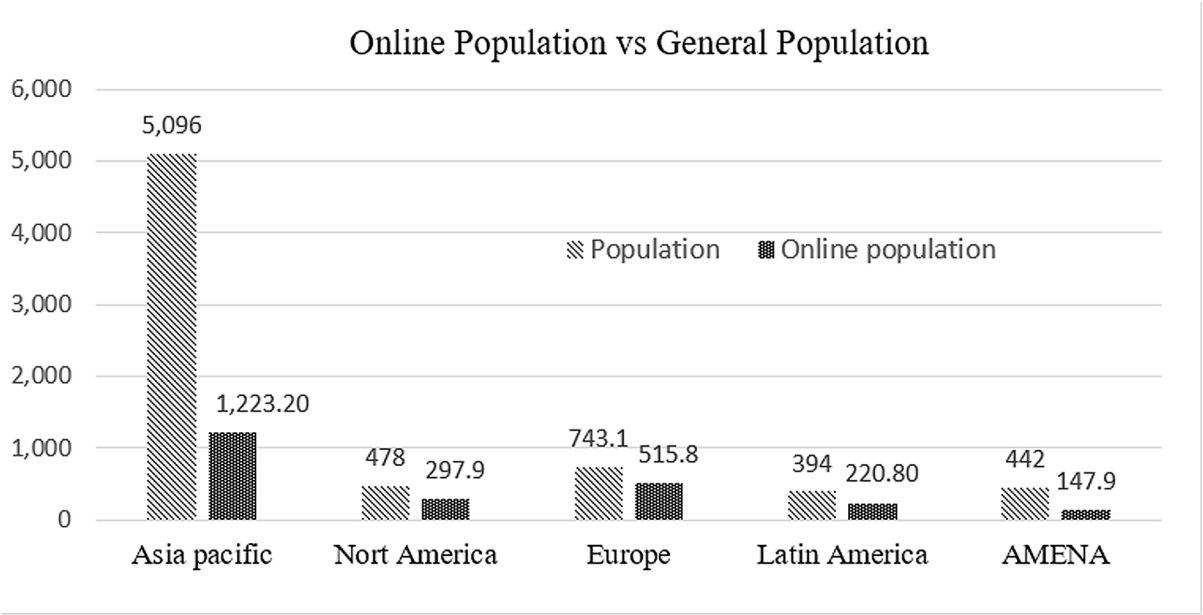
of tracking system made it easy for new sales promotion, and the ability to sell a much wider range of products. Following is the graphics and statistics regarding e-commerce around the world. Figure 1 presents B2C e-commerce sales worldwide from 2012 to 2018 (in billion U.S. dollars).

This above graph (Figure 1) shows B2C e-commerce sales worldwide in 2012 and 2013 including a forecast until 2018. In 2016, global B2C e-commerce sales are expected to reach 1.92 trillion U.S. dollars. It can be attributed to the economic and technologic growth of the emerging economies and the largest growing markets. The four largest emerging and developing economies are the BRICS countries (Brazil, Russia, India, China, and South Africa). The next five largest markets are South Korea, Mexico, Indonesia, Turkey, and Saudi Arabia. The digital buyer e-commerce participation per region varies. Figure 2 demonstrates the number of digital buyers worldwide from 2014 to 2019 (in billions).

Figure 2. Number of digital buyers worldwide from 2014 to 2019 (in billions)



(Source: Global B2C E-commerce Report 2016)

It is clear that, given the amount of population in Asia Pacific, the penetration of online population is not high. That means that the internet is basically available in the cities. The same proportion can be applied to Latin America and AMENA (Association of the Middle East and North Africa), where the level of development is not as high as the development countries. In contrast, North America and Europe have a much more penetration of online users which means that the availability of the internet is equally distributed throughout the country.

This timeline displays a forecast of the number of digital buyers worldwide up to 2019 (Figure 3), based on factual numbers from 2014 to 2015. In 2019, over 2 billion people worldwide are expected to buy goods and services online, up from 1.46 billion global digital buyers in 2015.

Purchasing goods and services online has become a common practice among many people around the world. Some choose to make online purchases for convenience, others because of the competitive price

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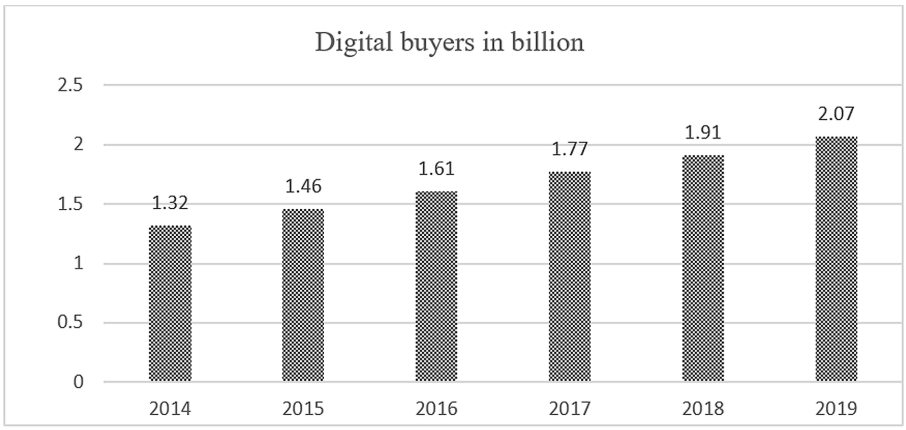
Figure 3. Digital buyers' prediction (2016- 2019)



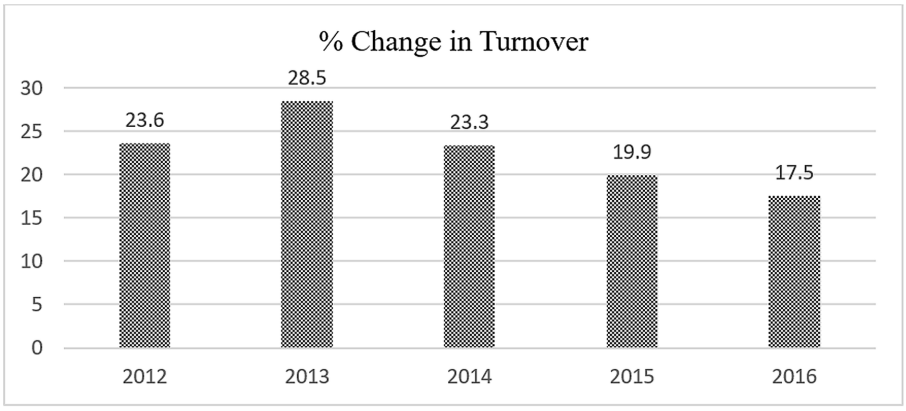
(Source: Global B2C E-commerce Report 2016)

offered by some e-commerce. Digital buyers can also be influenced by a range of digital resources when shopping, such as brand emails and product reviews. Reasons to purchase aside, the number of digital buyers is on the rise. Around 1.4 billion people made online purchases in 2015. This figure is forecast to constantly increase in the coming years, passing the two billion mark in 2019.

E-Commerce GDP

Global e-commerce sales have increased steadily, end the growth rate has been quite consistent as we can see in this graph. However, the result showed for 2016 indicate that the growth is not as high as before and it can be accredited to the settle of the global e-commerce market. See Figure 4.

Figure 4. Percentage (%) change in turnover



(Source: Global B2C E-commerce Report 2016)

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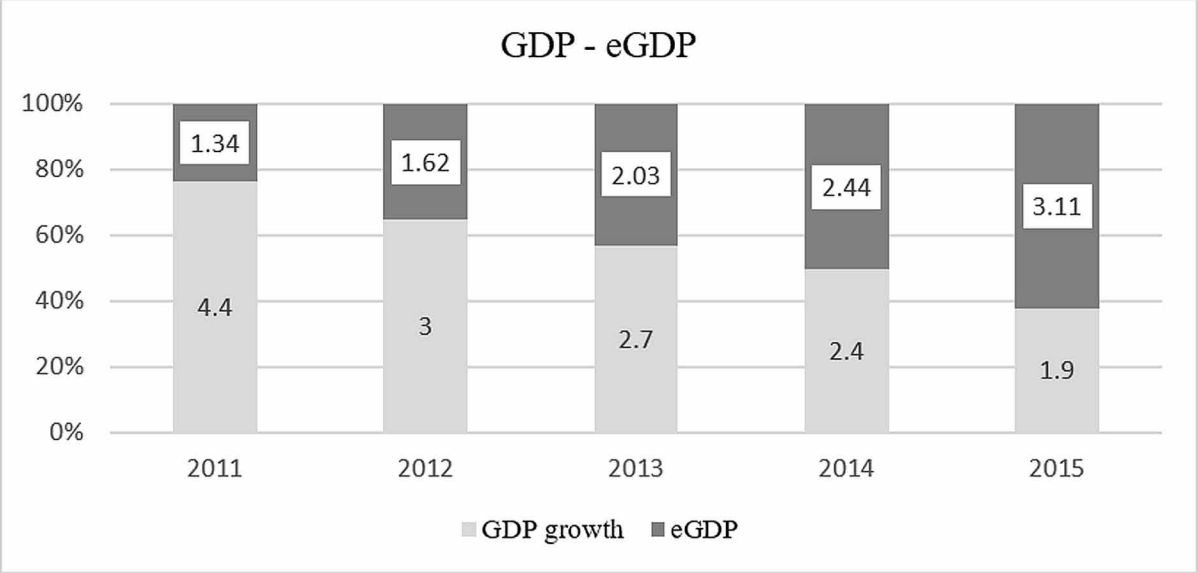
Comparison of GDP with eGDP Per Year

GDP growth rate is decreasing. It was 1.9% in 2015 which was lower than the previous year 2.4%. In contrast, the share of e-commerce in the global GDP continued to increase. After reaching 1.34% in 2011, the eGDP raised gradually over the last few years to reach 3.11% in 2015. See Figure 5. The customer has been regarded as one of the most powerful forces in today's market place, equally important in e-commerce (Chen & Dubinsky, 2003; Shun & Yunjie, 2006). The customer expectation in e-commerce

Figure 5. Share of e-commerce in GDP of the total GDP growth



(Source: Global B2C E-commerce Report 2016)

is expected to increase in the formation of satisfaction.

This table and graphic shows the internet penetration (%) of the TOP 10 countries. The 10 countries together have a total penetration of 86% of the population (Figure 6).

The above charts and diagram (Figure 5 and Figure 6) indicate customer participation in online marketing. Thus, customer perception on online service needs to be incorporated in establishing service strategy to predict customer's choice and future purchase intentions (Lee and Park, 2009).

INVENTORY PREDICTION SYSTEM

The success of e-commerce often describes with the ability to predict customers' intention to use e-commerce to buy a standard product. The matching of online demand with its supply is particularly challenging since the procurement decision must be made before observing demand. E-product demand

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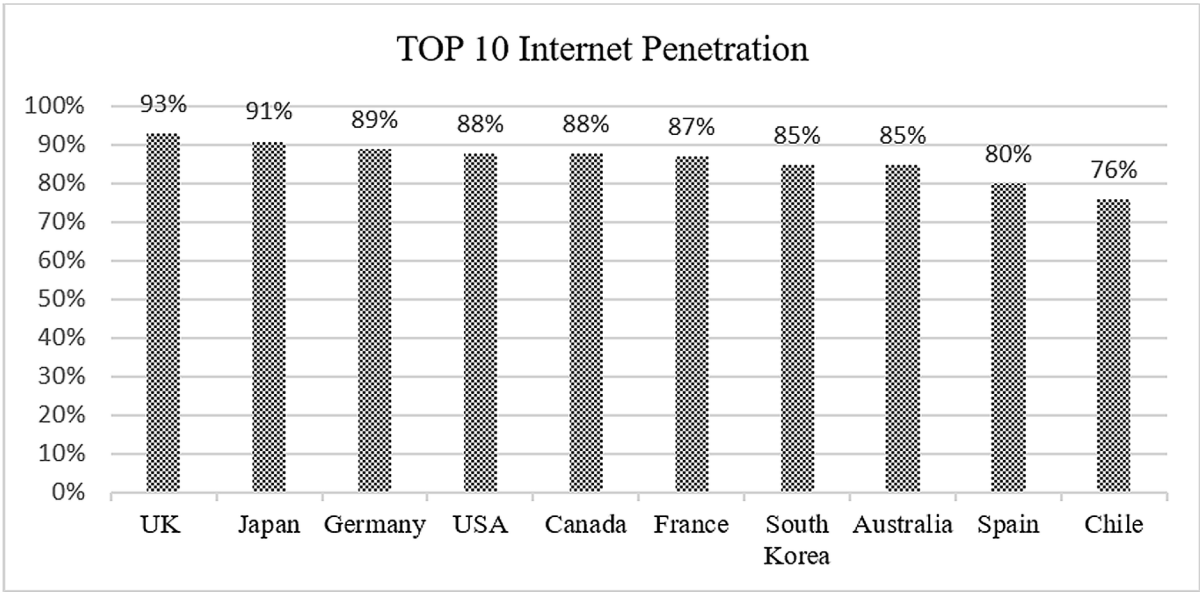
Figure 6. Top 10 internet penetration (by country)



(Source: Global B2C E-commerce Report 2016)

is always stochastic. A decision tool is needed to understand the market in order to make the commitment to procure items before demand occurs. A newsvendor model may be applied in such settings, as the newsstand business model, to make the best judgment on how a firm decides to procure products for a given season. This scenario refers a considerable uncertainty in the e-commerce forecast despite the care and attention placed on the realization of the demand. The e-commerce demand forecasting decisions and order planning is actually the demonstration of managing strategy for e-merchant procurement and inventory. As traditional sales, the e-commerce involves in supply chain and warehouses to stock inventory. A firm needs to integrate the logistics process with the online ordering system to provide a uniform and seamless delivery system. The forecasting and replenishing inventory for the online products are sensitive due to the quick change of customer taste, style, and global competition.

E-procurement is fundamentally iterative in nature, which requires a deep understanding of customer needs, effective improvement and strategic modifications in designs, features, or schedule. The prediction model determines how much inventory to order prior to demand occurs. The uncertainty of demand leads to the decision point to select ordering quantity such that customer demand will be less than order, or demand will exceed the order). The balance between the excessive inventory and inadequate inventory is the theme of the newsvendor model. The lead time to source products also affects the decision. Considering the design attributes, product index, shopping mode, the firm decides the procurement quantity of a product to be Q units.

Hypothesis 1: The decision has a positive effect and the probability of demand will be less than or equal to Q units.

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The operative decision problem can now be formulated as follows,

D = Uncertain demand
F_t = Forecast for a period, t
S = Sell price, (pair shoe)
C = Purchase charges,
V = Discount sell price
Q = Order quantity, decision variable (maximize expected profit, Q such that p($Q \leq D$)
$F(Q)$ = Probability of Q units to remain at inventory
C_o = Overage cost, (profit decreases loss by ordering one fewer unit, opportunity loss)
C_u = Underage cost, (profit increases by ordering one more unit).

Using per unit loss C_o, the expected loss on the Q^{th} unit = $C_o \times F(Q)$. Therefore, the expected gain on the Q^{th} unit = $C_u \times (1\text{-}F(Q))$. The probability that equals the critical ratio for Q^{th} unit, $C_o \times F(Q) = C_u \times (1–F(Q))$ gives, critical ratio, $F(Q) = C_u/(C_o+C_u)$.

For Normal distribution, $\Phi(z) = \dfrac{C_u}{C_0 + C_u}$

The ability to quickly respond to the changing customer expectations, and to manage procurement complexity will increase revenues. However, it requires an efficient decision-making process integrating past demand information, market analysis, customer response and flexible supply chain to maintain strategic procurement to deal with such complexity. Following steps describes the procedure:

Step 1: Select a product; assemble a dataset of product sale, S, and demand, D that are comparable (i.e., similar product). Obtain initial forecast and actual demand

Step 2: Evaluate A/F ratio (dataset)

a. Evaluate the average of A/F ratio
b. Evaluate the standard deviation of A/F ratio

Step 3: Predict a new sale forecast with a certainty. If new forecast is 90% confident, then smoothing constant, $\alpha = 0.9$, where $\alpha \in (0,1)$. Updated forecast is a weighted combination as,

a. $F_{t+1} = \alpha\left(D\right) + \left(1-\alpha\right)F_t$

Step 4: Set a Normal distribution function to predict the demand

a. Assess the mean and standard deviation as the following:
b. Determine the expected (demand) = Expected A/F ratio × Updated Forecast
c. Determine the standard deviation = Standard deviation A/F ratio × Updated Forecast

Step 5: Evaluate the critical ratio $\Phi(z) = \dfrac{C_u}{C_0 + C_u} = \gamma$

a. For forecast using Normal distribution, find z for Optimal Order Quantity Q, $z = \Phi^{-1}\left(\gamma\right)$

Step 6: Maximize profit, *convert z into Order Quantity, Q*, $z = \dfrac{Q-\mu}{\sigma}$

a. Therefore, $Q = \mu + z \times \sigma$.

The newsvendor model has extended theoretically in many directions, particularly pricing decision, inventory models safety stock level overbooking customers (Cachon & Terwiesch, 2012; Silver, Pyke, & Peterson, 1998; Nahmias & Olsen, 2015). The method is particularly important for multinational

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companies, procure products from overseas with a long lead time. Certainly, e-commerce provides tools to control of marketing and distribution around the globe.

EMPIRICAL STUDY

A primary requirement of any e-commerce business is to employ a system to predict upcoming demand, manage orders and maintain inventory level efficiently. Procurement scheduling and capturing the main season sale demand are critical in e-commerce business because of the competition to get into the market first. Products that come to market later lose significant sales. In contrast, early availability in the market increases the profits. The prediction model uses the supply chain practices of a prominent online shoe seller (say, GW Inc.). GW is a European shoe designer, often sell a range 17 products, most of which are manufactured in South Asian countries. Although GW needs a long 10-12 weeks lead time to procure, their focus of online sale is mainly the order flexibility and cost-efficient delivery. As most online sellers, GW's priority is to balance the products procurement and customer order fulfillment for a target season. Extra products after the target season often sale with a discount price. Table 1 presents forecast and actual demand for GW's Shoe line data.

Table 1. GW's Shoes forecast and actual demand

Items	Cost	Forecast	Actual	Error	A/F Ratio	Rank	Percentile
Handmade Genuine Leather Men's	$29.98	319	119	200	0.373	1	5.88%
ROXDIA Spring Autumn Full Grain	$55.00	83	37	46	0.446	2	11.76%
Men Flats Shoes Luxury Brand	$52.85	122	72	50	0.590	3	17.65%
ZANVLLCHY 2017 Spring Summer	$43.86	122	78	44	0.639	4	23.53%
2017 Business Men Shoes Luxury	$42.16	43	28	15	0.651	5	29.41%
*Men Leather Flats High Quality (LF-HQ)**	$41.60	550	375	175	0.682	6	35.29%
JINTOHO Plus Size Men Flats Fashion	$37.99	72	50	22	0.694	7	41.18%
Fashion Men Shoes Luxury	$57.50	440	360	80	0.818	8	47.06%
Classical Men Dress Wedding Flat	$45.76	39	32	7	0.821	9	52.94%
Fashion breathable flats casual sh.	$42.36	47	56	-9	1.191	10	58.82%
LuoDiRam Brand 2016 Fashion Big Si.	$37.42	62	79	-17	1.274	11	64.71%
LuoDiRam Brand 2016 Fashion Big S	$38.37	130	169	-39	1.300	12	70.59%
Luxury Spikes Style Men Shoes.	$67.76	61	83	-22	1.361	13	76.47%
Men Loafers Big Size Soft Handmade	$39.54	175	255	-80	1.457	14	82.35%
ERRFC Designer Men Black Dress	$44.88	106	155	-49	1.462	15	88.24%
men's casual gentleman wedding	$48.88	90	140	-50	1.556	16	94.12%
Loafers genuine leather shoes	$25.89	219	350	-131	1.598	17	100.00%
		Mean =			0.995		
		standard deviation =			0.418		

*Example cited for inventory model discussion

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In the data collection phase, GW consults with designers and sale experts to project upcoming sales and use past sales data to revise main sale-season prediction. To better understand, GW's e-commerce supply chain procurement strategies and challenges, let's consider a particular item, Leather Flats High Quality (LF-HQ) men shoe, which is a newly redesigned product, target the upcoming summer selling season. Although GW's products are mostly casual and fashion shoes, some of the items are made for the professional sports. GW practices procuring items from the overseas supplier (i.e., shoe manufacturer) for the advantage of product variety, cost benefits, as well as their expertise to manufacture both casual, fashion and high-quality sports shoes. Due to the long lead time, GW must commit to procurement order prior to the target sale period. Therefore, strategic planning is a way for selecting uncertain procurement quantity long prior the target season despite their offerings and flexibility of shipment. GW's e-commerce inventory depends on the following hypothesis and steps,

Hypothesis 2: What is the upcoming forecast of LF-HQ and how many units should be ordered?

Following are the steps:

Step 1: Dataset and A/F ratio shows in Table 1.

Step 2: Item selected in the dataset, Table 1 as Leather Flats High Quality (LF-HQ) shoe:
Prior demand forecast = 550; New prediction = 800 units
With 60% weight (α =0.6) on new prediction, the weighted combination is given by,
(1-0.6) (550) + 0.6 (800) = 700 units

Step 3: Forecast is not random, but the A/F ratio is random
Set mean = Expected A/F ratio = 0.995
Set Standard deviation = 0.418
Expected (demand) = 0.995 × 700 = 697 units
Standard deviation (demand) = 0.418 × 700 = 293 units
Leather Flats High Quality show new forecast: Normal (697, 293)

Step 4: Assume Leather Flats High Quality shoe Cost
Each pair sells, S = \$41.6, purchase charges, C = \$23 and discount sell is V = \$17 per pair.
Loss: C_o = Cost – Salvage = C – V = 23– 17 = \$5
Gain: C_u = Price – Cost = S – C = 41.6 – 23 = \$18.6
Critical Ratio: $\Phi(z) = \dfrac{C_u}{C_0 + C_u} = \dfrac{18.6}{5 + 18.6} = 0.79$

Step 5: If the quantity ordered is Q, then with 79% probability,
Demand is Q or lower. Using z to find Q, (z = 0.84),

Step 6: The optimal quantity, $Q = \mu + z \times \sigma$. Therefore, Q = 697 + 0.84 ×0.84 = 943 units.

Above algorithm completes the necessary steps to forecast the LF-HQ demand for a target season. Note that a single sale forecast in e-commerce is not enough. The forecast has updated by integrating the potential variation of all sales, as (expected value and variation of A/F ratio) for all products in the e-brand.

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CONCLUSION

This study employs a dynamic procurement models considering the market trend, updated design and customer demand in the online marketplace. The results of this study raise motivating theoretical and empirical points regarding the effect merchandise procurement and customer demand management. Although the results provide important guidelines for e-commerce development, it is practically impossible to perfectly match supply with the demand in due to the dynamic changes of customer expectations in e-commerce settings. The study has suggested that a newsvendor model is an effective tool for making such an instantaneous decision of ordering quantities when the quick response to the customer order is the main challenge in online marketplace. An efficient decision-making process integrating with customized information of the new demand information, contemporary fashion, customer response and flexibility in the supply chain are the key to advance e-commerce business.

E-commerce provides faster buying and selling procedure since the Internet provides more reach to customers for 24/7 buying and selling opportunity with no geographic limitations. E-commerce success includes performance issues, such as response time, international procurement lead time, or large demands in a small-time frame, order completeness and traceability of product delivery. Although a premium or express shipping service is available to major e-retailers, the delivery time may perceive a limitation compared to purchase in a store. Previous studies on the above-mentioned issues, however, have certain limitations. It is essential to be aware of the e-commerce challenges. The main challenge for sellers is the ability to analyze customer expectation, past sales, gathering information from the online pre-sales, the online market trend which are often difficult to track. The empirical analysis is shown here provided practical implications for sellers with basic information mainly collected from the internal excerpts and their projection for a product targeting the upcoming sales considering the design upgrade, and company's e-brand popularity, as well as the past sale data.

The greater part of the existing research focuses on tangible demand. Although it has become increasingly critical to deal with the variation of demand, safety stock, and unpredictability of the online business, much attention is needed to deal with the innovative products and faster customer response combined with competitive pricing and enhanced product quality. Furthermore, the sustainable resource planning, profit-maximizing and order fulfillment, and sustained seller reputation based on users' demographic, behavior, and expectations are remained to be investigated for the future.

REFERENCES

Barua, A., & Mukhopadhyay, T. (2000). Information technology and business performance: past, present and future. In R. W. Zmud (Ed.), *Framing the domains of IT management: projecting the future through the past*. Cincinnati, OH: Pinnaflex Education Resources Inc.

Bente, G., Baptist, O., & Leuschner, H. (2012). To buy or not to buy: Influence of seller photos and reputation on buyer trust and purchase behavior. *International Journal of Human-Computer Studies*, *70*(1), 1–13. doi:10.1016/j.ijhcs.2011.08.005

Brynjolfsson, E., & Kahin, B. (Eds.). (2000). *Understanding the digital economy*. MA: MIT Press.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Cachon, G. and Terwiesch, C. (2012). *Matching Supply with Demand: An Introduction to Operations Management* (3 ed.). McGraw-Hill Education.

Chen, Z., & Dubinsky, A. J. (2003). A conceptual model of perceived customer value in e-commerce. A preliminary investigation. *Psychology and Marketing*, *20*(4), 323–347. doi:10.1002/mar.10076

Ecommerce Foundation. (2016). Global B2C E-commerce Report 2016. Retrieved from www.ecommercefoundation.org

Gangeshwer, D. K. (2013). E-Commerce or Internet Marketing: A Business Review Fro Indian Context. *International Journal of u- and e- Service Science and Technology*, *6*(6), 187–194.

Grandon, E., & Pearson, J. (2004). Electronic commerce adoption: An empirical study of small and medium US businesses. *Information & Management*, *42*(1), 197–216. doi:10.1016/j.im.2003.12.010

Jelassi, T., & Leenen, S. (2003). An E-Commerce Sales Model for Manufacturing Companies: A Conceptual Framework and a European Example. *European Management Journal*, *21*(1), 38–47. doi:10.1016/S0263-2373(02)00151-2

Lee, S., Lee, S., & Park, Y. (2007). A prediction model for success of services in e-commerce using decision tree: E-customers attitude towards online service. *Expert Systems with Applications*, *33*(3), 572–581. doi:10.1016/j.eswa.2006.06.005

Lee, S., & Park, Y. (2009). The classification and strategic management of services in e-commerce: Development of service taxonomy based on customer perception (2009). *Expert Systems with Applications*, *36*(6), 9618–9624. doi:10.1016/j.eswa.2008.08.014

Metters, R., King-Metter, K., & Pullman, M. (2004). *Successful service operations management*. Seoul: Thomson.

Niranjanamurthy, M., Kavyashree, N., Jagannath, S., & Chahar, D. (2013). Analysis of E-Commerce and M-Commerce: Advantages, Limitations and Security Issues. *International Journal of Advanced Research in Computer and Communication Engineering*, *2*(6), 2360–2370.

Poon, S., & Joseph, M. (2000). Product characteristics and internet commerce benefit among small businesses. *Journal of Product and Brand Management*, *9*(1), 21–34. doi:10.1108/10610420010316311

Roggio, A. (2015, January 11). Practical Ecommerce. Retrieved April 25, 2017, from http://www.practicalecommerce.com/5-Tips-for-Buying-Retail-Inventory-for-Ecommerce

Saeed, S., Bamarouf, Y. A., Ramayah, T., & Iqbal, S. Z. (2017). *Design Solutions for User-Centric Information Systems (1 - 422)*. Hershey, PA: IGI Global; doi:10.4018/978-1-5225-1944-7

Saeed, S., & Reddick, C. G. (2013). *Human-Centered System Design for Electronic Governance*. IGI Global. doi:10.4018/978-1-4666-3640-8

Shun, C., & Yunjie, X. (2006). Effects of outcome, process and shopping enjoyment on online consumer behavior. *Electronic Commerce Research and Applications*, *5*(4), 272–281. doi:10.1016/j.elerap.2006.04.004

Silver, E. A., Pyke, D. F. and Peterson, R. (1998). Inventory Management and Production Planning and Scheduling (3 ed.). Wiley.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Steven Nahmias, S. and Olsen, T. L. (2015). *Production and Operations Analysis* (7th ed.). Waveland Press, Inc.

Utz, S., Kerkhof, P., & Bos, J. (2012). Consumers rule: How consumer reviews influence perceived trustworthiness of online stores. *Electronic Commerce Research*, *11*(1), 49–58. doi:10.1016/j.elerap.2011.07.010

Yoo, B., Jeon, S., & Han, T. (2016). An analysis of popularity information effects: Field experiments in an online marketplace. *Electronic Commerce Research and Applications*, *17*, 87–98. doi:10.1016/j.elerap.2016.03.003

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Chapter 12
The Role of Social Commerce Components on the Consumer Decision-Making Process

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ABSTRACT

Rapid changes in commerce, technology, and consumer behaviour are leading businesses to shift their online activities. The popularity of social media pushed online merchants to integrate these platforms into their online presence, leading to the rise of social commerce. Consumers' interaction and participation online create a massive amount of information. The use of social commerce components facilitates the interaction of consumers by sharing their experiences and learning from others' experiences. In this chapter, the authors look at how this process has impacts throughout the consumer decision-making process when making a purchase and suggests directions for future research.

INTRODUCTION

The increase of social media popularity is leading to the rise of social commerce (Lin, Li, & Wang, 2017; Wang & Yu, 2017). Social commerce is a subset of e-commerce based on social networks platforms. The possibility of interaction, the hallmark of social networks, is central to social commerce, allowing consumers to behave collaboratively by sharing information, recommending options and advising alternatives (Huang & Benyoucef, 2015). Research shows that consumers enjoy sharing their purchase information with their friends and contacts online and that they are receptive to following others' online recommendations when making purchase decisions (Chen & Shen, 2015). Often this type of informa-

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tion is considered more reliable because it refers to an experienced user who has experience with the product (Kim & Park, 2013). Different factors impact on the willingness to be active online by providing recommendations and reviews. Website design in general, and social commerce features, in particular, have a high influence on consumers' participation online.

Despite the growing importance of social commerce, the impact of social commerce factors on consumers' purchase decision-making is under-researched (Chen, Lu, & Wang, 2017). In this vein, social commerce components are gaining scholars' and practitioners' interest. To the authors' best knowledge, although a few studies have researched the impact of social commerce components on consumer purchase decision process, there is a dearth of studies focusing on how consumers process the information acquired from the social commerce components and how this information impacts the purchase decision process (Chen, Lu, & Gupta, 2017).

In general, consumers share their opinion online about uncommon purchase experiences which they think may be helpful for others. For example, consumers may not share a "cigarette" purchase online with others unless they experienced an abnormal or a special situation in purchasing or in utilizing the product. In some cases, consumers share information about a purchase which have a high level of complexity. Other consumers will share purchases with a high-level of satisfaction (or dissatisfaction). Also, in the case of new products, early buyers may share their purchase experience since it is their first experience with this product. Thus, the information generated by consumers which will facilitate the purchase decision-making process of other consumers (Huang & Benyoucef, 2017), contributing to more accurate, faster decisions and, less effort.

Hence, this work aims at understanding both what drives consumers to share information online and the impact of such information in the buying decision process. We look at purchase decisions as cognitive behaviour. The chapter focuses on social commerce components to understand their impact on consumer purchase decision-making process. Chen and Gupta (2017) addressed the significance of ratings and reviews, recommendations, and communities and forums in improving the purchase decision. Ratings and reviews play a high role in minimizing consumers' uncertainty and consequently performing a high-quality decision by learning more about products' quality and attributes that other consumers had shared. The chapter aims to review the literature and propose directions for further research.

BACKGROUND

Social Commerce

Social commerce is a subset of e-commerce which may include two main types: a social network website that integrates commercial features enabling transactions and advertisement, or a traditional e-commerce website that includes social tools to enable social interactions. Central to social commerce are social networks and web technologies which allow users to acquire and share information and enable social commerce platforms to become an important learning platform. Social posts and information shared by earlier experienced consumers are learning sources for potential consumers; consumers are continuously learning from what other users are posting and sharing.

In the social media context, consumers' purchase decision-making processes are impacted by several factors such as website design, flow of experience, ease of technology, trust, and enjoyment (Lin et al., 2012; Parboteeah et al., 2009; Wu et al., 2016). The ease of use and learning facilitated by providing suit-

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able designed interfaces will result in easier acquisition of information by the user, which consequently leads users to execute a successful transaction (Lin & Lo, 2016).

Several studies use the flow of experience to capture the emotional motivation/reaction of users toward online shopping (Lu, Zhou, & Wang, 2009; Lin, Fernandez, & Gregor, 2012). Users will be more likely to sense enjoyment when they feel comfortable and confident during their shopping, and it may occur if consumers feel comfortable navigating and browsing online. Consequently, the enjoyment of consumers in their shopping experience and confidence using their online skills to overcome challenges during the shopping journey will raise positive feelings toward the task which will lead them to further interactions (Wu et al., 2016).

Social commerce provides consumers with an environment rich with information and experiences which enables them to learn and get knowledge on different interests. Consumers attempt to make an accurate purchase decision by relying on social commerce components and learning from others' experiences (Chen & Gupta, 2017).

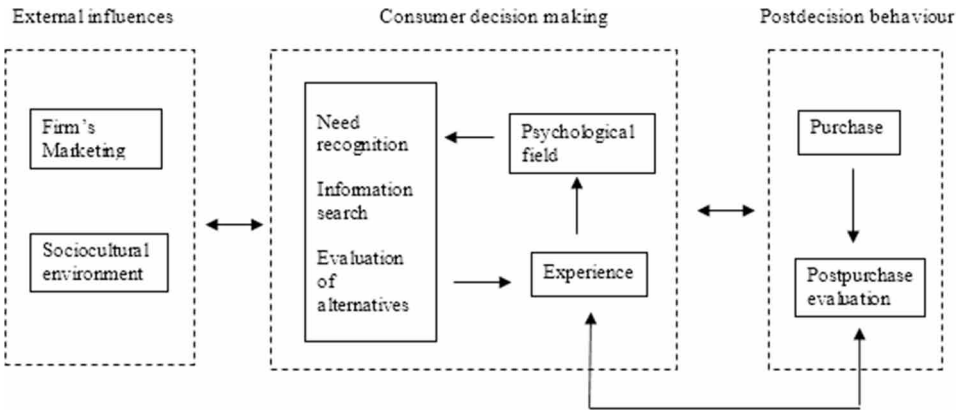
Consumer Decision Making Process Model

Consumer behaviour models provide an overview of the influences and processes involved in a given phenomena. Although they have limitations and should not be seen as aiming at providing an exhaustive picture of the complexities of consumer behaviour, models allow for a systematization of how and why consumers behave as they do.

Several models have been proposed to illustrate consumer decision making. Schiffman and Kanuk model of consumer decision making (Fig 1) has been used as a comprehensive frame of reference of the process and influences relevant for the understanding of the inputs, process, and output of consumer behaviour (Schiffman & Kanuk, 2007). The model includes three components: the input, the process, and the output.

The input component covers the external influences that impact consumers' behaviour, decisions, attitudes and values. These include marketing strategies and activities of companies (i. e. all the marketing mix decisions) and sociocultural influences.

Figure 1. A model of consumer decision making
Source: Soares and Malota (2008), p. 14



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The process component refers to how consumers make decisions. Psychological influences such as values, motivation and attitudes play a dominant role at this stage. There are three stages in this process: need recognition, pre-purchase search and evaluation of alternatives.

Finally, the output component of this model is concerned with post-decision behaviour, namely the purchase and post-purchase evaluation.

Extant research discussed different models explaining the online purchase decision-making process (for example Rad & Benyoucef, 2011; Chen *et al.*, 2015; Karimi, Papamichail & Holland, 2015; Karimi, Holland & Papamichail, 2018).

However, in general, the five-stage decision-making process model has also been considered useful to understand consumer behaviour online: need recognition, pre-purchase (information search and evaluation of alternatives), purchase, and post-purchase evaluation. Visual attention analysis has also shown that the decision-making process consists of stages (Zuschke, 2019).

Social Commerce and the Consumer Decision Making Process

With no prior aim of purchasing a product, consumers may recognize their need for a product while navigating online through social websites (Chen & Gupta, 2017). When a need is recognised, consumers may search for information and possible solutions for their problem. Consumers collect product-related information even when they are not planning to buy a product immediately.

Consumers go through several cycles during the information search stage (Karimi et al., 2018, 2015), these cycles are a result of formulation, evaluation, and appraise of information (Chen et al., 2015; Karimi et al., 2018, 2015). According to Zuschke (2019), consumers were found to switch between processing patterns depending on the task's complexity.

The information search process depends on the importance of satisfying the need, familiarity with available solutions and the amount of time available for the search. According to Beresford and Sloper (2008), decision strategies with high cognitive effort are more likely to be used when decision accuracy is prioritized over saving cognitive effort. Information search can be internal or external. Internal search is based on existing information in memory (quality, quantity, accuracy, relevance). External search is the information search beyond one's memory and comprises not only personal sources (friends, experts, salespeople) but also impersonal sources (advertising, internet). External search occurs when internal search is not perceived as sufficient for a confident decision and whenever the benefits of the additional information prevail over its costs. After the process of information search, the consumer should have a set of possible alternatives for satisfying his/her needs.

From a consumer perspective, the journey of gathering and evaluating information is a cycle aiming at making an adequate choice. According to Chen and Gupta (2017), consumers gather and evaluate information by learning from the social commerce components. During this stage, product alternatives are identified and evaluating criteria are determined (Karimi et al., 2015).

Choice/purchase is the stage of the buying decision process where consumers decide what to purchase in order to fulfil their needs and solve their problems. Payne, Bettman and Johnson (1993) concluded that decision-makers select a choice strategy as a result of a trade-off between accuracy and effort. Allen (2002) cited that Russo and Dosher developed the compensatory 'majority of confirming dimension' strategy (MCD). This strategy assumes that consumers who are confronted with multiple options consistently process all the available information in an attribute-wise and paired-comparison manner. According to Allen (2002 p.517), the rational choice theory depicted choice experience to be divided into two steps.

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"First, a chooser must anticipate future consequences associated with an array of current choice alternatives. Second, the chooser must consider or imagine what his or her future preferences will be for the currently anticipated consequences associated with the choice alternatives."

Finally, the last stage refers to the evaluation of the received product by consumers in light of their expectations, for example, in terms of quality, performance, delivery, etc. (Chen & Gupta, 2017). The post-purchase is considered as an influential stage in the social commerce mode, in which consumers may turn from being influenced to becoming a potential influencer (Rad & Benyoucef, 2011).

Hence, social commerce may have implications of all stages of the decision-making process.

Decision-Making Styles and Knowledge of Product

Research has shown that decision-making style and prior knowledge of the product are important for the pre-purchase stage. Karimi, Holland and Papamichail (2018) confirm that the whole purchase process duration varies and is correlated to the decision-making style of the consumer and the level of knowledge of the product. Earlier studies classified online consumer based on their decision-making style and knowledge of product (Karimi et al., 2015). Karimi et al. (2015) hold that each type consumers processes purchase decisions in a different manner. Consumers are classified into satisficers and maximisers based on their decision-making style. Satisficers are consumers who look for alternatives that are good enough (Karimi et al., 2015), rather than try to achieve an ideal outcome. Satisficers are critically selective when it comes to using and processing of information (Chang & Burke, 2007). On the contrary, maximisers are consumers who carry out an intensive search for information and browsing (Chowdhury, Ratneshwar, & Mohanty, 2009). They conduct an exhaustive search for all possibilities and analyse thoroughly the available information (Schwartz et al., 2002). Maximisers try to identify the best alternative. Schwartz et al., (2002) found that maximisers tend to rely on information about how others are doing as a way of assessing whether their chosen outcomes were indeed the best. It was also reported that maximisers engaged in more comparisons regarding their purchase decision (Schwartz et al., 2002).

The prior knowledge of the product was also found to have an impact on consumer online purchase behaviour (Karimi et al., 2015). The information search and information processing are influenced by prior knowledge of the product (Karimi et al., 2015). Prior knowledge of product make consumers more conscious of what they prefer, consider less information, and raise self-confidence (Karimi et al., 2015).

Social Commerce Components (SCCs)

Social commerce components include social media, social shopping, ratings and reviews, recommendation and referrals, and online social communities and forums in which information is produced and shared (Hajli, 2012a; Hajli, 2012b; Rad & Benyoucef, 2011; Hajli, 2013; Friedrich, 2015; Chen & Gupta, 2017; Chen et al., 2017).

Recommendations

Shadkam and O'Hara (2013) indicate that social recommendation refers to the use of social media to have and make recommendations on what to read, eat, see, buy and do. A social recommendation can be text, location, or a combination of photos and text (Chen et al., 2017). The customer tends to recommend

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a product if s/he is satisfied (Andronikidis, 2009). Chang and Hsiao (2013) reported that the availability of the recommendation feature in social networks apps helps users to choose between alternatives. Consumers' recommendations and suggestions are important sources of information on social websites (Wang & Yu, 2017). Social media users and shoppers who had the real purchase experience are the main contributors to social recommendations on social media. Consequently, social commerce websites display such recommendations to potential analogous shoppers in characteristics of recommenders such as preference and social relations (Li, Wu, & Lai, 2013). According to Chen and Gupta (2017), consumers tend to share their experience in online community platforms and like to describe the experience more thoroughly. Thus, other consumers will have an advantage from the described experience and learn from it.

Virtual Communities and Forums

Consumers acquire various information using social commerce components to support their purchase decisions. Communities and forums are considered as product experience platforms that assist merchants and retailers in creating user-generated content that drives possible sale (Hajli et al., 2014). Communities and forums' members provide support for each other. Chen et al. (2013) argued that users' interaction and the mutual support between them will lead, in return, to trust in the network itself. Moreover, Hajli (2012b) found that such social commerce components increase consumer purchase intention by increasing trust and perceived ease of use. Online communities and forums constitute a rich source of information. Contributors and participants in communities and forums use text, photos, and even videos to share their experience and educate others. Thus, users can learn different dimensions of the product/service, such as attributes or practical use, easier in communities and forums (Chen & Gupta, 2017). Indeed, users' participation in communities and forum is related to their target product and interests. According to Chen and Gupta (2017), learning from communities and forums reduces consumers' demand uncertainty.

There is a wide variety of virtual communities and forums, hence it is necessary to differentiate between online communities. Online communities differ from each other in their structure, objectives, models and type of members/users. Therefore, it is more relevant for future research to study each type of online communities individually.

Ratings and Reviews

Ratings and reviews are original social commerce tools for both consumers and online merchants (Shadkam & O'Hara, 2013). Often, reviews have a short text format with some photos attached. Ratings typically are numerical ranging from low to high. In general, ratings and reviews are associated. Ratings and reviews enable consumers to exchange feedback regarding goods and services and recommend choices based on their personal experience and point of view. From a business perspective, social media tools assist them to integrate users' feedback into their websites directly. From the consumers' perspective, information provided by real shoppers and independent users has high credibility and is very useful for purchase decisions (Kim & Park, 2013). Such information provided in reviews will enable users to learn about product quality and increase users' confidence regarding produce performance/characteristics (Chen & Gupta, 2017) and reduce consumers' uncertainty. According to Chen and Gupta (2017), learning from ratings and reviews increase consumers' interest and increase the capacity of information processing.

Unlike recommendations and referrals which have only one direction (positive) of influence on consumers, ratings and reviews are characterized by two directions, negative and positive.

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Understanding Information and Knowledge Sharing Processes in Social Commerce

Different theories have been used as underlying frameworks to understand consumer behaviour in social commerce. In this section, we present these theories and also identify approaches that can be useful to this endeavour.

Previous studies have mostly used the Theory of Reasoned Action (TRA) and Technology Acceptance Model (TAM) as two main theoretical backgrounds to studies in this area (Hajli, 2012b). TRA and TAM explain that the actual use of the system is predicted by the behavioural intention of the user to use the system. Moreover, the user's intention to use the system depends on the user's attitude towards the use of the system, which is determined by the user's perceived ease of use and perceived usefulness regarding the system (Friedrich, 2015). These models are useful to understand the adoption of social commerce but do not emphasize the process underlying the information sharing process.

The Trust Transfer Theory (TTT) has also been used in recent studies to understand the intention in social commerce, namely the role of trust towards members in social shopping intention and social sharing intention (Chen, Shen, & Chen, 2014). Trust transfer takes place when trust is transmitted from a known entity/person to another unknown in an association environment (Chen et al., 2014). The transfer process includes three parties, namely trustor, trustee and a trusted (third party). If a trustor has a strong belief in the trustworthiness of the trusted third party, such trust can be transferred to the trustee when there is a close relationship between the trustee and the third party (Chen et al., 2014). In particular, the trustee is called the target and the third party called the source of trust transfer, and trust can be transferred from different kinds of sources, such as individuals or a context, using communication or cognitive processes.

Finally, the social learning theory is a significant theory of learning and development, it is also linked to various concepts of conventional learning (Bandura, 1971). The theory includes some social elements. It highlights that humans can acquire knowledge of new behaviours and information by observation. In social commerce, buyers get social knowledge about the goods and services which interest them through browsing the information created by other buyers, this is known as the social learning process (Huang & Benyoucef, 2015). Social commerce components provide a good setting for shoppers to perceive others' behaviour. Consumers have access to social experiences and knowledge by participating in communities and forums, browsing reviews and ratings done by others, or bearing in mind recommendations in social networks (Huang & Benyoucef, 2015). For social learning to occur, social interaction between learners and role models is required (Chen & Gupta, 2017). Learning implies two different interaction processes, an external interaction when individuals interact with the surrounding environments (social, cultural and material), and an internal psychological process. According to Chen and Gupta (2017), consumer interaction behaviours with social commerce components are an external interaction process.

The constructive consumer choice process framework developed by Bettman, Luce and Payne (1998) considers that consumers are attempting to accomplish goals, what influences the information they attend to and how it is perceived or encoded, and what factors affect the heuristics consumers utilize to combine information and make a decision. A consumer making a decision has a goal hierarchy, often developed constructively on the spot, specifying the goals and sub-goals he or she must achieve. Consumers' goals for choice processing are maximizing the accuracy of a decision, minimizing the cognitive effort required for the decision, minimizing the experience of negative emotion while making the decision, or maximizing the ease with which a decision can be justified.

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FUTURE RESEARCH DIRECTIONS

Understanding how consumers collect and acquire information is of extreme importance both from a micro-level and macro-level perspective. This process of searching for, learning and sharing information has implications throughout the five stages of consumer decision making.

Our review suggests a number of research questions for further research, such as: How do consumers process information during the pre-purchase process and prior to making their choice? How do ratings and reviews affect consumers' pre-purchase decision-making process outcomes? Since ratings and reviews are not structured or in an organized format, does the order and tidiness of information affect the acquisition of information and evaluation?

Merchants are considering different dimensions before investing in their online activities. It is essential to understand consumers' behaviour and factors facilitating the process of information acquisition and use. In addition, acknowledging the role of ratings and reviews is highly recommended due to the value of this type of information on different social commerce platforms. Therefore, focusing on these aspects by scholars may provide a clearer picture to improve the understanding of social commerce phenomenon. Our review suggests a number of research questions for further research, such as: How do consumers process information during the pre-purchase process and prior to making their choice? How do ratings and reviews affect consumers pre-purchase decision-making process outcomes? Since ratings and reviews are not structured or in an organized format, does the order and tidiness of information affect the acquisition of information and evaluation?

Research also shows that recommendations increase trust on members and consequently consumers trust on the network. In addition, it was reported that ratings and reviews increase trust in product and platforms. Thus, the process of learning from social commerce components has a link to consumers' trust. Therefore, future researches can be directed to study how learning can build consumer trust. Do rating and ratings and reviews impact consumers' decisions in the same manner regardless of consumers' decision-making style and prior knowledge of the product? Do consumers acquire information from ratings and review process the information in the same way? Do consumers follow different choice strategies when making their purchase choice on social commerce?

Consumers are learning from ratings and reviews, and these posts are valued because they are posted by consumers who had the purchase experience. It is very interesting to study if consumers will assess all posted ratings and reviews without taking into consideration the variety of different consumers' preferences? In regard to communities, it would be more applicable to studying the different types of online communities individually to understand better consumers' behaviour. Finally, future studies may focus on the motivation behind consumers' participation by sharing their experience through rating, reviewing or recommending a product they had purchased.

CONCLUSION

Social commerce components are tools for consumers' online interaction which impact the consumers' decision process. It is essential to study the impact of social commerce components for online commercial activities development. Online merchants and retailers attempt to influence consumers to share their purchase experience. The interaction of consumers impacts the purchase decision of other consumers. The pre-purchase stage of the decision-making process is the phase in which consumers gather and process

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information. Consumers behaviour during the purchase decision-making process varies based on their decision-making style and prior knowledge of the product. That variation impacts the purchase process outcomes. In addition, the information acquired and processed has an impact on the process in general. A consumer can learn about the product and get knowledge to perform the best decision. Consumers always seek to reduce the effort and time spent to make a purchase decision. Thus, purchase experience shared socially will help consumers on their purchase task. Information gathered from ratings and reviews may assist consumers in building the product criteria, limits the number of alternatives, reduce the number of cycles needed to evaluate between products, and speed up the whole decision process.

Furthermore, studies highlight that relational ties are the main core of social media and the base for social commerce to expand. Thus, studies on social commerce have the social view of relationships that need to sustainable and transparent for the success of the business. Therefore, social information provides a supportive and rich content in which people are more likely to interact with each other for mutual benefits and further build strong relationships. The aim of this chapter is to contribute to the consumer behaviour literature in particular, and further contribute to information systems literature, by illustrating the information creation and sharing process and consumers' use of that information in social commerce platforms.

The managerial contribution of the study will be in providing insights for online merchants and practitioners on best online practices regarding website design and interaction tools, specifically what tools could be used and how such tools could help to achieve the required objectives. On the other hand, the study will provide a better understanding of distinctive online consumer archetypes and how these consumers behave on social commerce. Based on that, identifying each group may facilitate the targeting and online activities tasks to simplify consumers' decision-making process. From a marketing management point of view, it may contribute to designing more effective navigation and information sharing platforms.

REFERENCES

Allen, D. E. (2002). Toward a Theory of Consumer Choice as Sociohistorically Shaped Practical Experience : The Fits-Like-a-Glove (FLAG) Framework. *The Journal of Consumer Research*, *28*(4), 515–532. doi:10.1086/338202

Andronikidis, A. (2009). Linking dimensions of perceived service quality to actual purchase behaviour. *EuroMed Journal of Business*, *4*(1), 4–20. doi:10.1108/14502190910956666

Bai, Y., Yao, Z., & Dou, Y. F. (2015). Effect of social commerce factors on user purchase behavior: An empirical investigation from renren.com. *International Journal of Information Management*, *35*(5), 538–550. doi:10.1016/j.ijinfomgt.2015.04.011

Bandura, A. (1971). *Social Learning Theory* . General Learning Corporation.

Beresford, B., & Sloper, T. (2008). *Understanding the Dynamics of Decision-Making and Choice : A Scoping Study of Key Psychological Theories to Inform The Design and Analysis of the Panel Study*. York, UK: Social Policy Research Unit, University of York.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Bettman, J. R., Luce, M. F., & Payne, J. W. (1998). Constructive Consumer Choice Processes. *The Journal of Consumer Research*, *25*(December), 187–216. doi:10.1086/209535

Chang, C., & Burke, R. R. (2007). Consumer choice of retail shopping aids. *Journal of Retailing and Consumer Services*, *14*(5), 339–346. doi:10.1016/j.jretconser.2006.12.003

Chen, A., Lu, Y., & Gupta, S. (2017). Enhancing the Decision Quality through Learning from the Social Commerce Components. *Journal of Global Information Management*, *25*(1), 66–91. doi:10.4018/JGIM.2017010104

Chen, A., Lu, Y., & Wang, B. (2017). Customers' purchase decision-making process in social commerce: A social learning perspective. *International Journal of Information Management*, *37*(6), 627–638. doi:10.1016/j.ijinfomgt.2017.05.001

Chen, A., Lu, Y., Wang, B., Zhao, L., & Li, M. (2013). What drives content creation behavior on SNSs? A commitment perspective. *Journal of Business Research*, *66*(12), 2529–2535. doi:10.1016/j.jbusres.2013.05.045

Chen, C. H., Nguyen, B., Klaus, P. P., & Wu, M. S. (2015). Exploring electronic word-of-mouth (eWOM) in the consumer purchase decision-making process: The case of online holidays–evidence from United Kingdom (UK) consumers. *Journal of Travel & Tourism Marketing*, *32*(8), 953–970. doi:10.1080/10548408.2014.956165

Chen, J., & Shen, X. L. (2015). Consumers' decisions in social commerce context: An empirical investigation. *Decision Support Systems*, *79*, 55–64. doi:10.1016/j.dss.2015.07.012

Chen, J., Shen, X. L., & Chen, Z. J. (2014). Understanding social commerce intention: A relational view. *Proceedings of the Annual Hawaii International Conference on System Sciences*, 1793–1802.

Chowdhury, T. G., Ratneshwar, S., & Mohanty, P. (2009). The time-harried shopper: Exploring the differences between maximizers and satisficers. *Marketing Letters*, *20*(2), 155–167. doi:10.100711002-008-9063-0

Friedrich, T. (2015). Analyzing the Factors that Influence Consumers ' Adoption of Social Commerce – A Literature Review. *Twenty-First Americas Conference on Information Systems*.

Hajli, M. (2012a). An integrated model for E-commerce adoption at the customer level with the impact of social commerce. *International Journal of Information Science and Management, 10*, 77–97.

Hajli, M. (2012b). Social Commerce Adoption Model. *UKAIs*, 1–26.

Hajli, M. N. (2013). A study of the impact of social media on consumers. *International Journal of Market Research*, *56*(3), 387–404. doi:10.2501/IJMR-2014-025

Hajli, N., Lin, X., Featherman, M., & Wang, Y. (2014). Social word of mouth How trust develops in the market. *International Journal of Market Research*, *56*(5), 1–18. doi:10.2501/IJMR-2014-045

Huang, Z., & Benyoucef, M. (2015). User preferences of social features on social commerce websites: An empirical study. *Technological Forecasting and Social Change*, *95*, 57–72. doi:10.1016/j.techfore.2014.03.005

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Huang, Z., & Benyoucef, M. (2017). The effects of social commerce design on consumer purchase decision-making: An empirical study. *Electronic Commerce Research and Applications*, *25*, 40–58. doi:10.1016/j.elerap.2017.08.003

Karimi, S., Holland, C. P., & Papamichail, K. N. (2018). The impact of consumer archetypes on online purchase decision-making processes and outcomes : A behavioural process perspective. *Journal of Business Research*, *91*(May), 71–82. doi:10.1016/j.jbusres.2018.05.038

Karimi, S., Papamichail, K. N., & Holland, C. P. (2015). The effect of prior knowledge and decision-making style on the online purchase decision-making process : A typology of consumer shopping behaviour. *Decision Support Systems*, *77*, 137–147. doi:10.1016/j.dss.2015.06.004

Kazungu, I., Matto, G., Relations, P., Gligorijevic, B., Stach, D., Yu, G., … Soon, Y. H. (2015). *A purchase decision-making process model of online consumers and its influential factor a cross sector analysis.* Theses PhD.

Kim, S., & Park, H. (2013). Effects of various characteristics of social commerce (s-commerce) on consumers' trust and trust performance. *International Journal of Information Management*, *33*(2), 318–332. doi:10.1016/j.ijinfomgt.2012.11.006

Li, Y., Wu, C., & Lai, C. (2013). A social recommender mechanism for e-commerce : Combining similarity, trust, and relationship. *Decision Support Systems*, *55*(3), 740–752. doi:10.1016/j.dss.2013.02.009

Lin, A. C. H., Fernandez, W. D., & Gregor, S. (2012). Understanding web enjoyment experiences and informal learning: A study in a museum context. *Decision Support Systems*, *53*(4), 846–858. doi:10.1016/j.dss.2012.05.020

Lin, S. W., & Lo, L. Y. S. (2016). Evoking online consumer impulse buying through virtual layout schemes. *Behaviour & Information Technology*, *35*(1), 38–56. doi:10.1080/0144929X.2015.1056546

Lin, X., Li, Y., & Wang, X. (2017). Social commerce research: Definition, research themes and the trends. *International Journal of Information Management*, *37*(3), 190–201. doi:10.1016/j.ijinfomgt.2016.06.006

Lu, Y., Zhou, T., & Wang, B. (2009). Exploring Chinese users' acceptance of instant messaging using the theory of planned behavior, the technology acceptance model, and the flow theory. *Computers in Human Behavior*, *25*(1), 29–39. doi:10.1016/j.chb.2008.06.002

Noh, M., Lee, K., Kim, S., & Garrison, G. (2013). Effects of Collectivism on Actual S-Commerce Use and the Moderating Effect of Price Consciousness. *Journal of Electronic Commerce Research*, *14*(3), 244–260.

Papamichail, K. N., & Robertson, I. (2003). Supporting societal decision making: A process perspective. *Journal of Multi-Criteria Decision Analysis*, *12*(2–3), 203–212. doi:10.1002/mcda.357

Parboteeah, D. V., Valacich, J. S., & Wells, J. D. (2009). The Influence of Website Characteristics on a Consumer's Urge to Buy Impulsively. *Information Systems Research*, *20*(1), 60–78. doi:10.1287/isre.1070.0157

Payne, J. W., Bettman, R., & Johnson, E. J. (1993). *The adaptive decision maker*. Cambridge University Press. doi:10.1017/CBO9781139173933

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Rad, A., & Benyoucef, M. (2011). A Model for Understanding Social Commerce. *Journal of Information Systems Applied Research Research*, *4*(2), 63–73.

Schiffman, L., & Kanuk, L. (2007). *Consumer behaviour, Pearson*. Upper Saddle River, NJ: Prentice Hall.

Schwartz, B., Ward, A., Lyubomirsky, S., Monterosso, J., White, K., & Lehman, D. R. (2002). Maximizing versus satisficing: Happiness is a matter of choice. *Journal of Personality and Social Psychology*, *83*(5), 1178–1197. doi:10.1037/0022-3514.83.5.1178 PMID:12416921

Shadkam, M., & Hara, J. O. (2013, May). Social Commerce Dimensions: The Potential Leverage for Marketers. *Journal of Internet Banking and Commerce*, *18*, 1–14.

Shanmugam, M., Sun, S., Amidi, A., Khani, F., & Khani, F. (2016). The applications of social commerce constructs. *International Journal of Information Management*, *36*(3), 425–432. doi:10.1016/j.ijinfomgt.2016.01.007

Soares, A., & Malota, E. (2008). *International Consumer Behaviour*. Athens University of Economics and Business.

Wang, Y., & Yu, C. (2017). Social interaction-based consumer decision-making model in social commerce: The role of word of mouth and observational learning. *International Journal of Information Management*, *37*(3), 179–189. doi:10.1016/j.ijinfomgt.2015.11.005

Wu, I., Chen, K., & Chiu, M. (2016). Defining key drivers of online impulse purchasing : A perspective of both impulse shoppers and system users. *International Journal of Information Management*, *36*(3), 284–296. doi:10.1016/j.ijinfomgt.2015.11.015

Zhang, K. Z. K., & Benyoucef, M. (2016). Consumer behavior in social commerce: A literature review. *Decision Support Systems*, *86*, 95–108. doi:10.1016/j.dss.2016.04.001

Zuschke, N. (2019, Jan.). An analysis of process-tracing research on consumer decision-making. *Journal of Business Research*, 1–16.

KEY TERMS AND DEFINITIONS

Consumer Decision-Making Model: Graphic representation of the cross interaction between market, social, environment, and individual factors affecting the flow of decisions of consumers.

Online Social Interaction: The online exchange of ideas and preferences between two or more individuals which can take the form of a comment, like, or by sharing what others had posted.

Purchase Experience: The different dimensions in feeling, knowledge, and satisfaction that a shopper gains during and after performing a purchase.

Ratings and Reviews: The reflection of users' experience regarding goods and services. Ratings are usually presented in a scale from 1 to 5, and reviews are expressed in a text in which photos can be included.

Social Learning: Refers to acquiring new behaviour and knowledge by observing others, in particular individuals with high influence.

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Social Recommendations: Raising attention on product, place, or person to other users who intersect the social relation, characteristics, or interests of the recommender.

User-Generated Content: Information created by users of different online mediums to introduce their ideas and/or experiences aiming to educated or entertain others and shared publicly. This information could be in a text, photo, audio, or video format.

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Chapter 13
Understanding User Social Commerce Usage Intention: A Stimulus–Organism–Response Perspective

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ABSTRACT

The integration of social media and e-commerce leads to the emergence of social commerce. Although previous research has examined social commerce user behaviour from multiple perspectives, it has focused on the effect of instrumental beliefs, such as perceived value, and has seldom examined the effect of emotional factors, such as sense of community on user behaviour. The purpose of this research is to draw on the stimulus-organism-response (SOR) model to examine the effect of sense of community on users' social commerce usage intention. The results indicate that both social support and service quality (stimulus) affect the sense of community (organism), which in turn affects users' sharing and participation intention (response). The results imply that service providers need to develop the user's sense of community in order to facilitate his or her social commerce usage intention.

INTRODUCTION

E-commerce has been developing rapidly in the world. A report indicated that about 533 million Chinese users have conducted online purchase, accounting for 69.1% of its internet population (CNNIC, 2018). In the US, this figure is about 80% (Pew Research Center, 2016). At the same time, social media sites such as Facebook, Twitter and WeChat have been integrated with e-commerce, which leads to the emergence of social commerce, such as F-commerce (Facebook). In China, Jingdong (JD), a leading e-commerce company, has cooperated with Tencent, which is the largest social networking company. Users can access JD to conduct purchase via WeChat, a leading social networking platform developed by Tencent. These examples indicate that social commerce has been attached importance by enterprises.

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In the social commerce context, users interact between each other and exchange their opinions, ideas and experiences. This plays a great influence on users' behavioural decision. They rely on the comments, reviews and suggestions shared by other members rather than the information posted by online vendors to make their purchase decisions (Chen, Lu and Wang, 2017). However, prior research has found that users lack intention to participate in social commerce (Zhang, Lu, Gupta and Zhao, 2014) and share contents (Liang, Ho, Li and Turban, 2011; Chen and Shen, 2015). This may hinder the development of social commerce. A report indicated that 72% of online shoppers have never shared their purchase experiences (CNNIC, 2017). Service providers need to understand the factors affecting users' social commerce usage intention. Then they can adopt effective measures to facilitate user behaviour and ensure the success of social commerce.

The purpose of this research is to draw on the stimulus-organism-response (SOR) model to uncover the effect of sense of community on users' social commerce usage intention. The stimulus includes social support and community quality, which reflect the effect of community members and platforms, respectively. As users frequently interact between each other in social commerce communities, they may exchange social support, which reflects the advice, suggestions, empathy and encouragement. Social support including both informational and emotional support has been found to be a significant determinant of social commerce usage intention (Shanmugam, Sun, Amidi, Khani and Khani, 2016; Li and Ku, 2018). In addition, this research adopted three factors of system quality, information quality and service quality from the information systems (IS) success model to examine their effects on user intention (DeLone and McLean, 2004). These three factors reflect the community platform quality. The organism is represented by sense of community, which reflects a user's feelings of membership, belongingness and attachment to a community (Koh, Kim and Kim, 2003). Response includes sharing intention and participation intention, both of which have been examined as the social commerce users' behavioural variables (Zhang et al., 2014; Ko, 2018). We believe that SOR provides a useful lens to understand social commerce users' behavioral decision process, in which external stimulus affects the internal state that leads to user intention.

Previous research has examined users' social commerce usage intention from multiple perspectives, such as trust (Lu, Zeng and Fan, 2016a; Lu, Fan and Zhou, 2016b; Hajli, Sims, Zadeh and Richard, 2017), social interaction (Xiang, Zheng, Lee and Zhao, 2016; Zhang, Benyoucef and Zhao, 2016; Wang and Yu, 2017), and perceived value (Hu, Huang, Zhong, Davison and Zhao, 2016; Sun, Wei, Fan, Lu and Gupta, 2016; Chung, Song and Lee, 2017). However, it has mainly focused on the effect of instrumental beliefs such as perceived value and has seldom examined the effect of emotional beliefs on user behaviour. This may undermine our understanding of users' social commerce usage intention. Extant research has reported that an individual user's emotion is a significant determinant of his or her behaviour (Tsai and Bagozzi, 2014; Wan, Lu, Wang and Zhao, 2017). In this research, we examine users' social commerce usage intention from the emotional perspective of sense of community. When users interact with each other in a social commerce community, they may develop sense of community, which in turn affects their behavioural decision such as sharing and participation intention.

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RESEARCH MODEL AND HYPOTHESES

Social Commerce Usage Intention

As an emerging model, social commerce usage intention has received great attention from information systems researchers. Due to the significant uncertainty and risk associated with social commerce, trust has been identified to be a significant factor affecting user behaviour. Kim and Park (2013) found that transaction safety, reputation and information quality affect users' trust in social commerce. Chen and Shen (2015) noted that social support affects trust, which in turn determines users' social sharing and shopping intention. Lu et al. (2016a) reported that institution-based trust affects users' transaction intention in social commerce marketplaces. Lu et al. (2016b) stated that social presence affects trust and a user's purchase intention in social commerce. These studies suggest that social commerce trust is affected by multiple factors such as reputation, social presence and social support.

In addition to trust, social interaction has also been examined in the social commerce context. As users conduct frequent social interaction, they may form close social networking relationships, which influence their behaviour. Wang and Yu (2017) argued that social interaction, which includes word-of-mouth (WOM) communication and observing other users' purchase, affects users' intention to purchase. Xiang et al. (2016) noted that parasocial interaction leads to users' impulse buying behaviour on social commerce platforms. Liu, Chu, Huang and Chen (2016) found that interpersonal interaction contributes to the flow experience, which reflects an optimal experience in social commerce. Zhang et al. (2016) stated that interactivity affects relationship quality, which in turn determines users' brand loyalty in social commerce. From these results, we can find that social interaction is a significant determinant of users' social commerce usage intention.

Previous research has also explored the effect of social support on user behaviour in the social commerce context. Liang et al. (2011) reported that social support including informational support and emotional support affects relationship quality and users' social commerce behaviour. Bai, Yao and Dou (2015) found that social support helps mitigate both product uncertainty and seller uncertainty, which in turn lead to social commerce users' purchase behaviour. Sun et al. (2016) stated that social support as a factor of social climate affects perceived value and users' purchase intention. These results highlight the necessity to take social support into consideration when examining social commerce user behaviour.

As evidenced by these studies, social commerce usage intention has been examined from multiple perspectives such as trust, social support and social interaction. However, they have seldom examined the effect of emotional beliefs such as sense of community on user intention. This research tries to fill the gap by drawing on the SOR model as the theoretical base.

SOR

The SOR originates from environmental psychology and it has been used to explain the effect of environmental factors on an individual user's psychological state and behaviour (Mehrabian and Russell, 1974). The theory proposes that environmental stimulus (S) may affect a user's internal state (O), which in turn affects his or her behavioral response (R). To some extent, stimulus reflects an input, whereas response reflects an output. Organism reflects the internal process. In this research, we include both social support and community quality as the stimulus (Hu et al., 2016), which reflect the effect of community members and platforms, respectively. The organism is represented by sense of community (Zhang,

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2010), which reflects a user's affective states such as membership, belongingness and attachment to a community. Response includes both sharing intention and participation intention (Zhang et al., 2014). Sharing intention reflects a user's intention to share his or her experiences, advice and recommendations with other members (Chen and Shen, 2015), whereas participation intention reflects a user's intention to visit and use a community (Xu and Li, 2015).

SOR has been widely adopted to examine user behaviour in information systems research. Li, Dong and Chen (2012) examined the effects of both utilitarian and hedonic factors on mobile consumption experience. Zhang, Lu, Wang and Wu (2015) noted that site characteristics affect customers' co-creation experience and their intention to participate in co-creation. Hu et al. (2016) suggested that website features and peers' qualities affect shopping value, which further affects users' purchase intention. Liu et al. (2016) adopted SOR to find that interpersonal interaction affects the flow experience, which in turn affects purchase intention. These studies indicate that SOR provides a useful lens to explain user behaviour. This research generalizes it to the social commerce context.

Social Support

Social support reflects an individual user's experiences of being cared for, being responded to and being helped by other members in a community (Liang et al., 2011). As noted earlier, social support has been identified to be a significant factor determining user behaviour in social commerce (Zhang and Benyoucef, 2016). In line with these studies, we measured social support with two factors: informational support and emotional support (Liang et al., 2011). Informational support reflects the recommendations, advice, and suggestions that help to solve the problems (Liang et al., 2011). When users receive valuable information from other members, they may feel the utility and develop a sense of community, which includes membership and belongingness. Otherwise, they may feel that the community is useless to their working and life, which may lead to their disappointment and low sense of community. In addition, informational support can alleviate uncertainty and increase users' trust (Chen and Shen, 2015), which may help improve sense of community. Liang et al. (2011) found that informational support leads to a user's better relationship quality with a community. Lin (2011) reported that instrumental support (similar to informational support) affects a user's network ties and commitment to an instant messaging community. Thus, we suggest:

H1: Informational support is positively related to sense of community.

Emotional support reflects the caring, empathy and encouragement expressed by other members to an individual user (Liang et al., 2011). Compared to informational support that represents a direct support, emotional support is an indirect support. When users are in negative moods such as frustration and depression, they expect to receive emotional support from other members. The emotional support such as caring and encouragement may help relieve users' moods and facilitate their belongingness and attachment to a community. Lin, Hsu, Cheng and Chiu (2015) found that emotional support as a nurturant support affects community identification. Chen and Shen (2015) noted that emotional support affects a user's commitment to a community. Based on these results, we propose:

H2: Emotional support is positively related to sense of community.

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Community Quality

In social commerce communities, users not only interact with other members, but also interact with the community platform. Thus, community platform quality as the stimulus may also affect their internal state. We draw on three factors of system quality, information quality and service quality from the IS success model to reflect the effect of community quality (DeLone and McLean, 2004).

System quality reflects the access speed, navigation and visual appeal of a community (Kim, Xu and Koh, 2004). System quality may form a user's initial impressions toward a community. When a community has fast access speed, effective navigation and an attractive interface, users may have good evaluations toward it and develop sense of community. In contrast, if the community has low system quality such as slow speed and a poor interface, users may feel that service providers lack the ability and integrity to provide quality platforms to them. They cannot develop belongingness and attachment to the community. Lin, Fan and Chau (2014) also found that system quality affects a user's sense of belonging to social networking sites. Thus, we suggest:

H3: System quality is positively related to sense of community.

Information quality reflects the relevance, timeliness and sufficiency of the information offered by communities (Kim et al., 2004). As information overload has become a common issue, providing relevant information to users based on their preferences is critical to ensuring a good experience (Hsu, Chang, Kuo and Cheng, 2017). This may help build users' trust in service providers and develop their identification to the community (Zhang et al., 2016). Similarly, timely and sufficient information may also demonstrate a service provider's trustworthiness. In contrast, users cannot build a sense of belonging to a community that provides low quality information to them. Thus, we suggest:

H4: Information quality is positively related to sense of community.

Service quality reflects the reliability, promptness and personalization of the services offered to a user (Kim et al., 2004). Users may expect to obtain reliable and personalized services when accessing social commerce communities. When this expectation is confirmed, they may become satisfied and develop a strong sense of community. In contrast, poor service quality may undermine a user's trust and his or her sense of belongingness and attachment. For example, if users wait much longer for the responses from communities, they may lack patience and drop their usage. Liang et al. (2011) found that service quality as a factor of website quality affects relationship quality, which includes trust, satisfaction and commitment. Thus, we state:

H5: Service quality is positively related to sense of community.

Sense of Community

Sense of community reflects an individual's feelings of relationship to a community (Koh et al., 2003). It often includes four factors: membership, influence, needs fulfillment and emotional connection (McMillan and Chavis, 1986). Membership reflects the feeling of belonging to a community. Influence reflects a user's feelings of control and influence over the community (Zhang, 2010). Needs fulfillment reflects

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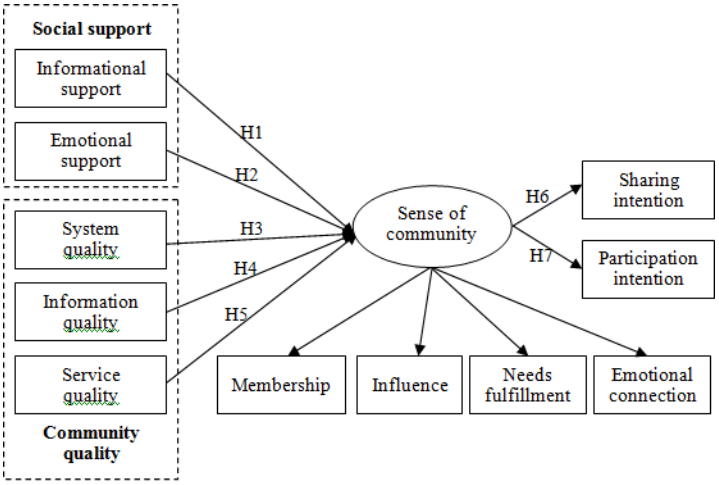
that users believe that a community will meet their needs. Emotional connection reflects the bonds developed among community members. Prior research has found that sense of community significantly affects social networking user behaviour (Zhang, 2010; Oh, Ozkaya and LaRose, 2014; Mamonov, Koufaris and Benbunan-Fich, 2016). We propose that it may also affect users' social commerce usage intention.

When users develop a sense of community, they may be motivated to actively share contents and participate in a community. They are proud of being a member of the community and perceive their value and influence in the community. In addition, they feel a sense of belongingness and attachment to the community. These feelings including membership, influence, needs fulfillment and emotional connection may facilitate their sharing and participation in the community. Mamonov et al. (2016) reported that sense of community affects users' contribution in social networking sites. Xu and Li (2015) noted that sense of belonging to a community affects community participation. Consistent with these studies, we suggest:

H6: Sense of community is positively related to sharing intention.
H7: Sense of community is positively related to participation intention.

Figure 1 presents the research model. Sense of community is a second-order factor, which includes four reflective factors: membership, influence, needs fulfillment and emotional connection.

Figure 1. Research model



METHOD

The research model includes eleven factors. Each factor was measured with multiple items. All items were adapted from extant literature to improve the content validity. Items of informational support and emotional support were adapted from Liang et al. (2011). Items of informational support (INS) reflect the advice and suggestions received from other members. Items of emotional support (EMS) reflect the caring, encouragement and empathy expressed by other members. Items of membership, influence, needs fulfillment and emotional connection were adapted from Zhang (2010). Items of membership

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(MEM) reflect the sense of belonging to a community. Items of influence (INFL) reflect a user's feeling of value and influence in a community. Items of needs fulfillment (NED) reflect that a community can meet a user's needs. Items of emotional connection (EMC) reflect the emotional bonds developed between members. Items of system quality, information quality and service quality were adapted from Zhou (2013). Items of system quality (SYS) measure the access speed, navigation and visual appeal of a community platform. Items of information quality (INF) measure the timeliness, accuracy, sufficiency and relevancy. Items of service quality (SER) measure the reliability, personalization and promptness. Items of sharing intention (SHA) were adapted from Chen and Shen (2015) to reflect a user's intention to share his or her experiences and recommendations with other members. Items of participation intention (PAR) were adapted from Zhang (2010) to reflect a user's intention to participate in a community.

These items were first translated into Chinese by a researcher. Then another researcher translated them back into English to ensure consistency. When the instrument was developed, it was tested among twenty users that had social commerce experience. Then according to their comments, we revised a few items to improve the clarity and understandability. The final items and sources are listed in the Appendix.

Data were collected at a university campus. We believe that university students are an appropriate sample for this research because social commerce as an emerging business model is popular among young adults. The CNNIC report (2018) indicated that users that were between twenty and twenty-nine years old are the largest group (30%) of internet users. In addition, students represent a majority (25.4%) of internet users. These data suggest that university students are an important group of internet users. Previous research has also adopted university students as the sample (Sim, Tan, Wong, Ooi and Hew, 2014; Teo, Tan, Ooi, Hew and Yew, 2015; Wong, Tan, Tan and Ooi, 2015). Data were collected in September 2017 at an eastern China city, where e-commerce is more developed than other regions. We randomly contacted students in the university and inquired whether they had social commerce experience. Then we asked those with positive answers to fill the paper questionnaire based on their experience. We scrutinized all responses and dropped those with too many missing values. As a result, we obtained 339 valid responses. Among them, 59% of male and 41% were female. A majority of them (75.5%) were between twenty and twenty-nine years old. About one third (37.8%) of them have used social commerce communities for more than a year. The frequently used social commerce communities include WeChat, Sina Weibo, Dianping, and Meilishuo, which represent a few well-known communities.

We conducted two tests to examine common method variance. First, we performed a Harman's single-factor test (Podsakoff, MacKenzie, Lee and Podsakoff, 2003). The results indicated that the largest variance explained by an individual factor is 22.65%. Thus, none of the factors can explain the majority of the variance. Second, we modeled all items as the indicators of a factor representing the method effect, and re-estimated the model (Malhotra, Kim and Patil, 2006). The results indicated a poor fitness. For example, the goodness of fit index (GFI) is 0.473 (< 0.90). The root mean square error of approximation (RMSEA) is 0.173 (> 0.08). The results of both tests indicated that common method variance is not a significant problem in this research.

RESULTS

Following a two-step approach, we first examined the measurement model to test reliability and validity. Then we examined the structural model to test research hypotheses.

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Table 1. Standardized item loadings, AVE, CR and alpha values

Factor	Item	Standardized Loading	AVE	CR	Alpha
Informational support (INS)	INS1	0.708	0.55	0.79	0.78
	INS2	0.829			
	INS3	0.686			
Emotional support (EMS)	EMS1	0.720	0.59	0.85	0.85
	EMS2	0.813			
	EMS3	0.813			
	EMS4	0.722			
Membership (MEM)	MEM1	0.728	0.53	0.77	0.76
	MEM2	0.822			
	MEM3	0.629			
Influence (INFL)	INFL1	0.785	0.53	0.81	0.81
	INFL2	0.776			
	INFL3	0.706			
	INFL4	0.621			
Needs fulfillment (NED)	NED1	0.807	0.65	0.84	0.84
	NED2	0.718			
	NED3	0.878			
Emotional connection (EMC)	EMC1	0.781	0.55	0.78	0.78
	EMC2	0.715			
	EMC3	0.720			
System quality (SYS)	SYS1	0.735	0.58	0.85	0.84
	SYS2	0.838			
	SYS3	0.771			
	SYS4	0.697			
Information quality (INF)	INF1	0.769	0.61	0.86	0.86
	INF2	0.795			
	INF3	0.804			
	INF4	0.756			
Service quality (SER)	SER1	0.775	0.61	0.83	0.83
	SER2	0.797			
	SER3	0.779			
Sharing intention (SHA)	SHA1	0.826	0.57	0.80	0.79
	SHA2	0.791			
	SHA3	0.637			
Participation intention (PAR)	USE1	0.653	0.51	0.76	0.76
	USE2	0.768			
	USE3	0.723			

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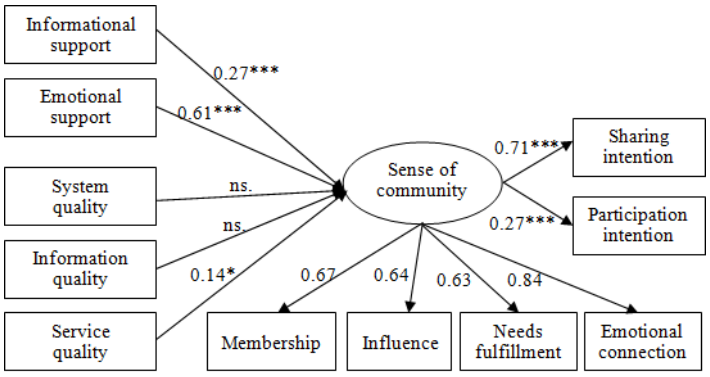
First, we conducted a confirmatory factor analysis to examine the validity, which includes convergent validity and discriminant validity. Convergent validity measures whether items can effectively reflect their factor, whereas discriminant validity measures whether two factors are statistically different. Table 1 lists the standardized item loadings, the average variance extracted (AVE), the composite reliability (CR) and Cronbach Alpha values. As listed in the table, most item loadings are larger than 0.7. Each AVE exceeds 0.5, and each CR exceeds 0.7. This indicated the good convergent validity (Gefen, Straub and Boudreau, 2000). In addition, all Alpha values are larger than 0.7, demonstrating good reliability.

To examine the discriminant validity, we compared the square root of AVE and factor correlation coefficients. As listed in Table 2, for each factor, the square root of AVE is significantly larger than its correlation coefficients with other factors, suggesting good discriminant validity (Gefen et al., 2000).

Table 2. The square root of AVE (shown as bold at diagonal) and factor correlation coefficients

	INS	EMS	MEM	INFL	NED	EMC	SYS	INF	SER	SHA	PAR
INS	**0.744**										
EMS	0.504	**0.768**									
MEM	0.402	0.422	**0.731**								
INFL	0.558	0.566	0.555	**0.725**							
NED	0.469	0.424	0.455	0.359	**0.804**						
EMC	0.472	0.507	0.560	0.467	0.550	**0.739**					
SYS	0.003	0.010	0.041	0.064	0.006	0.033	**0.762**				
INF	0.111	0.064	0.108	0.079	0.111	0.060	0.539	**0.781**			
SER	0.114	0.115	0.063	0.038	0.191	0.193	0.447	0.574	**0.784**		
SHA	0.495	0.539	0.508	0.414	0.426	0.416	0.035	0.022	0.080	**0.756**	
PAR	0.109	0.202	0.189	0.088	0.152	0.310	0.179	0.140	0.144	0.114	**0.716**

Figure 2. The results estimated by LISREL



(Note: *, P<0.05; ***, P<0.001; ns, not significant)

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Second, we adopted structural equation modeling software LISREL to estimate the structural model. Figure 2 presents the results. Except H3 and H4, other hypotheses were supported. Four factors including membership, influence, needs fulfillment and emotional connection have high loadings on the second-order factor. Table 3 lists the recommended and actual values of a few indices. Except GFI, other fit indices have better actual values than the recommended values. The explained variance of sense of community, sharing intention and participation intention is 66.7%, 50.6%, and 7.5%, respectively.

Table 3. The recommended and actual values of fit indices

Fit Indices	chi^2/df	GFI	AGFI	CFI	NFI	NNFI	RMSEA
Recommended value	<3	>0.90	>0.80	>0.90	>0.90	>0.90	<0.08
Actual value	1.96	0.879	0.852	0.965	0.934	0.961	0.053

(Note: chi^2/df is the ratio between Chi-square and degrees of freedom, GFI is Goodness of Fit Index, AGFI is the Adjusted Goodness of Fit Index, CFI is the Comparative Fit Index, NFI is the Normed Fit Index, NNFI is the Non-Normed Fit Index, RMSEA is Root Mean Square Error of Approximation)

DISCUSSION

As shown in Figure 2, informational support, emotional support and service quality significantly affect sense of community, which in turn affects both sharing intention and participation intention. We did not find the effect of system quality and information quality on sense of community.

Compared to informational support, emotional support has a larger effect ($\gamma = 0.61, P < 0.001$) on sense of community. This suggests that users are much concerned with the emotional support when developing sense of community. To some extent, informational support is instrumental, whereas emotional support is affective. Users not only expect to obtain useful information from other members, but also expect to obtain emotional comfort to relieve their moods. When users receive the caring and encouragement from other members, they may build identification with a community (Lin et al., 2015) and form a strong sense of community. Mamonov et al. (2016) has found that social interaction is a significant factor affecting sense of community in the context of social networking sites. Our results indicated that social support also affects sense of community. Thus, service providers need to encourage users' exchange of social support including informational and emotional support in order to enhance their sense of community.

Among three factors of community quality, only service quality has a significant effect ($\gamma = 0.14$, $P < 0.05$) on sense of community. This indicated that users attach great importance to the services received from communities. Quality services such as personalized and reliable services may help build users' trust (Liang et al., 2011) and enhance their sense of community. For example, service providers have adopted location-based services to offer the personalized information and services to users based on their locations and preferences. This may help improve their sense of belongingness and attachment.

The results indicated that both system quality and information quality have no effect on sense of community. This is inconsistent with Zhang (2010), which found the effect of information quality on social networking users' sense of community in the US. The result may be explained for two reasons. First, our sample is composed of young adult users. They have relatively high self-efficacy and rich experience of using internet (Ifinedo, 2017). They are not much concerned with system quality when visiting a social commerce community. Second, our results found that informational support has a significant effect on

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sense of community. This suggests that users paid more attention to the information received from other members rather than that from the community. They may feel that compared to the information offered by a community, the information offered other members is more helpful and useful to their working and life (Wang and Yu, 2017).

Sense of community has four high-loading factors: membership, influence, needs fulfillment and emotional connection. This suggests that it is appropriate to measure sense of community as a second-order factor. This is consistent with prior research (Zhang, 2010). Among these four factors, emotional connection has a relatively larger loading (0.84) on sense of community. This highlights the central role of emotional connection in sense of community. The results indicated that sense of community affects both sharing intention and participation intention. The effect of sense of community on sharing intention is especially strong *(*$\beta = 0.71$, $P < 0.001$). These results show that sense of community is a significant factor determining users' social commerce usage intention.

IMPLICATIONS AND LIMITATIONS

From a theoretical perspective, this research draws on the SOR model to examine the effect of sense of community on users' social commerce usage intention. As noted earlier, although previous research has examined social commerce user behaviour from multiple perspectives such as trust, social interaction and perceived value, it has focused on the instrumental beliefs and has seldom disclosed the effect of emotional beliefs such as sense of community on user behaviour. This research tries to fill the gap. The results indicated that both social support and service quality as the stimulus affect sense of community, which in turn determines users' sharing and participation intention in social commerce. These results advance our understanding of social commerce user behaviour. Future research may pay more attention to the effect of emotional beliefs such as flow when examining social commerce user behaviour. Second, we found that social support, which includes informational support and emotional support, has a significant effect on sense of community. The effect of emotional support on sense of community is especially strong. This suggests that sense of community as an emotional belief receives significant influence from emotional support. These results extend extant research, which has found the effect of social interaction on sense of community (Mamonov et al., 2016). Third, the results indicated that service quality of a community significantly affects sense of community. Thus, offering reliable and personalized services is helpful for improving sense of community. This enriches extant research, which has reported the effect of information quality on sense of community in the social networking context (Zhang, 2010).

From a managerial perspective, the results imply that service providers need to develop users' sense of community in order to facilitate their social commerce usage intention. On one hand, service providers need to create a supportive climate in social commerce communities. They can use incentives such as points to encourage users' exchanging social support between each other. They can also encourage opinion leaders to actively offer social support and act as examples. On the other hand, they need to improve the community platform and offer quality services to users. They may use location-based services to offer contextual information to users. This may better meet users' needs and help develop their sense of community. At the same time, service providers need to be concerned with information privacy and should obtain users' permissions before pushing location-based services to them.

This research has the following limitations. First, the sample is mainly composed of university students. Although they represent an important group of internet users, future research needs to generalize

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the results to other samples, such as enterprise employees. Second, we focused on the effect of sense of community on user behaviour and neglected the possible effect of other control variables such as user experience and satisfaction. Future research can examine their effects. Third, we examined users' sharing and participation intention in this research. Although behavioral intention is a significant determinant of actual behaviour, future research needs to test the actual user behaviour. Fourth, we conducted a cross-sectional study. However, user behaviour is dynamic. Thus, a longitudinal research may provide more insights into user behavioural development.

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REFERENCES

Bai, Y., Yao, Z., & Dou, Y. F. (2015). Effect of social commerce factors on user purchase behavior: An empirical investigation from renren.com. *International Journal of Information Management*, *35*(5), 538–550. doi:10.1016/j.ijinfomgt.2015.04.011

Chen, A., Lu, Y., & Wang, B. (2017). Customers' purchase decision-making process in social commerce: A social learning perspective. *International Journal of Information Management*, *37*(6), 627–638. doi:10.1016/j.ijinfomgt.2017.05.001

Chen, J., & Shen, X.-L. (2015). Consumers' decisions in social commerce context: An empirical investigation. *Decision Support Systems*, *79*, 55–64. doi:10.1016/j.dss.2015.07.012

Chung, N., Song, H. G., & Lee, H. (2017). Consumers' impulsive buying behavior of restaurant products in social commerce. *International Journal of Contemporary Hospitality Management*, *29*(2), 709–731. doi:10.1108/IJCHM-10-2015-0608

CNNIC. (2017). *China social networking application user behaviour report in 2016*. China Internet Network Information Center.

CNNIC. (2018). *The 41st China Statistical Report on Internet Development*. China Internet Network Information Center.

DeLone, W. H., & McLean, E. R. (2004). Measuring e-Commerce success: Applying the DeLone & McLean information systems success model. *International Journal of Electronic Commerce*, *9*(1), 31–47. doi:10.1080/10864415.2004.11044317

Gefen, D., Straub, D. W., & Boudreau, M. C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the Association for Information Systems*, *4*(7), 1–70.

Hajli, N., Sims, J., Zadeh, A. H., & Richard, M.-O. (2017). A social commerce investigation of the role of trust in a social networking site on purchase intentions. *Journal of Business Research*, *71*, 133–141. doi:10.1016/j.jbusres.2016.10.004

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hsu, C. L., Chang, K. C., Kuo, N. T., & Cheng, Y. S. (2017). The mediating effect of flow experience on social shopping behavior. *Information Development*, *33*(3), 243–256. doi:10.1177/0266666916651918

Hu, X., Huang, Q., Zhong, X. P., Davison, R. M., & Zhao, D. T. (2016). The influence of peer characteristics and technical features of a social shopping website on a consumer's purchase intention. *International Journal of Information Management*, *36*(6), 1218–1230. doi:10.1016/j.ijinfomgt.2016.08.005

Ifinedo, P. (2017). Examining students' intention to continue using blogs for learning: Perspectives from technology acceptance, motivational, and social-cognitive frameworks. *Computers in Human Behavior*, *72*(Supplement C), 189–199. doi:10.1016/j.chb.2016.12.049

Kim, H. W., Xu, Y., & Koh, J. (2004). A comparison of online trust building factors between potential customers and repeat customers. *Journal of the Association for Information Systems*, *5*(10), 392–420. doi:10.17705/1jais.00056

Kim, S., & Park, H. (2013). Effects of various characteristics of social commerce (s-commerce) on consumers' trust and trust performance. *International Journal of Information Management*, *33*(2), 318–332. doi:10.1016/j.ijinfomgt.2012.11.006

Ko, H.-C. (2018). Social desire or commercial desire? The factors driving social sharing and shopping intentions on social commerce platforms. *Electronic Commerce Research and Applications*, *28*, 1–15. doi:10.1016/j.elerap.2017.12.011

Koh, J., Kim, Y. G., & Kim, Y. G. (2003). Sense of virtual community: A conceptual framework and empirical validation. *International Journal of Electronic Commerce*, *8*(2), 75–94. doi:10.1080/10864415.2003.11044295

Li, C.-Y., & Ku, Y.-C. (2018). The power of a thumbs-up: Will e-commerce switch to social commerce? *Information & Management*, *55*(3), 340–357. doi:10.1016/j.im.2017.09.001

Li, M., Dong, Z. Y., & Chen, X. (2012). Factors influencing consumption experience of mobile commerce A study from experiential view. *Internet Research*, *22*(2), 120–141. doi:10.1108/10662241211214539

Liang, T.-P., Ho, Y.-T., Li, Y.-W., & Turban, E. (2011). What drives social commerce: The role of social support and relationship quality. *International Journal of Electronic Commerce*, *16*(2), 69–90. doi:10.2753/JEC1086-4415160204

Lin, C.-P. (2011). Assessing the mediating role of online social capital between social support and instant messaging usage. *Electronic Commerce Research and Applications*, *10*(1), 105–114. doi:10.1016/j.elerap.2010.08.003

Lin, H., Fan, W., & Chau, P. Y. K. (2014). Determinants of users' continuance of social networking sites: A self-regulation perspective. *Information & Management*, *51*(5), 595–603. doi:10.1016/j.im.2014.03.010

Lin, T.-C., Hsu, J. S.-C., Cheng, H.-L., & Chiu, C.-M. (2015). Exploring the relationship between receiving and offering online social support: A dual social support model. *Information & Management*, *52*(3), 371–383. doi:10.1016/j.im.2015.01.003

Liu, H., Chu, H., Huang, Q., & Chen, X. (2016). Enhancing the flow experience of consumers in China through interpersonal interaction in social commerce. *Computers in Human Behavior*, *58*, 306–314. doi:10.1016/j.chb.2016.01.012

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Lu, B., Zeng, Q., & Fan, W. (2016a). Examining macro-sources of institution-based trust in social commerce marketplaces: An empirical study. *Electronic Commerce Research and Applications*, *20*, 116–131. doi:10.1016/j.elerap.2016.10.004

Lu, B. Z., Fan, W. G., & Zhou, M. (2016b). Social presence, trust, and social commerce purchase intention: An empirical research. *Computers in Human Behavior*, *56*, 225–237. doi:10.1016/j.chb.2015.11.057

Malhotra, N. K., Kim, S. S., & Patil, A. (2006). Common method variance in IS research: A comparison of alternative approaches and a reanalysis of past research. *Management Science*, *52*(12), 1865–1883. doi:10.1287/mnsc.1060.0597

Mamonov, S., Koufaris, M., & Benbunan-Fich, R. (2016). The role of the sense of community in the sustainability of social network sites. *International Journal of Electronic Commerce*, *20*(4), 470–498. doi:10.1080/10864415.2016.1171974

McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory. *Journal of Community Psychology*, *14*(1), 6–23. doi:10.1002/1520-6629(198601)14:1<6::AID-JCOP2290140103>3.0.CO;2-I

Mehrabian, A., & Russell, J. A. (1974). *An Approach to Environmental Psychology*. Cambridge, MA: The MIT Press.

Oh, H. J., Ozkaya, E., & LaRose, R. (2014). How does online social networking enhance life satisfaction? The relationships among online supportive interaction, affect, perceived social support, sense of community, and life satisfaction. *Computers in Human Behavior*, *30*(0), 69–78. doi:10.1016/j.chb.2013.07.053

Pew Research Center. (2016). Online shopping and e-commerce. Retrieved from http://www.pewinternet.org/2016/12/19/online-shopping-acknowledgments/

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, *88*(5), 879–903. doi:10.1037/0021-9010.88.5.879 PMID:14516251

Shanmugam, M., Sun, S., Amidi, A., Khani, F., & Khani, F. (2016). The applications of social commerce constructs. *International Journal of Information Management*, *36*(3), 425–432. doi:10.1016/j.ijinfomgt.2016.01.007

Sim, J.-J., Tan, G. W.-H., Wong, J. C. J., Ooi, K.-B., & Hew, T.-S. (2014). Understanding and predicting the motivators of mobile music acceptance – A multi-stage MRA-artificial neural network approach. *Telematics and Informatics*, *31*(4), 569–584. doi:10.1016/j.tele.2013.11.005

Sun, Y., Wei, K. K., Fan, C., Lu, Y., & Gupta, S. (2016). Does social climate matter? On friendship groups in social commerce. *Electronic Commerce Research and Applications*, *18*, 37–47. doi:10.1016/j.elerap.2016.06.002

Teo, A.-C., Tan, G. W.-H., Ooi, K.-B., Hew, T.-S., & Yew, K.-T. (2015). The effects of convenience and speed in m-payment. *Industrial Management & Data Systems*, *115*(2), 311–331. doi:10.1108/IMDS-08-2014-0231

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Tsai, H.-T., & Bagozzi, R. P. (2014). Contribution behavior in virtual communities: Cognitive, emotional, and social influences. *Management Information Systems Quarterly*, *38*(1), 143–163. doi:10.25300/MISQ/2014/38.1.07

Wan, J., Lu, Y., Wang, B., & Zhao, L. (2017). How attachment influences users' willingness to donate to content creators in social media: A socio-technical systems perspective. *Information & Management*, *54*(7), 837–850. doi:10.1016/j.im.2016.12.007

Wang, Y., & Yu, C. (2017). Social interaction-based consumer decision-making model in social commerce: The role of word of mouth and observational learning. *International Journal of Information Management*, *37*(3), 179–189. doi:10.1016/j.ijinfomgt.2015.11.005

Wong, C.-H., Tan, G. W.-H., Tan, B.-I., & Ooi, K.-B. (2015). Mobile advertising: The changing landscape of the advertising industry. *Telematics and Informatics*, *32*(4), 720–734. doi:10.1016/j.tele.2015.03.003

Xiang, L., Zheng, X., Lee, M. K. O., & Zhao, D. (2016). Exploring consumers' impulse buying behavior on social commerce platform: The role of parasocial interaction. *International Journal of Information Management*, *36*(3), 333–347. doi:10.1016/j.ijinfomgt.2015.11.002

Xu, B., & Li, D. (2015). An empirical study of the motivations for content contribution and community participation in Wikipedia. *Information & Management*, *52*(3), 275–286. doi:10.1016/j.im.2014.12.003

Zhang, H., Lu, Y., Gupta, S., & Zhao, L. (2014). What motivates customers to participate in social commerce? The impact of technological environments and virtual customer experiences. *Information & Management*, *51*(8), 1017–1030. doi:10.1016/j.im.2014.07.005

Zhang, H., Lu, Y. B., Wang, B., & Wu, S. B. (2015). The impacts of technological environments and co-creation experiences on customer participation. *Information & Management*, *52*(4), 468–482. doi:10.1016/j.im.2015.01.008

Zhang, K. Z. K., & Benyoucef, M. (2016). Consumer behavior in social commerce: A literature review. *Decision Support Systems*, *86*, 95–108. doi:10.1016/j.dss.2016.04.001

Zhang, K. Z. K., Benyoucef, M., & Zhao, S. J. (2016). Building brand loyalty in social commerce: The case of brand microblogs. *Electronic Commerce Research and Applications*, *15*, 14–25. doi:10.1016/j.elerap.2015.12.001

Zhang, Z. (2010). Feeling the sense of community in social networking usage. *IEEE Transactions on Engineering Management*, *57*(2), 225–239. doi:10.1109/TEM.2009.2023455

Zhou, T. (2013). An empirical examination of continuance intention of mobile payment services. *Decision Support Systems*, *54*(2), 1085–1091. doi:10.1016/j.dss.2012.10.034

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APPENDIX: MEASUREMENT SCALE AND ITEMS

Informational support (INS): Adapted from Liang et al. (2011):
INS1: When I encountered a problem, some people in the community would give me information to help me overcome the problem.
INS2: When faced with difficulties, some people in the community would help me discover the cause and provide me with suggestions.
INS3: In the community, some people would offer suggestions when I needed help.
Emotional support (EMS): Adapted from Liang et al. (2011):
EMS1: When faced with difficulties, some people in the community are on my side with me.
EMS2: When faced with difficulties, some people in the community comforted and encouraged me.
EMS3: When faced with difficulties, some people in the community listened to me talk about my private feelings.
EMS4: When faced with difficulties, some people in the community expressed interest and concern in my well-being.
Membership (MEM): Adapted from Zhang (2010):
MEM1: I feel that I am a member of the community.
MEM2: I have been in the community for a long time.
MEM3: I feel a sense of belonging to the community.
Influence (INFL): Adapted from Zhang (2010):
INFL1: I have a chance to provide advice or suggestions to other members of the community.
INFL2: Often there are some people that respond to my comments or the problems I posted in the community.
INFL3: I am an active member of the community.
INFL4: I care about what other members think of me.
Needs fulfillment (NED): Adapted from Zhang (2010):
NED1: In the community, my needs can be satisfied.
NED2: In the community, I can exchange with other members about the problems and get help.
NED3: It is worthwhile to spend time on the community.
Emotional connection (EMC): Adapted from Zhang (2010):
EMC1: I often discuss with other member of the community and enjoy the time.
EMC2: In the community, I and other members witnessed a few important matters.
EMC3: I have positive expectations toward the future of the community.
System quality (SYS): Adapted from Zhou (2013):
SYS1: The community runs smoothly.
SYS2: The community is easy to navigate.
SYS3: The community is visually attractive.
SYS4: The community quickly loads all the text and graphics.
Information quality (INF): Adapted from Zhou (2013):
INF1: The community provides me with up-to-date information.
INF2: The community provides me with accurate information.
INF3: The community provides me with information relevant to my needs.

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INF4: The community provides me with sufficient information.
Service quality (SER): Adapted from Zhou (2013):
SER1: The community provides reliable services.
SER2: The community provides personalized services.
SER3: The community provides prompt responses.
Sharing intention (SHA): Adapted from Chen and Shen (2015):
SHA1: I am willing to provide my experiences and suggestions when other members of the community want my advice on something.
SHA2: I am willing to share my own experience with other members of the community.
SHA3: I am willing to recommend this community to other people.
Participation intention (PAR): Adapted from Zhang (2010):
PAR1: If some people recommend this community to me, I will use it.
PAR2: I am willing to spend more time and effort on participating in the community.
PAR3: When I visit this kind of communities, this one is my first choice.

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Chapter 14
Consumer Protection in Online Shopping:
An Investigation of Virtual Credit Card Awareness in Turkey

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ABSTRACT

The main purposes of this research are (1) to reveal the virtual credit card (VCC) awareness of online shoppers and (2) to prepare a to do list for managers and relevant institutions to provide a more secured internet shopping process by enhancing the trust perception of consumers. To this end, a structured questionnaire consists of three sections was designed and conducted during the period April-May 2018 in Turkey. The findings achieved show that online shoppers mostly attach importance to the recognition of the website, which means they seek trust in online shopping process. On the other hand, they mostly use credit and debit cards, which may make consumers encounter serious fraud issues. VCC usage is only 4.9% in general although VCC awareness is 55.1%. This low level of VCC awareness is associated with education level and the information provided by the financial banks.

1. INTRODUCTION

Today's increasing competitive market forces companies to keep pace with the technology, new trends and innovative changes to capture customer value (Berman, 2012). These attempts and investments are not a preference for companies, but a must when the consumers' power in terms of limitless choice among the variety of brands is considered. The main purpose is to be able to up to date; in other words, companies have to create new ways of doing business. Today, they succeed this by benefiting from the digital transformation. They can boost their sales, productivity and profits as well by serving more and more customers beyond the traditional ways (Matt et al., 2015). In this manner, every company wants

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to cross the limits via digitalization, but this attempt heavily depends on the Information Technologies (IT) ability and the internet infrastructure.

Considering the internet infrastructure worldwide, Asia is the continent where the most internet users live with the rate of 49% according to the global internet usage statistics of Internet World Stats by 2018 (internetworldstats.com, 2018). On the second position, Europe comes with 16.8% and Africa follows with 11% on the third position. These statistics show that almost half of the internet users live in Asia. However, a different picture appears when the number of internet users is proportioned to the total population of the continents, also called as internet penetration. In this context, North America has the first place with the penetration rate of 95%, Europe comes second with 85.2% and Australia/Oceania is the third with 68.9% according to the new picture. These internet penetration rates indicate that the individuals at North America and Europe use the internet with a ratio over 80%.

Europe statistics by 2018 imply that the internet penetration throughout the Europe is increasing rapidly. According to the report prepared by Ecommerce Foundation, Sweden has the highest penetration rate with 99.7% while Switzerland is at the second position with 98.3% and Iceland is the third with the ratio of 98% (Ecommerce Foundation, 2018). On the other hand, Ukraine is at the bottom of the list with 66% when Turkey has a ratio of 68.4%, which means Turkey's penetration is one of the lowest ratios among European countries. This state of Turkey indicates that the country is supposed to cover a lot of ground to catch up with the level of the developed countries in Europe where the internet penetration ratio is remarkable over 85%.

The other issue closely related to internet penetration is online shopping which has a high importance in today's economic system. In this context, considering the European region statistics again, the most online shoppers live in the Netherlands and Switzerland with the ratio of 82% according to the report prepared by Ecommerce Foundation. Sweden is the second with 81% when Denmark and Luxembourg follow it with 80% (Ecommerce Foundation, 2018). As understood from here, internet penetration and online shopping differ widely across the EU. The highest internet penetration rates do not mean a highest online shopping volume. Then, the question, "why does not high penetration rates guarantee high online shopping volumes?" comes to the mind.

In response to this question, the background of online shopping has to be initially comprehended. Online shopping is a system that creates closer relationships by benefiting virtual infrastructure of the internet based on the exchange of products and money among producers and consumers, reduces the costs, and gives opportunity to consumers to reach the products/services easily and independently of time and space (Chang & Chen, 2008; Lee et al., 2010; Gomez-Herrera et al., 2014). Online shopping has many advantages for both producers and consumers. It makes easier the way of doing business via digitalization; it provides a limitless choice of products/services and comparison of them to get with a better price (Mokhtarian, 2003; Liu & Forsythe, 2010).

However, there is a heavy cost coming with this online system. As Yıldırım (2013) mentioned, the digitalization of the transactions between producers and consumers makes the virtual environment uncertain and risky. The reasons resulting from lack of face-to-face communication, not being able to touch and see the products physically (unobservability), the problems associated with delivery and payment transactions, and theft of personal and/or financial information pose an obstacle to the development of online shopping. In addition to these factors, cultural values may sometimes create barriers as well (Kueh & Voon, 2007). Consumers tend to avoid online shopping especially when they have high levels of uncertainty avoidance scores. They feel uncomfortable and do not prefer to purchase online because of the factors associated with uncertainty such as information asymmetry, and the possibility of third

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parties' abusive intentions like information theft and financial frauds (Patterson, 2012; Petrova & Valles, 2012; Yıldırım & Barutçu, 2016).

In this manner, the importance of being secured financially stands out among online shoppers in Turkey where the uncertainty avoidance score is 85% (Hofstede Insights, 2019). Although there are some tools such as anti-virus software, security certificates (SET, SSL etc.) and secured http (Diker & Varol, 2013) to prevent the online frauds, none of them is found completely enough. Accordingly, other tools were needed, especially in the payment process, to make the price-sensitive consumers pay and purchase online (Valls et al., 2011). One of the tools developed to provide payment security is called Virtual Credit Card (VCC). This system works as a virtual reflection of the physical credit card without having a real limit. It is not physically available, and has a different card number. The most important feature of it is to allow the owner to make the limit zero when not in use (Oz, 2002; Erdağ & Batuman, 2006; Kaya, 2009). In this regard, VCC is thought to be a promising system in terms of consumer protection in online shopping process when considering the low level of Turkey's online shopping turnover and high level of uncertainty avoidance score.

In the light of all these information, it can be said that today's main problems are (1) how to provide a secured online shopping process to consumers, and (2) how to make them aware of the systems that provide security. Within this direction, this study is designed to (1) reveal the awareness of consumers through VCC and to (2) prepare a to do list for shareholders such as consumers, consumer agencies and other relevant institutions of the government and organizations based on the results to enhance the awareness of VCC. Providing a more secured internet shopping issue is thought to be significantly important in Turkey where the price-sensitive, uncertain-avoidant and conventionally purchasing consumers live.

2. BACKGROUND

2.1. Current State of Online Shopping in Turkey

As mentioned above, high levels of internet penetration rates do not guarantee the high volumes of online shopping. In the meantime, it is getting worse if the penetration level is low. Turkey is almost in the middle position with the ratio of 53% (Montenegro is the last with 13%), although it is one of the countries that have lowest internet penetration rates. Despite Turkey has shown a great progress when compared to last year's ratio, which is 29% (Ecommerce Foundation, 2017), there is still much to reach the level of the developed countries. The B2C turnover of Turkey, which is €12.5 billion, is also an evidence that supports the current state of online shopping where the UK is the first with 177.7, France with 93.2 and Germany with €93 billion. According to the report named as 'Household Information Technology Usage Report' released by TSI (Turkish Statistical Institute, 2018), the ratio of purchasing goods and services from the internet has increased from 11.8% to 29.3% in the last five years. Although this ratio increased approximately 4.5 point when compared to the previous year, online shoppers have to be encouraged to spend more in online shopping in order to reach a greater turnover.

The reasons why the online shopping turnover of Turkey is low can be explained with some reasons: low ratio of internet access, also called as internet penetration with 68.4%, the insufficient technological infrastructure, the problems caused by the e-retailer or e-seller and online shopping process, and other reasons such as trust issue and lack of experience of usage towards IT. Considering the ratio of purchasing goods and services from the internet, which is 29.3% by 2018 as mentioned before, also indicates the

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consumers who do not shop online. Stated in other words, the ratio of consumers who do not prefer to shop online can be expressed as 70.7%, which is significantly high. The reasons why consumers do not prefer to shop online in Turkey are explained in the report of TSI (2015) related to this topic. According to this report, the first reason not to shop online, which has a ratio of 81.2%, stems from the traditional shopping habits such as purchasing the products in person, like to see or touch the products and being loyal to the physical store. The latter is 'payment security and privacy concerns' with 44.2% and the third reason is distrust towards the process of receiving or returning goods with the ratio of 27%. As seen from here, excluding the first reason which is associated with traditionalism and regular practicing towards purchasing the products by seeing and touching more, the second most important factor that generates barriers towards developing the online shopping volume by enhancing the risk perceptions of consumers is payment security and privacy concerns. This concern leads consumer to feel financially insecure.

The privacy concerns of consumers in online shopping process generally stems from fraud and financial information theft that frequently occur. The state of unobservability and information asymmetry by the structure of the internet, which is attractive to malevolent third parties, enhances the risk perception of consumers (Tan & Thoen, 2010; Liu & Wei, 2003). The JavaScript codes uploaded to e-commerce sites by these malevolent individuals (Constantin, 2016), fake web sites, security vulnerability, virus attacks etc. are the some kinds of methods used for fraud (Aslanyürek, 2016). Preventing these kinds of fraud methods via websites and providing a more secured online shopping process are the businesses of the managers of e-commerce sites that directly interact with the online shoppers. These kinds of websites try to prevent the information leakage in the virtual environment by using tools such as anti-virus software, security certificates (SET, SSL etc.) and secured http (Diker & Varol, 2013). Besides the software security, some systems that guarantee payment process are also used. For instance, online shoppers have the chance of paying at the door concurrently with the delivery. However, consumers generally prefer to use credit cards due to the advantages such as the ease of use and installment option (Zengin & Güngördü, 2013; Kahraman, 2016) in online shopping. The statistics of 'Online Card Payment Transactions' that were released by The Interbank Card Center (ICC, 2018) in Turkey also support this tendency of online shoppers. According to the statistics of the last three years, domestic and international use of domestic card transactions amounted to 68.8 million Turkish Liras (TL) in 2016, TL 98.2 million in 2017 and TL 95.8 million in the first three quarter of 2018 that indicates a rising graph over years.

The rise of credit card usage in online shopping over years reveals that consumers have to be protected more at the point of online payment. In the contrary case, consumers may be vulnerable and encounter problems such as fraud and financial information theft. These kinds of problems may negatively influence the attitudes of consumers towards the next online payment preference via credit cards. Regarding this issue, the problems that consumers encounter in online shopping were announced by TSI (2018) in the 'Household Information Technology Usage Report'. Considering the results of the report, 21.5% of the consumers who shop online encountered at least one problem in the online shopping process by 2017. The most encountered problem is the delivery of wrong or damaged goods/services with the ratio of 49.1%. After that, the delayed delivery comes with the ratio of 46.5% and technical failure during the ordering or payment process follows it with 20.1%. In addition to these, fraud issue that contains the misuse of credit card information has a ratio of 15%. This ratio shows significant increase when compared to last years, which is 10.6%. This rise displays that online shoppers are now under financial fraud risk so much that they cannot be overlooked.

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2.2. Online Payment Methods and Virtual Credit Card (VCC)

Consumers cannot give up using credit cards and debit cards in online shopping due to some advantages they offer such as the ease of use, installment options etc., and this increases the volume of the use of cards in online shopping. This intense card usage, which creates a very attractive environment for third parties, caused an increase in the number of card fraud cases based on stealing card information and this situation made the banks involved in the procedure as well. Banks assure the payment procedure via the system called as 3D Secure by sending a confirmation code to consumers' cellphones (Kaya, 2009). Since there appears the law "Debit Cards and Credit Cards Law" no. 5464, which holds the banks responsible for providing system security, and does not make the card holders responsible for the losses that may occur through the theft of card information (Uçar, 2015). In other words, the unjust treatments, which are likely to occur through the theft of card information in online shopping, have to be undertaken by the financial banks. However, not all online sellers use this system enhancing the payment security yet because it is not mandatory.

All these previously mentioned issues show that the security of payment procedure in internet shopping cannot be fully satisfied with the efforts of a single party. In other words, the way to increase security in payment procedure is to use more than one security technique at the same time. In fact, the security of the online payment process on the websites, which have security certificates, cannot be fully assured by the security of the banks with 3D secure. On the other side, the banks do not want to suffer from the weighty responsibility that was imposed by the Law no. 5464. With this purpose, banks serve another secured payment system called as 'Virtual Credit Card (VCC)' to their customers in order to secure themselves and respond to the requests due to the aforementioned advantages.

VCC is connected with the digital information of the physical credit card, and it is not physically available as a form of plastic card (Oz, 2002). In other words, VCC has no chip or magnetic strip. It can only be viewed online and there is no risk of loss or theft because the cardholder does not need to carry on it (Kaya, 2009). VCC corresponds to the same account number as the physical credit card of the customer; however, it has a different card number, expiration date and CVC code (Erdağ & Batuman, 2006). VCC can only be used for the purchases and other transactions made from the internet. The limit of VCC can be reset when not in use and it can be increased just before online shopping (Konuk & Yıldırım, 2012). Thus, it cannot be used in the physical shopping environments such as stores. Through the VCC, it is aimed to decrease and block the online card frauds based on credit card information theft in online shopping (Özgüven, 2011). The ability of consumers to determine the credit card limit as they wish in online shopping and to reset it when not in use minimizes the loss that may occur even if the card information is stolen by third parties. In such a case, it will be impossible to make a purchase with a zero card limit.

Although secure payment can be provided by VCC, it is seen that there are a lot of credit card fraud cases carried out with the stolen card information nowadays. It is thought that this is associated with the lowness of VCC awareness, and low usage as well. In other words, greater awareness in VCC leads to greater usage of VCC in online shopping by more consumers. Otherwise, low level of awareness will cause financial frauds to increase over time. In a study carried out by Konuk and Yıldırım (2012) at Sakarya province of Turkey, it was concluded that 63% of the participants who had the majority of education level as high school with 56.5% did not hear about the VCC before. In other saying, the ratio of the VCC awareness is only 37%. In addition to this, the ratio of VCC usage is only 26.8% inside this group. With reference to this point, it can be assumed that it is not enough to have only awareness about

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the VCC because according to results of the same research, the participants claimed that the banks did not provide adequate information about the VCC.

As can be seen from the results of the research of Konuk and Yıldırım (2012), low level of VCC awareness may cause low level of VCC usage. From different point of view, the way to increase the level of VCC usage is to raise the awareness of consumers about VCC. At this point, the research called as "Turkey Internet Measurement Research" done by IAB Turkey (2012) has rich content about the internet usage of Turkish consumers and VCC usage as well. According to the results of this research that represents the general internet profile of Turkish consumers who are primary school and high school graduate with a clear majority of 60%, VCC usage ratio is only 12.16% among the other online payment methods. Considering the payment methods, credit card usage leads the way with the ratio of 77.28%. On the other hand, VCC usage comes after the cash on delivery method (19.31%) and money order/electronic funds transfer (EFT) method (16.92%) as the fourth with this ratio. Another research conducted by Çetin and Irmak (2014) lays out that VCC usage is 28.1% among the other payment methods. This result is much higher than the results of IAB Turkey, but still not enough. One of the reasons to reach a higher VCC usage ratio is possibly the education level of the participants who have PhD degree in majority with the ratio of 66.2% in this research.

Consequently, the level of VCC awareness among Turkish consumers is seen low, and this negativity may bring significant losses in the future. The current condition of the level of VCC awareness clearly states that VCC should be used in online shopping more. The usage of VCC by more consumers through providing the high awareness will also decrease the pressure of the Law no. 5464 on financial banks, and prepare a more secured shopping process as well by benefiting the advantages of physical credit cards. Starting from this point, it can be put forward that making the consumers use VCC in online shopping process can be provided by raising the level of VCC awareness.

Considering the literature as a whole, this research is expected to answer the following questions:

1) Which factors do consumers consider in online shopping?
2) Which payment methods do consumers generally prefer and use in online shopping?
3) What are the reasons to prefer the relevant payment method?
4) What are the strengths and weaknesses of online payment methods?
5) Do consumers have any knowledge/awareness about VCC?
6) Which factors are important to be aware about VCC?

3. METHODOLOGY

The main purposes of this research are (1) to reveal the Virtual Credit Card (VCC) awareness of online shoppers and (2) to prepare a to do list for managers and relevant institutions to provide a more secured internet shopping process by enhancing the trust perception of consumers. In this general framework, in order to minimize the fraud issues especially during the online payment process and to protect the consumers from serious financial losses in online shopping procedure:

Purpose 1: To reveal the awareness of consumers through VCC, and to identify possible factors that reduce and/or block level of VCC awareness. In this context, it is aimed to;

- Determine the payment methods used by consumers in online shopping.

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- Reveal the levels of VCC awareness within these payment methods.
- Reach the main reasons by identifying the factors that reduce and/or block level of VCC awareness.
- Develop the possible factors that have the potential to enhance the awareness after identifying them.

Purpose 2: To prepare a to do list based on the results of the 'purpose 1' and to inform the shareholders such as consumers, consumer agencies and other relevant institutions of the government and organizations to enhance the awareness of VCC level to provide a more secured internet shopping process. In this context, it is aimed to;

- Provide information what VCC is, how it is used and what factors to be considered when using it.
- Raise the awareness of the public through VCC.
- Minimize the fraud issues that consumers may encounter during online payment process.

To this end, firstly, a couple of interviews with two academics and two experts from the field were performed to make revisions and to have a better understanding about the questions, which were planned to use in the survey. Some of the questions were gathered from the previous study of Konuk and Yıldırım (2012), and the interviewers determined the rest. After that, a structured questionnaire consists of three sections including the questions to measure the (1) online payment systems, (2) virtual card awareness and (3) demographic characteristics of the participants that were designed according to the findings of the interviews. The questionnaires were conducted via face-to-face interviews during April-May 2018 in Turkey and 325 questionnaires were gained via convenience sampling. After the elimination, 314 questionnaires were analyzed. This research employs the non-parametric statistical tests in order to reach the findings of VCC awareness. The reason to benefit from the exploratory research is to reveal the deeper insights about VCC when considering the lack of the VCC studies in the literature.

4. FINDINGS

Table 1 shows the demographic characteristics of the participants.

In this context, females are in majority with the ratio of 56.1%, and single participants are with the ratio of 58.9% as well. Considering the education level that is very important for this study, the participants who are high-school graduate are in majority with 48.7% that represents almost the half. Subsequently, graduate participants come with 30.6% and upper secondary comes after it with the ratio of 11.5%. The ratio of the participants from primary school is significantly low with 5.1%. Regarding the occupation, the participants are mostly from private sector with the ratio of 40.1%, and the participants who have no work come after it with 32.5%. Lastly, the income level shows that the major group is 1501-3000 TL with the ratio of 41.7%.

Table 2 represents the factors that are considered primarily in online shopping process. As can be seen from the table above, the most important factor that online shoppers attach is the recognition of the website with the ratio of 18.1%. Guarantee, return and exchange policies provided by the website come as the second one with 14%, and customer reviews appear as the third one with the ratio of 11.1%. Besides, payment options come as 4th with 10.9. Regarding the table as a whole, it can be stated that online shoppers mostly attach importance to feel secure in online shopping. They prefer to purchase

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Table 1. Demographics

		f	%
Gender	Male	138	43.9
	Female	176	56.1
Marital Status	Married	129	41.1
	Single	185	58.9
Education Level	Primary-school	16	5.1
	High-school	153	48.7
	Upper secondary	36	11.5
	Graduate	96	30.6
	Postgraduate	13	4.1
Occupation	Civil servant	57	18.2
	Private sector	126	40.1
	Self-employment	20	6.4
	Retired	9	2.9
	No work	102	32.5
Personal Income	Under 1500 TL	75	23.9
	1501-3000 TL	131	41.7
	3001-4500 TL	48	15.3
	4501-6000 TL	13	4.1
	6001 +	8	2.5
	No income	39	12.4

Table 2. The factors considered primarily in online shopping

	f	%
Recognition of the website	226	18.1
Guarantee, return and exchange policies provided by the website	175	14.0
Customer reviews on the website	139	11.1
Payment options provided by the website	136	10.9
Variety of products provided by the website	131	10.5
Security tools (SET, SSL protocols etc.) provided by the website	128	10.2
Product delivery time of the website	122	9.8
Ease of use of the website	110	8.8
Cargo company that contracted with the website	83	6.6

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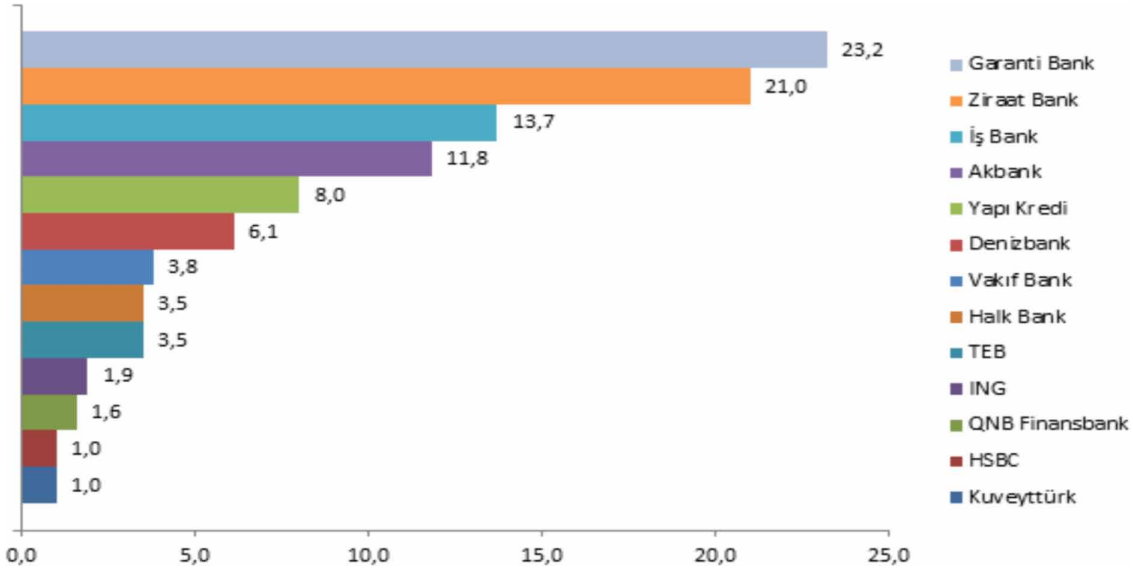
Figure 1. Preferred banks in online shopping



from the well-known websites, they want to see other customers' experiences about the website, and they want to see the security tools such as SET and SSL protocols not to be exposed to fraud issues. At the same time, they request different payment options; because, one option may not fit the customers' needs. When the website provides only one payment method, customers who are very sensitive to security may not purchase from there.

Figure 1 displays the bank choices of consumers in online shopping. As can be seen from the figure, the most preferred bank is Garanti Bank with the ratio of 23.2%, which represents almost one quarter of the participants. Ziraat Bank comes with 21% right after Garanti. These two banks lead the way among all the banks in this case. Additionally, Ziraat Bank and Garanti Bank are the most valuable brands among the banks, respectively (Brand Finance, 2019). On the other hand, HSBC, QNB Finansbank, ING and TEB do not have many consumers and not widely preferred as others have.

Figure 2 shows the payment methods that are generally preferred and recently used by online shoppers. Considering the first graph, credit card is the most preferred payment method with the ratio of 52.4%, which represents half of the whole. Secondly, debit card comes with 23.9% and in the third place; there is cash on delivery method with 13.5%. On the other hand, VCC choice is only 4.9% (only preferred by 22 participants) which shows a significant lowness. Regarding the second graph, it is seen that the levels of all payment methods except credit card are decreasing. This indicates that online shoppers cannot give up using credit cards in online shopping due to the aforementioned advantages although this payment method has several risks. Therefore, the importance of VCC comes into prominence again. However, the usage of VCC is only 3.5% as the last online shopping payment method. This may stem from the low level of VCC awareness as mentioned before.

Right after the Figure 2, Figure 3 represents the reasons why online shoppers prefer the relevant payment method in their last online purchase. In this context, the first reason to use the relevant payment method is the ease of use with the ratio of 39.1% in majority. This finding is mostly associated with the physical credit cards. The second reason is the payment security provided with 22.8% when installment

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Figure 2. Generally preferred and recently used payment methods in online shopping

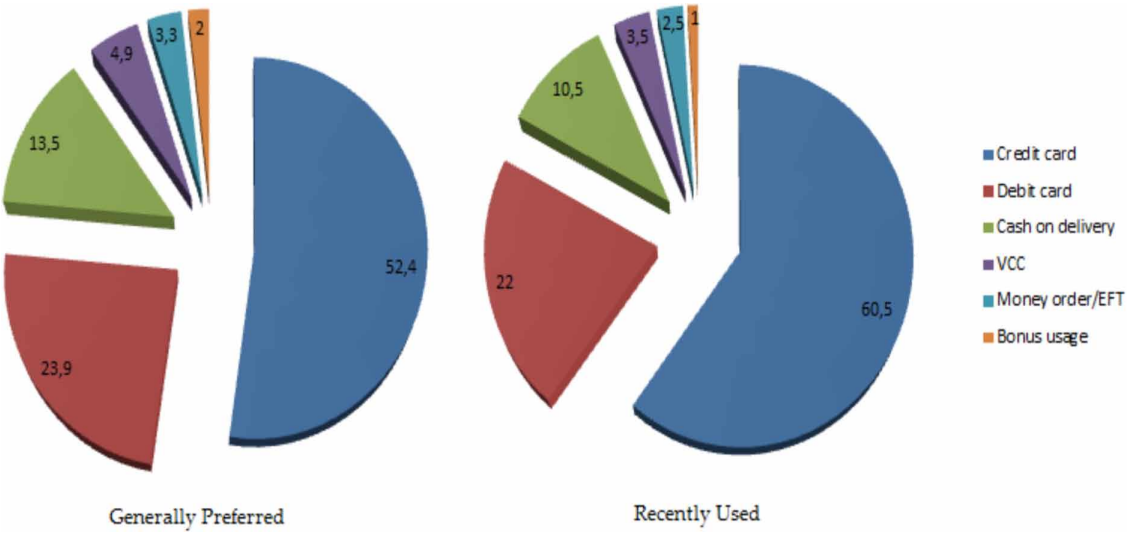
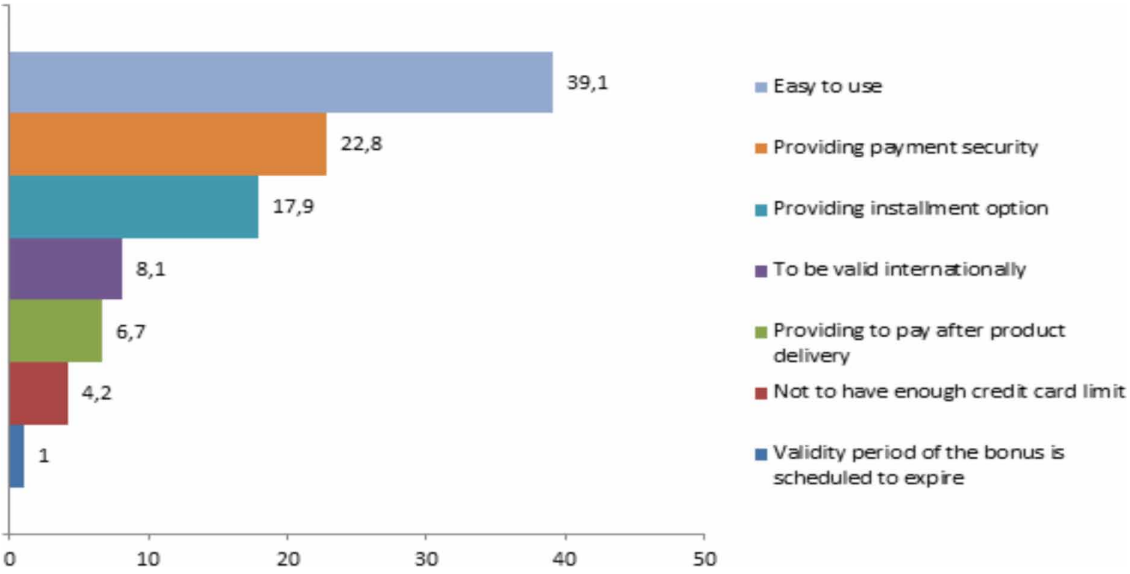


Figure 3. Reasons to prefer the recently used payment method



option is the third with 17.9%. The other reasons do not come into prominence with low ratios as these first three do. Moving from here, online shoppers mostly seek easiness, security and installment options in the purchase process.

Table 3 was generated in order to reveal the reasons associated with the payment methods to use in online shopping. With reference to this point, the reason 'easy to use' is mostly associated with credit card (67.5%) and debit cards (25%). This is not a surprise, because their usage is so simple by taking

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Table 3. Crosstabs of the recently payment method and the reason to prefer

	Credit Card	Debit Card	VCC	Money Order/EFT	Cash on Delivery	Bonus Usage	Total
Easy to use	135	50	1	3	9	2	200
Providing payment security	65	21	10	4	22	1	123
Providing installment option	77	12	3	-	1	-	93
To be valid internationally	27	11	2	1	1	1	43
Providing to pay after delivery	14	4	-	2	14	1	35
Not to have enough credit card limit	13	5	-	2	1	1	22
Validity period of the bonus	3	2	-	-	-	-	5
Total	334	105	16	12	48	6	

them out from the wallet/purse and typing the numbers on them into the online purchase screen. On the other hand, VCC is not found to be easy to use by online shoppers because of the working principle of it. Consumers have to log in their bank accounts, determine the limit and then they can purchase the order. This process prevents consumers from using VCC. The interesting point here is that 'providing payment security' is again mostly associated with credit cards (52.8%) although it has many fraud risks in online shopping. Consumers may not be aware of the risks they may encounter on the internet. 'Cash on delivery' is the second with 17.8% and debit card using is the third with the ratio of 17% although it has the same risks with credit cards. Considering VCC, the ratio is low with 8.1%, but the ratio is 62.5% when a self-evaluation is made. In other words, consumers who prefer VCC in their last online shopping use VCC because it provides payment security. Moving from here, VCC is also preferred because of the reasons which are providing installment option, to be valid internationally and easy to use, respectively.

Figure 4. Awareness of VCC and VCC hearing sources

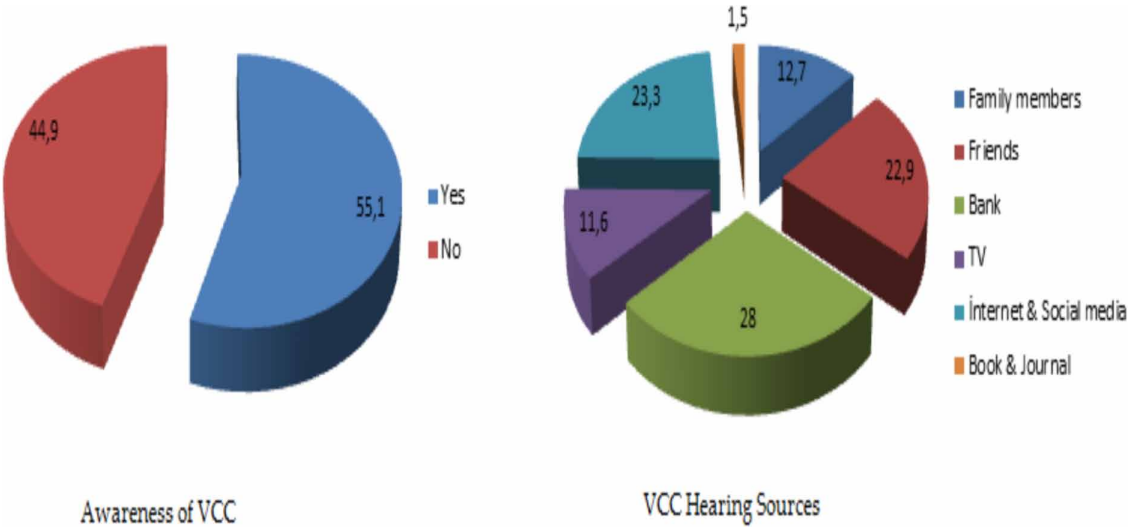

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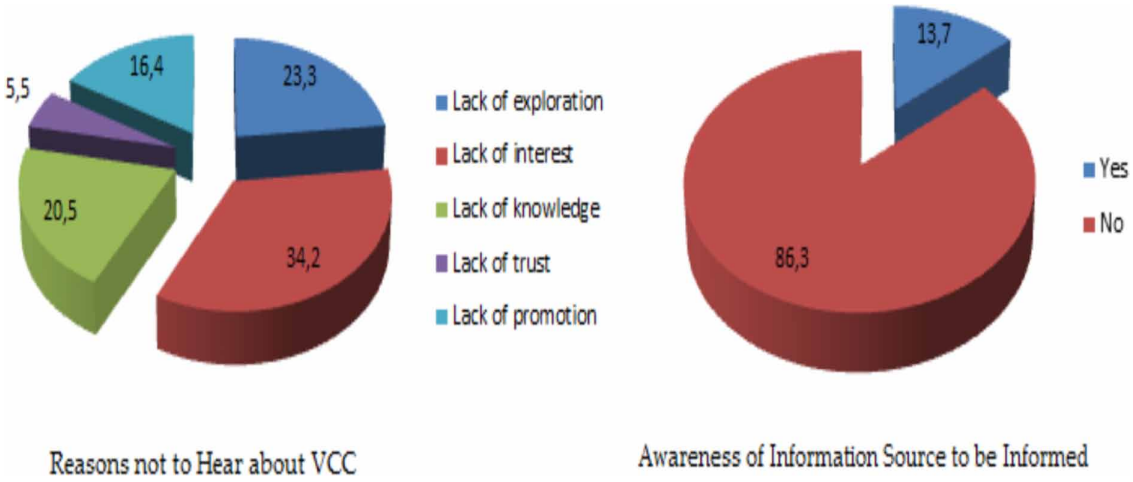
Figure 4 shows the level of VCC awareness of online shoppers and sources of this awareness. In this context, consumers are mostly aware of VCC with the ratio of 55.1%. On the other hand, the level of consumers who do not know VCC is not low enough to be ignored with the ratio of 44.9%. Considering the sources, online shoppers mostly hear this payment method from financial banks with 28%, internet & social media with 23.3% and friends with 22.9%, respectively. In addition to these, family members (12.7%) and TV (11.6%) are important sources about VCC awareness as well. From this point forth, it can be stated that VCC has an average awareness level, which cannot be seen as enough for consumer protection in online shopping. Moreover, the share of financial banks, which have the first responsibility in case of fraud cases, is considerably low although it is the first source of information. Additionally, the level of internet & social media has to be increased by benefiting from the power of it to make the consumers be aware of VCC.

Figure 5. Reasons not to hear about VCC and awareness of information source to be informed



Considering the abovementioned graphs in Figure 5, the participants were asked to write the possible reasons why they have not heard about VCC so far, and whether they knew from which sources they can get information about VCC. In this context, the most encountered reason, why online shoppers have not heard about VCC, is the lack of interest with the ratio of 34.2% in majority. In other words, consumers are not interested in VCC, because they mostly attach importance to the ease of use of the payment method as mentioned in Figure 3. The second important reason is the lack of exploration with 23.3% and the third one is the lack of knowledge with 20.5%, which are also associated with consumers' interest. Besides, financial banks are also responsible for the low awareness, because they do not make promotions (16.4%) to give information about VCC. The second graph supports this finding as well. Regarding the second graph, most of the consumers with 86.3% do not know where they can get information about the VCC. These findings may be seen as the reasons why VCC awareness is not enough among online shoppers.

Figure 6 represents the awareness of online shoppers about VCC provided by their banks and whether adequate information is provided. Moving from here, consumers are mostly not aware of their bank's VCC application with the ratio of 64.3%. On the other hand, consumers who are aware of VCC state that the bank did not provide adequate information, which means consumers learn about the VCC from

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Figure 6. Awareness of the chosen bank's VCC application and providing adequate information

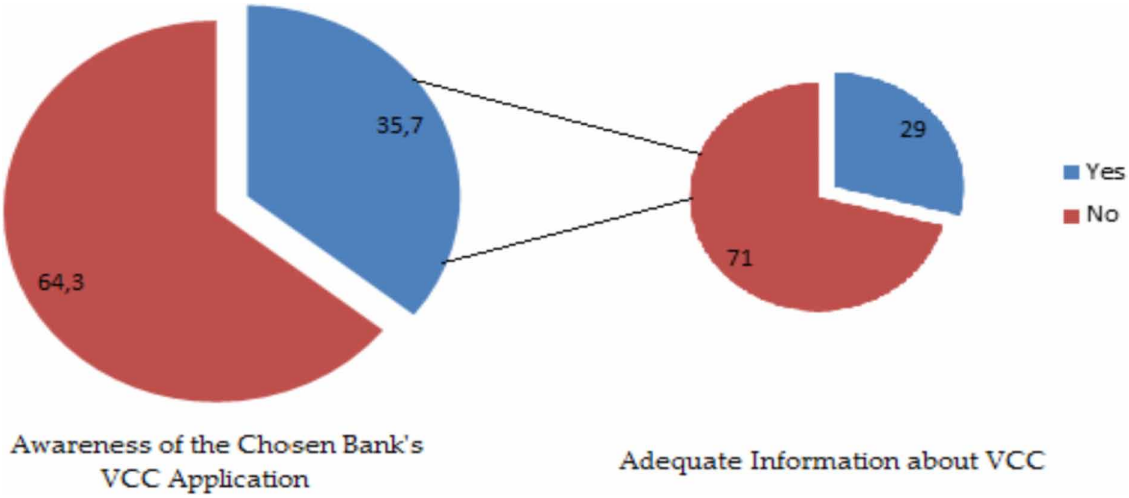

Table 4. Chi-square analysis through awareness of the chosen bank's VCC application and adequate information provided

		Adequate Information Provided?			Chi-square (sig.)
		Yes	**No**	**Total**	
Awareness of the Chosen Bank's VCC Application	Yes	86	26	112	,000***
	No	5	197	202	
	Total	91	223		

***sig.<0,001

other sources aforementioned before in Figure 4. Therefore, it can be re-expressed that the banks do not carry out their duties although their role is quite important for consumer protection in online shopping. This can be seen in detail below in Table 4.

Table 4 shows the crosstabs through awareness of the chosen bank's VCC application and whether adequate information is provided. In this context, online shoppers who are aware of their bank's VCC application also state that provided information about VCC is not enough (76.7%). In parallel, consumers who are not aware of the VCC application utter that no adequate information was provided (97.5%). In this regard, it also means that only 2.5% part of them was equipped with adequate information about VCC by their banks. It seems that there is a relationship between these two variables; therefore, chi-square analysis was conducted to test this relationship. As seen from Table 4, the significant level of chi-square analysis is under 0,001, which means this relationship is significantly supported by the data. In other words, as the banks provide adequate information for their customers, VCC awareness of the customer raises.

Table 5 indicates the crosstabs through awareness of VCC and education level. Considering the table, most of the online shoppers, who are primary and high school graduates, are not aware of VCC. More precisely, considering these education levels, 62.5% of primary school graduate consumers and 54.2%

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Table 5. Chi-square analysis through education level and awareness of VCC

		Awareness of VCC			Chi-square (sig.)
		Yes	**No**	**Total**	
Education Level	Primary-school	6	10	16	,003**
	High-school	70	83	153	
	Upper secondary	26	10	36	
	Graduate	63	33	86	
	Postgraduate	8	5	13	
	Total	173	141		

**sig.<0,01

of high school graduate consumers are away from VCC awareness. On the other hand, a significant breaking point is seen with upper-secondary graduate consumers. 72.2% of these consumers have VCC awareness when graduate ones are at 73.2% and postgraduate ones are at 61.5% ratio. Moving from here, the group with the highest VCC awareness level is the consumers who have graduate level. It seems that there is a relationship between these two variables; therefore, chi-square analysis was conducted to test this relationship. As can be seen from Table 5, the significant level of chi-square analysis is under 0,01, which means this relationship is significantly supported by the data. That is to say, as education level increases, VCC awareness also increases.

CONCLUSION

Today's consumer purchase preference is mostly shaped around online shopping due to the developments in the Internet and Information Technologies. This virtual environment has its own rules and way of working. It has several advantages, but also disadvantages such as intangibility, fraud issues and so on. These issues make consumers more sensitive in online shopping procedure especially at the point of payment. It enhances the risk perceptions of consumers while decreasing the online purchase volumes for the danger of encountering serious financial problems. Therefore, the payment security has to be provided by relevant institutions and organizations.

In this research, it is concluded that online shoppers primarily consider the recognition of the website at the beginning of online shopping process. In other words, they do not prefer the websites that they are not acquainted with because they seek trust. Besides, consumers in online shopping also see the clarity of the policies that the website has and other customers' reviews as important factors. All these factors can be considered as the effort of the consumers to seek trust. Furthermore, they mostly prefer credit and debit cards as online payment methods. They prefer these payment methods due to some advantages, especially the ease of use during the process. Moreover, in the recent online shopping they used these payment methods, particularly the credit cards increasingly. However, these preferences as online payment methods throw online shoppers into the fire. As previously mentioned, they seek trust in online shopping but they do not know how to achieve this via payment methods exactly, because they have a misunderstanding about credit and debit cards provide payment security as well.

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In parallel, consumers do not mostly prefer VCC in their online shopping process, although the level of VCC awareness is surprisingly about 55%. More than half of online shoppers are aware of VCC, but fewer of them know its benefits. Accordingly, VCC awareness is not low enough to be ignored with 45%, because the ratio of consumers who use this payment method is only 4.9%. This may stem from the insufficient efforts of financial banks as an information source although they have the first responsibility in case fraud issues occur. Internet & social media and friends have almost the same percentage with banks, which means consumers seek information about VCC outdoor since banks do not do their part.

On the other hand, online shoppers are as guilty as financial banks, because they mostly attach importance to the ease of use of the payment methods. They seek trust but not interested in VCC; they have lack of knowledge and lack of exploration. In other words, it can be stated that online shoppers seek payment security in wrong places. The low level of awareness of information source that consumers can get information also supports this. The significantly high percentage with 86% shows that online shoppers are not aware of the information sources to be informed about the VCC. In addition to this, most consumers also do not know whether there is a VCC application in their chosen banks, because their banks did not provide adequate information about VCC. These results can be considered as the reasons why VCC awareness is not enough among online shoppers. As seen, this is a reciprocal procedure; therefore, consumers and banks have close responsibilities to decrease the level of online payment fraud issues. Moreover, education level is also important, because consumers who have low level of education do not have adequate information about VCC. Therefore, such problems can be solved via training programs provided by the relevant institutions.

This research also has some limitations. First of all, it has been tried to reveal the awareness of VCC. To this end, the questionnaire was designed in terms of descriptive statistics due to the lack of VCC studies in the literature. There are not any questions associated with the use of VCC, so further researches can be conducted in the light of the results of this research. The other thing is sampling method. Convenience sampling was used to gather data due to the lack of time and effort, and the study was carried out almost in two months. It can be extended over a period of time to enrich the results.

MANAGERIAL IMPLICATIONS

Considering the weighty responsibility imposed by the Law no. 5464 to financial banks, it can be stated that the only way for banks to wash their hands is to provide payment security for consumers in online shopping. According to the obtained results of the present research, there is a method providing payment security and half of the consumers know it. However, the results show that fewer consumers, who are aware of VCC, use this method. This proves the informing issue. Therefore, top organization of the financial banks called "Banking Regulation and Supervision Agency" should consider the results of this study, and make the banks give broad information about the VCC application. The banks can decrease the level of fraud issues all together and even prevent them. By doing this, they can create a trustworthy online shopping and protect themselves from the weighty responsibility of Law no. 5464.

Another relevant organization called "Information and Communication Technologies Authority" should also consider the results. There is a misunderstanding about VCC and consumers generally do not prefer to use it because of lack of interest, exploration and knowledge. In parallel, consumers mostly attach importance to the ease of use of the payment methods. From this point of view, regarding the relationship between VCC awareness and education level, when the usage of VCC is facilitated

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via technological investments, consumers may be willing to use it more. In addition to this, the results provide important feedbacks to "Consumer Problems Association". If an increase can be achieved in VCC awareness and usage as well, the complaints stemming from the fraud issues in online shopping process can be decreased. This positive development will reduce the workload of "Consumer Arbitration Committees" which is one of the stakeholders in resolving complaints.

Consequently, the main purpose of both the institutions and the government is to make online shoppers use VCC in their shopping process. Almost there is no exact way to prevent financial frauds in the virtual environment, but it is possible to avoid. However, this is only possible when consumers know how to protect themselves against malevolent third parties. In this manner, VCC awareness can increase the use of VCC, and VCC usage can enhance consumers' trust perception especially at the point of online payment. Ultimately, all these developments contribute to the online shopping turnover of Turkey.

REFERENCES

Aslanyürek, M. (2016). İnternet ve sosyal medya kullanıcılarının internet güvenliği ve çevrimiçi gizlilik ile ilgili kanaatleri ve farkındalıkları. *Maltepe Üniversitesi İletişim Fakültesi Dergisi*, *3*(1), 80–106.

Berman, S. J. (2012). Digital transformation: Opportunities to create new business models. *Strategy and Leadership*, *40*(2), 16–24. doi:10.1108/10878571211209314

Brand Finance. (2019). *Banking 500 2019*. Retrieved from https://brandirectory.com/rankings/banking-500-2019

Çetin, H., & Irmak, S. (2014). Elektronik alışverişte akademisyenlerin güvenlik ve risk algılarının belirlenmesi. *Yönetim Bilimleri Dergisi*, *12*(24), 275–294.

Chang, H. H., & Chen, S. W. (2008). The impact of online store environment cues on purchase intention: Trust and perceived risk as a mediator. *Online Information Review*, *32*(6), 818–841. doi:10.1108/14684520810923953

Constantin, L. (2016). *Thousands of online shops compromised for credit card theft*. Retrieved from https://www.computerworld.com/article/3131085/security/thousands-of-online-shops-compromised-for-credit-card-theft.html

Diker, A. & Varol, A. (2013). E-ticaret ve güvenlik. *1th International Syposium on Digital Forensics and Security Proceedings*, 29-33.

Ecommerce Foundation. (2017). *European ecommerce report light version*. Retrieved from https://www.eurocommerce.eu/media/142202/c_european_ecommerce_report_2017_v170623-published_28basic_29.pdf

Ecommerce Foundation. (2018). *European ecommerce report 2018 edition*. Retrieved from https://www.haendlerbund.de/de/downloads/ecommerce-europe/european-ecommerce-report-2018.pdf

Erdağ, N., & Batuman, E. (2006). *Elektronik ticaret el kitabı*. İstanbul: Arıkan Yayınları.

Gomez-Herrera, E., Martens, B., & Turlea, G. (2014). The drivers and impediments for cross-border e-commerce in the EU. *Information Economics and Policy*, *28*, 83–96. doi:10.1016/j.infoecopol.2014.05.002

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hofstede Insights. (2019). *Values of Turkey's cultural dimensions*. Retrieved from https://www.hofstede-insights.com/product/compare-countries/

ICC. (2018). *Online card payment transactions*. Retrieved from: https://bkm.com.tr/internetten-yapilan-kartli-odeme-islemleri/

Internet World Stats. (2018). *World internet user statistics*. Retrieved from http://www.internetworldstats.com/stats.htm

Kaya, F. (2009). *Türkiye'de kredi kartı uygulaması*. İstanbul: Graphis Matbaa.

Konuk, F. A., & Yıldırım, E. (2012). Sanal kart bilinirliliği üzerine bir araştırma: Sakarya ilinde bir uygulama. *11. National Business Congress Proceedings*, 85-87.

Kueh, K., & Voon, B. H. (2007). Culture and service quality expectations: Evidence from generation y cosumers in Malaysia. *Managing Service Quality*, *17*(6), 656–680. doi:10.1108/09604520710834993

Lee, H. H., Kim, J., & Fiore, A. M. (2010). Affective and cognitive online shopping experience: Effects of image interactivity technology and experimenting with appearance. *Clothing & Textiles Research Journal*, *28*(2), 140–154. doi:10.1177/0887302X09341586

Liu, C., & Forsythe, S. (2010). Sustaining online shopping: Moderating role of online shopping motives. *Journal of Internet Commerce*, *9*(2), 83–103. doi:10.1080/15332861.2010.503848

Liu, X., & Wei, K. K. (2003). An empirical study of product differences in consumers' e-commerce adoption behavior. *Electronic Commerce Research and Applications*, *2*(3), 229–239. doi:10.1016/S1567-4223(03)00027-9

Matt, C., Hess, T., & Benlian, A. (2015). Digital transformation strategies. *Business & Information Systems Engineering*, *57*(5), 339–343. doi:10.100712599-015-0401-5

Mokhtarian, P. L. (2003). A conceptual analysis of the transportation impacts of B2C e-commerce. *Transportation*, *31*(3), 257–284. doi:10.1023/B:PORT.0000025428.64128.d3

Oz, E. (2002). *Foundations of e-commerce*. Prentice Hall.

Özgüven, N. (2011). Tüketicilerin online alışverişe karşı tutumları ile demografik özellikleri arasındaki ilişkinin analizi. *KMÜ Sosyal ve Ekonomik Araştırmalar Dergisi*, *13*(21), 47–54.

Patterson, A. (2012). Social-networks of the world, unite and take over: A meta-ıntrospective perspective on the Facebook brand. *Journal of Business Research*, *65*(4), 527–534. doi:10.1016/j.jbusres.2011.02.032

Petrova, A., & Valles, C. (2012). *Perceived risks as adoption barriers of Facebook commerce: Exploring Facebook users' perception* (Master's Thesis). Jönköping University.

Tan, Y. H., & Thoen, W. (2010). A logical model of trust in e-commerce. *Electronic Markets*, *10*(4), 258–263.

TSI. (2015). *Household information technology usage report*. Retrieved from http://www.tuik.gov.tr/PreHaberBultenleri.do?id=18660

TSI. (2018). *Household information technology usage report*. Retrieved from http://www.tuik.gov.tr/PreTablo.do?alt_id=1028

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Turkey, I. A. B. (2012). *Türkiye internet ölçümleme araştırması*. Retrieved from http://www.iab-turkiye.org/arastirma-raporlari.php

Uçar, A. (n.d.). *Bankacılık sektöründe bilişim suçları*. Retrieved from https://books.google.com.tr/books?id=Ka-fCQAAQBAJ&printsec=frontcover&hl=tr&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false

Valls, J. F., Andrade, M. J., & Arribas, R. (2011). Consumer attitudes towards brands in times of great price sensitivity: Four case studies. *Innovative Marketing*, *7*(2), 60–70.

Yıldırım, E. (2013). The effects of user comments on e-trust: An application on consumer electronics. *Journal of Economics*. *Business and Management*, *1*(4), 360–364.

Yıldırım, E., & Barutçu, M. T. (2016). How uncertainty avoidance, power distance and indulgence affect social commerce expenditure? An investigation based on Facebook. *International Journal of Science Culture and Sport*, *4*(4), 403–421. doi:10.14486/IntJSCS593

ADDITIONAL READING

Çetin, H., & Irmak, S. (2014). Elektronik alışverişte akademisyenlerin güvenlik ve risk algılarının belirlenmesi. *Yönetim Bilimleri Dergisi*, *12*(24), 275–294.

Constantin, L. (2016). *Thousands of online shops compromised for credit card theft*. Retrieved from https://www.computerworld.com/article/3131085/security/thousands-of-online-shops-compromised-for-credit-card-theft.html

Konuk, F. A., & Yıldırım, E. (2012). Sanal kart bilinirliliği üzerine bir araştırma: Sakarya ilinde bir uygulama. *11. National Business Congress Proceedings*, 85-87.

Özgüven, N. (2011). Tüketicilerin online alışverişe karşı tutumları ile demografik özellikleri arasındaki ilişkinin analizi. *KMÜ Sosyal ve Ekonomik Araştırmalar Dergisi*, *13*(21), 47–54.

KEY TERMS AND DEFINITIONS

Bonus: Extra money which is too little and uploaded to the credit and debit cards through the shopping amount.

Cash on Delivery: The system enables to pay after taking the products.

Installment: The payment option that enables consumers to pay in parts.

Online Shopper: Consumers who purchase from the internet.

VCC Awareness: The knowledge level of consumers about virtual credit card.

Virtual Credit Card: The virtual version of the physical credit card with different numbers.

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Chapter 15
Understanding Country Level Adoption of E-Commerce:
A Theoretical Model Including Technological, Institutional, and Cultural Factors

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ABSTRACT

This paper provides a theoretically grounded model of e-commerce adoption to explain differences in adoption rates among countries. The model extends the existing culture-policy-technology (CPT) framework to examine causal relationships between the technological, institutional, and cultural factors in order to examine country-level e-commerce adoption. Thus, interesting relationships among macro-level factors are hypothesized. The paper highlights the important of risk mitigating mechanisms or institutions to facilitate adoption of e-commerce in countries with high uncertainty avoidance. A call for empirical examination into country level adoption is answered by analyzing macro level data from 69 countries. The hypotheses are confirmed using PLS analytical procedures. The study is timely as e-commerce technology has now taken hold in several countries but its revenues in proportion to the overall total revenues remain low. The study is motivated by significant different in e-commerce adoption rates among countries. The paper makes significant contributions to literature and practice.

1. INTRODUCTION

In an ICT (Internet and Communication Technologies) enabled interdependent world, most countries consider e-commerce as a significant instrument for economic growth (Merhi & Ahluwalia, 2018; Zhu

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& Thatcher, 2010). However, despite early promise, overall e-commerce revenues remain insignificant in comparison to the overall business volumes (D'Onfro, 2015; Edquid, 2017) and e-commerce adoption at the global level remains low (Commission, 2011; EUR, 2013; Postnord, 2014; Stambor, 2010). Research shows that e-commerce adoption rates among different countries and regions exhibit significant variations (Zhu & Thatcher, 2010; Statista, 2017). For example, in 2017 e-commerce sales accounted for only 2.2% of the total retail sales in India, 23.1% in China, and 16% in Korea (Statista, 2017). Disparities exist even within the same continent or the same group of nations (developed vs. emerging). For example, in Europe, online shoppers in the age group between 15 and 79 ranged from less than 40% in Italy to more than 80% in United Kingdom (Postnord, 2014). Statista (2017) reported that in 2017 the share of e-commerce sales in the total retail sales is 19.1% in UK, 12.6% in Denmark, and 7.9% in Germany. According to a study by Business.com in 2017, the e-commerce share of total retail sales in Japan 5.4%, France 5.1%, Canada 5.7%, Russia 2%, and Brazil 2.8% (Edquid, 2017). The question then arises, "what causes such variations?" Additionally, because of gradual and consistent accretion in e-commerce trade volumes in recent times, governments across the nation states are focused on improving their share in the overall global trade. Therefore, it is important to examine the important drivers of e-commerce adoption at a country level.

In the existing literature, studies focusing on macro-level determinants of e-commerce adoption are few; most of this research mainly emphasizes individual and organizational environments (Delone & Mclean, 2004; Grandon et al., 2011; Chiu et al., 2014). Although individual and firm level factors are important, they do not explain significant differences in e-commerce adoption among countries. Moreover, because of sampling constraints, the generalization of the results reported in the existing research that examine macro-level determinants of e-commerce adoption is rather limited. Most existing studies focus on adoption factors within one country (Stylianou et al., 2003; Yoon, 2009; Al-Hudhaif & Alkubeyyer, 2011; Jehangir et al., 2011). Also, a significant number of these studies are based on qualitative methodology (Aleid et al., 2009; Choudrie & Dwivedi, 2005). As a result, Tan et al. (2007) called for empirical research into cross-cultural and cross-country analysis of e-commerce adoption factors.

Moreover, most existing research examining e-commerce adoption by higher-order entities is exploratory and is not theoretically grounded, the only exceptions being Molla and Licker (2005b). They proposed the perceived e-readiness model based on the interactionism doctrine; but this model is targeted for organizations, not countries (Molla & Licker 2005b). Bajaj and Leonard (2004) proposed the CPT model targeted toward country-level e-commerce adoption in which they identified Culture, Policy, and Technology as the main first-order drivers underlying adoption. This paper draws from the CPT framework (Bajaj & Leonard, 2004) to propose a causal model that includes technological, institutional, and cultural factors as antecedents of e-commerce adoption. In doing so, we introduce increasingly pertinent factors (e.g. perceived efficacy of safety nets as an antecedent of e-commerce adoption) and drop factors that have become irrelevant (e.g. hard-wired vs wireless Internet). The present paper draws from the CPT framework yet significantly extends its propositions. With the passage of nearly 15 years since the CPT framework was initially published, there have been radical changes in the Internet and e-commerce milieu. With significant evolution in the quality, availability, and accessibility of wireless Internet as well as very high level of diffusion of wireless Internet, the user-perceptible differences between wireless and hard-wired Internet access have virtually disappeared. For example, the CPT framework considers hard-wired Internet and wireless Internet as separate technological factors. Additionally, the CPT model advances propositions based on logical arguments. This paper significantly advances the research of Bajaj and Leonard (2004) by grounding the present research in established theories. Even though building

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upon the CPT framework, this research does not very strictly associate each of the factors included in the research model in a higher order factor. For example, the PEISN factor presented in the paper may be described as a cultural factor but also has significant policy implications. Yet another distinction between the CPT model and the research model presented in this paper is that we do not claim that our model provides comprehensive explanation of e-commerce adoption by countries. Unlike in Bajaj and Leonard (2004), we investigate a causal model to investigate the relationships among various factors of interest.

Now, we briefly introduce the factors included in our model, but expand their discussion in the subsequent sections of the paper. The technology drivers are captured in the composite index called "Maturity and Reach of Internet Technologies (MRIT)." MRIT includes dimensions such as accessibility, adequate bandwidth, diffusion of mobile networks, and implementation of security protocols. Research shows that governments are the primary agents for devising and implementing policies and creating channels for investments towards implementation of IT infrastructure (Picot & Wernick, 2007; Stoica et al., 2005); thus, government's focus on IT is a key driver of MRIT. Based on the Theory of Planned Behavior (TPB) and the Social Cognitive theory (Bandura, 1986), we argue that the perceived efficacy in using technology is an important driver of e-commerce adoption. We call this index "technological and entrepreneurial efficacy (TEE)." In order to mitigate the effect of uncertainty avoidance, institutional safety nets can safeguard the risks faced by the more vulnerable of the transacting parties. We also examine the role of perceived efficacy of institutional safety nets (PEISN) in facilitating adoption of e-commerce by people. To the best of our knowledge, this is the first paper that inquires into the effect of TEE, PEISN and uncertainty avoidance on country level adoption of e-commerce.

This paper makes significant contributions to research and practice. First, it contributes to the literature by examining the socio-technical determinants of country-level e-commerce adoption by developing a theoretically grounded research model that includes macro-level antecedents of e-commerce adoption. Second, this is the first paper that examines the role of safety nets as risk mitigating entities in e-commerce adoption. Third, the findings of this paper contribute to practice by suggesting the type and level of relationships of various factors of interest with e-commerce adoption. Fourth, the authors answer Tan et al. (2007)'s call for research by generating a significantly robust sampling frame comprising of sixty-nine countries in order to improve the generalizability of the findings reported in this paper. We make novel use of country-level data published by reputable organizations. The GFIT, MRIT, TEE, and e-commerce adoption indexes were published in the digital economy ranking study conducted by EIU (EIU, 2010). The PEISN data is sourced from the World Economic Forum (https://www.weforum.org/reports).

The paper answers the following research questions:

a) What are the relevant antecedents of e-commerce adoption at the country level in technological, social, and institutional domains?
b) What are the inter-relationships between various factors and country level e-commerce adoption?

The remainder of this paper is organized as follows. Section 2 provides background of the existing literature and the concepts examined in this paper. Section 3 describes the theoretical underpinnings of the research model and postulates different hypotheses examined in the paper. Section 4 provides information about the data used for empirical analysis. In section 5, the results are presented, and their implications are discussed. Lastly, section 6 concludes the paper by summarizing its important findings, highlighting its contributions, noting its limitations, and identifying opportunities for future research.

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2. BACKGROUND

The units of analysis of most e-commerce adoption research are consumers and businesses. Kalakota and Whinston (1996) focus on consumers as they define e-commerce as "the delivery of information, products/services, or payments via telephone lines, computer networks or any other means." Zwass (1996) provides an organizational context to e-commerce by describing it as "the sharing of business information, maintaining business relationships, and conducting business transactions by means of telecommunications networks." Treese and Stewart (1998) define e-commerce more generally by stating that it is the "use of the global Internet for purchase and sale of goods and services, including services and support after the sale." While scholars have abundantly explored the individual and organizational perspectives, theory-based research into country level e-commerce adoption remains scarce. This paper attempts to bridge this gap in the current literature.

The e-commerce revenues continue to grow across the world because of explosion of Internet adoption (EMarketer, 2016). The development of reliable and advanced m-commerce technologies and the exponential increase in the use of smart devices is fueling this growth even more. Yet, the total e-commerce retail sales were a meager 7.4% ($1.671 trillion) of the total worldwide retail sales of $22 million (EMarketer, 2016).

Considering that e-commerce offers many benefits, the ratio of e-commerce sales to the total sales is likely to continue to increase in the coming years. Because of the widespread diffusion of the Internet, and unlimited availability of information to consumers, electronic markets are considered more efficient than the traditional markets (Calabrese et al., 2014; Blažic et al., 2015; Cui et al., 2015; Ghose & Yao, 2011; Wang et al., 2015). Consumers can purchase products without having to travel to the stores, saving them time and money; moreover, they have access to a wider selection of products. A comparison between B2C e-commerce and brick and mortar shopping reveals various convenience advantages associated with e-shopping; namely search convenience defined as "products easy to find and compare" (Kaufman-Scarborough & Lindquist, 2002), possession convenience, time convenience, and schedule convenience (Pavlou & Gefen, 2004). E-retail provides consumers with enhanced services; namely the ability to research and compare products, expanded choice in products, and ability to transact anytime-anywhere (Wu & Tsai, 2018). As the search costs are trivial and there is no restriction of geographical product differentiation, mass-produced physical goods are expected to exhibit none or at most minimal price differentiation, making electronic markets attractive to the consumers (Luo et al., 2007). According to one estimate, the year on year growth in e-commerce retail sales was nearly 25% in 2015 (EMarketer, 2016). Organizations tracking e-commerce sales have also reported significant diversity in growth rates among different countries: examples being 22.3% in Argentina, 12.2% in China, and 3.7% in USA (EMarketer, 2016). These studies have also reported significant diversity in percentage retail e-commerce sales in different countries. Table 1 shows the annual sales and the e-commerce share of total retail sales in year 2016 (Edquid, 2017).

Even though some researchers have looked into the causes of between-country divergences in adoption of e-commerce, there is a lack of theory-based empirical research that examines the relationships among the factors underlying such divergences. Tan et al. (2007) gave a call for research to examine intercultural and inter-country differences in e-commerce adoption. Most studies that examined country-level adoption of e-commerce are case studies based on data from single countries. Many of these are based on qualitative analysis of interview data. Nevertheless, these research studies are valuable because they

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Table 1. E-commerce sales as a percentage of total sales in 2016 (Edquid, 2016)

Country	Annual online sales	E-commerce share of total retail sales
China	$672 billion	15.9%
U.S.	$340 billion	7.5%
U.K.	$99 billion	14.5%
Japan	$79 billion	5.4%
Germany	$73 billion	8.4%
France	$43 billion	5.1%
South Korea	$37 billion	9.8%
Canada	$30 billion	5.7%
Russia	$20 billion	2%
Brazil	$19 billion	2.8%

illuminate significant drivers of country level e-commerce adoption. A succinct review of this literature is provided next.

Examples of studies focusing on e-commerce adoption in one country are: Saudi Arabia (Al-Hudhaif & Alkubeyyer, 2011), France (Brousseau, 2003), Taiwan (Chen & Barnes, 2007), China (Stylianou et al., 2003; Yoon, 2009), India (Vyas & Gupta, 2017) and Singapore (Wong, 2003). Some studies compared two or more countries as case studies: examples being USA and Saudi Arabia (Brosdahl & Almousa, 2013); USA and China (Tong, 2010); South Africa and Sub-Saharan countries (Molla & Licker, 2005b) and USA and Canada (Hong & Zhu, 2006).

Wong (2003) found that demographic structure, financial and legal institutions, physical infrastructure, human resources, and e-commerce policy initiatives impacted the adoption of e-commerce in Singapore. Molla and Licker (2005b) indicated that perceived organizational e-readiness (POER) and perceived environmental e-readiness (PEER) influenced e-commerce adoption in South Africa. Ho et al. (2007) found that Internet penetration, telecommunication investment intensity, educational level, and regional contagion affected e-commerce adoption in 17 European countries. Government policies, supportive legal environment, compatible socio-cultural infrastructure, ICT infrastructure, and culture differences also affect e-commerce adoption (Ferguson & Yen, 2006; Javalgi & Ramsey, 2001; Merhi & Ahluwalia, 2018; Zhu & Thatcher, 2010). Merhi and Ahluwalia (2015, 2016) argue that Internet connectivity, social and cultural environment and legal environment influenced e-commerce adoption at the country level.

Papazafeiropoulou (2004) examined e-commerce adoption in South European countries using the demand-pull and supply-push framework and made policy recommendations for better diffusion of technology in this region. Tan et al. (2007) examined organizational e-commerce adoption in China by using a perceived eReadiness Model framework earlier proposed by Molla and Licker (2005b). Although the study focused on organizational adoption, the eReadiness model includes external (to the organizations) factors such as Government eReadiness, Market Forces eReadiness, and Support Industries eReadiness. These factors are also relevant to country-level examination of the diffusion process. Tan et al. (2007) acknowledged that their study was conducted in one of the most advanced regions of China and gave a call for large, cross-cultural and cross country examination of the e-readiness model. Aleid et al. (2009) investigated the factors that influenced consumers' e-commerce adoption in Saudi Arabia. Based on the

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analysis of interview data, they reported availability, cost, and speed of broadband; the business process of delivery and returns; information about terms and conditions; security concerns; legal framework; government responsibility; and people's education as the important factors that affected e-commerce adoption in the country. Consumer trust, awareness of technology, technological infrastructure, e-maturity, education, and government policies have been identified as pertinent macro-level factors underlying e-commerce adoption (Mahmood et al., 2004; Pavlou & Gefen, 2004; Rose & Straub, 2001).

Most literature examining country-level e-commerce adoption comprises of exploratory studies, therefore they do not provide a cogent model or framework that could be applied in subsequent research. The first theoretically grounded model, named perceived eReadiness model (PERM), was proposed by Molla and Licker (2005b) which classified various pertinent factors of e-commerce adoption into organization and external factors. This eReadiness model presupposes the context as innovation adoption by organizations. The present study looks at the e-commerce adoption at a more general level and is not restricted to the organizational context. However, the theoretical reasoning underlying the PERM model can well be applied to the focus of the inquiry of this paper (Molla & Licker, 2005b). Particularly relevant is the interactionism doctrine which argues for collective treatment of multiple imperatives, that is, technology, managerial, organization, and environmental imperatives, in one framework. A framework focused on country-level adoption of e-commerce at a macro-level, and not constrained by the organizational context, is the Culture, Policy, and Technology (CPT) framework (Bajaj & Leonard, 2004). The CPT framework is not as explicitly grounded in theory as the PERM model[1], but is similar to the latter, except that it is focused on macro-level factors of adoption. The culture construct in the CPT framework identifies the dimensions of trust, corruption, and the patterns of communication. The policy factor includes the dimensions focused on general trade and on Internet usage and e-commerce. The technology factor comprises of three dimensions, namely, maturity of hard-wired telecommunication infrastructure, technical expertise within a country, and the level of wireless infrastructure.

We draw from the CPT model (Bajaj & Leonard, 2004) to frame the research model of the present study. Some changes in the CPT model may be necessary because of the evolution of different factors with the passage of time. For example, the wireless networks, devices, and applications have made quantum leaps in capability and diffusion from the time when the model was published. In the present times, users feel little difference in the reliability and bandwidth of Internet connections when using hard-wired or mobile Internet. Therefore, it may not be necessary to distinguish between hard wired networks and wireless networks in the context of e-commerce adoption as was conceptualized in the CPT framework. In this paper, we examine the impacts of two technological constructs, MRIT and TEE. As numerous articles reported the key role of government in implementation of IT infrastructure, we include Government Focus on IT (GFIT) in our model. Also, several articles emphasize that culture is a key factor why the adoption rates vary among countries. In particular, the exploratory studies that examined e-commerce adoption in developing countries highlight uncertainty and risk as significant concerns in the minds of potential adopters of e-commerce, especially in developing countries. Therefore, the role of uncertainty avoidance and perceived efficacy of institutional safety nets in affecting country-level e-commerce adoption is worthy of a rigorous investigation.

In e-commerce literature, researchers have only chosen, out of all other cultural dimensions of Hofstede, to examine the impact of uncertainty avoidance on e-commerce adoption. These studies have examined the influence of uncertainty avoidance based on primary data collected from individuals of certain countries. Belkhamza and Wafa (2014) examined the impact of uncertainty avoidance on e-commerce adoption using data collected from Malaysia and Algeria. They found that uncertainty avoidance

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moderates the relationships between perceived usefulness, subjective norm, attitude, and intention to use e-commerce. In a study that investigated the impact of uncertainty avoidance and perceived risk on e-commerce in USA, Jordan, and India, Al Kailani and Kumar (2011) found that uncertainty avoidance and perceived risk negatively impact e-commerce adoption. Karahanna et al. (2013) collected data from 3500 consumers from 38 countries and found that uncertainty avoidance moderates the relationships between information quality and perceived usefulness, and between trust and e-loyalty.

Although these studies are important, they lack generalizability. We argue that in order to examine the impact of cultural impact on a phenomenon, country level data are required. For this reason, we investigate the impact of uncertainty avoidance on e-commerce adoption using Hofstede index.

Therefore, we include uncertainty avoidance in the research model of the present study. Finally, we borrow from the safety-net literature to posit perceived efficacy of institutional safety nets (PEISN) as an important determinant of e-commerce adoption. PEISN is an important factor especially in cultures where people associate greater risk with usage of e-commerce and presence of safety nets can instill the necessary confidence in people.

3. RESEARCH MODEL AND HYPOTHESES

This section explains the theoretical reasoning underlying different hypotheses examined in the present paper.

3.1. Government's Focus on IT and Maturity and Reach of Internet Technologies

The stakeholder theory provides a lens through which government's role in technology diffusion can be examined; political and economic philosophies and culture being other important factors. Governments' eminent role in diffusion of new technologies is widely reported in the literature (Papazafeiropoulou & Pouloudi, 2000). Japan and countries in Europe and North America designed and implemented technology policies dating back to 1970s (Papazafeiropoulou & Pouloudi, 2000). Freeman and Reed (1983) in their initial explication of stakeholder theory espoused the argument that organizations need to meet their goals by "balancing the conflicting claims" of its various stakeholders. The term stakeholder has been defined in several ways in the literature, ranging from a very restrictive to a very expansive view. The stakeholder theory changes the paradigm of organizational governance by shifting the focus from stockholders to stakeholders. Government's role in promoting technology and innovation can be classified into three technology policy paradigms, namely; market failure, mission mode, and cooperative paradigms. The "Market Failure" paradigm propounds that private markets are the best places for technology innovation, and the role of the government is restricted in the areas of defense and in times of market failure. The "mission mode" paradigm asserts a more participatory role of the government in which it acts as a complementary agent to the private sector by participating through grants and funding of universities and R&D organizations; the government does not compete with the private sector in this paradigm. In the "cooperative paradigm," governments can participate in technology development and innovation, especially for use of private sector (Bozeman, 2000). This framework explains different strategies adopted by different governments in promoting IT infrastructure in their respective countries.

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Digital economy has become a significant contributor to the overall economic well-being of countries. In an increasingly interconnected world, countries are constantly competing with each other in order to increase their share in global trade and commerce. With digital economy becoming an increasingly significant platform for conducting trade and commerce, it is natural that governments would focus their attention and resources on putting in place adequate supporting ICT infrastructure in order to augment the access and quality of information technologies. In their study of diffusion of e-commerce in southeastern European countries, Papazafeiropoulou (2004) found that all governments supported the use of Internet and e-commerce.

Furthermore, governments are providers of efficient and unmediated services to its citizens through digital applications using ICT platforms. E-government applications have yielded expanded reach, faster speeds, and greater effectiveness in providing essential services to citizens (Merhi & Koong, 2013). As keepers of public interest, responsible governments are obliged to pay attention to reducing digital divide and to provide a fair technological platform for private sector to participate and compete. IT products and services now contribute significantly to the national assets of many countries. Research shows that governments make efforts to digitize the public sector not only to organize them better and make them more efficient, but also to offer indirect benefits by disseminating best practices to the industry and making people familiar with the technologies (Chen et al., 2006; Papazafeiropoulou, 2004). Thus:

Hypothesis 1: Government's greater focus on IT (GFIT) is positively related to, and is an antecedent of, the maturity and reach of Internet technologies (MRIT).

3.2. Maturity and Reach of Internet Technologies (MRIT), Technological and Entrepreneurial Efficacy (TEE) and E-Commerce Adoption

Implementation of an robust and reliable ICT infrastructure is an essential driver of e-commerce adoption (Okoli et al., 2010; Zwick & Dholakia, 2008, Mbarika et al., 2005). Similarly, the lack of telecommunication infrastructure is known to act as a barrier in the growth of e-commerce adoption (Kaba et al., 2009). Research shows that e-commerce depends on quality and effectiveness of Internet and mobile phone communications (Zwick & Dholakia, 2008) and computers (Elen et al., 2010). Higher broadband penetration, low prices of internet access, and good quality of network connections are likely to facilitate e-commerce adoption. Stylianou et al. (2003) found that even though the business climate in China was conducive to e-commerce adoption, it was hindered by inadequate technological infrastructure. Thus, ubiquitous availability of Internet access, reliable network connections, affordable prices, and implementation of adequate security protocols in the network and web technologies are fundamental drivers of e-commerce adoption. Thus:

Hypothesis 2: Maturity and reach of Internet technologies (MRIT) is positively related to, and is an antecedent of, e-commerce adoption.

Self-efficacy is defined as the belief "in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997). According to social cognitive theory (Bandura, 1986, 1997), self-efficacy is considered as a form of self-evaluation that affects individuals' decisions about what behaviors to undertake, the amount of effort needed when faced with obstacles, and the mastery of their behavior. Therefore, individuals having low levels of self-efficacy are less likely

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to perform a related behavior in the future than those with high degree of self-efficacy (Bandura, 1997). The IS literature has affirmed the importance of IT self-efficacy in adopting e-commerce (Bhattacherjee, 2000; Hsu & Chiu, 2004). These studies show that higher IT self-efficacy leads to greater e-commerce adoption. Molla and Licker (2005a) suggest technological preparedness and capability of organizations to adopt e-commerce. Aleid et al. (2009) suggested that people's education about e-commerce and lack of specialized IT companies and professionals were significant factors affecting e-commerce adoption in Saudi Arabia. Similar findings were reported in the investigation of e-commerce adoption by small and medium enterprises in Indonesia (Govindaraju & Chandra, 2011). They reported that number of educated people and people with IT skills, knowledge about the benefits of e-commerce, and the organization's way of doing business restricted the adoption. The foregoing explanation leads to the third hypothesis of this study:

Hypothesis 3: Technological and entrepreneurial efficacy (TEE) is positively related to, and is an antecedent of e-commerce adoption.

Gist and Mitchell (1992) suggest that analysis of task requirements, attributional analysis of experience, and assessment of personal and situational resources/constraints are the three important determinants of self-efficacy. The analysis of task requirements involves inferences about personal skills or qualities to perform an action. Attributional analysis is more about past experiences of performing similar tasks in the past. The third factor of personal and situation resources/constraints pertains to the assessment of the availability of different resources for performing specific tasks. We argue that MRIT (maturity and reach of Internet technologies) facilitates the analysis of task performance by individuals and overcomes personal and situational resources/constraints. Reliable Internet connections can ease people's concerns about the likelihood of interruption of online transactions before they are completed successfully. A sense of assurance about the security of Internet channel contributes to increased confidence that conducting online transactions do not involve financial and personal risks. Research shows that low levels of ICT diffusion can limit awareness about information and e-commerce technologies (Molla & Licker, 2005a). Based on the foregoing discussion, the fourth hypothesis can be stated as:

Hypothesis 4: Maturity and reach of Internet technologies (MRIT) is positively related to, and is an antecedent of, technological and entrepreneurial efficacy (TEE).

3.3. Uncertainty Avoidance (UA), Perceived Efficacy of Institutional Safety-Net (PEISN) and E-Commerce Adoption

Diffusion of Innovation theory asserts that the rates of diffusion are dependent on the characteristics of the adopters, the social network, the communication, and the characteristics of the innovation and the promoters. The characteristics of the adopters within a particular homogeneous group may be reflected by certain traits. Hofstede (1980) defined culture as a "collective programming" of minds of people within a society. The apprehension that their sensitive information may be stolen and misused is a key reason why many consumers feel anxious in using e-commerce. Uncertainty avoidance, a sense of discomfort with vulnerability and/or uncertainty, is a cultural construct (Hofstede, 1980). Research shows that security, privacy, and fraud are significant concerns in the minds of e-commerce consumers (Aleid et al., 2009). Uncertainty avoidance is defined as "the extent of feeling threatened by uncertain or unknown

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situations" (Dorfman & Howell, 1997). In countries with high uncertainty avoidance, individuals tend to minimize ambiguity because they feel anxious in uncertain situations (Hofstede, 1980). In contrast, people in countries with low uncertainty avoidance feel relatively more comfortable with uncertain situations and can tolerate different opinions and behaviors.

Several scholars have criticized using aggregate measures of cultural constructs published by Hofstede (1980) for assessing individual level differences among different cultures (Bearden et al., 2006; Lim et al., 2006; Zhao et al., 2014). However, Hofstede's (1980) measures are appropriate to use for country-level assessment of cultures. (Smith et al., 2013). Researchers from many disciplines have replicated Hofstede's empirical results and used his cultural dimensions (Akinduko et al., 2017; Hallikainen & Laukkanen, 2018; Karahanna et al., 2013; Merhi, 2018; Merhi & Ahluwalia, 2015; Merkin, 2006; Mladenović et al., 2017). Unlike studies that are at the individual level at which Hofstede measures are often criticized, this manuscript correctly utilizes Hofstede to do a national level data analysis.

Uncertainty avoidance was found to negatively impact consumers' buying decision on Internet (Lim et al., 2004) and adoption of technology products (Bagchi et al., 2003). Typically, e-commerce puts the purchasers in a weaker position relative to the sellers, therefore invoking unbalanced risks against purchasers. Some examples of risk perceptions faced by e-commerce consumers are: receiving a product different from one expected, not receiving a product at all even after payment is made, not receiving product when it was promised, and breach of personal and financial information. Hofstede (1980) argues that individuals in countries with high uncertainty avoidance values are generally less willing to accept personal risk than those in countries that have low uncertainty avoidance index. People in high uncertainty avoidance societies are expected to avoid risky behavior (Kahneman & Tversky, 1979). Thus,

Hypothesis 5: Uncertainty avoidance is negatively related to, and is an antecedent of, e-commerce adoption.

Lyytinen and Damsgaard (2001) argue that the diffusion of innovation theory by itself is not adequate to explain the diffusion of information technologies in organizations because the technologies are subject to multiple forces, such as the influences of institutions, business context, and the economic and technological constraints. These forces, when exerting different pressures, can result in significant variations in diffusion of similar technologies. For example, considerable variations in the adoption of EDI technologies in Hong Kong, Denmark, and Finland were reported even though the motivations for the innovation were similar (Lyytinen & Damsgaard, 2001). The effectiveness of institutions in regulating fair trade practices and protecting the rights of consumers are significant factors in enabling adoption of innovation. For example, protection from credit card fraud emboldens people to conduct online transactions. Research shows that in general, people perceive e-commerce as more risky than conventional commerce (Chiu et al., 2014; Brosdahl & Almousa, 2013). Therefore, people's perceptions about the efficacy of institutions in delivering legitimate protection to them is an important determinant of e-commerce adoption. Presence of risk mitigating institutions can serve as coping mechanisms against perceived risks faced by consumers. Legal approach is the most common method of seeking justice; and effectiveness of laws is among the factors proposed in the CPT framework (Bajaj & Leonard, 2004). However, in many countries, seeking legal remedies is expensive and takes a very long time. People need remedies that are swift and which they can trust. For example, most retail businesses in USA state their return policies encouraging consumers to purchase the products, even for "just trying them out." Safety nets is defined in Wordnet as "a guarantee of professional or financial security" (WordNet2.1, 2005). Safety nets are

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risk-shifting devices that are used in situations where normal-risks cannot be tolerated (Hovakimian et al., 2003). This paper draws from the safety-net literature to propose a new construct called Perceived Efficacy of Institutional Safety-Nets (PEISN) and empirically examines its relationship with e-commerce adoption. PEISN provides a sense of assurance that the online transactions are backed by institutions that are designed to safeguard consumers' interests by providing financial or professional guarantees.

As mentioned previously, PEISN is a perception about the effectiveness of safety nets that are hedging devices against risks associated with e-commerce. PEISN reflects people's assessment of the effectiveness of safety nets such as protection to buyers of online products and services. Uncertainty avoidance is also associated with risk; societies with greater uncertainty avoidance tend to minimize risks. Additionally, the societies with higher uncertainty avoidance prefer structured lives, and expect formal institutions to enforce stricter rules and laws covering most situations (House et al., 2004). Accordingly, people with higher uncertainty avoidance have lower acceptance of uncertainty and higher needs for structures, i.e. stronger formal rules and regulations (Lim et al., 2004). Consequently, people in societies with high uncertainty avoidance perceive a greater need for more effective safety nets, and they are likely to expect stricter standards for these institutions compared to people in societies with low uncertainty avoidance. Using the expectation disconfirmation principle (Oliver, 1977), the sixth hypothesis is now stated.

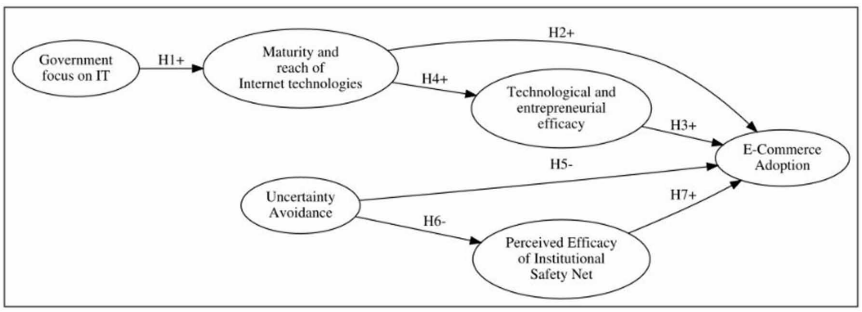
Hypothesis 6: Uncertainty avoidance (UA) is negatively related to, and is an antecedent of, perceived efficacy of institutional safety nets (PEISN).

Institutional safety nets such as efficient legal system protecting consumer rights can assuage the anxiousness of those who consider that online buying involve risks. Organizations like Better Business Bureau's (www.bbb.com) and TRUSTe (www.etrust.com) also provide structural assurances to customers by providing their reliability seals (Gefen et al., 2003). In a country where the legal systems are well developed, and enforcement mechanisms are efficient, individuals feel confident that their interests are protected. Research shows that potential and existing adopters of e-commerce are wary about consumer protection enforcement and laws governing e-commerce transactions (Aleid et al., 2009). People are reluctant to adopt an innovation unless they feel the confidence that their risks are contained (Kwast & Passmore, 2000). Because effective safety nets mitigate risks, the seventh hypothesis posits that:

Hypothesis 7: Perceived efficacy of institutional safety-net (PEISN) is positively related to, and is an antecedent of, e-commerce adoption.

Figure 1 summarizes the discussion in this section by showing all seven hypothesized relationships.

Figure 1. The research model



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4. DATA

Country level secondary data consisting of seventy countries formed the initial sample for conducting the empirical analysis of the hypothesized relationships. Because the determinants comprise of macro-level indicators at the country-level, the sampling frame was formed by the data published by large, reputable organizations, which possess the wherewithal to collect data at a global scale. The data for GFIT, MRIT, TEE, and e-commerce adoption indexes were obtained from digital economy ranking study conducted by EIU (EIU, 2010). Table 2 shows different items comprising various indexes and their respective

Table 2. Factor indexes

Item		Weight
GFIT		
Government spend on ICT as a proportion of GDP		5%
Digital development strategy		25%
E-government strategy		20%
Online procurement		5%
Availability of online public services for citizens and businesses		15%
E-participation, based on the UN e-participation index		15%
	MRIT	
Broadband penetration		15%
Broadband quality		10%
Broadband affordability		10%
Mobile-phone penetration		15%
Mobile quality		10%
Internet user penetration		15%
International Internet bandwidth		10%
Internet security		15%
	TEE	
Educational level		20%
Internet literacy		20%
Degree of entrepreneurship		20%
Technical skills of workforce		20%
Degree of innovation (measured by the generation of patents and trademarks, as well as R&D spending		20%
Adoption		
Consumer spending on ICT per head		15%
Level of e-business development		10%
Use of Internet by consumers, assessing both the range of Internet features used by individuals and their online purchasing activity		25%
Use of online public services by citizens		25%
Use of online public services by businesses		25%

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weights. The PEISN data is based on the survey items related to the effectiveness of ICT related regulatory environment and dispute resolution. These data are sourced from the "Executive Opinion Survey" of World Economic Forum (https://www.weforum.org/reports).

At this stage, data of 70 countries were available for further processing and analysis. The uncertainty avoidance index was drawn from the Hofstede cultural study (Hofstede, 1980; Hofstede et al., 2010). The uncertainty avoidance data for six of the seventy countries comprising the sampling frame was not available in the Hofstede's study, therefore separate procedures were adapted to impute the missing data for these countries. The six countries were Ukraine, Lithuania, Latvia, Kazakhstan, Azerbaijan, and Bermuda. Uncertainty avoidance indexes for Ukraine, Lithuania, and Latvia were directly available at www.Hofstede-insights.com. Indexes for Kazakhstan and Azerbaijan were imputed by using two-step triangulation. We explain the triangulation method next. Several cultural studies have been conducted after the publication of Hofstede's study. In the first step, the countries whose uncertainty avoidance scores were available in Hofstede's and whose scores were nearly equal to those of Kazakhstan and Azerbaijan in different studies were identified (House et al., 2004; Kaasa, 2016). In the second step, the uncertainty avoidance scores in Hofstede's cultural index tables were determined for the equivalent countries and these index scores were substituted for the respective countries, namely, Kazakhstan and Azerbaijan. No tangible uncertainty avoidance score was found for Bermuda in the literature, therefore it was dropped from subsequent analysis, leaving 69 countries in the sampling frame. Table 3 shows the descriptive statistics of the data set.

Table 3. Descriptive statistics

VAR	N	Mean	SD	Skew	Kurtosis	SE
GFIT	69	6.26	1.89	-0.08	-1.06	0.23
MRIT	69	5.13	1.96	0.03	-1.47	0.24
TEE	69	6.23	1.57	-0.07	-1.06	0.19
UA	69	64.64	22.55	-0.32	-0.49	2.71
PEISN	69	4.50	0.80	-0.26	-0.82	0.10
ADOPTION	69	5.71	2.17	-0.09	-1.36	0.26

5. EMPIRICAL ANALYSIS AND DISCUSSION

The hypothesized relationships were analyzed using partial least square modeling. The MatrixPLS package, a part of R statistical repository, was used to conduct the PLS analysis (Ronkk¨ o, 2017). The analytic results were cross-validated by using the SmartPLS software.

We used PLS because we have formative and not reflective measures (Lowry & Gaskin, 2014). Hair et al. (2017) offers rules of thumb for choosing between PLS-SEM and Covariance based-SEM. Hair et al. (2017) advise that it is best to use PLS-SEM when the data used in the analysis are secondary/archival, particularly single-item measures, and when the research objective is just to explain the relationships between exogenous and endogenous constructs. PLS-SEM is also the preferred method when sample size is below 100 and the constructs are formative (Hair et al., 2017). Our study meets all these criteria and we thus choose PLS-SEM.

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Table 4. Summary results of the bootstrapping analysis

Path	Estimate	SE	t	p
GFIT → MRIT	0.86	0.02	35.86	0.00
MRIT → TEE	0.91	0.02	50.67	0.00
MRIT → ADOPTION	0.26	0.10	2.59	0.01
TEE → ADOPTION	0.58	0.09	6.56	0.00
UA → PEISN	-0.29	0.12	-2.48	0.02
UA → ADOPTION	-0.04	0.04	-0.96	0.34
PEISN → ADOPTION	0.16	0.06	2.87	0.01

Figure 2. Path model

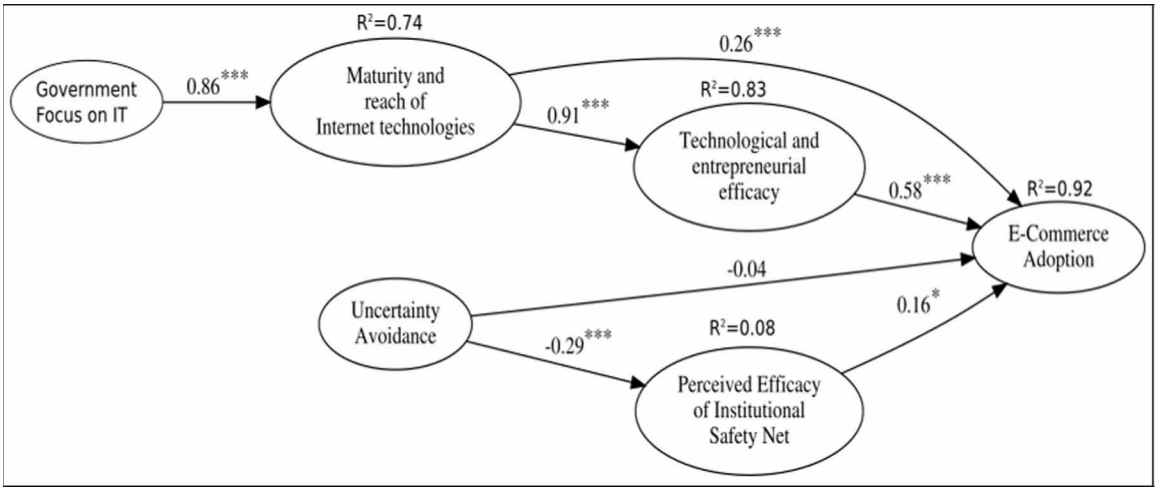

Table 5. Summary of hypotheses testing

Label	Hypothesis	Confirmed?
H1	Greater government's focus on IT (GFIT) positively affects the maturity and reach of Internet technologies (MRIT)	Yes
H2A	Maturity and reach of Internet technologies (MRIT) positively affects e-commerce adoption.	Yes
H2B	Maturity and reach of Internet technologies (MRIT) positively affects technological and entrepreneurial efficacy (TEE).	Yes
H3	Technological and entrepreneurial efficacy (TEE) positively affects ecommerce adoption.	Yes
H4A	Countries with greater uncertainty avoidance (UA) exhibit lower ecommerce adoption.	No
H4B	Countries with greater uncertainty avoidance (UA) exhibit lower perceived efficacy of institutional safety-nets (PEISN)	Yes
H5	Countries with greater perceived efficacy of institutional safety-nets (PEISN) exhibit greater adoption of e-commerce	Yes[1]

[1] Supported at 0.1 level

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The regression results of the bootstrapping analysis are shown in Table 4. The standardized path coefficients of the hypothesized relationships and the R^2 values of the endogenous variables are shown in Figure 2. Except for the relationship between uncertainty avoidance and e-commerce adoption (H5), all other hypothesized relationships were found to be statistically significant. The results and their implications are discussed next.

According to the first hypothesis (H1), government's focus on IT (GFIT) is a significant antecedent of maturity and reach of Internet technologies (MRIT) in a country. The MRIT construct includes access, quality, cost, and security dimensions of the Internet technologies within a country. In the contemporary digital global economy, the implementation and execution of public policies strongly influence IT capabilities and environment (Bhattacherjee & Sanford, 2006; Stoica et al., 2005). Many factors prompt increasing focus of governments on IT. This is because IT, directly and indirectly, is reported to contribute to the economic well-being of many countries (Van Dijk, 2003). Therefore, it is reasonable to expect that most governments would make conducive policies and work towards implementing and sustaining a robust IT infrastructure. Moreover, governments are expected to fulfill their fundamental responsibilities of framing and implementing policies for equitable participation of all stakeholders in the development and operation of IT infrastructure. Thus, government's involvement in diffusion of IT can be considered as a market regulator and as a provider of public good (Picot & Wernick, 2007). Governments are also direct beneficiaries from the affordances offered by IT applications as they offer many of its services (e.g. e-tax) to citizens using digital platforms in order to reduce costs, improve speed, and empower people. The empirical results confirmed hypothesis one.

The second hypothesis postulated that greater MRIT results in greater adoption of e-commerce (H2). The MRIT construct includes technological factors (broadband and Internet user penetration) that are essential for sustaining electronic transactions. Other factors such as cost and quality promote usage. MRIT also includes the dimension of Internet security, which is an important factor in users' adoption of e-commerce (Albrechtsen, 2007; Bones et al., 2007; Flavian & Guinaliu, 2006). The results show that MRIT is a strong driver of e-commerce adoption.

Technological and entrepreneurial efficacy (TEE) taps into educational, technical, and Internet efficacy, and entrepreneurial factors. Perceived efficacy is one's confidence in the capacity to successfully complete a task (e.g. make an online purchase). Cognitive relational theory suggests that people form a sense about their capability to perform actions by appraising their environment (Lazarus & Launier, 1978). Having access to the required technologies (i.e. broadband Internet, mobile wireless) at affordable cost and good quality (i.e. Internet security) lends confidence to the interested e-commerce users, thus augmenting their TEE. The results confirmed the positive relationship between MRIT and TEE.

TEE taps into educational and technical efficacy levels of people. Several studies have examined the role of efficacy in promoting use of IT at the individual level (Krueger & Dickson, 1994; McElroy et al., 2007; McFarland, 2001; Thatcher & Perrewe, 2002). Adequate confidence in security and quality of technologies is necessary before people feel assured to conduct e-commerce. This study also confirms the positive relationship between TEE and e-commerce adoption.

Uncertainty avoidance taps into the perception that people feel threatened by uncertain, unstructured situations, and ambiguity (Yoon, 2009). Individuals in countries with higher uncertainty avoidance index are more reluctant to engage with ambiguous situations (Hofstede, 1980). E-commerce transactions are characterized by presence of uncertainty because of spatial and temporal separation between buyers and sellers. This puts buyers in weaker positions compared to sellers, because in most cases, buyers complete their obligations before experiencing the purchased products. Therefore, societies with high

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uncertainty avoidance are likely to be deterred from using e-commerce. The data failed to confirm the direct relationship between UA and e-commerce adoption. This result is in consonance with the findings reported by the earlier studies that show that the main effect of UA on ecommerce adoption was not statistically significant (Lim et al., 2004). The results show that PEISN mediates the path between UA and e-commerce adoption. The data support this mediated relationship (H6).

The practical implication of this finding is that effective institutional mechanisms can mitigate the consequences of uncertainty avoidance. For example, governments can set up effective and easy to use risk lowering mechanisms that can expeditiously arbiter disputes arising from e-commerce transactions. Industries can device their own mechanisms that serve as deterrents for dishonest digital firms. For example, in USA, the Best Business Bureau allows consumers to file complaints against businesses and provide information to other consumers about the complaint-data. At the firm level, companies can clearly state and honor hassle free return policies and provide easy to use communication methods (i.e. telephone, email, mailing address) that consumers can use to seek help and request redress. Legal remedies in most countries, especially in developing countries, are expensive and take very long to complete. In many countries, the existing laws may have been designed in the context of non-digital commerce. Setting up effective institutions that can act as safety nets can encourage people to adopt e-commerce.

6. CONCLUSION

This study investigates the causes of country-level differences in e-commerce adoption by examining specific macro-level drivers of e-commerce adoption. PLS analytic procedure was used to confirm the hypothesized relationships. This study contributes to the literature in many ways. This paper proposes a rigorous causal model to assess inter-country adoption of e-commerce. The model is solidly grounded in theory, drawing from the relevant theories, namely: the stakeholder theory, the e-readiness model, the theory of planned behavior, the PEISN literature, and the CPT framework (Molla & Licker, 2005a; Bajaj & Leonard, 2004; Ajzen, 2002). Thus, the paper makes significant contributions to the literature, and also answers an important call for inter-country empirical research into e-commerce adoption (Tan et al., 2007). This paper makes an important contribution to practice by proposing that setting up effective risk lowering mechanisms may encourage people to adopt e-commerce, especially in societies with high uncertainty avoidance. Finally, by using a robust data set comprising 69 countries, the paper improves the generalizability of its findings. This is a substantial improvement over the existing literature, which is mostly based on one country or at most a comparison of a few countries.

The findings of this paper offer important implications for policy makers. The research model provides a diagnostic tool for policy makers and governments to find out which specific areas need more attention in advancing e-commerce adoption. The ability to transact digitally provides organizations and consumers with numerous advantages such as cost savings, greater deficiencies, faster time-to-completion, more efficient inventories and supply chain management (Uzoka, 2008; Zhu & Thatcher, 2010). According to the findings of our study, policy makers need to consider their country's institutional and cultural environments. For instance, when people are reluctant to conduct Internet-based commercial transactions because of uncertainty avoidance, setting up effective safety nets can be beneficial in mitigating deterrent concerns of potential adopters. Industry and individual firms can device their own safety nets. The results show that government's role in implementing IT infrastructure in a country is a significant contributor to e-commerce adoption (total effect 0.68). The stakeholder theory explains different perspectives that the

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governments may take in implementing IT infrastructure in a country. In some countries, government owned organizations participate directly in ICT markets along with other private players (e.g. India); whereas in other countries governments confine their roles to policymaking and regulation (e.g. USA).

While this study makes many significant contributions to practice and research, its few limitations provide opportunities for further research on this important topic. Firstly, the findings are based on secondary data published by various organizations. Therefore, the findings reflect various indexes published by the source organizations. Studies of this nature have to depend on resourceful organizations such as the United Nations, ITU, EIU, and others for across countries data. Sourcing data from credible organizations lends integrity and authenticity to the findings. At the same time, the researchers are dependent on the composition of indexes and the times at which the data is made available by the sourcing organizations. For example, the cultural data published by Hofstede is several years old. The GLOBE cultural study (House et al., 2004) is more recent than the Hofstede study (Hofstede, 1980), but the data for this report was also collected prior to year 2000. A contemporary study comparable to Hofstede or GLOBE studies can provide updated scores of cultural factors. Moreover, data for all countries is not available in the Hofstede and the GLOBE studies. Therefore, uncertainty avoidance scores of five countries were substituted using other sources. We call upon additional research to examine inter-country adoption of e-commerce by improving these limitations.

REFERENCES

Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, *32*(4), 665–683. doi:10.1111/j.1559-1816.2002.tb00236.x

Akinduko, A., Ariwa, E., & Gibson, M. (2017). A cross-cultural investigation into adoption of user controls in cyberstalking protection: A case study of Nigeria and the United Kingdom. In *Innovative Computing Technology (INTECH), 2017 Seventh International Conference on* (pp. 181-190). IEEE.

Al-Hudhaif, S., & Alkubeyyer, A. (2011). E-commerce adoption factors in Saudi Arabia. *International Journal of Business and Management*, *6*(9), 112–133. doi:10.5539/ijbm.v6n9p122

Al Kailani, M., & Kumar, R. (2011). Investigating uncertainty avoidance and perceived risk for impacting Internet buying: A study in three national cultures. *International Journal of Business and Management*, *6*(5), 76. doi:10.5539/ijbm.v6n5p76

Albrechtsen, E. (2007). A qualitative study of users' view on information security. *Computers & Security*, *26*(4), 276–289. doi:10.1016/j.cose.2006.11.004

Aleid, F., Rogerson, S., & Fairweather, B. (2009). Factors affecting consumers adoption of ecommerce in Saudi Arabia from a consumers perspective. In *IADIS International Conference e-Commerce* (pp. 11–18). IADIS.

Bagchi, K., Cerveny, R., Hart, P., & Peterson, M. (2003). The influence of national culture in information technology product adoption. In *Proceedings of Americas Conference of Information Systems* (pp. 957–965). Academic Press.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Bajaj, A., & Leonard, L. N. (2004). The CPT framework: Understanding the roles of culture, policy and technology in promoting ecommerce readiness. *Problems and Perspectives in Management*, *2*(3), 242–252.

Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1997). *Self-Efficacy: The Exercise of Control*. New York, NY: Freeman.

Bearden, W. O., Money, R. B., & Nevins, J. L. (2006). A measure of long-term orientation: Development and validation. *Journal of the Academy of Marketing Science*, *34*(3), 456–467. doi:10.1177/0092070306286706

Belkhamza, Z., & Wafa, S. A. (2014). The role of uncertainty avoidance on e-commerce acceptance across cultures. *International Business Research*, *7*(5), 166–173. doi:10.5539/ibr.v7n5p166

Bhattacherjee, A. (2000). Acceptance of e-commerce services: The case of electronic brokerages. *Systems, Man and Cybernetics, Part A: Systems and Humans. IEEE Transactions on*, *30*(4), 411–420.

Bhattacherjee, A., & Sanford, C. (2006). Influence processes for information technology acceptance: An elaboration likelihood model. *Management Information Systems Quarterly*, *30*(4), 805–825. doi:10.2307/25148755

Blažic, B. J., Jerman-Blažic, A., & Arh, T. (2015). A virtual user community: Cultural backgrounds in the design of an internet-based service. *Journal of Global Information Management*, *23*(2), 24–47. doi:10.4018/JGIM.2015040102

Bones, E., Hasvold, P., Henriksen, E., & Strandens, T. (2007). Risk analysis of information security in a mobile instant messaging and presence system for healthcare. *International Journal of Medical Informatics*, *76*(9), 677–687. doi:10.1016/j.ijmedinf.2006.06.002 PMID:16931132

Bozeman, B. (2000). Technology transfer and public policy: A review of research and theory. *Research Policy*, *29*(4), 627–655. doi:10.1016/S0048-7333(99)00093-1

Brosdahl, D. J., & Almousa, M. (2013). Risk perception and internet shopping: Comparing united states and Saudi Arabian consumers. *Journal of Management and Marketing Research*, *13*, 1–17.

Brousseau, E. (2003). E-commerce in France: Did early adoption prevent its development? *The Information Society*, *19*(1), 45–57. doi:10.1080/01972240309473

Calabrese, A., Capece, G., Di Pillo, F., & Martino, F. (2014). Cultural adaptation of web design services as critical success factor for business excellence: A cross-cultural study of Portuguese, Brazilian, Angolan and Macanese Web sites. *Cross Cultural Management*, *21*(2), 172–190. doi:10.1108/CCM-09-2012-0070

Chen, Y., & Barnes, S. (2007). Initial trust and online buyer behavior. *Industrial Management & Data Systems*, *107*(1), 21–36. doi:10.1108/02635570710719034

Chen, Y., Chen, H., Huang, W., & Ching, R. K. (2006). E-government strategies in developed and developing countries: An implementation framework and case study. *Journal of Global Information Management*, *14*(1), 23–46. doi:10.4018/jgim.2006010102

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Chiu, C. M., Wang, E. T., Fang, Y. H., & Huang, H. Y. (2014). Understanding customers' repeat purchase intentions in b2c ecommerce: The roles of utilitarian value, hedonic value and perceived risk. *Information Systems Journal*, *24*(1), 85–114. doi:10.1111/j.1365-2575.2012.00407.x

Choudrie, J., & Dwivedi, Y. K. (2005). Investigating the research approached for examining technology adoption issues. *Journal of Research Practice*, *1*(1), 1–11.

Commission, E. (2011). *Online services, including e-commerce, in the single market*. Retrieved from http://ec.europa. eu/internal_market/e-commerce/docs/communication2012/SEC2011_1641_en.pdf

Cui, T., Wang, X., & Teo, H. H. (2015). Building a culturally-competent Web site: A cross-cultural analysis of web site structure. *Journal of Global Information Management*, *23*(4), 1–25. doi:10.4018/JGIM.2015100101

D'Onfro, J. (2015). *Wal-Mart is losing the war against amazon*. Available online at: http://www.businessinsider.com/wal-mart-ecommerce-vs-amazon-2015-7

Delone, W. H., & Mclean, E. R. (2004). Measuring e-commerce success: Applying the Delone and Mclean information systems success model. *International Journal of Electronic Commerce*, *9*(1), 31–47. doi:10.1080/10864415.2004.11044317

Dorfman, P. W., Howell, J. P., Hibino, S., Lee, J. K., Tate, U., & Bautista, A. (1997). Leadership in western and Asian countries: Commonalities and differences in effective leadership processes across cultures. *The Leadership Quarterly*, *8*(3), 233–274. doi:10.1016/S1048-9843(97)90003-5

Edquid, R. (2017). *10 of the largest Ecommerce Markets in the World by Country*. Available online at: https://www.business.com/articles/10-of-the-largest-ecommerce-markets-in-the-world-b/

EIU. (2010). *EIU: Digital economy rankings*. Retrieved from http://graphics.eiu.com/upload/EIU_Digital_ economy_rankings_2010_FINAL_WEB.pdf

Elen, J., Clarebou, G., Sarfo, F. K., & Louw, J. P.-T., & Stassens, N. (2010). Computer and information and communication technology: Students culture specific interpretations. *Journal of Educational Technology & Society*, *13*(4), 227–239.

EMarketer. (2016). *Worldwide retail commerce sales: Emarketer's updates sales and forecast through 2019*. Available online at: http://www.emarketer.com/FReport/ FWorldwide-Retail-Ecommerce-Sales-eMarketers-Updated-Estimates-Forecast-Through-2019/F2001716&usg=AOvVaw2XRqmWRKUJ0kGEFY8c4wCQ

EUR. (2013). *European e-commerce grew by 16% to euro 363 billion in 2013, 2014*. Available online at: http://www.ecommerceeurope.eu/press/european-e-commerce-grew-by-16-to-363-billion-in-2013

Ferguson, C. W., & Yen, D. C. (2006). A regional approach to e-commerce global expansion. *International Journal of Electronic Business*, *4*(1), 99–114. doi:10.1504/IJEB.2006.009159

Flavian, C., & Guinaliu, M. (2006). Consumer trust, perceived security and privacy policy. *Industrial Management & Data Systems*, *106*(5), 601–620. doi:10.1108/02635570610666403

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Freeman, R. E., & Reed, D. L. (1983). Stockholders and stakeholders: A new perspective on corporate governance. *California Management Review*, *25*(3), 88–106. doi:10.2307/41165018

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *Management Information Systems Quarterly*, *27*(1), 51–90. doi:10.2307/30036519

Ghose, A., & Yao, Y. (2011). Using transaction prices to re-examine price dispersion in electronic markets. *Information Systems Research*, *22*(2), 269–288. doi:10.1287/isre.1090.0252

Gist, M. E., & Mitchell, T. R. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *Academy of Management Review*, *17*(2), 183–211. doi:10.5465/amr.1992.4279530

Govindaraju, R., & Chandra, D. R. (2011). E-commerce adoption by Indonesian small, medium, and micro enterprises (SMMEs): Analysis of goals and barriers. In *Communication Software and Networks (ICCSN), 2011 IEEE 3rd International Conference on* (pp. 113–117). IEEE.

Grandon, E. E., Nasco, S. A., & Mykytyn, P. P. Jr. (2011). Comparing theories to explain e-commerce adoption. *Journal of Business Research*, *64*(3), 292–298. doi:10.1016/j.jbusres.2009.11.015

Hair, J., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial Management & Data Systems*, *117*(3), 442–458. doi:10.1108/IMDS-04-2016-0130

Hallikainen, H., & Laukkanen, T. (2018). National culture and consumer trust in e-commerce. *International Journal of Information Management*, *38*(1), 97–106. doi:10.1016/j.ijinfomgt.2017.07.002

Ho, S.-C., Kauffman, R. J., & Liang, T.-P. (2007). A growth theory perspective on b2c e-commerce growth in Europe: An exploratory study. *Electronic Commerce Research and Applications*, *6*(3), 237–259. doi:10.1016/j.elerap.2006.06.003

Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Beverly Hills, CA: Sage.

Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: Software of the mind*. London, UK: McGraw-Hill.

Hong, W., & Zhu, K. (2006). Migrating to internet-based e-commerce: Factors affecting e-commerce adoption and migration at the firm level. *Information & Management*, *43*(2), 204–221. doi:10.1016/j.im.2005.06.003

House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. (2004). *Culture, leadership, and organizations: The GLOBE study of 62 societies*. Sage Publications.

Hovakimian, A., Kane, E. J., & Laeven, L. (2003). How country and safety-net characteristics affect bank risk-shifting. *Journal of Financial Services Research*, *23*(3), 177–204. doi:10.1023/A:1024699811875

Hsu, M. H., & Chiu, C. M. (2004). Internet self-efficacy and electronic service acceptance. *Decision Support Systems*, *38*(3), 369–381. doi:10.1016/j.dss.2003.08.001

Javalgi, R., & Ramsey, R. (2001). Strategic issues of e-commerce as an alternative global distribution system. *International Marketing Review*, *18*(4), 376–391. doi:10.1108/02651330110398387

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Jehangir, M., Dominic, P. D. D., Naseebullah, N., & Khan, A. (2011). Towards digital economy: The development of ICT and e-commerce in Malaysia. *Modern Applied Science*, *5*(2), 171. doi:10.5539/mas.v5n2p171

Kaasa, A. (2016). Culture as a possible factor of innovation: Evidence from the European union and neighboring countries. In *Re-thinking Diversity* (pp. 83–107). Springer. doi:10.1007/978-3-658-11502-9_5

Kaba, K., N'Da, B., Meso, P., & Mbarika, V. W. (2009). Micro factors influencing the attitudes toward and the use of a mobile technology: A model of cell-phone use in guinea. *IEEE Transactions on Professional Communication*, *52*(3), 272–290. doi:10.1109/TPC.2009.2025308

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, *47*(2), 263–291. doi:10.2307/1914185

Kalakota, R., & Whinston, A. B. (1996). *Electronic Commerce: A Manager's Guide*. Reading, MA: Addison-Wesley.

Karahanna, E., Williams, C. K., Polites, G. L., Liu, B., & Seligman, L. (2013). Uncertainty avoidance and consumer perceptions of global e-commerce sites: A multi-level model. *Drake Management Review*, *3*(1), 12–47.

Kaufman-Scarborough, C., & Lindquist, J. D. (2002). E-shopping in a multiple channel environment. *Journal of Consumer Marketing*, *19*(4), 333–350. doi:10.1108/07363760210433645

Krueger, N., & Dickson, P. (1994). How believing in ourselves increases risk taking: perceived self-efficacy and opportunity recognition. *Decision Sciences, 25*(3).

Kwast, M. L., & Passmore, S. W. (2000). The subsidy provided by the federal safety net: Theory and evidence. In *Financial Modernization and Regulation* (pp. 35–55). Springer. doi:10.1007/978-1-4757-5228-1_4

Lazarus, R. S., & Launier, R. (1978). *Perspectives in Interactional Psychology. In Stress-related transactions between person and environment* (pp. 287–327). New York: Springer. doi:10.1007/978-1-4613-3997-7_12

Lim, K., Sia, C., Lee, M., & Ben, I. (2006). Do I trust you online, and if so, will I buy? An empirical study of two trust-building strategies. *Journal of Management Information Systems*, *23*(2), 233–266. doi:10.2753/MIS0742-1222230210

Lim, K. H., Leung, K., Sia, C. L., & Lee, M. K. (2004). Is e-commerce boundary-less? effects of individualism- collectivism and uncertainty avoidance on internet shopping. *Journal of International Business Studies*, *35*(6), 545–559. doi:10.1057/palgrave.jibs.8400104

Lowry, P. B., & Gaskin, J. (2014). Partial least squares (PLS) structural equation modeling (SEM) for building and testing behavioral causal theory: When to choose it and how to use it. *IEEE Transactions on Professional Communication*, *57*(2), 123–146. doi:10.1109/TPC.2014.2312452

Luo, J., Zhang, H., & Li, H. (2007). Pricing strategy, online competition, and market dynamics in b2c electronic markets. In *The First China Summer Workshop on Information Management (CSWIM 2007)*, (pp. 27–31). Institute of Operations Research and Management Sciences.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Lyytinen, K., & Damsgaard, J. (2001). Whats wrong with the diffusion of innovation theory? In *Diffusing software product and process innovations* (pp. 173–190). Springer. doi:10.1007/978-0-387-35404-0_11

Mahmood, M. A., Bagchi, K., & Ford, T. C. (2004). Online shopping behavior: Cross-country empirical research. *International Journal of Electronic Commerce*, *9*(1), 9–30. doi:10.1080/10864415.2004.11044321

Mbarika, V. W. A., Okoli, C., Byrd, T. A., & Datta, P. (2005). The neglected continent of is research: A research agenda for Sub-Saharan Africa. *Journal of the Association for Information Systems*, *6*(5), 130–170. doi:10.17705/1jais.00067

McElroy, J. C., Hendrickson, A. R., Townsend, A. M., & DeMarie, S. M. (2007). Dispositional factors in internet use: Personality versus cognitive style. *Management Information Systems Quarterly*, *31*(4), 809–820. doi:10.2307/25148821

McFarland, D. J. (2001). The role of age and efficacy on technology acceptance: Implications for e-learning. *World Conference on the WWW and Internet Proceedings*.

Merhi, M. I. (2018). Does national culture have any impact on e-government usage? *International Journal of Technology Diffusion*, *9*(3), 29–45. doi:10.4018/IJTD.2018070103

Merhi, M. I., & Ahluwalia, P. (2015). Country environments factors affecting e-commerce adoption: A cross-country analysis. *Journal of Management Systems*, *25*(3), 21–38.

Merhi, M. I., & Ahluwalia, P. (2017). Influence of safety nets, uncertainty avoidance, and governments on e-commerce adoption: A country-level analysis. *International Journal of Applied Business and Economic Research*, *15*(2), 397–408.

Merhi, M. I., & Ahluwalia, P. (2018). Digital Economy and Corruption Perceptions: A Cross-Country Analysis. *International Journal of Digital Accounting Research*, *18*(2), 29–47. doi:10.4192/1577-8517-v18_2

Merhi, M. I., & Koong, K. S. (2013). E-government effectiveness: Assessment of contributing governments' ICT usage factors. *International Journal of Business and Systems Research*, *7*(1), 1–24. doi:10.1504/IJBSR.2013.050615

Merkin, R. (2006). Uncertainty Avoidance and the facework: A test of the Hofeste model. *International Journal of Intercultural Relations*, *30*(2), 213–228. doi:10.1016/j.ijintrel.2005.08.001

Mladenović, S. S., Mladenović, I., Milovančević, M., & Denić, N. (2017). Cross-cultural dimensions influence on business internationalization by soft computing technique. *Computers in Human Behavior*, *75*, 865–869. doi:10.1016/j.chb.2017.06.035

Molla, A., & Licker, P. S. (2005a). eCommerce adoption in developing countries: A model and instrument. *Information & Management*, *42*(6), 877–899. doi:10.1016/j.im.2004.09.002

Molla, A., & Licker, P. S. (2005b). Perceived e-readiness factors in e-commerce adoption: An empirical investigation in a developing country. *International Journal of Electronic Commerce*, *10*(1), 83–110. doi:10.1080/10864415.2005.11043963

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Okoli, C., Mbarika, V. W. A., & McCoy, S. (2010). The effects of infrastructure and policy on e- business in Latin America and Sub-Saharan Africa. *European Journal of Information Systems*, *19*(1), 5–20. doi:10.1057/ejis.2009.48

Oliver, R. L. (1977). Effect of expectation and disconfirmation on postexposure product evaluations: An alternative interpretation. *The Journal of Applied Psychology*, *62*(4), 480–486. doi:10.1037/0021-9010.62.4.480

Papazafeiropoulou, A. (2004). Inter-country analysis of electronic commerce adoption in South Eastern Europe: Policy recommendations for the region. *Journal of Global Information Technology Management*, *7*(2), 54–69. doi:10.1080/1097198X.2004.10856372

Papazafeiropoulou, A., & Pouloudi, A. (2000). The government's role in improving electronic commerce adoption. ECIS 2000 Proceedings, 188.

Pavlou, P. A., & Gefen, D. (2004). Building effective online marketplaces with institution-based trust. *Information Systems Research*, *15*(1), 37–59. doi:10.1287/isre.1040.0015

Picot, A., & Wernick, C. (2007). The role of government in broadband access. *Telecommunications Policy*, *31*(10), 660–674. doi:10.1016/j.telpol.2007.08.002

Postnord. (2014). *E-commerce in Europe 2014*. Available online at: http://www.postnord.com/globalassets/global/ english/document/publications/2014/e-commerce-in-europe-2014.pdf

Ronkko, M. (2017). *Matrixpls: Matrix-based Partial Least Squares Estimation*. R package version 1.0.5. Retrieved from https://github.com/mronkko/matrixpls

Rose, G., & Straub, D. W. (2001). The effect of download time on consumer attitude toward the e-service retail. *e-Service Journal*, *3*(1), 55–76. doi:10.2979/esj.2001.1.1.55

Smith, R., Deitz, G., Royne, M. B., Hansen, J. D., Grünhagen, M., & Witte, C. (2013). Cross-cultural examination of online shopping behavior: A comparison of Norway, Germany, and the United States. *Journal of Business Research*, *66*(3), 328–335. doi:10.1016/j.jbusres.2011.08.013

Stambor, Z. (2010). *E-commerce will gradually emerge abroad, Forrester research predicts*. Available online at: http://www.Internetretailer.com/2010/01/29/e-commerce-will-gradually-emerge-abroad-forrester-research-predicts

Statista. (2017). *E-commerce sales as percentage of total retail sales in selected countries in 2017*. Available online at: https://www.statista.com/statistics/255083/online-sales-as-share-of-total-retail-sales-in-selected-countries/

Stoica, M., Miller, D. W., & Stotlar, D. (2005). New technology adoption, business strategy and government involvement: The case of mobile commerce. *Journal of Nonprofit & Public Sector Marketing*, *13*(1/2), 213–232. doi:10.1300/J054v13n01_12

Stylianou, C., Robbins, S. S., & Jackson, P. (2003). Perceptions and attitudes about e-commerce development in china: An exploratory study. *Journal of Global Information Management*, *11*(2), 31–47. doi:10.4018/jgim.2003040102

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Tan, J., Tyler, K., & Manica, A. (2007). Business-to-business adoption of eCommerce in China. *Information & Management*, *44*(3), 332–351. doi:10.1016/j.im.2007.04.001

Thatcher, J. B., & Perrewe, P. L. (2002). An empirical examination of individual traits as antecedents to computer anxiety and computer self-efficacy. *Management Information Systems Quarterly*, *26*(4), 381–396. doi:10.2307/4132314

Tong, X. (2010). A cross-national investigation of an extended technology acceptance model in the online shopping context. *International Journal of Retail & Distribution Management*, *38*(10), 742–759. doi:10.1108/09590551011076524

Treese, G. W., & Stewart, L. C. (1998). *Designing Systems for Internet Commerce*. Reading, MA: Addison-Wesley.

Uzoka, F. (2008). Organizational influences on e-commerce adoption in a developing country context using UTAUT. *International Journal of Business Information Systems*, *3*(3), 300–316. doi:10.1504/IJBIS.2008.017287

Van Dijk, M. P. (2003). Government policies with respect to an information technology cluster in Bangalore, India. *European Journal of Development Research*, *15*(2), 93–108. doi:10.1080/09578810312331287495

Vyas, A., & Gupta, S. (2017). Challenges Assessment for the E-Commerce Industry in India: A Review (With Special Reference to Flipkart V/S Snapdeal). *Journal of Global Information Management*, *25*(4), 16–31. doi:10.4018/JGIM.2017100102

Wang, V., Lou, H., Wang, Y., & Guo, C. (2015). Differences in organizational Web site design across cultures: A comparative study of US and Chinese industrial SMEs. *Asia Pacific Journal of Marketing and Logistics*, *27*(4), 582–599. doi:10.1108/APJML-07-2014-0116

Wong, P.-K. (2003). Global and national factors affecting e-commerce diffusion in Singapore. *The Information Society*, *19*(1), 19–32. doi:10.1080/01972240309471

WordNet2.1. (2005). *Wordnet: An electronic lexical database*. Princeton University.

Wu, C. H., & Tsai, S. B. (2018). Using DEMATEL-Based ANP Model to Measure the Successful Factors of E-Commerce. *Journal of Global Information Management*, *26*(1), 120–135. doi:10.4018/JGIM.2018010107

Yoon, C. (2009). The effects of national culture values on consumer acceptance of e-commerce: Online shoppers in china. *Information & Management*, *46*(5), 294–301. doi:10.1016/j.im.2009.06.001

Zhao, F., Shen, K. N., & Collier, A. (2014). Effects of national culture on e-government diffusion—A global study of 55 countries. *Information & Management*, *51*(8), 1005–1016. doi:10.1016/j.im.2014.06.004

Zhu, L., & Thatcher, S. M. B. (2010). National information ecology: A new institutional economics perspective on global e-commerce adoption. *Journal of Electronic Commerce Research*, *11*(1), 53–72.

Zwass, V. (1996). Electronic commerce: Structures and issues. *International Journal of Electronic Commerce*, *1*(1), 3–23. doi:10.1080/10864415.1998.11518323

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Zwick, D., & Dholakia, N. (2008). Info transformation of markets: Introduction to the special issue on marketing and information technology. *Journal of Macromarketing*, *28*(4), 318–325. doi:10.1177/0276146708325381

ENDNOTE

[1] It was published before the PERM Model.

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Chapter 16
A Cloud Computing–Based Model of E-Commerce Adoption for Developing Countries

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ABSTRACT

While e-commerce can contribute significantly to the economies of developing countries, challenges may include a lack of telecommunications infrastructure, low Internet and credit card penetration, lack of skilled professionals and insufficient delivery systems. Cloud computing offers a solution to most of these challenges, providing access to a low-cost, reliable and flexible internet-based infrastructure. However, there is little empirical validation of the adoption of cloud computing in e-commerce; to bridge that gap, the present study proposes a cloud-based model of e-commerce adoption. Based on a survey of leaders of 175 small, medium, and large ICT firms in Egypt, a developing country where e-commerce is expected to boom in the coming years, the proposed model empirically validates organizational, technical and contextual factors that would make e-commerce adoption more effective for business, governments and service providers.

LITERATURE REVIEW AND RESEARCH MOTIVATION

E-Commerce Adoption in Developing Countries

Several studies of e-commerce adoption in developing countries have emphasized the effect of contextual factors such as technological, economical, legal and financial infrastructures (Travica et al., 2002; Jennex et al., 2002) while others have looked at managerial and organizational factors affecting the adoption decision (Daniel et al., 2002). Molla and Licker (2005a, 2005b) developed the Perceived E-Readiness Model (PERM) for e-commerce in developing countries, integrating contextual and organizational factors. That model considers a number of internal organizational factors (e.g. organization's perception of e-commerce and its potential benefits and risks, managers' commitment, resources), as well as contextual

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factors (e.g. government support, market forces, support industries' e-readiness) as important elements in e-commerce adoption. PERM has been validated as an effective e-commerce adoption model in a number of countries, including China (Tan et al., 2007), Bahrain (Ali et al., 2014) and Iran (Fathian et al., 2008). These studies highlighted critical issues for e-commerce e-readiness, including organizational features, technology infrastructures, IT availability and security environment.

However, all of the above studies are limited by their failure to address important organizational factors, such as Internet-based technology innovations currently adopted in these countries that can significantly impact e-commerce. In Egypt, e-commerce remains underdeveloped; according to the Egypt Business Directory (El-Behary, 2015), despite a 400% increase in Internet penetration between 2004 and 2015 to 31 million Internet users, only 2% of those users shopped online in 2015, and 80% paid on delivery. One key challenge for e-commerce in Egypt is low credit card penetration. In 2015, only 7% of Egyptians had a bank account, and only 7.6 million had a credit or debit card (El-Behary, 2015). This is expected to change during the next decade, with a massive increase in pre-paid and credit card penetration accompanying an e-commerce boom (El-Behary, 2015). The Internet contribution to GDP is projected to rise significantly to 1.6% of GDP in 2017 (Boston Consulting Group, 2012).

Other challenges obstructing e-commerce development in Egypt include a lack of technological infrastructure and the weak readiness of support industries like banking and tax and customs administrations (El-Behary, 2015). In similar countries, such as the Kingdom of Saudi Arabia, the lack of clear regulations and government support are thought to be key influences on e-commerce adoption (Al-Ghamdi et al., 2011). However, explanations of low e-commerce penetration within this fast-growing Internet population have not been empirically tested, and nothing is known about organizational, individual, contextual and technological factors affecting e-commerce adoption in Egypt.

Cloud Computing Adoption and E-Commerce

The importance of investment in cloud computing (CC) technology for conducting business has been widely acknowledged (e.g. Armbrust et al., 2010). As well as reducing cost, this Internet-based innovation can enhance the reliability, availability and flexibility of e-business (Tuncay, 2010). Like electricity, water, gas and telephony, which are accessed so frequently that they are always-on and paid for by consumer usage, CC is expected to become the fifth utility (Misra et al., 2011).

Among studies of CC adoption in technologically developing communities, Low et al. (2011) conducted a questionnaire-based survey of 111 high-tech firms in Taiwan. Their findings revealed that technological context (relative advantage, complexity and compatibility) and organizational context (top management support, firm size and technology readiness) significantly affect CC adoption. Investigating CC adoption in Saudi Arabia, Alhammadi et al. (2015) found that security concerns and government support were more influential than in technologically developed countries.

Few cost-benefit analyses have provided direct costings of CC implementation (Maheswaran, 2008; Schadler, 2009), and ROI has rarely been calculated (Misra et al., 2011). Some models suggest that cloud pricing makes it more suitable for small and medium rather than larger enterprises (Alhammadi et al., 2015). However, there is also evidence that CC capability contributes to e-commerce competitive advantage by enhancing methods of buying, selling and dealing with customers (Armbrust et al., 2010). Theoretically at least, cloud computing technology can address many e-commerce challenges through high service and infrastructure performance, cost savings and business security (Shah, 2014). To the best

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of the author's knowledge, however, no previous work has proposed or empirically tested a CC-based model for e-commerce adoption.

Research Model

The main aim of the current research was to explore the factors affecting CC-based e-commerce adoption and to suggest a model for a developing country. Emphasis was placed on user perceptions of organizational, technological and environmental factors, as these broadly encompass the e-commerce antecedents likely to be considered by business leaders (Molla et al., 2005a, 2005b; Tan et al., 2007, 2008) such as those sampled here. The literature review described earlier identified a number of relevant constructs; as the existing literature is characterized by an absence of rigorous research linking CC and e-commerce, the chosen constructs were those shown to be of relevance in both contexts. Given the exploratory stage of this research, thirteen constructs were selected to ensure wide coverage of potentially relevant variables, resulting in a relatively large number of initial hypotheses (twelve), subsequently refined through validity and reliability assessment as reported below.

From the existing literature, the following organization-related constructs were identified as relevant: firm size (FS) (Xu et al., 2004); organizational awareness (A) (Tan et al., 2007; Molla et al., 2005a; Blount et al., 2005); management commitment (C) (Molla et al., 2005a; Aljifri et al., 2003); available resources (R) (Zhuang et al., 2006); and management governance (G) (Tan et al., 2007; Molla et al., 2005a; Chatterjee et al., 2002). These constructs were hypothesized to affect e-commerce adoption in the present context as follows.

H1: Firm Size (FS) will have a positive impact on initial CC e-commerce adoption.
H2: Organizational awareness (A) will have a positive impact on initial CC e-commerce adoption.
H3: Management commitment (C) will have a positive impact on initial CC e-commerce adoption.
H4: Available resources (R) will have a positive impact on initial CC e-commerce adoption.
H5: Management governance (G) will have a positive impact on initial CC e-commerce adoption.

Again, building on previous research, the following cloud computing/technological constructs were identified as relevant: relative advantage (RA) (To et al., 2006); compatibility (CT) (Tan et al., 2008); complexity (CL) (Tan et al., 2008); and security concerns (SC) (Gangwar et al., 2015). These constructs were hypothesized to affect CC e-commerce adoption in the present context as follows.

H6: Relative advantage (RA) will have a positive impact on initial CC e-commerce adoption.
H7: Compatibility (CT) will have a positive impact on initial CC e-commerce adoption.
H8: Complexity (CL) will have a positive impact on initial CC e-commerce adoption.
H9: Security concerns (SC) will have a positive impact on initial CC e-commerce adoption.

On the same basis, the following environmental constructs were identified as relevant: government readiness (GVeR) (Kuan et al., 2001; Molla et al., 2005a); support industries' e-readiness (SIeR) (Au et al., 2001); and market forces e-readiness (SIeR) (Kshetri et al., 2002; Molla et al., 2005a). These constructs were hypothesized to affect CC e-commerce adoption in the present context as follows.

H10: Government readiness (GVeR) will have a positive impact on initial CC e-commerce adoption.

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H11: Support industries' e-readiness (SIeR) will have a positive impact on initial CC e-commerce adoption.
H12: Market forces e-readiness (SIeR) will have a positive impact on initial CC e-commerce adoption.

For present purposes, CC-based e-commerce adoption is the key dependent variable, defined as interactive online selling and purchasing using CC technology (Tan et al., 2007; Molla et al., 2005a, 2005b; Zhu et al., 2003). CC-based e-commerce adoption is measured here on a scale rather than as a binary issue of whether companies adopted or not. Based on Molla et al.'s (2005a) scale, CC-based e-commerce adoption includes an interactive website for accepting orders and queries, as well as online selling and purchasing. Beyond the scope of this research, more advanced adoption may include company integration with suppliers, customers and back office systems for electronic completion of most business transactions.

The survey used here was based primarily on scales used in previous research on e-commerce and cloud computing adoption; independent variable items were assessed using a five-point Likert-type scale, ranging from strongly agree (1) to strongly disagree (5). The questionnaire was in English, which is the working language of a majority of companies in Egypt, especially in the IT sector. The following scales were adapted from Molla et al. (2005a): awareness (10 items), commitment (7 items), resources (16 items), governance (8 items), government e-readiness (5 items), support industries' e-readiness (4 items), market forces e-readiness (2 items) and CC-based e-commerce initial adoption (6 items). Scales for compatibility (3 items) and complexity (2 items) were adopted from Tan et al. (2008). Firm size (1 item) scale was adopted from Tan et al. (2007). The relative advantage scale (3 items) was adopted from To et al. (2006) and the security concerns scale (3 items) from Gangwar et al. (2015).

All research constructs, along with definitions, measurement item statements and previous use are listed in Table 7 in the Appendix. The survey form included a space at the end for an open-ended account of why a firm did or did not adopt CC-based e-commerce.

METHOD

Sampling and Procedure

The goal of the present study was to explain the role of organizational, technical and environmental factors in CC-based e-commerce adoption as perceived by top-level executives. Previous research in similar contexts suggested that this population would be sufficiently well-informed for present purposes (Molla et al., 2005a; Molla et al., 2005b; Tan et al., 2008; Tan et al., 2007). The data were collected in Egypt, which as a key player in African and Middle Eastern regions is widely seen as a model of information and communication (ICT) development (Boston Consulting Group, 2012). Although a regional leader in terms of web uptake, Egypt is also considered least prepared for e-commerce, and achieving widespread adoption is seen as a real challenge (El-Behary, 2015). Egypt's experience in this regard is informative for other developing countries.

The study sample was drawn from IT organizations in Egypt as listed in the official 2015 directory of the Egyptian Information Technology Industry Development Agency (ITIDA), a government entity spearheading the development of Egypt's ICT industry. Listing 1562 micro, small, medium and large companies, including 954 located exclusively in Cairo, the directory provided website and contact details for each company, including managing directors' email addresses. Managing directors of Cairo-based

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companies were emailed the self-administered questionnaire, along with a covering letter introducing the researcher and the purpose of the study, explaining how to complete the questionnaire and the return deadline. Of 954 emails sent out in October 2015. 235 returned as undeliverable, either because of business closure or change of email address. To increase the response rate, a follow-up email was sent within two weeks. By the deadline, 187 responses were received, of which 12 were invalid because of missing data, yielding a total of 175 responses for a response rate approaching 26%. This sample size and response rate is considered adequate for technology adoption survey research (Molla et al., 2005b).

Data Analysis

Statistical analysis began with a descriptive analysis involving data screening. The validity and reliability of the research items and constructs were then assessed prior to model testing using multiple discriminant function analysis (MDFA). Calculation of CC ROI was based on responses to open-ended questions concerning CC costs and ROI.

Data Screening

Before data entry, questionnaires were coded and screened; each questionnaire was assigned a unique number, and each item was assigned a code to facilitate entry into SPSS. Each variable's frequency and range was assessed, and outliers (e.g. 22 or 44 entries) were corrected by revisiting the original questionnaire. Cases with missing values were evaluated for elimination; missing data may be ignored, representing 6% of sample size.

Item Reliability

Although all items were reported to be reliable in the literature, item reliability was checked by examining each item's loading and its correlation with the corresponding construct. According to Chin (1998), item loading and item-construct correlation should be at least 0.60. Based on the data in Table 1, items A1, A2, A5, A6, A9, R2, R5, R6, R8, R9, R10, R15 and R16 failed to meet this criterion, and these items were dropped. All remaining items were found to achieve adequate reliability.

Construct Reliability

Construct reliability was assessed by examining construct composite reliability, Average Variance Extracted (AVE) and Cronbach's alpha. According to Fornell and Larker (1981), a composite reliability value of .80 or greater indicates strong composite reliability; AVE should be greater than 0.50 to demonstrate significant variance, with a Cronbach's alpha of at least 0.6 (Keil et al., 2000). As shown in Table 2, the constructs commitment and governance achieved composite reliability, AVE and Cronbach's Alpha less than 0.5. Accordingly, these two constructs were dropped from the research model. In contrast, all remaining constructs returned composite reliability scores above 0.8, with AVE scores exceeding 0.5 and Cronbach's alpha higher than 0.6. On that basis, these remaining constructs showed adequate reliability.

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Table 1. Item Reliability: Item Loading and Item-Construct Correlation

Construct	Item	Item Loading	Item-Construct Correlation	Construct	Item	Item Loading	Item-Construct Correlation
A	**A1**	**0.4289**	**0.467**	C	C1	0.8250	0.868
	A2	**0.4112**	**0.429**		C2	0.8499	0.869
	A3	0.8289	0.840		C3	0.8872	0.909
	A4	0.8129	0.775		C4	0.8838	0.870
	A5	**0.4279**	**0.477**		C5	0.8529	0.858
	A6	**0.4356**	**0.471**		C6	0.8722	0.819
	A7	0.8982	0.763		C7	0.8568	0.861
	A8	0.7128	0.717	RA	RA1	0.7500	0.941
	A9	**0.4572**	**0.457**		RA2	0.9229	0.753
	A10	0.7509	0.827		RA3	0.8117	0.765
R	R1	0.6891	0.7689	G	G1	0.7282	0.876
	R2	**0.3532**	**0.4812**		G2	0.8453	0.917
	R3	0.8279	0.8289		G3	0.7377	0.817
	R4	0.7139	0.8439		G4	0.7180	0.856
	R5	**0.4169**	**0.4159**		G5	0.8342	0.925
	R6	**0.4246**	**0.4326**		G6	0.7265	0.837
	R7	0.8982	0.8772		G7	0.8232	0.788
	R8	**0.3328**	**0.4228**		G8	0.7155	0.866
	R9	**0.4372**	**0.3572**	GVeR	GVeR1	0.7150	0.857
	R10	**0.3509**	**0.4905**		GVeR2	0.8388	0.878
	R11	0.4279	0.8973		GVer3	0.8753	0.915
	R12	0.4356	0.7366		GVer4	0.8818	0.865
	R13	0.8982	0.8122		GVer5		
	R14	0.7128	0.7168	CL	CL1	0.8662	0.904
	R15	**0.4432**	**0.4981**		CL2	0.8943	0.918
	R16	**0.4421**	**0.3158**		CL3	0.8803	0.869
SC	SC1	0.7124	0.666	MFeR	MFeR1	0.8228	0.896
	SC2	0.7926	0.865		MFeR2	0.8931	0.931
	SC3	0.8533	0.871				

Table 2. Construct Reliability: SPSS Measure for Cronbach's Alfa, Composite Reliability & Average Variance

Construct	Composite Reliability	AVE	Cronbach Alpha	Construct	Composite Reliability	AVE	Cronbach Alpha
Awareness (A)	0.881	0.648	0.840	Complexity (CL)	0.931	0.772	0.902
Commitment (C)	**0.501**	**0.418**	**0.549**	Security Concerns (SC)	0.839	0.726	0.605
Resources (R)	0.897	0.812	0.745	Gov. e-Readiness (GVeR)	0.891	0.804	0.801
Governance (G)	**0.493**	**0.436**	**0.559**	Support I. e-Readiness (SIeR)	0.925	0.805	0.887
Relative Advantage (RA)	0.846	0.650	0.757	Market F. e-Readiness (MFeR)	0.869	0.790	0.618
Compatibility (CT)	0.832	0.612	0.831				

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Item Correlations

Each item was found to correlate more highly with other questions measuring the same construct than with other items measuring other constructs, confirming discriminant validity (Keil et al., 2000). A confirmatory factor analysis calculating T-values for item loadings verified that each item's loading was much higher on its assigned construct than on other constructs (Gefen, 2000), confirming their discriminant validity.

Construct Validity

Although all research constructs were measured using established scales, it was still necessary to validate the measures, using the correlation coefficient between each construct and its associated items as measured by Pearson's correlation coefficient. A significant correlation was found between all constructs and their associated items. Correlations between variables are presented in Table 3; these were significant for most model constructs.

Table 3. Correlation Coefficient between Constructs

Constructs		A	R	RA	CT	CL	SC	GVeR	SIeR	MFeR
A	Pearson Correlation	1.000	-.035	-.007	-.040	.078	.116*	.059	.191**	.189**
	Sig. (2-tailed)	.	.556	.898	.495	.179	.046	.314	.002	.013
R	Pearson Correlation	-.035	1.000	.553**	.402**	.323**	.319**	.127*	.058	.067
	Sig. (2-tailed)	.556	.	.000	.000	.000	.000	.029	.339	.348
RA	Pearson Correlation	-.007	.553**	1.000	.479**	.244**	.198**	.039	.114	.118
	Sig. (2-tailed)	.898	.000	.	.000	.000	.000	.500	.057	.067
CT	Pearson Correlation	-.040	.402*	.479**	1.000	.492**	.515**	.160**	.133*	.156*
	Sig. (2-tailed)	.495	.000	.000	.	.000	.000	.005	.027	.058
CL	Pearson Correlation	.078	.323**	.244**	.492**	1.000	.557**	.083	.090	.072
	Sig. (2-tailed)	.179	.000	.000	.000	.	.000	.149	.134	.125
SC	Pearson Correlation	.116*	.319**	.198**	.515**	.557**	1.000	.118*	.090	.081
	Sig. (2-tailed)	.046	.000	.000	.000	.000	.	.040	.133	.144
GVeR	Pearson Correlation	.059	.127*	.039	.160**	.083	.118*	1.000	.128*	.117*
	Sig. (2-tailed)	.314	.029	.500	.005	.149	.040	.	.033	.022
SIeR	Pearson Correlation	.191**	.058	.114	.133*	.090	.090	.128*	1.000	.138*
	Sig. (2-tailed)	.002	.339	.057	.027	.134	.133	.033	.	.023
MFeR	Pearson Correlation	.189**	.067	.118	.156*	.072	.081	.117*	.138*	1.000
	Sig. (2-tailed)	.013	.348	.067	.058	.125	.144	.022	.023	.

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Final Reliability

As illustrated in Table 4, a reliability check was done for the final instrument, which included 9 constructs and 35 items, including 5 assessing *awareness*, 8 assessing *resources* and 5 assessing *government e-readiness*. Relative advantage, compatibility, complexity, security concerns and support industries' e-readiness were each assessed by three items, and market forces e-readiness by two items. To be considered reliable, a measure's Cronbach alpha should not be less than 0.80; all the reliability coefficients satisfied this minimum criterion, indicating that the instrument was sufficiently reliable.

Table 4. Instrument Reliability

Construct	Number of Items	Cronbach Alpha
Awareness (A)	5	0.821
Resources (R)	8	0.869
Relative Advantage (RA)	3	0.801
Compatibility (CT)	3	0.897
Complexity (CL)	3	0.802
Security Concerns (SC)	3	0.912
Government e-readiness (GVeR)	5	0.867
Supportive Industries e-Readiness (SIeR)	3	0.923
Market Forces e-Readiness (MFeR)	2	0.834

RESULTS

Sample

In total, 175 top-level executives completed and returned the survey. A majority of these companies (64%) had been in business for more than 5 years, and 55% had 50–500 employees. A majority of respondents (59%) were managing directors or general managers; others included technical IT directors (24%), marketing directors (10%) and accounting directors (7%).

Cloud-Based E-Commerce Adoption

Of the 175 respondents, 50 (28%) indicated that their company was connected to the Internet with email and a static website, publishing company information without interactivity. A further 104 respondents (60%) indicated that their company was connected to the Internet with an interactive website accepting queries and entry from users. Finally, 21 respondents (12%) indicated that their company conducting online selling of products and services using the cloud.

Participating firms were categorized by number of employees as follows: small (50 employees or fewer); medium (50–500); and large (more than 500). The results suggest that small and medium size firms were more willing to adopt e-commerce. As all 21 firms reporting initial adoption of cloud-based e-commerce were either small or medium sized, hypothesis H1 was supported (Table 5).

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Table 5. CC-based e-commerce adoption (self-report)

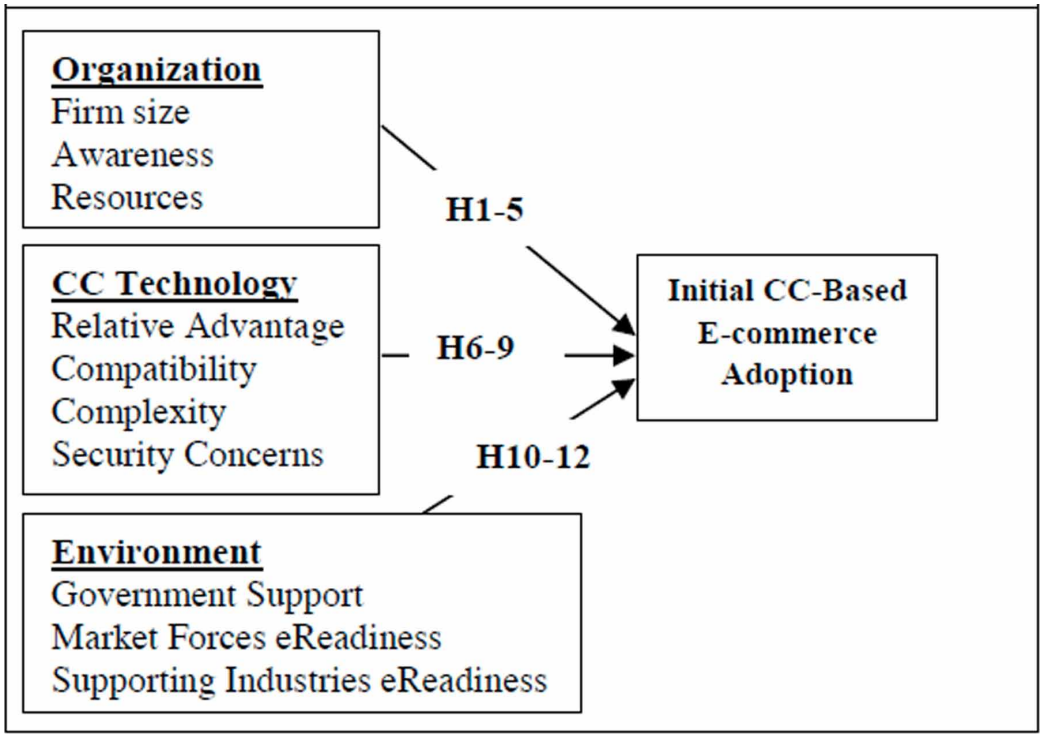
Adoption Level	Frequency	Percentage
Not connected to the Internet with no emails	0	0
Connected to the Internet with emails but no web site	0	0
Static web site publishing basic company information without interactivity	50	28
Interactive web site accepting queries and entry from users	104	60
Interactive CC-based e-commerce online selling and purchasing	21	12

Model Testing

The proposed model of CC-based e-commerce adoption in **Figure 1** was tested using multiple discriminant function analysis (MDFA). This technique is appropriate in cases involving interval independent variables and categorical dependent variables (Hair et al., 1995). Here, all independent variables were measured on a five-point Likert scale while dependent variables were operationalized as categories, selecting among five levels of initial adoption.

Following Hair et al.'s (1995) guidelines, MDFA included derivation, validation and interpretation. The derivation stage determined whether a statistically significant discriminant function distinguished between adopters and non-adopters. The validation stage checked predictive accuracy using the hit ratio and the Mahalanobis distance. In the interpretation stage, independent variables with factor loadings greater than or equal to 0.30 were identified as significant contributors to the model (Hair et al., 1995).

Figure 1. Cloud computing-based e-commerce suggested model



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For present purposes, initial adopters were identified as companies using interactive e-commerce for exchange of product and services online through CC technology (Molla et al., 2005a). Non-adopters were those with either a static website or a dynamic one accepting only queries with no transactions, or those without a web presence. Based on Hair et al.'s (1995) significance levels, MDFA for the initial adoption model showed a statistically significant function (Wilks's $\lambda = 0.23$; $\chi 2 = 187.54$; df = 8; $F = 42.55$, $p < 0.0001$), indicating that the model satisfactorily discriminates between initial adopters and non-adopters, correctly classifying 78% of the businesses in the sample by hit ratio. Hair et al. (1995) defined the acceptable hit rate as 52.6%; additionally, the Mahalanobis distance ($D2$) is 9, which suffices to support validity. Accordingly, the model can be said to be a valid predictor of CC-based e-commerce adopters and non-adopters.

Based on the discriminant loadings and probabilities for *f* statistics in Table 6, the following constructs can be said to significantly affect initial CC-based e-commerce adoption: *awareness*, *resources*, *compatibility*, *government e-readiness*, support industries' e-readiness and *market forces e-readiness*. As these factors seem likely to significantly affect initial adoption of CC-based e-commerce, hypotheses H2, H4, H7, H10, H11, and H12 were supported.

Table 6. Discriminant Analysis of the Initial Adoption of CC-based e-commerce

Construct	Discriminant Loading	*F*-Value	*P*-Level	Coefficient	Non-Adopters (N= 154)		Adopters (N= 21)	
					Mean	SD	Mean	SD
H2: Awareness (A)→ EA: Supported	0.632	61	0.000	0.671	2.57	0.71	3.45	1.04
H4: Resources (R)→ EA: Supported	0.623	62	0.000	0.656	3.09	1.35	2.55	0.36
Relative Advantage (RA)	0.335	35	0.000	0.376	2.33	0.37	3.34	0.21
H7: Compatibility (CT)→ EA: Supported	0.877	92	0.000	0.822	3.39	0.817	2.45	0.18
Complexity (CL)	0.034	35	0.000	0.302	2.17	1.62	2.66	1.43
Security Concerns (SC)	0.255	30	0.000	0.211	2.09	0.76	3.17	0.71
H10: Government e-readiness (GVeR)→ EA: Supported	0.776	70	0.000	0.703	3.17	1.96	3.64	1.63
H11: Supportive Industries e-Readiness (SIeR)→ EA: Supported	0.923	83	0.000	0.923	3.04	0.85	3.84	0.35
H12: Market Forces e-Readiness (MFeR)→ EA: Supported	0.834	73	0.000	0.812	2.13	0.76	3.75	0.78

Return on Investment

While cost was not among the constructs considered here, responses to the survey's open-ended questions highlighted the importance of cloud cost for the adoption decision. For that reason, the researcher contacted a number of the participating firms to follow up on CC cost and ROI issues.

Cloud costs are calculated on a monthly or yearly basis of pay-per-use. For startups who used cloud technology rather than investing in data centres, cloud return on investment could be calculated simply as ((annual profit - cloud cost)/cloud cost). For firms shifting from data centres to cloud, cost saving

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would be the elimination of all datacenter costs (following complete migration) or a reduction in datacenter costs (following partial migration). Increased profits related to CC can be calculated as annual profit increase plus decrease in disaster recovery cost (Misra et al., 2011). On that basis, the following equations enable calculation of cloud ROI.

$$ROI_{\text{per year}} = (\text{profit increase}_{\text{per year}} + \text{cost reduction}_{\text{per year}} - \text{cloud cost}_{\text{per year}}) \div (\text{cloud cost}_{\text{per year}}),$$

where $\text{profit increase}_{\text{per year}} = (\text{annual profit}_{\text{after cloud adoption}} - \text{annual profit}_{\text{before cloud adoption}}) + (\text{disaster recovery cost}_{\text{before cloud adoption}} - \text{disaster recovery cost}_{\text{after cloud adoption}})$.

$\text{Cost reduction}_{\text{per year}} = (\#\text{ of servers}_{\text{before cloud adoption}} - \#\text{ of servers}_{\text{after cloud adoption}}) \times \text{server cost}_{\text{per year}}$.
$\text{Server cost}_{\text{per year}} = \text{yearly cost of (electricity + manpower + maintenance + software + backup)}$.
$\text{Cloud cost}_{\text{per year}} = \text{yearly cost of (storage in cloud + bandwidth + application use)}$.
$\text{Storage cost}_{\text{per year}} = \#\text{ of GB stored in cloud} \times \text{cost per GB}_{\text{per year}}$.
$\text{Bandwidth cost}_{\text{per year}} = (\#\text{ of incoming GB} + \#\text{ of outgoing GB})_{\text{per year}} \times \text{cost per GB}_{\text{per year}}$.
$\text{Application cost}_{\text{per year}} = \#\text{ of application used} \times \text{time of application use}_{\text{per hour}} \times \text{cost}_{\text{per hour per application}}$.

While no detailed costs were disclosed, one startup and one large firm (with more than 500 employees) provided holistic ROI data. The start-up firm had worked for three years in e-booking for hotels and vans with a cloud-based infrastructure and reported an approximate annual ROI of 20%. The large firm had worked for ten years on B2B with global partners and reported a 0.5% ROI following recent partial migration from data centres to cloud technology. In this firm, the decision to migrate to cloud was based on faster time to market, fulfilment of partners' needs and additional revenue, even if running costs were higher.

DISCUSSION

This study establishes a novel framework for integrating e-commerce and cloud computing in a single model, which was empirically tested and highlights factors that may affect CC e-commerce adoption in developing countries. The model was found valid in discriminating between adopters and non-adopters as well as the degree of initial adoption in the present context. These findings indicate that adoption of innovations like cloud computing and e-commerce, which are relatively new to some developing countries, depends to a considerable extent on organizational, technological and environmental factors.

Among organizational determinants, firm size, awareness and resources were found to affect CC-based e-commerce adoption. While small and medium-sized firms might lack technological and financial resources, their less complex structure makes them more adaptable to change and more willing to adopt new technologies.

The findings lend empirical support to the previously reported positive effect of organizational awareness on adoption of e-commerce (Tan et al., 2007; Molla et al., 2005a; Blount et al., 2005) and cloud computing (Low et al., 2011), indicating that the organizations in developing countries most likely to move to cloud computing e-commerce are those most conscious of and responsive to the application of IT innovations in terms of opportunities, potential benefits and possible threats, and with a good understanding of relevant business models and application solutions.

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In the present context, technological, business and manpower resources can be seen to significantly affect CC e-commerce adoption. Organizations with appropriate human expertise, flexible systems, and cloud-friendly technical infrastructure are keener to adopt CC-based e-commerce. According to respondents, data centres are much less expensive in Egypt than the large bandwidth required for cloud. Organizations that have already invested in large, stable data centres are unlikely to forego these for more costly and risky options. Additionally, as technical manpower is available and cheap in Egypt, large organizations with sufficient technical staff are unlikely to adopt CC to reduce human resource costs. For these reasons, the competitive advance of CC as an inexpensive and utility technology may prove more significant in other countries where bandwidth is cheaper and technical manpower is more expensive.

Among technological determinants, only CC compatibility was found to influence initial adoption. This suggests migration is more likely if CC is perceived to align with an organization's existing systems and needs. The remaining technological variables (relative advantage, complexity and security concerns) appear to have no significant effect on adoption of CC e-commerce in the present context, which is inconsistent with previous studies (Tan et al., 2008; To et al., 2006; Low et al., 2011; Alhammadi et al., 2015; Gangwar et al., 2015). One possible explanation is that these factors are necessary but insufficient; validation of this finding would require further investigation of the model in another developing country. Another possible reason, as discussed previously, is that cloud computing is a relatively new and expensive technology, at least in Egypt.

Supporting industries, government and market forces are three factors that appear to affect initial adoption of e-commerce. The findings indicate that government support can motivate CC-based e-commerce applications through effective legislation, as well as legal, customs and tax environments. Support industries' e-readiness, in terms of the availability of secured telecommunication infrastructures, was also found to be essential for e-commerce diffusion. In some developing countries, telecommunications infrastructure is provided solely by government entities, lending further importance to government support in terms of legal frameworks as well as telecommunications and security infrastructure. More specifically, in a cloud computing context, government regulation and initiatives in technologically developing countries play a major role in encouraging enterprises to adopt new technologies (Alhammadi et al., 2015). According to our respondents, as the few cloud services providers in Egypt commonly provide only hosting services, their reliability is not yet well established. Instead, most businesses employ cloud providers in the US or Europe, adding further to operational costs. However, market forces were found to have a significant effect on adoption, supporting previous evidence of this factor's role in facilitating e-commerce diffusion (Molla et al., 2005a; Kshetri et al., 2002). It seems clear that, in developing countries, businesses with global customers and business partners and/or multinational supply chains are most likely to spearhead the latest technology to avoid market displacement.

CONCLUSION

This study advanced and empirically tested a novel framework, integrating adoption of e-commerce and cloud computing in a single model. The organizational, technical and environmental antecedents of cloud computing-based e-commerce adoption were explored in Egypt as an example of a developing country. The findings identified organizational resources related to technology, business and manpower, and the compatibility of these resources with cloud computing technologies, as significant influences on cloud computing-based ecommerce adoption. Organizational awareness of opportunities, potential

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benefits and possible threats were also found to affect the adoption decision. Small and medium-sized firms were found to be more ready to adopt cloud computing-based e-commerce, as ROI was found to be higher in small or start-up firms when compared to larger companies.

Supporting industries, governments and market forces readiness were identified as three contextual factors that affect initial adoption of cloud-based e-commerce. In many developing countries, government support is even more important, comprising legal support as well as provision of telecommunications and security infrastructure, along with appropriate tax and customs regulations. The current lack of local and regional cloud providers means that many businesses in Egypt employ cloud providers in US or Europe, adding further operational costs. The findings also indicate that in some developing countries with high-cost telecommunications and low-cost manpower, cloud computing may not be the best option for some firms. Those with links to global customers and business partners and/or multinational supply chains are most likely to deploy cloud e-commerce technology to ensure faster time to market.

In summary, cloud-based e-commerce can play a major role in boosting developing countries' economies, with adoption of such technologies built on government support, cloud providers and multinational partners. Awareness within the organization and compatibility of existing resources with cloud play a major role in adoption, with a higher return on investment for small to medium firms. Government, non-government organizations and business leaders can draw on the implications of this study to identify internal and external opportunities for CC e-commerce initiatives in technologically developing communities.

Methodological Implications

A key methodological strength of this research was the integration of antecedents of e-commerce and cloud computing adoption in a single model, along with validation of this model as a relevant framework for studying cloud-based e-commerce in developing countries. The proposed model encompasses most aspects of innovation adoption under three major research constructs: organizational, technical and environmental factors. This research contributes methodologically to the study of CC e-commerce adoption. First, contrary to assumptions in most of the existing literature, cloud adoption in developing countries is affected more by readiness and support within and outside organizations than by technical issues. These findings challenge the previous focus on technical aspects of cloud computing (such as relative advantage, security issues and technical complexity) as the main constraints on adoption, aligning instead with previous findings concerning the importance of internal organizational capabilities and the compatibility of organization's resources with the innovation technology for adoption in developing countries. The present findings suggest that firms with human, technological and business resources that are perceived as compatible with cloud computing technology are more open to cloud e-commerce adoption, not least because they also have an adequate awareness of potential benefits and threats. Second, the study highlights the major role of government as the main and sometimes sole provider of infrastructure and services in most developing countries. Finally, the study highlights the influence of international markets on developing markets, where new technologies in global markets serve as a catalyst for developing market innovation.

Practical Implications

Business leaders can apply the current findings to assess business, technical and human resources within their organization and to evaluate the compatibility of these resources with cloud-based e-commerce

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adoption. Potential risks were identified in terms of government readiness related to legal infrastructure, as well as service providers' readiness concerning available, reliable and affordable secured technical infrastructure. The equations for return on investment in cloud computing provided here may encourage business leaders and new startup entrepreneurs to calculate cost savings and profit increase in migrating to cloud. This research may also encourage developing organizations to monitor new innovations in international markets and to become more aware of how these changes impact on their revenue. Organizations with international partners are keener to adopt such innovations in pursuit of faster time to global market.

Service providers, government entities and international organizations seeking to expand in developing markets could use the proposed model to understand the factors affecting cloud e-commerce adoption in developing countries. In most developing countries, although Internet infrastructure is reliable enough, and there is affordable and skilled technical manpower, e-business remains underdeveloped. The present findings suggest that this owes in part to a lack of credibility of local service providers, as well as the high cost of communication lines. It follows that investment in appropriate legal regulation and lower-cost bandwidth is a pressing issue for governments and private service providers. As essential steps, governments of developing countries must encourage high technology service providers while also legislating to control online payments and charging mechanisms for cloud services.

Limitations and Future Work

The present study is among the first to link cloud computing technology with an e-commerce adoption model in the context of a developing country. Further testing and refinement of the proposed model is needed to resolve issues related to the items and constructs dropped from the model. As the study investigated only IT companies working in Egypt, future research using a larger sample drawn from various industries and applied in other developing countries can test the relevance of the model and whether these results are replicable.

Additionally, the quantitative approach adopted here could not fully capture the reasons underlying participants' perceptions of key constructs. Their qualitative responses at the end of the survey highlighted additional themes not included in the model, such as the high cost of communication lines and the small number of cloud providers in Egypt. These findings suggest additional constructs that could usefully be explored further.

REFERENCES

Al-Ghamdi, R., & Drew, S. (2011). Seven key drivers to online retailing in KSA. *In Proceedings of the IADIS International Conference on e-Society,* Avila, Spain: IADIS.

Alhammadi, A., Stanier, C., & Eardley, A. (2015, August 28-29). The Determinants of Cloud computing Adoption in Saudi Arabia. In C. Wyld & J. Zizka (Eds.). Computer Science & Information Technology *:The Second International Conference on Computer Science and Engineering, CSEN 2015 Proceedings*, Dubai, UAE (pp. 55–67). 10.5121/csit.2015.51406

Ali, H., & Alrayes, A. (2014). An Empirical Investigation of the Effect of E-Readiness Factors on Adoption of E-Procurement in Kingdom of Bahrain. *International Journal of Business and Management*, *9*(12), 220–229. doi:10.5539/ijbm.v9n12p220

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Aljifri, A., Pons, A., & Collins, D. (2003). Global e-commerce: A framework for understanding and overcoming the trust barrier. *Information Management & Computer Security*, *11*(3), 130–138. doi:10.1108/09685220310480417

Armbrust, M., Fox, A., Griffith, R., Joseph, A. D., Katz, R., Konwinski, A., ... Zaharia, M. (2010). A view of cloud computing. *Communications of the ACM*, *53*(4), 50–58. doi:10.1145/1721654.1721672

Au, Y., & Kauffman, R. (2001). Should we wait? Network externalities, compatibility and electronic billing adoption. *Journal of Management Information Systems*, *18*(2), 47–75. doi:10.1080/07421222.2001.11045678

Blount, Y., Castleman, T., & Swatman, P. (2005). E-commerce, human resource strategies, and competitive advantage: Two Australian banking case studies. *International Journal of Electronic Commerce*, *9*(3), 73–89.

Boston Consulting Group. (2012). Egypt at a Crossroads: How the Internet Is Transforming Egypt's Economy.

Chatterjee, D., Grewal, R., & Sambamurthy, V. (2002). Shaping up for e-commerce: Institutional enablers of the organizational assimilation of web technologies. *Management Information Systems Quarterly*, *26*(2), 65–89. doi:10.2307/4132321

Chin, W. (1998). The Partial Least Squares Approach to Structural Equation Modelling. In G. Marcoulides (Ed.). Modern Methods for Business Research (pp. 295-336). Lawrence Erlbaum Associates.

Daniel, E. M., & Grimshaw, D. J. (2002). An exploratory comparison of electronic commerce adoption in lare and small enterprises. *Journal of Information Technology*, *17*(3), 133–147. doi:10.1080/0268396022000018409

El-Behary, H. (2015). Less than 4,000 Egyptians transact online: Despite fast penetration of internet in Egypt, e-commerce remains slow in growth. *Daily Egypt News.* Retrieved from http://www.dailynews-egypt.com/2015/01/13/less-4000-egyptian-transact-online-egypt-business-directory/

Fathian, M., Akhavan, P., & Hoorali, M. (2008). E-Readiness Assessment of non-profit ICT SMEs in a Developing Country: The Case of Iran. *Technovation*, *28*(9), 578–590. doi:10.1016/j.technovation.2008.02.002

Fornell, C., & Larcker, D. (1981). Structural Equation Models with Unobservable Variables and Measurement Errors. *JMR, Journal of Marketing Research*, *18*(2), 39–50. doi:10.2307/3151312

Gangwar, H., Date, H., & Ramaswamy, R. (2015). Understanding determinants of cloud computing adoption using an integrated TAM-TOE model. *Journal of Enterprise Information Management*, *28*(1), 107–130. doi:10.1108/JEIM-08-2013-0065

Gefen, D. (2000). E-commerce: The Role of Familiarity and Trust. *Omega: The International Journal of Management Science*, *28*(6), 725–737. doi:10.1016/S0305-0483(00)00021-9

Ghoneim, A., Ghoneim, S., & Kamel, S. (2004). The impact of the role of the government of Egypt in electronic commerce development and growth. In M. K. Hershey (Ed.), *The Social and Cognitive Impacts of E-commerce on Modern Organizations* (pp. 253–276). Hershey, PA: IGI Global.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hair, F., Anderson, E., Tatham, L., & Black, C. (1995). *Multivariate Data Analysis with Readings* (4th ed.). Englewood Cliffs, NJ: Prentice Hall.

Hawk, S. (2004). A Comparison of B2C E-commerce in Developing Countries. *Electronic Commerce Research*, *4*(3), 181–199. doi:10.1023/B:ELEC.0000027979.91972.36

Javaid, A. Cloud Computing in E-commerce, its benefits and E-commerce Application, Academia.edu.

Jennex, M. E., & Amoroso, D. L. (2002). E-Business and technology issues for developing economics: A Ukraine case study. *Electronic Journal of Information Systems in Developing Countries*, *10*(5), 1–14.

Keil, M., Tan, B., Wei, K., Saarinen, T., Tuunainen, V., & Wassenaar, A. (2000, June). A cross-cultural study on escalation of communication behaviour in software projects. *Management Information Systems Quarterly*, *24*(2), 299–325. doi:10.2307/3250940

Kshetri, N., & Dholakia, N. (2001). Determinants of the global diffusion of B2B E-commerce. *Electronic Markets*, *12*(2), 120–129. doi:10.1080/10196780252844562

Kuan, K., & Chau, P. (2001). A perception-based model for EDI adoption in small businesses using a technology-organization environment framework. *Information & Management*, *38*(8), 50–57. doi:10.1016/S0378-7206(01)00073-8

Low, C., Chen, Y., & Wu, M. (2011). Understanding the determinants of cloud computing adoption. *Industrial Management & Data Systems*, *111*(7), 1006–1023. doi:10.1108/02635571111161262

Maheswaran, M. (2008, November). Cloud computing, Seminar Report. Cochin University of Science and Technology, India.

Misra, S., & Mondal, A. (2011). Identification of a companys suitability for the adoption of cloud computing and modelling its corresponding return on investment. *Mathematical and Computer Modelling*, *53*(3-4), 504–521. doi:10.1016/j.mcm.2010.03.037

Molla, A., & Heeks, R. (2007). Exploring E-commerce Benefits for Businesses in a Developing country. *The Information Society*, *23*(2), 95–108. doi:10.1080/01972240701224028

Molla, A., & Licker, P. S. (2005a). eCommerce adoption in developing countries: A model and Instrument. *Information & Management*, *42*(6), 877–899. doi:10.1016/j.im.2004.09.002

Molla, A., & Licker, P. S. (2005b). Perceived E-Readiness Factors in E-Commerce Adoption: An Empirical Investigation in a Developing Country. *International Journal of Electronic Commerce*, *10*(1), 83–110.

Montealegre, R. (1996). Implications of electronic commerce for managers in developing countries. *Information Technology for Development*, *7*(3), 145–153. doi:10.1080/02681102.1996.9525279

Pinsonneault, A., & Kraemer, K. (1993). Survey research methodology in management information systems: An assessment. *Journal of Management Information Systems*, *10*(2), 75–105. doi:10.1080/07421222.1993.11518001

Schadler, T. (2009, January 5). Should your email live in the cloud? A comparative cost analysis.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Shah, J. (2014). Role and Challenges in Cloud Computing and Ecommerce in SME's. *International Multidisciplinary Research Journal*, *1*(3), 1–4.

Tan, J., Tyler, K., & Manica, A. (2007). Business-to-business adoption of e-commerce in China. *Information & Management*, *44*(3), 332–351. doi:10.1016/j.im.2007.04.001

Tan, S. K., Chong, S. C., Lin, B., & Eze, U. C. (2008). Internet-based ICT adoption: Evidence from Malaysian SMEs. *Industrial Management & Data Systems*, *109*(2), 224–244. doi:10.1108/02635570910930118

To, M. L., & Ngai, E. W. T. (2006). Predicting the organizational adoption of B2C e-commerce: An empirical study. *Industrial Management & Data Systems*, *106*(8), 1133–1147. doi:10.1108/02635570610710791

Travica, B. (2002). Diffusion of electronic commerce in developing countries: The case of Costa Rica. *Journal of Global Information Technology Management*, *5*(1), 4–24. doi:10.1080/1097198X.2002.10856317

Tuncay, E. (2010). Effective use of cloud computing in educational institutions. *Procedia: Social and Behavioral Sciences*, *2*(2), 938–942. doi:10.1016/j.sbspro.2010.03.130

Xu, S., Zhu, K., & Gibbs, J. (2004). Global technology, local adoption: A cross-country investigation of Internet adoption by companies in the United States and China. *Electronic Markets*, *14*(1), 13–24. doi:10.1080/1019678042000175261

Zhu, K., Kraemer, K., & Sean Xu, K. (2003). Electronic business adoption by European firms: A cross-country assessment of the facilitators and inhibitors. *European Journal of Information Systems*, *12*(4), 251–268. doi:10.1057/palgrave.ejis.3000475

Zhuang, Y., & Lederer, A. (2006). A resource-based view of electronic commerce. *Information & Management*, *43*(2), 251–261. doi:10.1016/j.im.2005.06.006

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APPENDIX

Table 7. Survey items

Constructs & References	Items	Measures
Firm Size (FS) Tan et al., 2007	FS1	how many employees are there in your company? (> 50, 50-500, more than 500)
Awareness (A) Molla et al., 2005a	A1	CC-based e-commerce is not yet applicable to our environment
	A2	CC-based e-commerce applications are becoming common with our partners
	A3	Businesses with whom our organization is competing are implementing CC-based e-commerce
	A4	Our business recognizes the opportunities and threats enabled by CC-based e-commerce
	A5	We has a good understanding of CC-based e-commerce business models applicable to our business
	A6	We have a good understanding of CC-based e-commerce application solutions for our business
	A7	We have a clear understanding of the potential benefits of CC-based e-commerce to our business
	A8	Our organization believes that the gain from CC-based e-commerce outweighs its cost
	A9	We consider that CC-based e-commerce has a tremendous impact on our business
	A10	In general our business has adequate awareness about CC-based e-commerce
Commitment (C) Molla et al., 2005a	C1	We have a clear vision on CC-based e-commerce
	C2	Vision of CC-based e-commerce activities is understood in our company
	C3	Our CC-based e-commerce implementations are strategy-led
	C4	Senior management lead our CC-based e-commerce initiatives
	C5	We have staffed our CC-based e-commerce projects with the proper resources to achieve their goals
	C6	We have CC-based e-commerce mind-set at all levels of management
	C7	Our business demonstrates adequate level of commitment in CC-based e-commerce
Human Resources (HR) Tan et al., 2007	R1	Most of our employees are computer literate
	R2	Most of our employees have unrestricted access to computers
	R3	Most of our employees have unrestricted Internet access
Business Resources (BR) Molla et al., 2005a	R4	We have necessary technical and managerial skills to implement CC-based e-commerce
	R5	Our organization has a culture of enterprise wide information sharing
	R6	We have a policy that encourages CC-based e-commerce initiatives
	R7	We are aggressive in experimenting with new technologies
	R8	Failure can be tolerated in our organization
	R9	Our organization is capable of dealing with rapid changes
	R10	We have strong relationships with our suppliers and customers
	R11	We have sufficient experience with network based applications
	R12	We sufficiently invest in our CC-based e-commerce projects
	R13	We have business resources to implement CC-based e-commerce
	R14	Our existing systems allow us to make changes for CC-based e-commerce applications
	R15	We have an established enterprise-wide IT infrastructure
	R16	Our existing systems are flexible

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Table 7. Continued

Constructs & References	Items	Measures
Governance (G) Molla et al., 2005a	G1	Roles and responsibilities are clear for CC-based e-commerce initiative
	G2	CC-based e-commerce accountability is extracted via on-going responsibility
	G3	Decision-making authority has been clearly assigned for all CC-based e-commerce initiatives
	G4	Our managers demonstrate readiness for change
	G5	We thoroughly analyze the possible changes to be caused in our organization, suppliers, partners, and customers as a result of each CC-based e-commerce implementation
	G6	We follow a systematic process for managing change issues as a result of CC-based e-commerce
	G7	We have clearly defined metrics for assessing the impact of our CC-based e-commerce initiatives
	G8	We have an effective governance model in our CC-based e-commerce
Relative Advantage (RA) To et al., 2006	RA1	Using CC-based e-commerce technology would increase our business opportunities
	RA2	Using CC-based e-commerce would improve our customer services
	RA3	Using CC-based e-commerce would enhance our competitiveness
Compatibility (CT) Tan et al., 2008	CT1	CC-based e-commerce technology is fitting with the existing resources
	CT2	CC-based e-commerce technology is matching our needs
	CT3	CC-based e-commerce technology suited the staff previous experiences
Complexity (CL) Tan et al., 2008	CL1	CC-based e-commerce technology is difficult to understand
	CL2	CC-based e-commerce technology is difficult to use
Security Concerns (SC) Gangwar et al., 2015	SC1	We believe that CC technology ensure security controls for our data
	SC2	We believe that CC technology prevent unauthorized access for our data
	SC3	We consider CC technology as a safe environment for business
Government e-Readiness (GVeR) Molla et al., 2005a	GVeR1	We believe that there are effective laws to protect consumer privacy
	GVeR2	We believe that there are effective laws to combat cyber crime
	GVeR3	We believe that the legal environment is conducive for Internet business
	GVeR4	The government demonstrates commitment for CC-based e-commerce
	GVeR5	Government regulations allow electronic settlement of CC-based e-commerce transactions
Supportive Industries e-Readiness (SIeR) Molla et al., 2005a	SIeR1	Secure electronic transaction services are easily available and affordable
	SIeR2	The telecommunication infrastructure is reliable and efficient
	SIeR3	Technology infrastructure of financial institutions is capable of supporting CC-based e-commerce
	SIeR4	There is efficient and affordable support from the local IT industry to support CC-based e-commerce
Market Forces e-Readiness (MFeR) Molla et al., 2005a	MFeR1	We believe that our customers are ready to do business on the Internet
	MFeR2	We believe that our business partners are ready to conduct business on the Internet
CC-based e-commerce Adoption (EA) Molla et al., 2005a		which one of the following best describes the current e-commerce status of your company?
	EA1	not connected to the Internet with no emails
	EA2	connected to the Internet with emails but no web site
	EA3	static site publishing basic company information without interactivity
	EA4	interactive web site accepting queries and entry from users
	EA5	interactive CC-based e-commerce that is online selling and purchasing of products and services

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Chapter 17
The Moderating Effects of Gender on E-Commerce Systems Adoption Factors

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ABSTRACT

The purpose of this article was to investigate the moderating effects of gender on e-commerce systems adoption factors among university lecturers in Ghana. In order to achieve this purpose, the unified theory of acceptance and use of technology (UTAUT) was used as the theoretical lens for the study. Eight hypotheses were developed and tested. Data analysis was performed with a structural equation modeling (SEM) technique using SmartPLS Application. Using a survey of 223 respondents, the study showed that factors such as performance expectancy, effort expectancy, and facilitating conditions positively and significantly influenced Ghanaian lecturers' behavioral intention and ultimately the actual use of e-commerce systems. As for the moderating effects of gender, this study discovered that gender insignificantly moderated the effects of performance expectancy, effort expectancy and social influence on behavioral intention.

1. INTRODUCTION

In recent times, e-commerce has revolutionized the conduct of business to a large extent. Electronic commerce (EC) has substantial potential to foster the growth of businesses being it small or medium-sized enterprises (SMEs) in developed and developing countries (Wang et al., 2016; Chen, 2012; Kauffman et al., 2010; Choshin & Ghaffari, 2017; Yang et al., 2015). It comes as no surprise that the e-commerce systems adoption research has seen much attention in recent times (Ueasangkomsate, 2015; Thorleuchter & Van den Poel, 2012; Kim & Peterson, 2017; Oliveira et al., 2017; Wang et al., 2016; Hallikainen &

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Laukkanen, 2018; Kaur & Khanam Quareshi, 2015; Hwang & Lee, 2012; Capece et al., 2012; Rahayu & Day, 2016). For a successful e-commerce systems implementation, e-commerce researchers and practitioners must have an in-depth of online customer behavior. Even though there are research endeavors to explain e-commerce system adoption and online consumer behavior (Chiliya et al., 2011; Govindaraju et al., 2015; Kartiwi & MacGregor, 2008; Triandini et al., 2017), one of the main questions is how to understand the influences of social normative and affective factors on electronic customer relationship management. Lian & Yen (2014) also recently called for research to investigate the moderating effects of gender in e-commerce systems adoption. Arguably, among the many characteristics that impact the use of e-commerce, one that has received relatively little attention is gender. Extant evidence suggests that men and women differ in their beliefs regarding the use of information technology-related innovations, including ecommerce (Zhou & Wang, 2010; Wang, Wu & Wang 2009; Van Slyke et al., 2010). However, less is known about how gender moderates the impact of various beliefs on behavioral intentions.

Despite this great attention by the researchers, studies on the moderating effects of gender on e-commerce systems adoption is still far behind (Hasan, 2010; Saeed et al., 2003a, 2003b; Lian & Yen, 2014). This raises the question as to what are the precise factors that influence gender in their adoption of e-commerce. The answer is important as it is widely known that the e-commerce can revolutionize the conduct of business globally and play an important role in economic development. E-commerce make a significant contribution not only in terms of its technological and managerial benefits but also in terms of development and opportunities it provides (Yeh et al., 2014). This study fills this knowledge gap by investigating the factors responsible for gender differences in the adoption factors of e-commerce adoption.

It cannot be denied that there have been studies conducted regarding e-commerce adoption by organizations/businesses, however most of these focus on developed countries (Williams, Dwivedi, Lal, & Schwarz, 2009; Daniel & Grimshaw, 2002). Studies that focus on e-commerce in developing countries are rarely found. As commonly known, there is a difference between developing countries and developed countries. These differences are not only from an economic standpoint, but they also concern political, environmental and social as well as cultural factors. Therefore, research findings obtained from developed countries cannot be applied directly to developing countries.

The potential tendency for e-commerce to foster the growth of businesses in developing countries calls for further research to better enhance the understanding of e-commerce adoption in the context of developing economies. Motivated from these gaps, this study aims to investigate the moderating effects of gender on e-commerce adoption factors in Ghana.

The organization of this paper is as follows: Section 2 presents the theoretical foundations and literature; Section 3 presents the research model and hypotheses; Section 4 outlines the research methodology and analysis; Section 5 presents the discussion of the findings, and Section 6 presents limitations of the study and suggestions for future research. Section 7 concludes the study.

2. THEORETICAL FOUNDATION AND LITERATURE

2.1. The Unified Theory of Acceptance and Use of Technology (UTAUT)

The unified theory of acceptance and use of technology (UTAUT) is over a decade old and has been used extensively in information systems (IS) and other fields. UTAUT was originally devised in order to explain the factors that affect the acceptance and use of ICT by employees. Nevertheless, in numerous

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studies it has been applied in a consumer context. Furthermore, UTAUT has become a popular theoretical choice within the field of ICT (Williams, Rana, Dwivedi, & Lal, 2011). Examples of applications of the UTAUT in consumer contexts include the adoption by users of the following information and communication technologies: mobile banking (Zhou, Lu, & Wang, 2010); mobile phone technologies (Lu, Yao, & Yu, 2005; Park, Yang, & Lehto, 2007; Wang & Wang, 2010; Zhou, 2011); online family dispute resolution services (Casey & Wilson-Evered, 2012); location-based services (Xu & Gupta, 2009); question answer services (Deng, Liu, & Qi, 2011); Internet banking (Abushanab & Pearson, 2007; Im, Hong, & Kang, 2011; Riffai, Grantb, & Edgarc, 2012); virtual learning technologies (Chiu & Wang, 2008); e-government (Hung, Wang, & Chou, 2007; Sapio et al., 2010; Schaupp, Carter, & McBride, 2010; Wang & Shih, 2009); e-recruiting (Laumer, Eckhardt, & Trunk, 2010); and online purchase intention in regard to rural tourism (San Martín & Herrero, 2012). Additionally, in the area of organizations the UTAUT model has been applied to technologies such as: computer use (Al-Gahtani, Hubona, & Wang, 2007); electronic commerce applications (Sutanonpaiboon & Pearson, 2006; Wymer & Regan, 2005); virtual learning technologies (Van Raaij & Schepers, 2008; Wang, Wu, & Wang, 2009); human resources databases (Eckhardt, Laumer, & Weitzel, 2009); organizational social networks (Curtis et al., 2010; Sykes, Venkatesh, & Gosain, 2009); e-government (Gupta, Dasgupta, & Gupta, 2008); and health information systems (Alapetite, Andersen, & Hertzum, 2009; Chang, Hwang, Hung, & Li, 2007; Duyck et al., 2010; Kijsanayotin, Pannarunothai, & Speedie, 2009).

The UTAUT states that behaviour/actual use of a system is preceded by intention with intention being influenced by performance expectancy (PE), effort expectancy (EE), social influence (SI) and facilitating conditions (FC). PE refers to the degree to which an individual believes that using a system will be beneficial or improve his/her job performance (Venkatesh et al., 2003). EE refers to the degree of ease associated with the use of a system (Venkatesh et al., 2003). SI refers to external actors that can influence an individual perception on system use. Examples of these factors are family, friends and mass media (Venkatesh et al., 2003). FC refers to the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system (Venkatesh et al., 2003). The definitions and root constructs of the four constructs of UTAUT is provided in Table 1.

Table 1. Definitions and root constructs for the four constructs (Venkatesh et al. 2003)

Construct	Definition	Root constructs
Performance expectancy	The degree to which an individual believes that using the system will help him or her to attain gains in performance	Perceived Usefulness from Technology Acceptance Model (TAM)
Effort expectancy	The degree of ease associated with the use of the system	Perceived ease of use' from TAM
Social influence	The degree to which an individual perceived that important others believe he or she should use the new system	Subjective norm in Theory of Reasoned Action (TRA), TAM2, Theory of Planned Behaviour (TPB)
Facilitating conditions	The degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system.	Perceived behavioral control' from TPB

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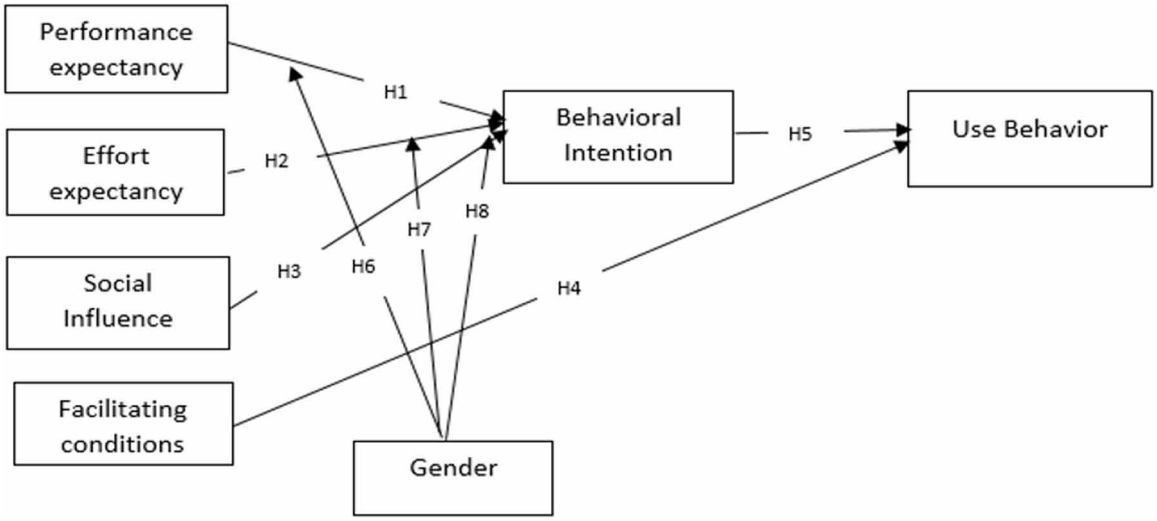
3. RESEARCH MODEL AND HYPOTHESES

Figure 1. Theoretical framework. Source: UTAUT model (Venkatesh et al. 2003)



A number of e-commerce studies have been conducted based on the UTAUT model (Figure 1). Gupta et al. (2008) found that performance expectation, effort expectation, social influence, and facilitating conditions affect users' behavioral intentions toward ICT in an e-government context. Similar findings were also found in a study conducted by Schaupp et al. (2010). Chiu and Wang (2008) added the ''subjective task value'' construct in their study of user intentions regarding the continuing use of online learning. They found that the performance expectation and effort expectation are significant variables. Similar studies conducted by Pynoo et al. (2011) which focused on teacher acceptance of digital learning, and Qingfei et al. (2008) which focused on user acceptance of mobile commerce confirmed the importance of the four drivers in the context of EC. Zhou et al. (2010) integrated the Task Technology Fit (TTF) and UTAUT models to understand users' behavioral intentions toward mobile banking and found that, with the exception of effort expectation, the other three drivers have significant effects. Based on the above discussion, the four drivers belonging to UTAUT have sufficient explanatory power in an EC environment context.

According to a study by Agarwal & Prasad (1998), performance expectancy is the strongest predictor of intention behavioral action. The predictive effect of performance expectancy is mediated by age, gender and experience. Previous research by Calvert et al. (2005) found that at early ages there was no significant difference between males and females in using computers however, at later ages, females' interest wanes. In related research by Afarikumah & Acheampong (2010), the perception of computer usefulness was found to be irrespective of gender and age of tertiary students. In view of the above discussion, the researchers hypothesized that:

H1. Performance expectancy will positively affect lecturers' intention to adopt e-commerce systems.

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The effort expectancy construct within each model is significant in both voluntary and mandatory usage contexts; however, each one is significant during the first time period, becoming non-significant over periods of extended and sustained usage (Venkatesh et al., 2003) which is consistent with previous research (e.g., Agarwal & Prasad, 1997, 1998; Davis et al., 1989; Thompson et al., 1991, 1994). To this end we expect effort expectancy to be more prominent in the embryonic stage of every behavioral intention for Ghanaian lecturers to adopt e-commerce system. It is also expected that increased levels of ease of use of e-commerce systems will also increase the behavioral intention to use the system. As a result, the researchers hypothesized:

H2. Effort expectancy will positively affect lecturers' intention to adopt e-commerce systems.

Social influence in all the models contains the explicit or implicit notion that the individual's behaviour is influenced by the way in which they believe others will view them as a result of having used the technology (Venkatesh et al., 2003). Social influence can directly affect intention to use technology. Family, friends and even media can influence the overall behavioral intention to adopt e-commerce systems. According to Hartwick and Barki, (1994) reliance on others' opinions in technology acceptance literature is significant only in mandatory settings. Thus, the authors hypothesized that:

H3. Social Influence will positively affect lecturers' intention to adopt e-commerce systems.

According to the authors of the UTAUT model, facilitating conditions have a positive relationship with technology usage. In earlier models such as Theory of Planned Behavior and DTPB, facilitating conditions predict intention when effort expectancy is unavailable. However, in MPCU and IDT, prediction of facilitating conditions on behavioral intention is non-significant (Venkatesh et al 2003). In situations where an individual believes that support to use technology is erratic, influence on intentions to use technology will be significant. However, where the support is consistent we expect facilitating conditions to directly influence use behavior. It is therefore expected that facilitating conditions will predict use behavior.

H4. Facilitating conditions will positively affect lecturers' use behavior to adopt e-commerce systems.
H5. Behavioral intention will positively affect lecturers' User behavior to adopt e-commerce systems.

3.1. Gender Effect

The ''gender gap'' in IT acceptance has been well documented in prior studies (Bae & Lee, 2011; Fan & Miao, 2012; Garbarino & Strahilevitz, 2004; Nirmala & Dewi, 2011; Sangran et al., 2009; Sebastianelli et al., 2008; Seock & Bailey, 2008; Stafford et al., 2004; Van Slyke, Belanger, Johnson, & Hightower, 2010; Van Slyke et al., 2002; Wu, 2003). Following are related findings. Van Slyke et al. (2002) noted that, in general, men are more likely to try a new IT than are women. In other words, in comparison with females, males tend to have higher Personal Innovativeness of IT (PIIT) and online shopping is no exception (Bae & Lee, 2011; Sangran et al., 2009; Seock & Bailey, 2008; Van Slyke et al., 2010). Sangran et al. (2009) indicated that men and women have different motivations for shopping online. Van Slyke et al. (2002) found that men like to shop online more than woman do. Additionally, men have significantly more positive perceptions regarding compatibility, complexity, relative advantage, result

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demonstrability, and trust than woman do. Similar findings were also noted by Garbarino and Strahilevitz (2004) who indicated that woman have higher levels of perceived risk regarding online shopping than men have. Therefore, a friend's recommendation has a greater effect onto a woman's intention to shop online than it has for a man's. In other words, because women perceive the risk of shopping online as high, recommendations from friends will reduce that perceived risk and increase their intention to shop online. Bae and Lee (2011) reported similar findings. Fan and Miao (2012) studied the effects of electronic word-of- mouth and found that males and females have different online shopping behaviors. Wu (2003) also found that, in comparison with women, men have a relatively more positive attitude toward online shopping. Additionally, men and women have different preferences regarding different online shopping product types (Nirmala & Dewi, 2011; Sebastianelli et al., 2008). Stafford et al. (2004) noted that this gender gap in the context of online shopping also exists across different cultures and nationalities. This is why it will be necessary to study this gender gap within the Ghanaian context.

Consequently, the following hypotheses are proposed to understand the moderating effect of gender on the EC systems adoption among Ghanaian lecturers.

H6. The influence on performance expectancy on Ghanaian lecturers' intention to adopt e-commerce systems will be moderated by gender.

H7. The influence on effort expectancy on Ghanaian lecturers' intention to adopt e-commerce systems will be moderated by gender.

H8. The influence on social influence on Ghanaian lecturers' intention to adopt e-commerce systems will be moderated by gender.

4. RESEARCH METHODOLOGY AND ANALYSIS

The purpose of this study is to gain clear understanding of the factors that influence user's intention to adopt e-commerce system. This study adopted the survey as the research design. This was to enable the test of the hypotheses and provide a basis to generalize the findings. The sample consisted of lecturers in Ghana who use e-commerce platform. Questionnaires were sent to two hundred and forty-five lecturers who use E-commerce platform such as Jumia Ghana, eShopAfrica, Heel the World, Lamudi, Tisu and zoobashop. Out of the 245-questionnaire sent, 223 were responded. The data gathered was then analyzed based on respondent's feedback with Structural equation modeling (SEM) technique using SmartPLS Application. The questionnaire was divided into 2 sections; Section A (demographic information), Section B; consist of the latent variables used for the study (information about performance expectancy, effort expectancy, social influence, facilitating condition, behavioral intention and use behavior). To ensure the content validity of the scales, all the items used to measure the variables were drawn from previous studies related to technology acceptance (Venkatesh et al., 2003; Compeau & Higgins, 1995; Moore & Benbassat, 1991; Thompson, Higgins & Howell, 1991). Respondents were asked to indicate their agreement or disagreement with several statements on a five-point likert scale ranging from 1 = strongly disagree to 5 = strongly agree.

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4.1. Data Analysis and Results

The analysis of the study was conducted in three phases. The first phase tested the measurement model (Figure 2) to examine the reliability and validity of variables. The second phase tested the structural model which also examined the relationships and hypotheses of the variables; and the final stage tested the moderating effect of gender on three independent variables. The measurement and structural model were recommended by Hair et al. (2017) and Rahman et al. (2016) to help researchers to test their respective models.

4.2. Measurement Model

4.2.1. Reliability (Indicator, Cronbach's Alpha, Composite)

The study first assessed the reliability of the model. Three forms of reliability were used, namely; indicator reliability, composite reliability and Cronbach's alpha. Indicator reliability was computed by finding the square of each of the outer loadings (items). Much acceptable value for indicator reliability should be value larger than the minimum acceptable level of 0.4 and close to the preferred level of 0.7 (Hulland, 1999; Hair et al., 2012). This was done to remove items that may not contribute significantly to the study (Table 1). Cronbach's alpha and composite reliability were used to assess the inner consistency of the measurement model. Although both are good measurement model. In PLS-SEM, previous literature

Figure 2. Path model (measurement model results)

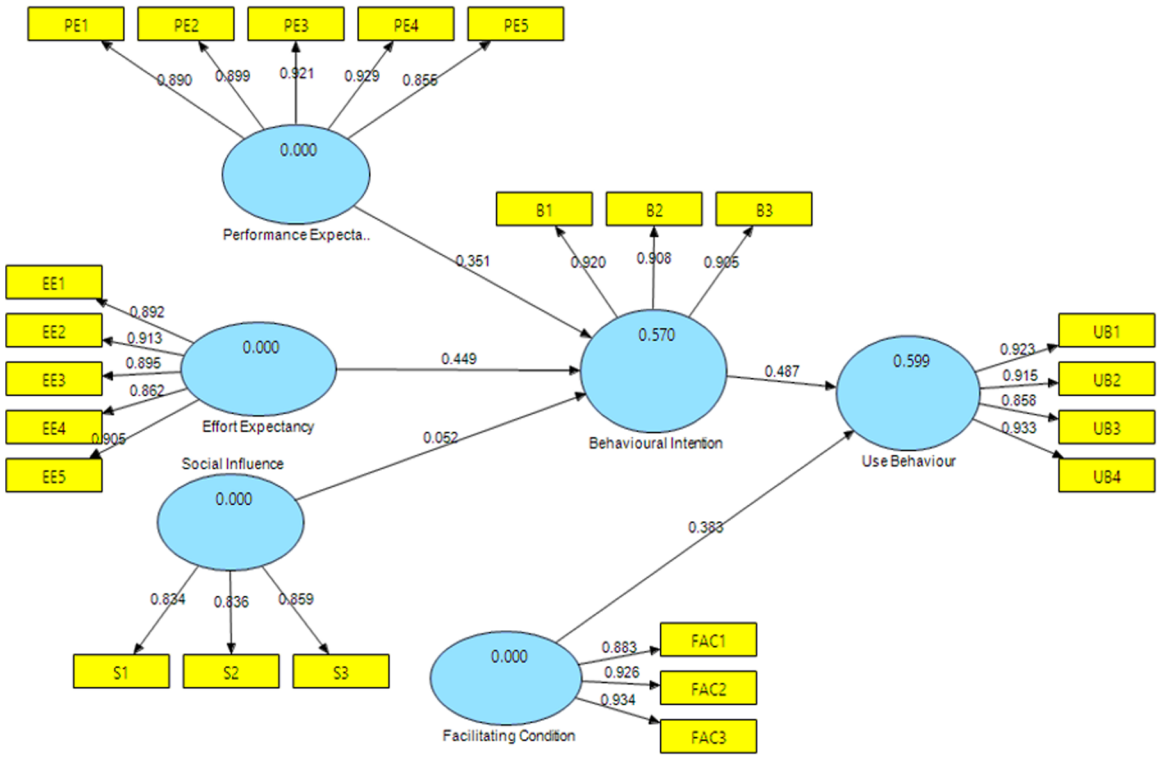

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Table 2. Summary of results

Latent variables	Indicators	Factor Loadings	Indicator Reliability (i.e. loadings^2)	Cronbach's Alpha	Composite Reliability
Behavioral Intention	B1	0.9204	0.8472	0.8983	0.9363
	B2	0.9084	0.8253		
	B3	0.9053	0.8196		
Effort Expectancy	EE1	0.8922	0.7960	0.9368	0.9519
	EE2	0.9132	0.8340		
	EE3	0.8949	0.8009		
	EE4	0.8619	0.7428		
	EE5	0.9046	0.8183		
Facilitating Condition	FAC1	0.8829	0.7795	0.9020	0.9547
	FAC2	0.9260	0.8575		
	FAC3	0.9340	0.8723		
Performance Expectancy	PE1	0.8903	0.7926	0.9405	0.9547
	PE2	0.8991	0.8084		
	PE3	0.9212	0.8486		
	PE4	0.9285	0.8621		
	PE5	0.8546	0.7304		
Social influence	S1	0.8338	0.6952	0.8191	0.8804
	S2	0.8363	0.6995		
	S3	0.8585	0.7370		
Use behavior	UB1	0.9230	0.8521	0.9285	0.9493
	UB2	0.9145	0.8364		
	UB3	0.8584	0.7369		
	UB4	0.9334	0.8713		

has suggested the use of composite reliability as a replacement of Cronbach's Alpha (Hair et al., 2012; Wong, 2013; Bagozzi & Yi, 1988). This is because, Cronbach's Alpha do not check for consistency of each indicator (item) but rather check the consistency for the combined indicators (Hair et al., 2013). As per Hair et al. (2014), the cut-off score for composite reliability is 0.7 and that of Cronbach's Alpha should be above 0.6 (Chin et al., 2003). As indicated in Table 1, the Cronbach's alpha value is above 0.6, and composite reliability value is more than 0.7. Hence, the model can be said as reliable or dependable.

4.2.2. Validity (Convergent, Discriminant)

The study also checked for convergent and Discriminant validity. Convergent validity specifies that items that are indicators of a construct should share a high proportion of variance (Wong, 2013; Hair el al., 2006). To check convergent validity, each latent variable's Average Variance Extracted (AVE) is evaluated. Average variance extracted (AVE) for each construct should be above the recommended cut-

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off 0.50 (Bagozzi & Yi, 1988; Fornell & Larker, 1981). From Table 2, it was found that all of the AVE values are greater than the acceptable threshold of 0.5, so convergent validity is confirmed. Discriminant validity which was also assessed, reflects the degree to which any single construct is unique and not simply a reflection of other variables (Hulland, 1999). As per Fornell and Larcker (1981), discriminant validity is obtained by calculating the square root of AVE, and if the values are larger the other correlation values among the latent variables. To do this, a table is created in which the square root of AVE is computed manually and written in bold on the diagonal of a correlation table between the latent variables (as seen in Table 3).

Table 3. Convergent and discriminant validity

	AVE	Behavioral Intention	Effort Expectancy	Facilitating Condition	Performance Expectancy	Social Influence	Use Behavior
Behavioral Intention	0.8307	**0.9114**					
Effort Expectancy	0.7984	0.6968	**0.8935**				
Facilitating Condition	0.8364	0.5726	0.6995	**0.9145**			
Performance Expectancy	0.8084	0.6600	0.6257	0.5928	**0.8991**		
Social Influence	0.7106	0.4844	0.5394	0.6797	0.5424	**0.8429**	
Use Behavior	0.8242	0.7069	0.7231	0.6624	0.6533	0.6368	**0.9078**

From the above Table 3, the latent variable Effort Expectancy AVE is found to be 0.798, hence its square root becomes 0.8935. This number is larger than the correlation values in the column of effort expectancy (0.6995, 0.6257, 0.5394 and 0.7231) and also larger than those in the row of effort expectancy (0.6968). Similar observation is also made for the latent variables performance expectancy, facilitating condition, social influence, behavioral intention and use behavior. The result indicates that discriminant validity is well established.

4.2.3. Structural Model Assessment

The study computed the T-statistics to check for the significance of the model using a procedure called bootstrapping (Figure 3) in SmartPLS. In this procedure, a large number of subsamples (e.g., 5000) are taken from the original sample with replacement to give bootstrap standard errors, which in turn gives approximate T-values for significance testing of the structural path (Wong, 2013). The Bootstrap result, however, approximates the normality of data. Path coefficient assessment is included in the structural model indicating the power of the relations among the R-square value and the latent variables (both independent and dependent variable). A 5% significance level ($p < 0.05$) is used as a statistical conclusion measure. The level of significance was determined by the use of the t-values. As indicated by Hair et al. (2013), t-values greater than the cut-off criteria (1.96) reflects significance in the model. Table 4 provides the summary of the results.

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Figure 3. Bootstrapping results

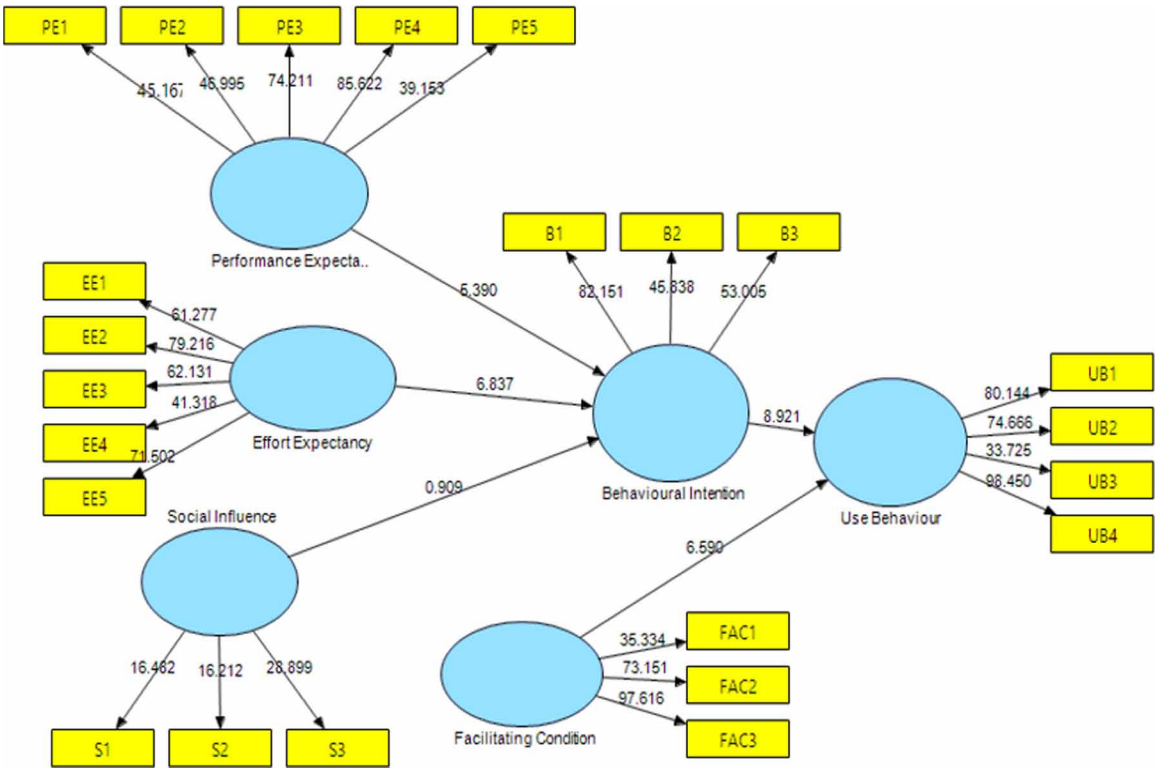

Table 4. Results of the hypothesis testing

HP	RLS	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T -Value	Decision
H1	PE -> BI	0.3506	0.3489	0.0664	0.0664	5.2737	Supported**
H2	EE-> BI	0.4494	0.4530	0.0653	0.0653	6.8761	Supported**
H3	SI -> BI	0.0517	0.0506	0.0571	0.0571	0.9057	Not supported
H4	FC-> UB	0.3832	0.3856	0.0600	0.0600	6.3857	Supported**
H5	BI -> UB	0.4874	0.4855	0.0570	0.0570	8.5426	Supported**
	BI (R^2) = 0.5697 ≈ 0.57			UB (R^2) = 0.5985 ≈ 0.60			

*p < 0.10; **p < 0.05; ***p < 0.01; BI = Behavioral Intention UB = Use Behavior FC = Facilitating Condition SI= social Influence; PE = Performance Expectancy EF = Effort Expectancy; HP = Hypothesis RLS = relationship

The analysis shows (Figure 2, Table 3) that performance expectancy (PE), effort expectancy and social influence together can explain 57% of the variance in behavioral intention. Also, facilitating condition and behavioral intention together explains 60% of the variance in use behavior. Hypothesis H1 states that performance expectancy will positively affect lecturers' intention to adopt e-commerce system. From Table 3, the hypothesis path for H1 was positive and significant ($\beta = 0.3506$, $P < 0.05$). This indicates that lecturers' intention to adopt e-commerce is influenced directly and positively by

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performance expectancy. Hence, hypothesis H1 is supported. Hypothesis H2 suggests that effort expectancy has a positive relationship on lecturers' intentions to adopt e-commerce system. The hypothesis path for H2 was positive and significant ($\beta = 0.4494$, $P < 0.05$). This indicates that lecturers' intention to adopt e-commerce is influenced directly and positively by effort expectancy. Hence, hypothesis H2 is supported. The relationship between social influence and lecturers' behavioral intention was not supported and insignificant with $\beta = 0.0517$ and $t = 0.9057$, indicating that social influence has no much significant with lecturers' intention to adopt e-commerce system. Hence, hypothesis H3 is not supported. Hypothesis H4 suggests that facilitating condition has a positive relationship on lecturers' intentions to adopt e-commerce system. The hypothesis path for H4 was positive and significant ($\beta = 0.3832$, $P < 0.05$). This indicates that lecturers' intention to adopt e-commerce is influenced directly and positively by facilitating condition. Hence, hypothesis H4 is supported. The relationship between behavioral intention and lecturers' use behavior was supported and significant with $\beta = 0.4874$and $t = 8.5426$, indicating that lecturers' behavioral intention to adopt e-commerce system is positively influenced by the user behavior. Hence, hypothesis H5 is supported.

4.2.4. Model Accuracy and Usefulness

The study also evaluated the model accuracy and usefulness by using Stone-Geisser Indicator (Q^2) and Cohen's Indicator (f^2) (Hair et al., 2014). The Stone-Geisser Indicator (Q2) measures the model prediction quality or significance model. As per Hair et al. (2014), to obtain a good prediction quality, indicator value greater than zero should be obtained. However, a perfect model would have $Q^2 = 1$, which indicates the model reflects reality and without any errors. Also, Cohen's Indicator (f^2) measures the usefulness of each construct. For Cohen's Indicator (f^2), Values of 0.02, 0.15 and 0.35 are considered small, medium, and large respectively (Hair et al., 2014). Table 4 shows that the values of Q^2, as well as those of f^2, indicate that the model is accurate and that the constructs are important for the general adjustment of the model.

Table 5. Values for Stone-Geisser Indicator (Q^2) and Cohen's Indicator (f^2)

Construct/variable	CV RED (Q^2)	CV COM (f^2)
Behavioral Intention	0.458518	0.622541
Effort Expectancy	0.687333	0.687333
Facilitating condition	0.633447	0.633447
Use behavior	0.491538	0.687263
Performance Expectancy	0.701884	0.701884
Social Influence	0.397532	0.397532
	$Q^2 > 0$	**f^2** > {0.02, 0.15 and 0.35 are considered small, medium and large}

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4.3. Moderating Effect of Gender

This study further investigated the moderating effect of gender on the relationship between the exogenous latent variable (performance expectancy (PE), effort expectancy (EE), Social Influence (SI)) and the endogenous latent variable (Behavioral Intention (BI)). The results indicate that gender has no moderating effect on PE, EE and SI. Although the relationship between PE and BI; and EE and BI were found to be statistically significant, moderating these variables with gender was found to be statistically insignificant. Figure 4 presents the model with gender as moderator. Table 5, also presents summary of the bootstrapping results.

Figure 4. Moderating effect of gender

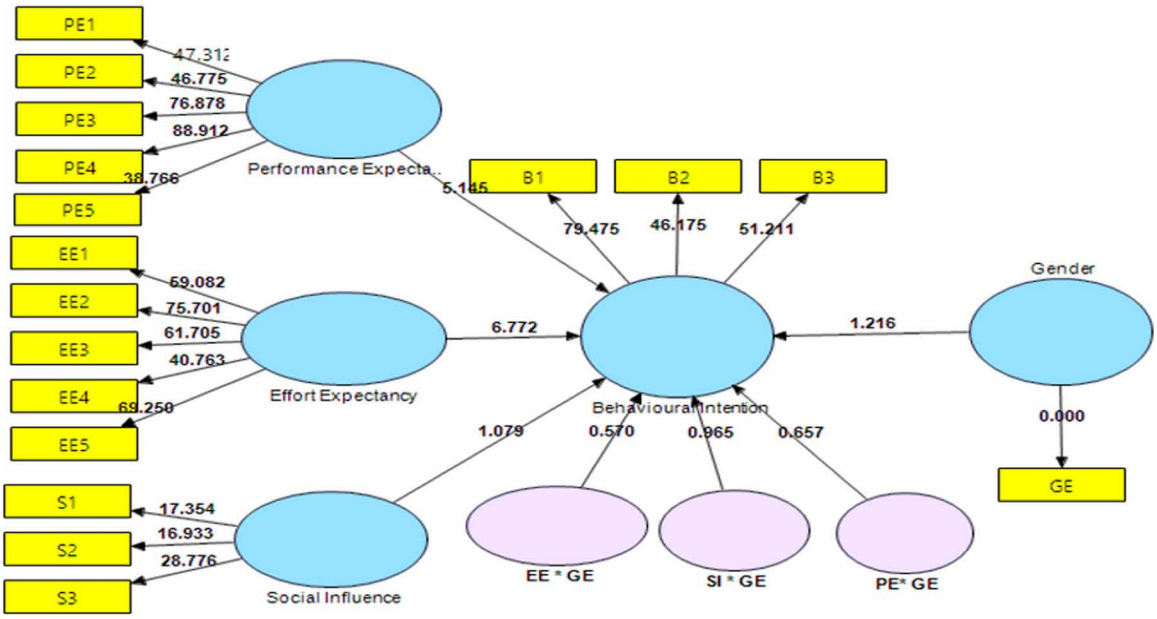

Table 6. Results of the hypothesis testing

Hypotheses	Relationship	Effect Type	T - Value	Decision
H6	Gender × (EE) -> BI	Moderating effect	0.570011	Not supported
	EE -> BI	Normal effect	6.771708	Supported**
	Gender -> BI	Normal effect	1.216253	Not supported
H7	Gender × (PE) -> BI	Moderating effect	0.657380	Not supported
	PE -> BI	Normal effect	5.144652	Supported**
H8	Gender × (SI) -> BI	Moderating effect	0.964780	Not supported
	SI -> BI	Normal effect	1.078820	Not supported

*p < 0.10; **p < 0.05; ***p < 0.01.

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5. DISCUSSION OF FINDINGS

By using the unified theory of acceptance and use of technology (UTAUT), this study enriched our understanding e-commerce systems adoptions factors and the moderating effect of gender on the adoption factors. The study results (Table 6) showed that a significant amount of variance in the use behavior is explained by the independent variables used in this study.

5.1. Hypotheses 1-5

The first hypothesis stated that performance expectancy (PE) will positively affect lecturers' intention to adopt e-commerce systems. Results from the PLS-SEM indicated a positive and significant relationship between PE and behavioral intention to use e-commerce systems by lecturers in Ghana. This shows support for H1 and concurs with Abrahao et al. (2016) whose study revealed that perceived expectancy has a positive and significant relationship with the intention to adopt mobile payment. Yu (2012) also found perceived expectancy to be a positive and significant factor affecting individual adoption of mobile banking.

The second hypothesis stated that effort expectancy (EE) will positively affect lecturers' intention to adopt e-commerce systems. Again, results from the PLS-SEM showed a positive and significant relationship between EE and behavioral intention to use e-commerce systems by lecturers in Ghana. The same effect is found in the works of Chong (2013), Barbosa and Zilber (2013), Oye et al. (2014) and Martins et al. (2014), where it was singled out as one of the greatest determinants of intention to adopt the technology. However, it contrasts Gouveia & Coelho (2007), who did not show this variable as a relevant factor.

This study further hypothesized that social influence (SI) will positively affect lecturers' intention to adopt e-commerce systems. The results from the analysis did not show support for SI. There was an insignificant relationship between SI and behavioral intention to use e-commerce systems by lecturers in Ghana. The same effect is found in the work of Suki & Suki (2017), where it was found that social influence had insignificant effect on students' behavioral intention to adopt a technology. This contrasts Yu (2012) and Sripalawat et al. (2010) whose study indicates that the social influence is the most powerful factor in affecting people intention to use mobile banking. Contrary to the findings of this current paper, Abrahao et al. (2016) analysis of the social influence factor also proved to be relevant and with a positive relationship in the prediction of behavioral intention in the same way that Gouveia and Coelho (2007), Oye et al. (2014) and Martins et al. (2014). Unlike this current study with a focus on a developing country, the aforementioned studies were conducted in the more developed contexts. Accordingly, the difference in culture may have played a major role in the disparity of the finding on social influence which is worthwhile to be further analyzed.

The fourth hypothesis stated facilitating conditions will positively affect lecturers' use behavior of e-commerce systems. The results revealed that facilitating conditions were a significant and a positive contributing predictor of lecturers use behavior of e-commerce systems. This finding was consistent with the research Suki & Suki (2017) whose research indicated that facilitating conditions have a positive effect on students' behavioral intention to use and the actual usage of a technology.

The fifth hypothesis stated that behavioral intention will positively affect lecturers' user behavior to adopt e-commerce systems. Indeed, Ghanaian lecturer's actual use of e-commerce systems was also

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influenced by their behavioral intention to use it. Hence, H5 was upheld. This is corroborating Brom et al. (2011) and Norazah & Norbayah (2016).

5.2. Hypotheses 6-8

H6 stated that the influence on performance expectancy on Ghanaian lecturers' intention to adopt e-commerce systems will be moderated by gender. H7 also stated the influence on effort expectancy on Ghanaian lecturers' intention to adopt e-commerce systems will be moderated by gender. Furthermore, H8 proposed the influence on social influence on Ghanaian lecturers' intention to adopt e-commerce systems will be moderated by gender. However, results from the PLS-SEM showed an insignificant relationship between gender and performance expectancy, effort expectancy and social influence. This indicates that gender has no moderating effect of PE, EE and SI on Ghanaian lecturers' intention to adopt e-commerce systems. This is somewhat surprising but not totally unexpected. This contrast the study of Hasan (2010), who found that online shopping attitude is higher in men than women. Yates (2001) also found computer- mediation communication to be higher in men than women. Different cultural settings might be a factor for this kind of disparity.

6. LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FUTURE RESEARCH

This research was not without some limitations. First, it is unknown how well the model and its findings will be generalized beyond the specific conditions of this study, since we adopted only university lecturers as sample. Future research is needed to better comprehend how well the model generalizes to e-commerce systems adopter with different background. Second, the current study did not include other possible moderating variables, such as experience, but included gender in the model. However, given that gender is the most important aspect of systems adoption and communication behavior (Tannen, 1991; Yates, 2001), we argue that gender should be investigated further. Future study can test the relationships with other moderating variables.

7. CONCLUSION

This study investigates the moderating effect of gender on e-commerce systems adoption factors using the unified theory of acceptance and use of technology (UTAUT). In the analysis of 223 samples, performance expectancy, effort expectancy and facilitating conditions had a positive and significant relationship with behavioral intention to adopt e-commerce systems. Social influence on the other hand had an insignificant relationship with behavioral intention to adopt e-commerce systems. Behavioral intention also showed a significant relationship with actual use of e-commerce systems, indicating that lecturers' behavioral intention to adopt e-commerce system is positively influenced by the user behavior. Moderating performance expectancy, effort expectancy and social influence with gender, the PLS-SEM analysis indicate gender has no moderating effect on any of the factors it moderated. The findings of this study will be helpful for e-commerce researchers and practitioners in understanding online consumers' behaviors, which is essential for successful e-commerce systems implementation.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

REFERENCES

Abrahao, R., Moriguchi, S., & Andrade, D. (2016). Intention of adoption of mobile payment: An analysis in the light of the Unified Theory of Acceptance and Use of Technology (UTAUT). *Innovation and Management Review*, *13*, 221–230.

Abushanab, E., & Pearson, J. M. (2007). Internet banking in Jordan: The unified theory of acceptance and use of technology (UTAUT) perspective. *Journal of Systems and Information Technology*, *9*(1), 78–97. doi:10.1108/13287260710817700

Afarikumah, E. & Acheampong, A. (2010). Modeling computer usage intentions of tertiary students in developing country through the Technology Acceptance Model. *International journal of education and development through information and communication technology,* 6(1), 102-116

Agarwal, R., & Prasad, J. (1997). The Role of Innovation Characteristics and Perceived Voluntariness in the Acceptance of Information Technologies. *Decision Sciences, 28*(3), 557-582.

Agarwal, R., & Prasad, J. (1998b). The antecedents and consequents of user perceptions in information technology adoption. *Decision Support Systems*, *22*(1), 15–29. doi:10.1016/S0167-9236(97)00006-7

Al-Gahtani, S. S., Hubona, G. S., & Wang, J. (2007). Information technology (IT) in Saudi Arabia: Culture and the acceptance and use of IT. *Information & Management*, *44*(8), 681–691. doi:10.1016/j.im.2007.09.002

Alapetite, A., Andersen, H. B., & Hertzum, M. (2009). Acceptance of speech recognition by physicians: A survey of expectations, experiences, and social influence. *International Journal of Human-Computer Studies*, *67*(1), 36–49. doi:10.1016/j.ijhcs.2008.08.004

Bae, S., & Lee, T. (2011). Gender differences in consumers' perception of online consumer reviews. *Electronic Commerce Research*, *11*(2), 201–214. doi:10.100710660-010-9072-y

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, *16*(1), 74–94. doi:10.1007/BF02723327

Barbosa, R. C. O., & Zilber, M. A. (2013). As características competitivas que impactam a adocão de inovacão: Um estudo sobre sistemas de pagamentos móveis. *Revista de Administracão e Inovacão*, *10*(3), 89–114.

Brom, C., Preuss, M., & Klement, D. (2011). Are educational computer micro-games engaging and effective for knowledge acquisition at high-schools? A quasi experimental study. *Computers & Education*, *57*(3), 1971–1988. doi:10.1016/j.compedu.2011.04.007

Calvert, S., Rideout, V., Woolard, J., Barr, R., & Strouse, G. (2005). Age, ethnicity, and socioeconomic patterns in early computer use: A national survey. *The American Behavioral Scientist*, *48*(5), 590–607. doi:10.1177/0002764204271508

Capece, G., Calabrese, A., Di Pillo, F., Costa, R., & Crisciotti, V. (2013). The impact of national culture on e-commerce acceptance: The Italian case. *Knowledge and Process Management*, *20*(2), 102–112. doi:10.1002/kpm.1413

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Casey, T., & Wilson-Evered, E. (2012). Predicting uptake of technology innovations in online family dispute resolution serviced: An application and extension of the UTAUT. *Computers in Human Behavior*, *28*(6), 2034–2045. doi:10.1016/j.chb.2012.05.022

Chang, I. C., Hwang, H. G., Hung, W. F., & Li, Y. C. (2007). Physicians' acceptance of pharmacokinetics-based clinical decision support systems. *Expert Systems with Applications*, *33*(2), 296–303. doi:10.1016/j.eswa.2006.05.001

Chen, C. (2012). Online group buying behavior in C2B e-commerce: Understanding consumer motivations. *Journal of Internet Commerce*, *11*(3), 254–270. doi:10.1080/15332861.2012.729465

Chiliya, N., Chikandiwa, C., & Afolabi, B. (2011). Factors Affecting Small Micro Medium Enterprises'(SMMEs) Adoption of E-Commerce in the Eastern Cape Province of South Africa. *International Journal of Business and Management*, *6*(10), 28–36. doi:10.5539/ijbm.v6n10p28

Chin, W. W., Marcolin, B. L., & Newsted, P. R. (1996). A partial least squares latent variable modelling approach for measuring interaction effects: Results from a Monte Carlo simulation study and voice mail emotion/adoption study. *Paper presented at the 17th International Conference on Information Systems*, Cleveland, OH.

Chiu, C. M., & Wang, E. T. G. (2008). Understanding web-based learning continuance intention: The role of subjective task value. *Information & Management*, *45*(3), 194–201. doi:10.1016/j.im.2008.02.003

Chong, A. Y. L. (2013). Understanding mobile commerce continuance intentions: An empirical analysis of Chinese consumers. *Journal of Computer Information Systems*, *53*(4), 22–30. doi:10.1080/08874417.2013.11645647

Choshin, M., & Ghaffari, A. (2017). An investigation of the impact of effective factors on the success of e-commerce in small- and medium-sized companies. *Computers in Human Behavior*, *66*, 67–74. doi:10.1016/j.chb.2016.09.026

Compeau, D. R., & Higgins, C. A. (1995a). Application of social cognitive theory to training for computer skills'. *Information Systems Research*, *6*(2), 118–143. doi:10.1287/isre.6.2.118

Curtis, L., Edwards, C., Fraser, K. L., Gudelsky, S., Holmquist, J., Thornton, K., & Sweetser, K. D. (2010). Adoption of social media for public relations by nonprofit organizations. *Public Relations Review*, *36*(1), 90–92. doi:10.1016/j.pubrev.2009.10.003

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, *35*(8), 982–1003. doi:10.1287/mnsc.35.8.982

Deng, S., Liu, Y., & Qi, Y. (2011). An empirical study on determinants of web-based question-answer services adoption. *Online Information Review*, *35*(5), 789–798. doi:10.1108/14684521111176507

Duyck, P., Pynoo, B., Devolder, P., Voet, T., Adang, L., Ovaere, D., & Vercruysse, J. (2010). Monitoring the PACS implementation process in a large university hospital - discrepancies between radiologists and physicians. *Journal of Digital Imaging*, *23*(1), 73–80. doi:10.100710278-008-9163-7 PMID:18956231

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Eckhardt, A., Laumer, S., & Weitzel, T. (2009). Who influences whom? Analyzing workplace referents' social influence on its adoption and non-adoption. *Journal of Information Technology*, *24*(1), 11–24. doi:10.1057/jit.2008.31

Fan, Y. W., & Miao, Y. F. (2012). Effect of electronic word-of-mouth on consumer purchase intention: The perspective of gender differences. *International Journal of Electronic Business Management*, *10*(3), 175–181.

Feizollahi, S., Shirmohammadi, A., Kahreh, Z. S., & Kaherh, M. S. (2014). Investigation the Effect of Internet Technology on Performance of Services Organizations with e-commerce Orientations. *Procedia: Social and Behavioral Sciences*, *109*, 605–609. doi:10.1016/j.sbspro.2013.12.514

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *JMR, Journal of Marketing Research*, *18*(1), 39–50. doi:10.2307/3151312

Garbarino, E., & Strahilevitz, M. (2004). Gender differences in the perceived risk of buying online and the effects of receiving a site recommendation. *Journal of Business Research*, *57*(7), 768–775. doi:10.1016/S0148-2963(02)00363-6

Gouveia, J. M., & Coelho, A. F. M. (2007). *Determinantes da adopcão de novas tecnologias de informacão e comunicacão - o caso da internet móvel em Portugal*. Logrono: Universidad de La Rioja.

Govindaraju, R., Wiratmadja, I. I., & Rivana, R. (2015). Analysis of drivers for e-commerce adoption by SMEs in Indonesia. *Paper presented at the Interdisciplinary Behavior and Social Sciences: Proceedings of the International Congress on Interdisciplinary Behaviour and Social Sciences 2014*. 10.1201/b18146-69

Gupta, B., Dasgupta, S., & Gupta, A. (2008). Adoption of ICT in a government organization in a developing country: An empirical study. *The Journal of Strategic Information Systems*, *17*(2), 140–154. doi:10.1016/j.jsis.2007.12.004

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2013). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks: Sage.

Hair, J. F., Hult, T. M., Ringle, C. M., & Sarstedt, M. (2014). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Los Angeles, CA: SAGE.

Hair, J. F., Thomas, G., Hult, M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling* (2nd ed.). Thousand Oaks, CA: Sage.

Hallikainen, H., & Laukkanen, T. (2018). National culture and consumer trust in e-commerce. *International Journal of Information Management*, *38*(1), 97–106. doi:10.1016/j.ijinfomgt.2017.07.002

Hartwick, J., & Barki, H. (1994). Explaining the Role of User Participation in Information System Use. *Management Science*, *40*(4), 440–465. doi:10.1287/mnsc.40.4.440

Hasan, B. (2010). Emerging and scripted roles in computer-supported collaborative learning. *Computers in Human Behavior*, *26*(4), 597–601. doi:10.1016/j.chb.2009.12.012

Hasan, B. (2010). Emerging and scripted roles in computer-supported collaborative learning. *Computers in Human Behavior*, *26*(4), 597–601. doi:10.1016/j.chb.2009.12.012

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic Management Journal*, *20*(2), 195–204. doi:10.1002/(SICI)1097-0266(199902)20:2<195::AID-SMJ13>3.0.CO;2-7

Hung, Y. H., Wang, Y. S., & Chou, S. C. T. (2007). *User acceptance of e-government services*. Kaohsiung: Natl Sun Yat-Sen Univ.

Hwang, Y., & Lee, K. C. (2012). Investigating the moderating role of uncertainty avoidance cultural values on multidimensional online trust. *Information & Management*, *49*(3), 171–176. doi:10.1016/j.im.2012.02.003

Im, I., Hong, S., & Kang, M. S. (2011). An international comparison of technology adoption: Testing the UTAUT model. *Information & Management*, *48*(1), 1–8. doi:10.1016/j.im.2010.09.001

Kartiwi, M., & MacGregor, R. C. (2008). Electronic Commerce adoption barriers in small to medium sized enterprises (SMEs) in developed and developing countries: A cross-Country comparison. *Journal of Electronic Commerce in Organizations*, *5*(3), 35–51. doi:10.4018/jeco.2007070103

Kauffman, R., Lai, H., & Lin, H. (2010). Consumer adoption of group-buying auctions: An experimental study. *Information Technology Management*, *11*(4), 191–211. doi:10.100710799-010-0068-z

Kaur, G., & Khanam Quareshi, T. (2015). Factors obstructing intentions to trust and purchase products online. *Asia Pacific Journal of Marketing and Logistics*, *27*(5), 758–783. doi:10.1108/APJML-10-2014-0146

Kijsanayotin, B., Pannarunothai, S., & Speedie, S. M. (2009). Factors influencing health information technology adoption in Thailand's community health centers: Applying the UTAUT model. *International Journal of Medical Informatics*, *78*(6), 404–416. doi:10.1016/j.ijmedinf.2008.12.005 PMID:19196548

Kim, Y., & Peterson, R. (2017). A Meta-analysis of Online Trust Relationships in E-commerce. *Journal of Interactive Marketing*, *38*, 44–54. doi:10.1016/j.intmar.2017.01.001

Laumer, S., Eckhardt, A., & Trunk, N. (2010). Do as your parents say? Analyzing IT adoption influencing factors for full and under age applicants. *Information Systems Frontiers*, *12*(2), 169–183. doi:10.100710796-008-9136-x

Lian, J., & Yen, D. (2014). Online shopping drivers and barriers for older adults: Age and gender differences. *Computers in Human Behavior*, *37*, 133–143. doi:10.1016/j.chb.2014.04.028

Lu, J., Yao, J. E., & Yu, C. S. (2005). Personal innovativeness, social influences and adoption of wireless internet services via mobile technology. *The Journal of Strategic Information Systems*, *14*(3), 245–268. doi:10.1016/j.jsis.2005.07.003

Martins, C., Oliveira, T., & Popovic, A. (2014). Understanding the Internet banking adoption: A unified theory of acceptance and use of technology and perceived risk application. *International Journal of Information Management*, *34*(1), 1–13. doi:10.1016/j.ijinfomgt.2013.06.002

Moore, G. C., & Benbasat, I. (1991). Development of an instrument to measure the perception of adopting an Information technology innovation. *Information Systems Research*, *2*(3), 192–223. doi:10.1287/isre.2.3.192

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Nirmala, R. P., & Dewi, I. J. (2011). The effects of shopping orientations, consumer innovativeness, purchase experience, and gender on intention to shop for fashion products online. *International Journal of Business*, *13*(1), 65–83.

Oliveira, T., Alhinho, M., Rita, P., & Dhillon, G. (2017). Modelling and testing consumer trust dimensions in e-commerce. *Computers in Human Behavior*, *71*, 153–164. doi:10.1016/j.chb.2017.01.050

Oye, N. D., Iahad, N. A., & Rahim, N. A. (2014). The history of UTAUT model and its impact on ICT acceptance and usage by academicians. *Education and Information Technologies*, *19*, 251–270. doi:10.100710639-012-9189-9

Park, J., Yang, S., & Lehto, X. (2007). Adoption of mobile technologies for Chinese consumers. *Journal of Electronic Commerce Research*, *8*(3), 196–206.

Pynoo, B., Devolder, P., Tondeur, J., van Braak, J., Duyck, W., & Duyck, P. (2011). Predicting secondary school teachers' acceptance and use of a digital learning environment: A cross-sectional study. *Computers in Human Behavior*, *27*(1), 568–575. doi:10.1016/j.chb.2010.10.005

Qingfei, M., Shaobo, J., & Gang, Q. (2008). Mobile commerce user acceptance study in China: A revised UTAUT model. *Tsinghua Science and Technology*, *13*(3), 257–264. doi:10.1016/S1007-0214(08)70042-7

Rahayu, R., & Day, J. (2016). E-commerce adoption by SMEs in developing countries: Evidence from Indonesia. *Eurasian Bus Rev*, *7*(1), 25–41. doi:10.100740821-016-0044-6

Rahman, S. A., Amran, A., Ahmad, N. H., & Taghizadeh, S. K. (2016). Enhancing the wellbeing of base of the pyramid entrepreneurs through business success: The role of private organizations. *Social Indicators Research*, *127*(1), 195–216. doi:10.100711205-015-0951-4

Riffai, M. M. M. A., Grantb, K., & Edgarc, D. (2012). Big TAM in Oman: Exploring the promise of online banking, its adoption by customers and the challenges of banking in Oman. *International Journal of Information Management*, *32*(3), 239–250. doi:10.1016/j.ijinfomgt.2011.11.007

Saeed, K., Hwang, Y., & Grover, V. (2003a). Investigating the impact of web site value and advertising on firm performance in electronic commerce. *International Journal of Electronic Commerce*, *7*(2), 121–143.

Saeed, K., Hwang, Y., & Yi, M. (2003b). Toward an integrative framework for online consumer behavior research: A meta-analysis approach. *Journal of End User Computing*, *15*(4), 1–13. doi:10.4018/joeuc.2003100101

San Martín, H., & Herrero, Á. (2012). Influence of the user's psychological factors on the online purchase intention in rural tourism: Integrating innovativeness to the UTAUT framework. *Tourism Management*, *33*(2), 341–350. doi:10.1016/j.tourman.2011.04.003

Sangran, S., Siguaw, J. A., & Guan, C. (2009). A comparative study of motivational differences for online shopping. *The Data Base for Advances in Information Systems*, *40*(4), 28–42. doi:10.1145/1644953.1644957

Sapio, B., Turk, T., Cornacchia, M., Papa, F., Nicolo, E., & Livi, S. (2010). Building scenarios of digital television adoption: A pilot study. *Technology Analysis and Strategic Management*, *22*(1), 43–63. doi:10.1080/09537320903438054

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Schaupp, L. C., Carter, L., & McBride, M. E. (2010). E-file adoption: A study of US taxpayers' intentions. *Computers in Human Behavior*, *26*(4), 636–644. doi:10.1016/j.chb.2009.12.017

Sebastianelli, R., Tamimi, N., & Rajan, M. (2008). Perceived quality of online shopping: Does gender make a difference? *Journal of Internet Commerce*, *7*(4), 445–469. doi:10.1080/15332860802507164

Seock, Y. K., & Bailey, L. R. (2008). The influence of college students' shopping orientations and gender differences on online shopping information searches and purchase behaviours. *International Journal of Consumer Studies*, *32*(2), 13–121. doi:10.1111/j.1470-6431.2007.00647.x

Sripalawat, J., Thongmak, M., & Ngramyarn, A. (2011). M-banking in metropolitan Bangkok and a comparison with other countries. *Journal of Computer Information Systems*, *51*(3), 67–76.

Stafford, T. F., Turan, A., & Raisinghani, M. S. (2004). International and cross-cultural influences on online shopping behavior. *Journal of Global Information Technology Management*, *7*(2), 70–87. doi:10.1080/1097198X.2004.10856373

Suki, N. M., & Suki, N. M. (2016). *Structural relationships in the embedding of role-play games in a class for Japanese language proficiency: towards a unified view* (pp. 1–23). Technology, Knowledge and Learning; doi:10.100710758-01-9294-9298

Suki, N. M., & Suki, N. M. (2017). Determining students' behavioral intention to use animation and storytelling applying the UTAUT model: The moderating roles of gender and experience level. *International Journal of Management Education*, *15*(3), 528–538. doi:10.1016/j.ijme.2017.10.002

Sutanonpaiboon, J., & Pearson, A. M. (2006). E-commerce adoption: Perceptions of managers/owners of small and medium-sized enterprises (SMEs) in Thailand. *Journal of Internet Commerce*, *5*(3), 53–82. doi:10.1300/J179v05n03_03

Sykes, T. A., Venkatesh, V., & Gosain, S. (2009). Model of acceptance with peer support: A social network perspective to understand employees' system use. *Management Information Systems Quarterly*, *33*(2), 371–393. doi:10.2307/20650296

Tannen, D. (1991). *You just don't understand women and men in conversation*. New York, NY: Ballantine Books.

Thompson, R. L., Higgins, C. A., & Howell, J. M. (1991). Personal computing: Toward a conceptual model of utilization. *Management Information Systems Quarterly*, *15*(1), 124–143. doi:10.2307/249443

Thompson, R. L., Higgins, C. A., & Howell, J. M. (1991). Personal Computing: Toward a Conceptual Model of Utilization. *MIS Quarterly, 15*(1), 124-143.

Thompson, R. L., Higgins, C. A., & Howell, J. M. (1994). Influence of Experience on Personal Computer Utilization: Testing a Conceptual Model. *Journal of Management Information Systems*, *11*(1), 167–187. doi:10.1080/07421222.1994.11518035

Thorleuchter, D., & Van den Poel, D. (2012). Predicting e-commerce company success by mining the text of its publicly-accessible website. *Expert Systems with Applications*, *39*(17), 13026–13034. doi:10.1016/j.eswa.2012.05.096

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Triandini, E., Djunaidy, A., & Siahaan, D. (2017). A Maturity Model for E-Commerce Adoption by Small and Medium Enterprises in Indonesia. *Journal of Electronic Commerce in Organizations*, *15*(1), 44–58. doi:10.4018/JECO.2017010103

Ueasangkomsate, P. (2015). Adoption e-commerce for export market of small and medium enterprises in Thailand. *Procedia: Social and Behavioral Sciences*, *207*, 111–120. doi:10.1016/j.sbspro.2015.10.158

Van Raaij, E. M., & Schepers, J. J. L. (2008). The acceptance and use of a virtual learning environment in China. *Computers & Education*, *50*(3), 838–852. doi:10.1016/j.compedu.2006.09.001

Van Slyke, C., Belanger, F., Johnson, R. D., & Hightower, R. (2010). Gender-based differences in consumer e-commerce adoption. *Communications of the Association for Information Systems*, *26*(2), 17–34.

Van Slyke, C., Comunale, C. L., & Belanger, F. (2002). Gender differences in perceptions of web-based shopping. *Communications of the ACM*, *45*(7), 82–86. doi:10.1145/545151.545155

Venkatesh, V., Morris, M. G., Davis, F. D., & Davis, G. B. (2003). User acceptance of information technology: Towards a unified view. *Management Information Systems Quarterly*, *27*(3), 425–478. doi:10.2307/30036540

Wang, H. W., & Wang, S. H. (2010). User acceptance of mobile internet based on the unified theory of acceptance and use of technology: Investigating the determinants and gender differences. *Social Behavior and Personality*, *33*(3), 415–426. doi:10.2224bp.2010.38.3.415

Wang, W., Wang, Y., & Liu, E. (2016). The stickiness intention of group-buying websites: The integration of the commitment–trust theory and e-commerce success model. *Information & Management*, *53*(5), 625–642. doi:10.1016/j.im.2016.01.006

Wang, Y. S., & Shih, Y. W. (2009). Why do people use information kiosks? A validation of the unified theory of acceptance and use of technology. *Government Information Quarterly*, *26*(1), 158–165. doi:10.1016/j.giq.2008.07.001

Wang, Y. S., Wu, M. C., & Wang, H. Y. (2009). Investigating the determinants and age and gender differences in the acceptance of mobile learning. *British Journal of Educational Technology*, *40*(1), 92–118. doi:10.1111/j.1467-8535.2007.00809.x

Williams, M. D., Rana, N. P., Dwivedi, Y. K., & Lal, B. (2011). Is UTAUT really used or just cited for the sake of it? A systematic review of citations of UTAUT's originating article. In *19th European conference on information systems*, Helsinki, Finland.

Wong, K. k. (2013). Partial Least Squares Structural Equation Modeling (PLS-SEM) Techniques Using SmartPLS. *Marketing Bulletin*, 24.

Wu, S. I. (2003). The relationships between consumer characteristics and attitude toward online shopping. *Marketing Intelligence & Planning*, *21*(1), 37–44. doi:10.1108/02634500310458135

Wymer, S. A., & Regan, E. A. (2005). Factors influencing e-commerce adoption and use by small and medium businesses. *Electronic Markets*, *15*(4), 438–453. doi:10.1080/10196780500303151

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Xu, H., & Gupta, S. (2009). The effects of privacy concerns and personal innovativeness on potential and experienced customers' adoption of location-based services. *Electronic Markets*, *19*(3), 137–149. doi:10.100712525-009-0012-4

Yang, Q., Pang, C., Liu, L., Yen, D. C., & Tarne, J. M. (2015). Exploring consumer perceived risk and trust for online payments: An empirical study in China's younger generation. *Computers in Human Behavior*, *50*, 9–24. doi:10.1016/j.chb.2015.03.058

Yates, S. J. (2001). Gender, language, and computer-mediated communication for education. *Learning and Instruction*, *11*, 21–34. doi:10.1016/S0959-4752(00)00012-8

Yeh, R., Chen, Y., Lin, M., & Wu, H. (2014). Factors affecting consumer's value creation in online group buying. In *Proceedings of the 18th Pacific Asia Conference on Information Systems*, June 24-28.

Yu, C. (2012). Factors affecting individuals to adopt mobile banking: Empirical evidence from the UTAUT model. *Journal of Electronic Commerce Research*, *13*(2), 104–121.

Zhou, T. (2011). Understanding mobile internet continuance usage from the perspectives of UTAUT and flow. *Information Development*, *27*(3), 207–218. doi:10.1177/0266666911414596

Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. *Computers in Human Behavior*, *26*(4), 760–767. doi:10.1016/j.chb.2010.01.013

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Chapter 18
Study on E-Commerce Adoption in SMEs Under the Institutional Perspective: The Case of Saudi Arabia

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ABSTRACT

This article investigates and discusses the institutional factors influencing decisions of e-commerce adoption in Saudi small and medium enterprises (SMEs) from the temporal view. This article has been conducted in two phases: a full survey in 2013 and the follow-up targeted interviews in 2016. The analysis results demonstrated that there is a clear difference between initial e-commerce adoption and institutionalization in SMEs in terms of institutional predictors. When e-commerce was at its infant stage, governmental support and well-defined legal and regulations system were instrumental and served as mainly institutional forces to encourage firms to adopt e-commerce. As time went on and e-commerce became more business-driven, these effects become less important, even insignificant; instead of these, perceived market forces and perceived social awareness of e-commerce emerges as critical contributions to push SMEs to engage in e-commerce more sophisticatedly.

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INTRODUCTION

The literature on e-commerce empirically reveals that e-commerce adoption brings potentially benefits to SMEs (Tran et al., 2013). E-commerce in general bridges the physical and time-dependent distance between suppliers and customers, enhances the efficiency and flexibility of production and operation, reduces market entry barriers, and increases the competitiveness of markets. However, its adoption by SMEs remains limited. For example, a previous survey found that 36% of small businesses established web sites primarily to advertise and promote their business, compared to 9% who established one to sell or market online. Similarly, a survey of 444 SMEs found that many SMEs were reluctant to conduct transactions on line; more than 80% were only using the Internet to communicate (via e-mail) and gather business information (Zhu, 2008). Al-Qirim (2008) found that the main barriers or concerns inhibiting SMEs from adopting e-commerce are: non-adopted customers/suppliers, violated privacy and security issues, lack of expertise or personnel, lack of belief that online marketing would be effective, high costs, and technical limitations of hardware or software.

Although the King of Saudi Arabia (KSA) has the largest and fastest growth of Information Communication Technology (ICT) marketplaces in the Arab region, the diffusion and the rate of B2B e-commerce sophistication in SMEs are actually very low, and not parallel with the remarkable development of the e-business infrastructure (AlGhamdi et al., 2012). The challenge for policy-makers is therefore to better understand the e-commerce phenomenon and to ensure that the opportunity and potential offered by e-commerce is taken and realized in SMEs. There has been a long-standing debate and different approaches on how an enabling environment should be created and shaped to foster e-commerce adoption and diffusion. Additionally, the existing literature is lacking studies to focus on investigation of various determinants of decisions of e-commerce adoption at the different levels. Tran et al. (2014) and Molla & Licker (2005) provided empirical evidence showing that the determinants of initial adoption of e-commerce are very different from those of institutionalization of the technology. The experience of the initial adoption of e-commerce is also found not to have any significant effect on the decision of subsequent implementation of the technology.

Therefore, the purpose of the study is to investigate institutional factors affecting decisions of e-commerce adoption in Saudi SMEs from the temporal view. To address this objective, a conceptual model was developed based on the institutional perspective. This study has been conducted in Saudi Arabia in two phases. Phase I was in 2013 with a full survey and phase II was in 2016 with the follow-up targeted interviews. Data collected was analyzed to investigate whether determinants of e-commerce adoption in SEMs are different at maturity levels and change over time.

THE THEORETICAL BACKGROUND

The conceptual research framework was developed based on the institutional theory (Figure 1). The institutional theory provides a rich, complex view of organizations; organizations are open systems and the institutional context is a major source of influence on organizational behavior. Accordingly, in order to understand individual and organizational behavior, it must be located in a social and institutional context, and this context both regularizes behaviors and provides opportunity for agency and change. Institutional theory posits that pressures from industrial, political, legal and cultural systems, and expectations from society define what is socially acceptable and expected organizational behavior, which

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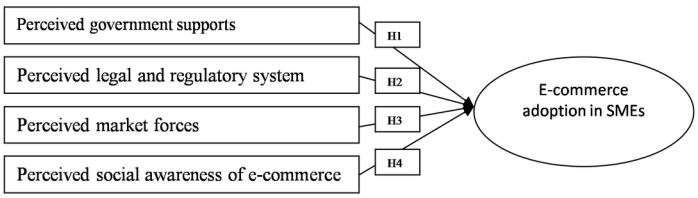
pressures organizations to look and act the same. In viewing institutions more widely as varied social constructs, including cultural beliefs, new institutionalism has moved away from its formal legal historical roots and become a more explanatory discipline in economics and social sciences. Contemporary institutional theory focuses on developing a sociological view of institutions -the way they interact and the way they affect society (Scott, 2005).

There is substantial evidence in economics that firms in different institutional environments react differently to similar challenges and that companies can perform efficiently if they receive the institutional support (Gosain, 2004). The limited studies of IT adoption and diffusion in the last decade have also suggested that a supportive institutional environment and a variety of nurturing policies from governments are especially indispensable for technological innovation. Therefore, this study considered five independent institutional constructs: perceived government supports, perceived legal and regulatory system, perceived market forces, and perceived social awareness of e-commerce.

Figure 1. Research framework and hypotheses



The dependent variables, e-commerce initial adoption, and intention for e-commerce institutionalization are posited as the primary constructs of SMEs' adoption of e-commerce at different levels. Based on the literature, the level of e-commerce adoption should be considered through the sophistication in terms of management, function, technology, and information, and the usage degree of e-commerce innovation by enterprises. In other words, the level of e-commerce adoption is a product of sophistication level by usage degree. Since the first stages of e-commerce adoption process is very simple while its last stages are much more sophisticated and complicated in terms of technology and management, consequently, the first stages are also very different from the last stages in terms of demand of technology infrastructure, management, and other resources. In order to effectively implement e-commerce at the more sophisticated level, one certain enterprise needs to reach a much higher e-readiness in terms of both external and internal environments. In this study, instead of studying the process of e-commerce adoption on many different stages, it investigated determinants of e-commerce adoption at two key levels, namely initial adoption versus institutionalization.

Initial adoption is referred as the simple level of e-commerce adoption with the low sophistication level and the low degree of usage. One enterprise is considered as in the initial adoption level if it has been implementing only one or several simple e-commerce innovations separately for a small part of the total business transactions and has been using only the static or interactive websites to make promotions and publish basic company information or receive queries, e-mail, and form entry from users (Molla & Licker, 2005; Tran et al., 2014).

Institutionalization is referred as the most sophisticated adoption of e-commerce. One enterprise is considered to be in the institutionalization stage if it has an integrated e-commerce system with external

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business partners and existing organizational systems, and most business processes conducted electronically. It means that the enterprise has implemented many different e-commerce innovations, most its B2B business processes have been conducting electronically, e-commerce innovations implemented having a good interoperability together, and with other existing IT systems, and e-commerce innovations implemented have a good interoperability with external IT infrastructure through transactive or integrated websites, and e-marketplace. Especially, based on the literature on Information Systems alignment, institutionalization of e-commerce should also be reflected through the degree of consistency between e-commerce strategy with business strategy, organizational structure, and social environment within the enterprise (Chiang & Nunez, 2013).

DEVELOPMENT OF HYPOTHESES AND CONSTRUCTS

Perceived Government Supports

Government support takes various forms from country to country; however, the institution theory indicated that governments played a critical role in creating the institutional environment that fostered private investment and e-commerce in particular (Oxley & Yeung, 2001). For e-commerce to succeed, the economy needs to be competitiveness, transparency, stableness; trend of collaboration and cooperation.

Policies and Commitments for National E-Commerce

Al-Rawi et al. (2008) reviewed and explored e-commerce growth in the Gulf region and they found that the governments' roles in promoting e-commerce is essential in terms of ensuring coherent policy for IT and e-commerce regarding consumer protection; secure, transparent, predictable, and enabled environment; coordination, collaboration, and cooperation. The European Commission's report suggested that governmental policies aiming at promoting e-commerce should include creating incentives and a favorable environment for enterprises; supporting educational and training programs; and establishing the role model of the public sector. It is argued that national policies for e-commerce, such as trade and telecommunication liberalization, training and maintaining an adequate e-commerce workforce, were likely to have a big impact on e-commerce by making IT more affordable to firms (AlGhamdi et al., 2012). Government's role in supporting e-commerce adoption in the private sector has been referred to as a leader, promoter, facilitator, regulator, educator and financiers.

E-Government Initiatives

In less developed or developing countries, competitive environment is often determined by the relationship between businesses and government, and business managers in SMEs often trend to be directed by government and less willing to accept changes (Huang et al., 2014). Once e-government initiatives are implemented, government's role often changes from simply informational to transactional. As a result, the government becomes both supplier and consumer therefore contributing to the growth of e-commerce (Huang et al., 2014).

In Australia, the Government is providing support in various forms; for example, hosting an online retail forum to encourage, assist and inform retailers. The Hong Kong ordinance contributed to future

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growth in e-commerce by providing for a legal infrastructure, such as the use digital signatures. It is stated that the Brazilian e-government initiatives, such as e-services and e-procurement have strongly stimulated e-commerce activities in the private sector. In many other countries, such as Denmark, France, the effectiveness of government supports in building consumer acceptance of IT as well as developing IT literacy to promote IT and e-commerce in businesses, especially SMEs was recorded (Gibbs & Kraemer, 2004).

Regarding SMEs, Lip-Sam & Hock-Eam (2011) and Jeon et al. (2006) found empirically that government support was effective factor for e-commerce adoption at all adoption levels in SMEs. When asked to identify the measures to encourage wider adoption and use of ecommerce, SMEs in the APEC region highly ranked government actions in improving telecom infrastructure, imposing fair tax policy for online transactions, developing national e-commerce strategy, enhancing government e-commerce use, providing e-commerce training, and promoting e-commerce use.

However, there were some contradictory findings in previous literatures with respect to governmental support. Ifinedo (2011) found that government support were not significant for the e-commerce adoption of SMEs in Canada. Governmental support was also not regarded as a driving factor for e-commerce adoption in USA (Chong et al., 2009). It was also found insignificant in differing groups of firms between Internet adopters and non-adopters in Singapore (Teo et al., 2009), in affecting the success level of e-commerce among SMEs in IT industry of Taiwan (Huang, 2009), and in the probability of e-commerce adoption of SMEs in Brunei (AlGhamdi et al., 2012). Therefore, we propose:

Hypothesis 1: Government support contributes significantly (and is positively related) to (a) initial adoption of e-commerce and (b) institutionalization in SMEs.

Perceived Legal and Regulations System

The legal consideration was the root of traditional institutional theory. Institutions were first the legal ground rules and procedures. Institutional influences were therefore political in nature as when organizations must conform to laws and regulations to earn the organizational legitimacy (Yuan et al., 2012). A well-defined legal framework is positively related to ensuring the security of e-commerce activities, and improves trust in e-transactions (Kim, 2005). The lack of legal framework for e-commerce in a country causes consumers to have significant reservations on purchasing online (Gibbs & Kraemer, 2004). The consumers' concerns regarding trust in business practices, privacy/security, and "resistance to using credit cards, and preferences for in-store shopping and inspection of products" become greater in an environment where the legal framework is less established (Gibbs & Kraemer, 2004).

Several international studies using secondary data found that the legal environment in a country significantly affected e-commerce activities and revenues in that country (Oxley & Yeung, 2001). A group of firm-level survey studies also showed that the regulatory environment was significantly important to determine both the breadth and depth of e-business adoption and drive the e-business value, especially in developing countries and newly industrialized economies (Gibbs & Kraemer, 2004). Another study of more than 100 SMEs in the state of Kentucky showed that regulations and rules were an important factor for e-commerce adoption (Kim, 2005). In addition, the implementation of e-commerce systems at the more sophisticated level demands even a more well-defined legal and regulatory system. Therefore, we propose:

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Hypotheses 2: Legal and regulations system have significant effects on (a) initial adoption and (b) institutionalization of e-commerce in SMEs.

Perceived Market Forces

E-commerce activities respond to the network principles in the social-business system of the enterprise (Molla & Licker, 2005). In other words, firms' potential for e-commerce is a function of their operating environment, including economic, social, and political factors. Organizations that perceive institutional pressures as ready for e-commerce are likely to adopt e-commerce or implement e-commerce at the more sophisticated level (Rogers, 1995). The level of take-up by suppliers and customers may have a corresponding effect on a firm's commitment to e-commerce. However, it is argued that such pressures tend to be less likely for some businesses in developing or less developed countries' context. For SMEs in relationships with large firms, the motivation to adopt is fueled by the integration of trading partners into organizational extranets (Zhu & Kraemer, 2005). Large companies are increasingly outsourcing many of their requirements, and e-enabled SMEs have the ability to respond more quickly to changing demands than their large counterparts enabling them to take advantage of outsourcing opportunities (Featherman & Pavlou, 2003).

A recent comprehensive study on SMEs in Denmark, Germany, France and the U.S. found that important drivers for e-commerce diffusion in manufacturing, retail/wholesale and financial service sectors included the use of e-commerce by major competitors, customer demand, and supplier requirements. The European Commission's e-Business Survey 2006 found that four main reasons for companies to start e-commerce were: "because competitors use it," "to gain competitive advantage," "to fulfill customers' expectations," and "to fulfill suppliers' expectations," which in summary represented competition pressure and market demand (Batenburg, 2007). Furthermore, policy-makers, industry practitioners and academic researchers, especially those in the U.S., strongly believed that while the government had an important role to play in setting the proper business climate to promote innovation, e-commerce development should be guided principally by market competition, market choice and industry leadership (Zhu & Kraemer, 2005). Several key dimensions of the market force identified in the literature review are discussed including (1) Competitive pressure, (2) Pressure/encouragement from customer/supplier, (3) Pressure/encouragement from trend-setting firms; and (4) Pressure/encouragement from industry/trade associations.

Competitive Pressure

Competitive pressure refers to the situations of marketplace where there are firms running similar businesses in competition with each other. In relation to e-commerce, this refers to the situation where selling online successfully and profitably can affect market share in the traditional marketplace (To & Ngai, 2006).

Pressure exerted by competitors' use of e-commerce was empirically a main driver of e-commerce adoption decisions among firms in Hong Kong (Gunasekaran & Ngai, 2008). When surveying more than 270 companies across three industries in ten countries, Gibbs et al. found the pressure from competitors was a significant determinant of scope of e-commerce use (Gibbs & Kraemer, 2004). Pressures from an enterprise's external business environment (suppliers, clients, competitors, and partners) were found as the most significant factor affecting the level of institutionalization of e-commerce adoption in developing countries (Molla & Licker, 2005).

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The findings about competitive pressure in the literature review, however, were not always consistent. The importance of competition was only marginal in e-commerce adoption among large public firms in India (Tarafdar & Vaidya, 2006). In a cross-country survey of retail industry, Zhu et al. found that competitive pressure was a significant factor for use of e-commerce only in developed countries, but not in developing countries (Zhu & Kraemer, 2005). Lastly, competition was not so important to the e-commerce starters and late adopters as to those extended adopters in New Zealand (Al-Qirim, 2008).

In Saudi Arabia, the reviewed literature does not record competition as an influencing factor in the adoption of e-commerce. Because of the lack of maturity of online business environments in the country, the convenience of traditional shops nearby and there is no competitive pressure on the Internet (AlGhamdi et al., 2012).

Pressure/Encouragement From Customers/Suppliers

Trading partners could be a dominant customer (or supplier) pushing its suppliers (or customers) to implement relationship-specific information systems. Several empirical studies have proved a positive relationship between trading partner's pressure and e-commerce adoption among SMEs in Singapore, and South Korea (Teo et al., 2003). Both traditional and IT manufacturers in SMEs in Hong Kong claimed that customer pressure was the primary motivator for them to adopt e-commerce (Ghobakhloo et al., 2011). Furthermore, SMEs participated in an APEC's e-commerce survey ranked "low use of e-commerce by customers and suppliers" as the No.1 perceived barrier to e-commerce adoption (Luqman & Abdullah, 2011). On the other side, although it was most important for the diversity of e-commerce usage, pressure from trading partners was not significantly important for e-commerce transaction volume in US companies (Kiong, 2004). Moreover, Chan et al. surveyed 627 SMEs in manufacturing and trading industries in Hong Kong and found 74 trading partners' influence to be totally opposite: compared with non-adopters, those EDI adopters considered the request by trading partners significantly less important (Chan et al., 2012).

Pressure/Encouragement From Industry/Trade Associations

Industry or trade associations have been strong promoters of B2B e-commerce, especially to SMEs, by providing them technical support, training and funding (Gibbs & Kraemer, 2004). For example, based on 50 qualitative interviews in multiple countries, it is found that trade and industry associations played an important role in promoting e-commerce in southeastern Europe (To & Ngai, 2006). Those associations also involved actively in setting up the industrial e-commerce standards. Their level of involvement and their actions were critical in launching an industry-wide use of IT. A contradictory finding in a survey of 137 CEOs showed no significant effect of trade association on e-commerce adoption in Taiwan's travel service industry (Wang et al., 2010). Drawing on the theoretical and empirical arguments, this study hypothesized that institutional pressures (from competitors, customers/suppliers, and industry associations) had a positive influence on a firm's e-commerce adoption, as follows:

Hypothesis 3: Perceived market force has significant effects on (a) initial adoption and (b) institutionalization of e-commerce in SMEs.

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Perceived Social Awareness of E-Commerce

The socio-culture environment should be of positive trust, beliefs, concepts, judgments, expectations, and methodologies towards e-commerce (Huang et al., 2014). Information sharing among organizations and between businesses with government is indispensable. All players need to have a positive perception of the role of information and positive attitudes toward IT and e-commerce. An information-sharing incentive industrial culture is more important for the development of e-commerce in developing or less developed countries. Social awareness of e-commerce represents social culture, knowledge, and attitudes of the industry toward e-commerce. It includes four facets: (1) industrial economic characteristics (i.e., competitiveness, transparency, stableness, trend of collaboration, and cooperation), (2) industrial socio-culture characteristics (i.e., trust, beliefs, concepts, judgments, expectations, and methodologies toward e-commerce) that are shared by people and enterprises within the industry, (3) industrial knowledge characteristics (i.e., perceptions of IT, skilled labor force, technicians, IT-oriented managers) required for the development of e-commerce strategy, and (4) industrial knowledge sharing infrastructure (i.e., initiatives available to share and develop knowledge and positive culture toward e-commerce (Ismail & Kamat, 2008; Zhu et al., 2006). E-commerce will benefit from online business educational programs and building the electronic services awareness in a country. Huang et al. (2014) found that government could mostly influence e-commerce diffusion through knowledge development including training programs, subsidies, and educational and informational campaigns to build the e-commerce awareness on nationwide. Therefore:

Hypotheses 4: Perceived social awareness of e-commerce significantly influences (a) initial adoption and (b) institutionalization of e-commerce in SMEs.

RESEARCH METHODOLOGY

This study used the explanatory mixed research method including first collecting quantitative data and then collecting qualitative data to help explain or elaborate on the quantitative results.

Data Sampling Procedures

Data Collection for the 2013 Quantitative Study

Data was collected in the King of Saudi Arabia (KSA) using a mixed sampling procedure Based on previous experience through the pilot study; it is highly difficult and takes long time to reach top managers in the Saudi enterprises using the common communications (e.g. email, letter, and calls without recommendation). In fact, the researcher has tried to find helps from several government officials but failed as they were not helpful. It is often that surveys via self-administered questionnaire through post or e-mail in the KSA gain a very low response rate; we used questionnaire survey administered in person in this study. The pilot study also confirmed that the questionnaire in person is appropriate for this situation.

Data collection was performed via a multistep process. Firstly, the website at http://www.saudiayp.com/category/Small_business accessed on 20 June 2013 which lists all 6909 small and medium enterprises in KSA, was used as an initial contact source. Next, researchers grouped all SMEs who have

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their own websites listed in this page to make a new list of 762 SMEs that is considered as a sampling frame for this present study. At this point, the researchers used parallel two methods. One a hand, based on the random systemic sampling technique (every 5 items) we have collected 70 small and medium enterprises, and then an interview invitation email and the questionnaire were electronically sent out to them by the researchers to introduce the research project. Only 14 out of these seventy enterprises agreed to participate in the project.

On the other hand, the researchers used the help of twelve professors from the King of Saud University – College of Business Administration in Riyadh, the Kingdom of Saudi Arabia to reach enterprises. They provided a list of 62 managers from enterprises but only 32 managers from appropriate enterprises who belong to the population (i.e. small and medium firms having their own websites). Then, calls or emails were sent out to introduce the research project and ask interviews. There have been 25 out of the 32 managers agreed to participate in the project. In next step, the researchers made calls directly to the 39 firms (i.e. 14 ones from the first technique and 25 ones from the second method) who agreed previously to make an appointment (date and time) for interviews later. Then the researcher visited each enterprise and administered the questionnaire in person. After each initial interview, participants were asked to suggest other participants that might be willing to participate in the research and so on with other participants. The snowball process provided about 148 additional potential participants, and 94 out of them participated in the project. The entire process of selection provided 133 responses during two months from June to July, 2013.

Data Collection for the 2016 Interview Study

Within the initial invitation letter of the 2013 quantitative study, researchers not only asked the participants to take the survey, but also asked him/her to have a follow-up interview in next year. For the purpose of enhanced effectiveness of interview, all interviews averaged about forty-five minutes in length and were conducted in person. The interviews included discussion of the company's use of B2B ecommerce and the reasons behind such adoption decisions, following an interview guideline that was emailed to the interviewee for review at least 72 hours in advance. The interview guideline provided interviewees with a script that had a similar schedule in the survey so that interviewees had a good idea and confidence about the interview. Interviews were carried out in September 2016.

The interview procedure worked as follows. The author began with factual information about the kind of e-commerce technologies and/or activities the company was using and/or engaging in. The researchers next asked about the already and intended changes of e-commerce adoption within the company. The researchers then entered a group of questions about the industrial, governmental, legal and cultural effects on the company's e-commerce decision. Lastly, the researchers asked the interviewees to rank the importance of influential factors that affected their decisions of e-commerce adoption. The researchers also asked whether there was any contributing factor that the study had not mentioned yet. There have been nine enterprises agreed to participate the interview and in fact there have been a total of four interviews conducted.

Demographics of Respondents and Their Enterprise

As described above, the researchers have reached 250 SMEs (i.e. 70 firms from the random systemic sampling technique, 63 companies from the "personal introduction" sampling technique, and 148 ones

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in the "snowball" method) to survey but only 137 completed questionnaires were collected, refined, and coded. Therefore, the response rate is 53%. Characteristics of demographic information of the respondents and their enterprises were analyzed and provided in Tables 1 and 2, respectively.

Table 1. Profile of respondents

Manager Gender		Manager Education		Position	
Male	90 (55%)	Ph.D.	5 people (4%)	Senior manager	37 (24%)
Female	47 (34%)	Master degree	64 people (55%)	Procurement manager	40(32%)
		Bachelor degree	68 people (41%)	Marketing manager	33 (24%)
				IT manager	10 (8%)
				Others	17 (9%)

Table 2. Profiles of enterprises

Business Sector		Number of Employee	
Manufacturing industry	59 firms (43%)	<20	12 (9%)
Service sector	56 firms (41%)	20-50	47 (34%)
Construction sector	15 firms (11%)	51-100	42 (30%)
Other industries	7 firms (5%)	>100	36 (27%)

All enterprises of the sample admitted that they have their own websites and use one or several of e-commerce innovations in business activities. It implies that all firms of the present sample should be considered as adopters. Considering the profile of the respondents and their enterprises, it can be said that the responses can be confidently relied upon. Table 3 shows the related information in detail.

Table 3. Category of firms in terms of the level of e-commerce adoption

Category	Simple E-Commerce Innovations Implemented	Many E-Commerce Innovations Implemented	Total
Static or interactive websites	98	33	129
Transactive or integrated websites and connect to e-platforms	0	6	6
Total	98	39	137

Data Screening

In order to address missing data, in this study, listwise deletion method was used, and there have been 4 uncompleted questionnaires deleted. Regarding multivariate analyses in correlations, SEM is very vulnerable to outliers (Hair et al., 2006). In this study, we used SPSS 19.0 calculating Cook's D to measure

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multivariate outliers. There was no Cook's D larger than 1 from the regression; this means that there was no case for deletion.

It needs also to test whether or not statistical difference exists between the two sample groups: one used the English version of questionnaire and one used the Arabian version of questionnaire. In this study, independent-samples t test was used to compare demographic variables, such as managers' gender, manager' educational degree, business sector and employee number of enterprises from the two groups: (1) using the English version and (2) using the Arabian version. The descriptive statistics results indicated there was no difference in mean scores between the groups being compared; for example regards to gender $t(131) = 0.57$, $p = 0.57$, regards to business sector, $t(131) = 0.526$, $p = 0.60$. This means that there is no concern that responses sampled from the two versions of questionnaire to be different. Additionally, it need also to test whether or not statistical difference exists between the three sample groups: one group of 14 participants from the "random-systemic-selected"70-sample list, the second group of 25 participants from the "personal-introduction" 32-sample list, and the third group of 94 participants from the "snowball" 148-sample list. The independent-samples t test was also used to compare demographic variables, such as managers' gender, manager' educational degree, and business sector. The results also indicated that there was no difference in mean scores between the groups being compared.

Instrument Development

Before conducting the instrument development, the research constructs were conceptualized to specify the domains associated with e-commerce activities. Based on the result of the existing relevant literature review discussed in the previous section, conceptual definitions of constructs are developed and shown in Table 4.

Table 4. Definition/ description of latent variables

Variables	Definitions/Description	References
Perceived government supports (GovS)	Represents the things reflect the role of government and its institutions, in orienting, supporting, regulating and managing, and monitoring e-commerce environment. It includes four facets: strategic directive role (having visions or macro plans and commitment), practical directive role (having e-Government initiates), management role to stop or eliminate risks in e-transaction (having legal documents, regulations), and supporting role (having supporting policies regarded to human, finance, and technique.)	Molla & Licker (2005), Ruikar et al. (2006), Saprikis (2013)
Perceived legal and regulations system (PLR)	Represents legal requirements and regulations to stop or eliminate risks in e-business transactions; so as to ensure the security of e-commerce activities and improve trust in e-transactions.	Kog (2010); Ismail & Kamat (2006); APEC (2006)
Perceived market forces (MFS)	It refers to the assessment that the pressure from business competitors and supports from partners (such as customers and suppliers) in conducting e-business.	Molla & Licker (2005); Burns & Burns (2008)
Social awareness of e-commerce (SW)	Represents issues related to social culture, knowledge, and attitudes of a community towards e-commerce. It has four facets: (1) industrial economic characteristics (competitiveness, transparency, stableness; trend of collaboration and cooperation), (2) industrial socio-culture characteristics (trust, beliefs, concepts, judgments, expectations, and methodologies towards e-commerce) that are shared by people and enterprises within the industry. (3) They are also industrial knowledge characteristics (perception of e-commerce, skilled labor force, technicians, IT-oriented managers) that required for the development of e-commerce strategy, and (4) industrial knowledge sharing supporting infrastructure (all initiatives, actions, and plans available that develop knowledge and positive culture for e-commerce).	Ismail & Kamat (2008); Zhu et al. (2006); Huang (2009)

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Development of the instrument followed the guidelines present by Moore & Benbasat (1991). Accordingly, this process includes three stages. The first stage was item creation. Its purpose was to create pools of items for each variable by identifying items from existing scales, and by creating additional items, that appeared to fit the construct definitions. The second stage was scale development. The basic procedure was to have panels of judge sort the items from the first stage into separate categories, based on the similarities and differences among items. Then the items was examined and dropped if any inappropriate wording or ambiguousness. The third stage was to test the overall instrument with the various scales developed previously. This stage includes three separate steps. First, the instrument was distributed to a small sample of respondents and then an analysis of the responses was carried out to get an initial indication of the scales' reliability. Items which did not contribute to the reliability were dropped from a full pilot test with a larger number of subjects. In the third step, the scales were further refined, and a field test of the instrument was conducted. The final questionnaire was shown in Appendices A.

DATA ANALYSIS

The research hypotheses were tested using structural equation modeling (SEM) implementing partial least squares (PLS) technique.

Assessment of Measurement Model

Prior to data analysis, three measurement properties need to be examined to ensure that the model has a satisfactory level of reliability and validity. To evaluate individual item reliability, the standardized loadings (or simple correlation) were assessed. A rule of thumb employed by many researchers is to accept items with loadings of 0.7 or more, which implies that there is more shared variance between the latent variables and its measure than error variance. Based on the output of confirmatory factor analysis (CFA) from Smart-PLS 2.0 M3, all items have loadings above 0.70. In addition, the loadings are all statistically significant. Therefore, it can be said that all the items demonstrate satisfactory level of individual item reliability.

Second, convergent validity was also examined by evaluating Cronbach's alpha by SPSS 19.0. This is to measure the internal consistency. It is estimated to ensure that the items assumed to measure each

Table 5. AVE and Cronbach's Alpha

Reflective Constructs	AVE	Cronbach's Alpha
GovS	0.7170	0.7882
MFS	0.6675	0.8864
PLR	0.6293	0.7961
SW	0.6192	0.8562
eCIA	0.6634	0.8715
eCI	0.7030	0.7040
Benchmark	0.5	0.6

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latent variable measures them and not measuring another latent variable. The Cronbach's alpha obtained for each construct is listed in Table 5. All constructs have acceptable convergent validity, as a value of 0.70 is usually accepted as the minimum desired value of the Cronbach's alpha.

Third, the discriminant validity of the measurement scale was tested. The analysis of cross-loading was carried out by following the rule that items should have a higher correlation with the latent variable that they are supposed to measure than with any other latent variable in the model (Chin, 1998). First, SmartPLS 2.0 M3 was used to generate the latent variable scores for all the six reflective variables and

Table 6. The cross loadings of constructs

Items	GovS	MFS	LRS	SW	eCI	eCIA
GovS1	**0.85**	0.52	0.32	0.65	0.67	0.70
GovS2	**0.86**	0.43	0.23	0.78	0.83	0.80
GovS3	**0.84**	0.74	0.70	0.65	0.32	0.69
GovS4	**0.88**	0.72	0.60	0.32	0.23	0.70
GovS5	**0.97**	0.10	0.72	0.23	0.70	0.82
GovS6	**0.79**	0.74	0.43	0.40	0.80	0.73
MFS1	0.32	**0.65**	0.53	0.20	0.52	0.40
MFS2	0.23	**0.79**	0.22	0.52	0.32	0.32
MFS3	0.40	**0.81**	0.12	-0.01	0.23	0.23
MFS4	0.20	**0.87**	0.13	0.32	0.40	0.32
MFS5	0.52	**0.91**	0.03	0.33	0.20	0.23
MFS6	-0.20	**0.91**	0.08	0.54	0.52	0.40
MFS7	0.54	**0.91**	0.42	0.44	0.12	0.20
PLR1	0.22	-0.12	**0.83**	0.12	0.13	0.52
PLR 2	-0.10	0.54	**0.85**	0.13	-0.05	0.54
PLR 3	0.34	0.22	**0.81**	0.03	-0.08	0.22
PLR 4	-0.32	0.10	**0.79**	0.08	0.42	-0.12
PLR 5	0.23	0.34	**0.88**	0.42	0.54	-0.13
SW1	0.40	0.32	0.12	**0.85**	0.22	-0.04
SW2	-0.20	0.23	0.43	**0.82**	0.12	-0.00
SW3	0.52	0.40	0.54	**0.80**	0.13	0.12
SW4	0.77	0.62	0.52	**0.77**	0.03	0.13
eCI1	-0.20	0.34	-0.22	0.22	**0.81**	0.20
eCI2	-0.12	0.32	0.52	-0.10	**0.86**	0.52
eCI3	0.43	0.23	0.32	0.34	**0.88**	0.85
eCI4	0.54	0.40	0.23	0.32	**0.78**	0.66
eCI5	-0.22	-0.32	0.40	0.23	**0.85**	0.75
eCIA1	0.70	0.63	052	0.70	0.90	**0.98**
eCIA2	0.84	0.70	0.83	0.60	0.90	**0.98**

Legend: The highest Pearson Correlation coefficient is highlighted

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standardized scores for each measurement item. Next, these scores were then entered into SPSS 19.0 to calculate Pearson's correlation coefficients for all the items. The Pearson correlation results are present in Table 6. The results showed that all items loaded higher on the latent variable they were theoretically specified to measure than any other latent variable in the model (see the highlighted correlation coefficients). In other words, the analysis demonstrated discriminant validity of the six latent variables.

In PLS, analysis of average variance extracted (AVE) is also useful for assessing the adequacy of discriminant validity at construct level. Accordingly, a latent variable should share more variance with its measures than it shares with other latent variables. AVE of a latent factor should be greater than the variance shared between the latent factor and other latent factor (e.g. the squared between two latent factor). The rule is that the square root of AVE of each latent variable should be larger than the correlation of two latent variables. Here, the correlation matrix for the latent factors was established (see Table 7). The results show that there was no correlation between any two latent variables larger than or even equal to the square root AVEs of the two latent variables. Thus, the analysis demonstrated discriminant validity. Therefore, having satisfied the three measurement properties, it can be concluded that the constructs are measured with adequate precision.

Table 7. The correlation of constructs and the square root of AVE

Items	GovS	MFS	PLR	SW	eCI	eCIA
GovS	**0.847**					
MFS	0.134	**0.817**				
PLR	0.321	0.122	**0.793**			
SW	-0.001	0.441	0.411	**0.840**		
eCI	0.120	-0.022	0.205	0.383	**0.840**	
eCIA	0.331	0.088	0.277	0.321	0.82	**0.980**

Assessment of Structural Model

Table 8 contains a summary of the hypotheses, the path coefficients obtained from the PLS analysis, the t-values, and associated levels of significance for each path.

Test of Predictive Validity of the Structural Model

The explanatory power of the model was assessed by examining the amount of variance in the dependent variable that can be explained by the model. Smart-PLS 2.0 3M provided the squared multi correlations (R2) for two dependent variables in a model. In this study, the R2 for "e-commerce initial adoption" and "e-commerce institutionalization" are 0.50 and 0.45 respectively meaning that about 50% and 45% of the changes in the entry-level adoption and institutionalization of e-commerce in SMEs is due to the four institutional variables in the model. Now, it can be summarized that the modified model and its instrument are sufficiently valid to explain adoption and institutionalization of e-commerce in SMEs.

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Test of Research Hypotheses

Each hypothesis was tested by looking at the sign, size, and statistical significance of the path coefficient between the independent and dependent variable. The bootstrap function in Smart-PLS 2.0 3M was used with 200 re-samples. Five of the eight paths are statistically significant (see Table 8). For e-commerce initial adoption (eCIA), two of the four institutional factors – GovS and PLR – have significant paths. For institutionalization of e-commerce (eCI), three of the four institutional factors –SW, PLRS, and MFS – have significant paths.

Table 8. Path coefficients and t values

Path	Expected Sign	Path Coefficients	t-Values	Inference
Dependent construct: E-commerce Initial Adoption (eCIA)				
H1a: GovS->eCIA	+	0.13	1.75*	Supported
H5a: LRS ->eCIA	+	0.16	1.99*	Supported
Dependent construct: Intention for E-commerce Institutionalization (eCI)				
H5b: LRS ->eCI	+	0.43	3.73**	Supported
H3b: SW ->eCI	+	0.34	4.21**	Supported
H2b: MFS ->eCI	+	0.21	2.53**	Supported

Legend: **=highly significant, *=significant; critical t-value: 1.96 p<0.05 and 2.58 p<0.01

The 2016 Follow-Up Interview Data Analysis

The qualitative data is collected in the face-to-face manner with four specific participants in September 2016. The analysis and results of those qualitative interviews helped the researcher clarifies the participants' responses in the full survey and complemented the previous quantitative analyses and results. The following report on the qualitative interviews was present in descriptive narrative and succinct form, categorized into five headings corresponding to two dependent variables and four independent variables in the quantitative results, and supported by interview participants' quotations (in italics in the following texts). This approach of analyzing the interview data was suited to the relatively small number of interviews in this study and the purpose of cross validating the effects of four institutionally influential factors for e-commerce adoption.

The first company was coded as SME1. According to its website, SME1 was a sport equipment manufacturing company. It had more than 150 employees. Its key customers included schools, sport centers, and organizations. Its strategic partners included local small and large enterprises. Its products and services included sport equipment of which the prices range from US$5 to over 10,000. In previous years, SEM1 average R&D investment was around US$ 30,000. The interviewee was a process improvement manager at the company, focusing on strategic business planning and organizational development. He had over 25 years of experience ranging from an officer to a member of senior management.

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The second company was coded as SME2. It was a local branch of a China-based Zhongfong manufacturing company. Its major products were pet foods. It had over 100 employees. Its primary customers were farms. The interviewee had worked for three years in a position for procurement management and had recently served as a member of a regional business management team.

The last company was coded as SME3. It was an advertising agency company focusing on online advertising and public relations, interactive marketing, and media resource planning and purchasing. Its primary customers were online gaming vendors and operators. SME3 was a small company with about 50 employees in Riyadh. The interviewee was a director of technology for five years ago. The results are discussed in detail in the following sub-sections.

Initial Adoption of E-Commerce and Intention for E-Commerce Institutionalization

With regard to the sophistication and usage level of B2B e-commerce adoption, SME1 was still in the stage of "initial adoption" in 2016, meanwhile SME2 and SME3 were at the more sophisticated e-commerce level.

As for SME1, its major B2B partners were retailing vendors. Its business transactions with those external vendors had involved B2B e-commerce at the simple level since 2010 and continue to now. Two examples given are that the enterprise started to use e-mail since 2010, and established a static website since 2011, respectively. Then it improved their websites to the interactive websites years later to make promotions and publish basic company information or receive queries, e-mail, and form entry from users. At presently, a quite much part of electronic fund transfer has been conducting electronically through e-banking systems. However, the company does not have an online CRM or SCM systems. The interviewee from SME1 also confirmed that back in 2013; her company "had no organized or systematic operations of electronic purchasing." She also admitted that SME1 was not early adopters of e-commerce because of the concern of return-of investment of new technology and IT infrastructure barriers. And that SME1 does not have any plan to invest and improve its initial e-commerce status in near future. The interviewee also said that SME1's "IT infrastructure is not strong enough," and its overall intention level of e-commerce institutionalization was "at very low level." These are consistent with the 2013 full survey. The scores of initial B2B e-commerce adoption (eCIA) and of intention for e-commerce institutionalization (eCI) of SME1in the 2013 full survey were 3.7and 2.2 out of 5, respectively.

As for SME2, at present this company is at the middle institutionalization level of e-commerce. In the 2016 interview, the interviewee told that SME2 invested and retrofitted the initial e-commerce status to become a more sophisticated e-commerce system in 2015. Especially, the new system of e-commerce is integrated with e-marketplace and aligned with the company's new business strategy. In early 2016, SME2 "began to adopt e-commerce based on a third-party purchasing platform provided by Ariba." Since then, all long operations of SME2's purchasing had been through this platform. With the close cooperation with Chinese, SME2 had adopted B2B e-commerce extensively in its supply chain. Integrating its purchasing platform with its internal ERP system provided by SAP, SME2 was able to place orders with its suppliers online and its suppliers were able to take the orders on a real-time basis. SEM2 also used EDI to share information internally with its parent company in the U.S. and peer companies in Europe. However, it was still at a low level in SME2 with respect to electronic data interchange of order and sales with external business partners, including suppliers and customers. The "intention for B2B e-commerce institutionalization (eCI)" items for SME2 have been received high scores in the 2013 full survey, and the overall score of eCI was 4.0 out of 5.

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As an online advertising company with about ten years old, SME3 is presently at the high level of e-commerce institutionalization. It "has been using e-commerce more and more frequently because the overall e-commerce development in Saudi Arabia has become more and more mature, especially in IT sector." The eCIA and eCI scores of SME3 based on the 2013 full survey were 2.18 and 4.1 out of 5. As a newly founded online business solution provider itself, SME3 had the highest score of eCI among three interviewed companies in 2013. Its response in the 2016 interview survey showed that SME3 had been using or at least intended to use most of the e-commerce technologies listed in the survey, except for receiving customer orders on the company's website. The company normally assigned specific a sales and customer service representative to each customer. Although the customers themselves were unable to place orders over the Internet directly, the company's representatives could place orders for the customers over the company's intranet. In the near future, SME3 planned to develop and implement an e-business system that would integrate better with its customers. It hoped to "involve more in e-commerce and expand its usage." It had a strong customer-oriented application of web-based e-commerce technologies, such as a multi-functional website, EDI system and CRM system. SME3's interviewee specified the sales model of the company—SAS (software and service), which treated the product of software as a kind of service and offered this service online, with the abilities to provide technical support and customer communication and deliver software upgrades all online.

Ranking Institutional Factors

All interviewees were asked to rank the institutional factors' effects on their decision of B2B e-commerce adoption. For a decision of initial adoption of e-commerce, "government support" and "legal and regulations" received the highest rank across all interviewees; and "market forces" and "social awareness" factors in order. For a decision of e-commerce institutionalization, the "social awareness", "legal and regulations", and "market forces" received the highest rank across all interviewees, and the "government supports" factor in order.

In addition, regarding SME2 that was at the initial level of e-commerce adoption in 2013, GovS and PLR were the two institutional factors only influencing on their decision of e-commerce adoption. For 2016 as SME2 has an intention for at the more sophisticated level of e-commerce adoption, MFS, PLR, and PSW were in the three top in order predicting its e-commerce adoption. Regarding SME3, when it was at the initial level of e-commerce in 2013, GovS and PLR were also the two institutional determinants of their decision of e-commerce adoption only. In 2016 as SME3 is already at the institutionalization of e-commerce, MFS, PSW, and PLR were in the three top in order predicting its decision of e-commerce. Regarding SME1 that did not change its adoption level between 2013 and 2016, and rankings of the institutional factors also did not change.

Thus, it can be said that there is a clear change in terms of institutionally influential factors of e-commerce adoption over time in each enterprise as the level of e-commerce adoption changes. This result is consistent with the quantitative data analysis that indicated that predictors differ for initial e-commerce adoption and intention for e-commerce institutionalization.

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DISCUSSION

Data analysis showed that GovS had significant influence a decision of initial adoption of e-commerce but did not have any impact on intention for e-commerce institutionalization in Saudi SMEs. This finding is completely consistent with the result reported by Leung et al. (2005) and the conventional wisdom that emphasizes the influence of the macro-environment on entry-level e-commerce adoption (Molla & Licker, 2005).

For the reason of this finding, in developing countries, competitive environment is often determined by the relationship between businesses and government, and additionally, business managers in SMEs often trend to be oriented by government's directions and less willing to accept changes (Huang et al., 2014). Furthermore, in the Kingdom of Saudi Arabia, at presently, there is an absence of government responsibility for e-commerce as well as no long and short -term strategic plans for the e-commerce environment development. Saudi people tend to feel more confident in business ventures if they are backed by the Government. Therefore, SMEs in the KSA more likely move to e-commerce at the entry-level if they receive enough government's supports in terms of regulation, laws, financing, and technical issues, however a decision of e-commerce maturity and sophistication in Saudi SMEs may depend much more on other factors; for example, managers' commitment, and resources.

Perceived legal and regulations support is the most significant institutional determinant of both the entry-level adoption and institutionalization of e-commerce in Saudi SMEs. This result is consistent with previous empirical findings (Molla & Licker, 2005). Our finding gives empirical support to qualitative research that identifies many legal obstacles to e-commerce, such as inadequate legal protection for online transactions, unclear business laws, and security and privacy concerns (Ismail & Kamat, 2006; Kog, 2010). By implication, this result points to the need for establishing a broad legal and institutional framework that makes a trustworthy e-marketplace.

Perceived market forces were found to have significant effects on only intention for e-commerce institutionalization in Saudi SMEs. This finding is completely consistent with the results reported by Molla & Licker (2005). It is also supported by (Tran et al., 2014) when they found that external business characteristics were critical factors affecting the institutionalization of e-procurement in construction industry in Vietnam. They confirmed the importance of meso-level environmental factor in e-commerce adoption, as market forces tend to be relatively specific to a given sector and industry. In fact, in the KSA, enterprises consider consumer purchasing power to be weak and not support them to run e-commerce. They are just waiting to see how the e-marketplace develops. This result indicates that the extent to which e-commerce is used by different business partners can motivate SMEs toward more sophisticated e-commerce implementation because of perceived benefit values or fear of market displacement or forces from partners towards supply chain integration.

Perceived social awareness of e-commerce was found to have significant impact on institutionalization but not on a decision of initial adoption of e-commerce in SMEs. The result is supported by empirical findings in other developing countries (Tran et al., 2014). This implies that information sharing culture, positive perception of the role of information, and positive attitudes toward IT and e-commerce by people will be critical for SMEs in implementing sophisticatedly e-commerce (Teo et al., 2009). Such characteristics are all the more important in developing countries, such as KSA, where information sharing is facing the "rigidity" of public administration and even private businesses.

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CONCLUSION

The analysis result in 2013 and 2016 demonstrated that there is a clear difference between initial e-commerce adoption and intention for e-commerce institutionalization in SMEs in terms of institutional predictors. Supports of government and perceived legal and regulations supports are more critical in pulling SMEs towards a decision of initial e-commerce adoption rather than intention for e-commerce institutionalization. When e-commerce adoption was at its infant stage, supports from governmental initiatives and legal systems were instrumental and served as initial institutional forces to encourage firms to adopt e-commerce. Meanwhile, perceived industrial pressures (i.e. market forces), and perceived social awareness pushed initial adopters to engage in e-commerce more sophisticatedly. As time went on, the effect of government supports become insignificant but these factors remained relatively stable.

This study extended the institutional theory by adding a new research lens—time. Employing such a temporal lens provides a new and powerful way to investigate and better understand the contextual factors for e-commerce adoption at different stages in SMEs. The study has following limitations, such as limited generalizability for the other regions in Middle East, not diversified data in terms of geographical regions, and small sample size. Additionally, the research instrument should be tested for test–retest reliability and external validity. Replicating the study would enable such tests. Some respondents suggested that the issues addressed in our study should be conducted in specific industries because different industries may have different considerations in their adoption of e-commerce due to various institutional pressures. Finally, moderating factors should be taken into consideration while analyzing institutional relationships on e-commerce adoption.

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REFERENCES

Al-Qirim, N. (2008). The adoption of eCommerce communications and applications technologies in small businesses in New Zealand. *Electronic Commerce Research and Applications*, *6*(4), 462–473. doi:10.1016/j.elerap.2007.02.012

Al-Rawi, K., Sabry, K., & Al-Nakeeb, A. (2008). Driving factors for e-commerce: Gulf region review. *Academy of Information and Management Sciences Journal*, *11*(2), 19.

AlGhamdi, R., Nguyen, J., Nguyen, A., & Drew, S. (2012). Factors influencing e-commerce adoption by retailers in Saudi Arabia: A quantitative analysis. *International Journal of Electronic Commerce Studies*, *3*(1), 83–100.

APEC. (2006). The final report on transparency in procurement and e-Procurement. *Paper presented at the APEC Senior Officials' Meeting (SOM III)*, Ha Noi, Viet Nam.

Batenburg, R. (2007). E-procurement adoption by European firms: A quantitative analysis. *Journal of Purchasing and Supply Management*, *13*(3), 182–192. doi:10.1016/j.pursup.2007.09.014

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Burns, R., & Burns, R. (2008). *Business Research Methods and Statistics Using SPSS*. SAGE Publications Ltd.

Chan, F. T. S., Yee-Loong Chong, A., & Zhou, L. (2012). An empirical investigation of factors affecting e-collaboration diffusion in SMEs. *International Journal of Production Economics*, *138*(2), 329–344. doi:10.1016/j.ijpe.2012.04.004

Chiang, I. R., & Nunez, M. A. (2013). Strategic alignment and value maximization for IT project portfolios. *Information Technology Management*, *14*(2), 143–157. doi:10.100710799-012-0126-9

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern methods for business research, 295*(2), 295-336.

Chong, A. Y.-L., Ooi, K.-B., & Sohal, A. (2009). The relationship between supply chain factors and adoption of e-Collaboration tools: An empirical examination. *International Journal of Production Economics*, *122*(1), 150–160. doi:10.1016/j.ijpe.2009.05.012

Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption: A perceived risk facets perspective. *International Journal of Human-Computer Studies*, *59*(4), 451–474. doi:10.1016/S1071-5819(03)00111-3

Ghobakhloo, M., Benitez-Amado, J., & Arias-Aranda, D. (2011). Reasons for information technology adoption and sophistication within manufacturing SMEs. *Paper presented at the The POMS 22nd Annual Conference: Operations Management: The Enabling Link - 2011*.

Gibbs, L. J., & Kraemer, K. L. (2004). A cross-country investigation of the determinants of scope of e-commerce use: An institutional approach. *Electronic Markets*, *14*(2), 124–137. doi:10.1080/10196780410001675077

Gosain, S. (2004). Enterprise Information Systems as Objects and Carriers of Institutional Forces: The New Iron Cage. *Journal of the Association for Information Systems*, *5*(4), 151–182. doi:10.17705/1jais.00049

Gunasekaran, A., & Ngai, E. W. T. (2008). Adoption of e-procurement in Hong Kong: An empirical research. *International Journal of Production Economics*, *113*(1), 159–175. doi:10.1016/j.ijpe.2007.04.012

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis*. NJ: Pearson Prentice Hall Upper Saddle River.

Huang, D. C., Tran, Q. D., Nguyen, T. Q. T., & Nazir, S. (2014). Initial Adoption vs. Institutionalization of E-Procurement in Construction Firms: The Role of Government in Developing Countries. *International Journal of Enterprise Information Systems*, *10*(4), 1–21. doi:10.4018/ijeis.2014100101

Huang, L. K. (2009). The Contingent Role of Innovation between IT Management Sophistication and Strategic Alignment. *Journal of Global Information Management*, *17*(2), 60–92. doi:10.4018/jgim.2009040103

Ifinedo, P. (2011). An empirical analysis of factors influencing Internet/e-business technologies adoption by SMEs in Canada. *International Journal of Information Technology & Decision Making*, *10*(04), 731–766. doi:10.1142/S0219622011004543

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Ismail, I., & Kamat, V. (2006). Evaluation of Legal Risks for E-Commerce in Construction. *Journal of Professional Issues in Engineering Education and Practice*, *132*(4), 355–360. doi:10.1061/(ASCE)1052-3928(2006)132:4(355)

Ismail, I. A., & Kamat, V. R. (2008). Integrated Multi-Disciplinary e-Business Infrastructure Framwork. In C. J. Anumba & K. Ruikar (Eds.), *E-Business in construction* (Vol. 65-80). West Sussex, UK: Blackwell Publishing Ltd. doi:10.1002/9781444302462.ch5

Jeon, B. N., Han, K. S., & Lee, M. J. (2006). Determining factors for the adoption of e-business: The case of SMEs in Korea. *Applied Economics*, *38*(16), 1905–1916. doi:10.1080/00036840500427262

Kim, N. A. (2005). *Survey on electronic procurement implementation in Malaysia construction companies* [Master thesis]. University Technology Malaysia, Malaysia.

Kiong, L. V. (2004). *Analysis of the State of E-Commerce Adoption by the SMEs in Northern Malaysia and Factors that Might Hinder its Adoption: An Empirical Study* [Doctoral dissertation]. University of South Australia, Australia.

Kog, Y. C. (2010). Legal Issues of Integrated Network for Construction and Real Estate Sector. *Journal of legal affairs and disputere solution in engineering and construction, 2*(4), 228-235.

Leung, M. Y., Ng, S. T., Skitmore, M., & Cheung, S. O. (2005). Critical stressors influencing construction estimators in Hong Kong. *Construction Management and Economics*, *23*(1), 33–44. doi:10.1080/01446190410001678099

Lip-Sam, T., & Hock-Eam, L. (2011). Estimating the determinants of B2B e-commerce adoption among small & medium enterprises. *International Journal of Business and Society*, *12*(1), 15.

Luqman, A., & Abdullah, N. K. (2011). E-business adoption amongst SMEs: A structural equation modeling approach. *Journal of Internet Banking and Commerce*, *16*(2), 1.

Molla, A., & Licker, P. S. (2005). Perceived e-readiness factors in e-commerce adoption: An empirical investigation in a developing country. *International Journal of Electronic Commerce*, *10*(1), 83–110.

Moore, G. C., & Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information Systems Research*, *2*(3), 192–222. doi:10.1287/isre.2.3.192

Oxley, J., & Yeung, B. (2001). E-commerce readiness: Institutional environment and international competitiveness. *Journal of International Business Studies*, *32*(4), 705–724. doi:10.1057/palgrave.jibs.8490991

Rogers, E. M. (1995). *Diffusions of Innovations. 4th*. New York: Free Press.

Ruikar, K., Anumba, C. J., & Carrillo, P. M. (2006). VERDICT - An e-readiness assessment application for construction companies. *Automation in Construction*, *15*(1), 98–110. doi:10.1016/j.autcon.2005.02.009

Saprikis, V. (2013). Suppliers' behavior on the post-adoption stage of business-to-business e-reverse auctions: An empirical study. *Telematics and Informatics*, *30*(2), 132–143. doi:10.1016/j.tele.2012.04.002

Scott, W. R. (2005). Institutional theory: Contributing to a theoretical research program. In *Great minds in management: The process of theory development* (pp. 460-484).

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Tarafdar, M., & Vaidya, S. D. (2006). Challenges in the adoption of E-Commerce technologies in India: The role of organizational factors. *International Journal of Information Management*, *26*(6), 428–441. doi:10.1016/j.ijinfomgt.2006.08.001

Teo, H. H., Wei, K. K., & Benbasat, I. (2003). Predicting intention to adopt interorganizational linkages: An institutional perspective. *Management Information Systems Quarterly*, *27*(1), 19–49. doi:10.2307/30036518

Teo, T. S. H., Lin, S., & Lai, K. (2009). Adopters and non-adopters of e-procurement in Singapore: An empirical study. *Omega*, *37*(5), 972–987. doi:10.1016/j.omega.2008.11.001

To, M. L., & Ngai, E. W. T. (2006). Predicting the organisational adoption of B2C e-commerce: An empirical study. *Industrial Management & Data Systems*, *106*(8), 1133–1147. doi:10.1108/02635570610710791

Tran, Q., Huang, D., & Zhang, C. (2013). An assessment method of the integrated e-commerce readiness for construction organizations in developing countries. *International Journal of E-Adoption*, *5*(1), 37–51. doi:10.4018/jea.2013010103

Tran, Q., Zhang, C., Sun, H., & Huang, D. (2014). Initial adoption versus institutionalization of e-procurement in construction firms: An empirical investigation in Vietnam. *Journal of Global Information Technology Management*, *17*(2), 91–116. doi:10.1080/1097198X.2014.928565

Wang, W. Y. C., Heng, M. S. H., & Chau, P. Y. K. (2010). The adoption behaviour of information technology industry in increasing business-to-business integration sophistication. *Information Systems Journal*, *20*(1), 5–24. doi:10.1111/j.1365-2575.2008.00298.x

Yuan, J. H., Xu, Y., Hu, Z., Yu, Z. F., Liu, J. Y., Hu, Z. G., & Xu, M. (2012). Managing electric power system transition in China. *Renewable & Sustainable Energy Reviews*, *16*(8), 5660–5677. doi:10.1016/j.rser.2012.05.046

Zhu, K., & Kraemer, K. L. (2005). Post-adoption variations in usage and value of E-Business by organizations: Cross-country evidence from the retail industry. *Information Systems Research*, *16*(1), 61–84. doi:10.1287/isre.1050.0045

Zhu, K., Kraemer, K. L., & Xu, S. (2006). The process of innovation assimilation by firms in different countries: A technology diffusion perspective on e-business. *Management Science*, *52*(10), 1557–1576. doi:10.1287/mnsc.1050.0487

Zhu, L. (2008). *The institutional environment for B2B e-commerce adoption* [Doctoral dissertation]. University of Arizona.

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Chapter 19
An Analysis of the Factors Influencing the Adoption of Online Shopping

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ABSTRACT

This article aims to identify the main influencing factors that may influence the adoption of online shopping in the UK by integrating Unified Theory of Acceptance and Use of Technology2 (UTAUT2) and DeLone-McLean model of IS Success with trust (TR), product variety (PRDV) and product guarantee. Data was collected from 388 British online shopping consumers using a structured self-administrated questionnaire. Structural equation modeling (SEM) showed that behavioural intention (BI) was influenced by performance expectancy (PE), convenience (CON), service quality (SerQ), trust (TR), product guarantee (PG), product guarantee (PRDV) and compatibility (COMP), in their order of influencing strength and all together accounted for 70.4% of the variance in BI. Contrary to the authors' expectations, effort expectancy (EE) and social influence (SI) did not have an influence on BI. The implications of this article to both theory and practice is discussed at the end.

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INTRODUCTION

The rapid growth of the Internet retailers during the past two decades has undoubtedly quelled the overly optimistic expectations for on-line business to consumer (B2C) commerce (Zolait & Sulaiman, 2008; Celik, 2016). Most of the customers have recognized the importance of online shopping in their everyday lives, such as overcoming time and spatial barriers, convenience, competitive pricing, expert advice, customized service and greater access to information (Lim, 2015). However, many customers are still reluctant to shop online due to poor online customer experience (Lin, 2008). A related and arguably a more pressing problem for Internet retailers is identifying, attracting, and keeping customers (Chang et al., 2015; Tarhini et al., 2016).

The United Kingdom had the largest electronic commerce market in Europe in 2014 and accounted for 32% (roughly 118 billion Euro) of European e-commerce sales (Statista, 2015). However, many of the UK internet users still reluctant to use online shopping services (Turner & Callaghan, 2006; Ramanathan, 2011; Celik, 2016). Furthermore, the UK losses 19 billion Euro yearly of the annual online revenue due to poor online customer experience (Statista, 2015). Hence, it becomes vital for marketers and policy makers to have a deeper understanding of their customers to formulate strategies to enhance their experience (Zhou et al., 2007; Jeong et al., 2009; Lim, 2015). In order to have a better understanding of customers, both academics and online marketers must understand the factors that may hinder or enable the acceptance of online shopping.

Although there are many studies that examine the antecedents of online shopping (e.g. Çelik & Yilmaz, 2011; Clemes, Gan & Zhang, 2014; Chang et al., 2015; Amaro & Duarte, 2015; Celik, 2016), many researchers acknowledge that there still a gap in the understanding of online shopping (Dennis et al., 2009; Hand et al., 2009; Hansen & Jensen, 2009; Lim & Ting, 2012; Lim, 2015) and called for future studies that examine the influencing factors of online shopping.

Various models and theories have been mainly developed and employed to examine and predict the adoption of technology such as Technology Acceptance Model (TAM); Theory of Reasoned Action (TRA); Theory of Planned Behaviour (TPB); Innovation Diffusion Theory (IDT); Model of PC Utilization (MPCU); Motivation Model (MM), Social Cognitive Theory (SCT), Unified Theory of Acceptance and Use of Technology (UTAUT) and the Information Systems Success Model (IS Success Model). Hence, taking into consideration the importance of integrating both the Unified Theory of acceptance and Use Technology (UTAUT2, Venkatesh et al., 2012) and the Information Systems Success Model (IS Success Model, Delone & Mclean, 2004), and to answer the call of previous research (Delone & Mclean, 2004; Venkatesh et al., 2012) on this area to extend the extant models, this paper aims to propose a model which could be able to explain, theoretically and empirically, the main factors that may hinder or enable the adoption of online shopping by British customers. This study will enable the marketers to formulate strategies aiming at improving the take up of online shopping. Furthermore, only integrating the constructs from the two models may not necessarily portrays a complete picture of the phenomena under investigation. Therefore, trust, product guarantee and product variety were integrated into our model in order to have a better understanding of consumer adoption of online shopping. Indeed, these 3 factors appears to be a key predictor that made the customers use the online shopping services (Dennis et al., 2010; Clemes et al. 2014; Chen et al., 2015; Amaro & Duarte, 2015; Chang et al., 2015; Lim et al., 2016). Therefore, adding these factors will complement the existing factors of the UTAUT2 and IS Success Model and are expected to have a direct influence on behavioural intention towards using online shopping services. From the theoretical perspective, there are scare studies that integrate UTAUT2 and

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IS Success Model and to the best of the authors' knowledge, there are no previous studies that integrate these two models together with the 3 added factors. Therefore, this paper contributes to the literature related to theories and models of technology adoption and acceptance and this is considered a critical step to advance a theory (Johns, 2006; Alvesson & Kärreman, 2007).

THEORETICAL FRAMEWORK

The Unified Theory of Acceptance and Use of Technology (UTAUT) theorised by Venkatesh et al. (2003) was adopted as theoretical base of the current conceptual model. In fact, the most significant factors from the eight theories and models (Theory of Reasoned Action, Theory of Planned Behaviour, Technology Acceptance Model, Motivational Model, Combined of Technology Acceptance Model and Theory of Planned Behaviour, Model of PC Utilisation, Social Cognitive Theory, and Innovation Diffusion Theory) were examined, compared, synthesised and integrated by Venkatesh et al. (2003) in one unified model named UTAUT. In the UTAUT, Venkatesh et al. (2003) identified three constructs as key determinants of the behavioural intention to use technology. These constructs are performance expectancy, effort expectancy, and social influences. Facilitating conditions and behavioural intention both were also proposed to have a direct influence on the actual use behaviour (Venkatesh et al., 2003). Indeed, Venkatesh's et al. (2003) model has been broadly considered to be a one of the most inclusiveness and parsimonious models to explain technology usage (Bagozzi, 2007). Further, about 70 percent of the variance in behavioural intention was account for by UTAUT which has never been recorded by any other model (Alalwan et al., 2014; Venkatesh et al., 2003).

Over the prior literature of information system and technology acceptance, the UTAUT has been extensively adopted to examine the individuals' intention and behaviour toward different kinds of technologies such as Internet banking (i.e. Abu-Shanab et al. 2010; Tarhini et al., 2015); Mobile banking (i.e. Zhou et al., 2010); E-learning (i.e. Van Raaij & Schepers, 2008); E-government (i.e. Qasem & Zolait, 2014; Rana et al., 2015); online shopping (Yang, 2009). Further evidence supporting the validity of UTAUT has been introduced by Dwivedi et al. (2011) based on their meta-analyses of 43 articles that have partially or fully adopted the UTAUT. Dwivedi et al. (2011) revealed that the most influential factor predicting behavioural intention among UTAUT constructs is performance expectancy. Also, social influences, effort expectancy, and facilitating conditions (listed in order of their influence) are all key drivers of behavioural intention. In addition, Dwivedi et al. (2011) confirmed a high reliability degree (over 0.70) for each factor in the UTAUT model.

In the light of the above discussion, and as, this study primarily aims to formulate a better understanding toward the adoption of online shopping and discovering the main factors predicting customers' decision to use or reject such system to use or reject such. In the line with this aim, the proposed conceptual model should cover the most important aspects taken into account by customers in this regard. Yet, as this study fully concentrates on the behavioural intention, three factors (performance expectancy, effort expectancy, and social influences) were only extracted from UTAUT in the current conceptual model while facilitating conditions was excluded. However, an analysis of the prior literature of online shopping leads to observe that there are other important factors are not presented in the UTAUT. Among of these factors is trust which has been validated and proven by many studies such as Ha and Stoel (2009); Hong and Cha (2013); Gao et al. (2015); Chiu et al. (2012); Rauniar et al. (2014); Amaro and Duarte (2015); and Chang et al. (2015). Perceived enjoyment has been also confirmed to be crucial factor predicting

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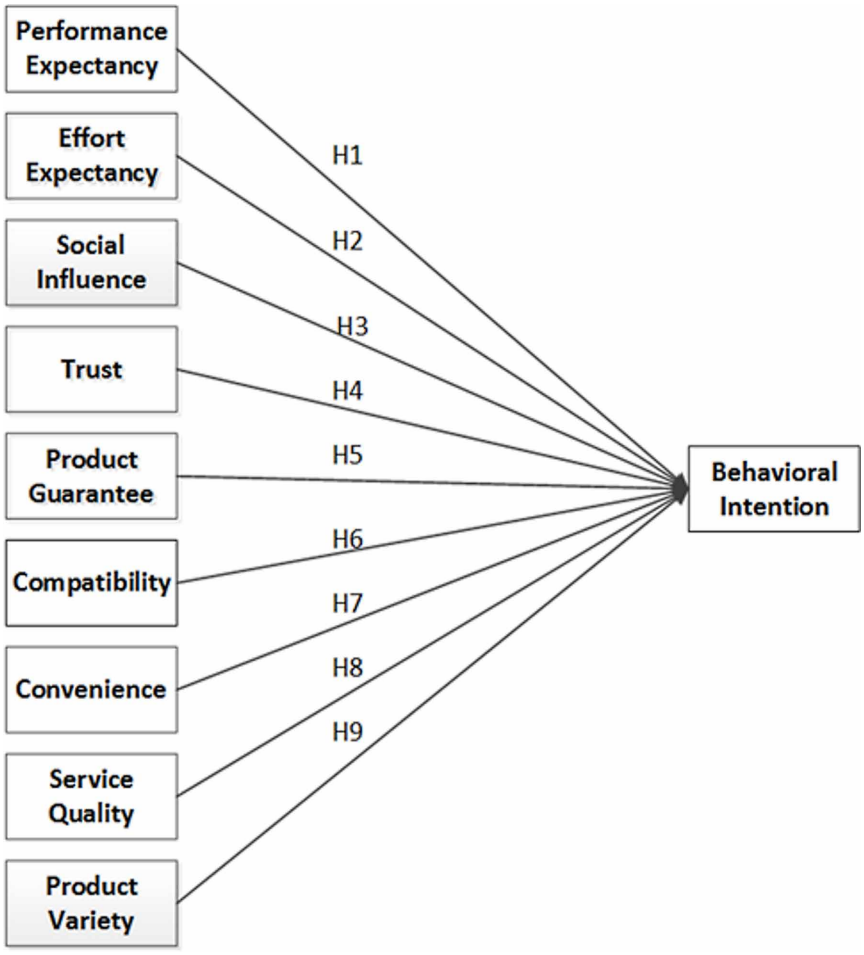
customer's intention to adopt online shopping (i.e. Ingham et al., 2015; Kim & Niehm, 2008). Another important factor was compatibility that has been approved by number of studies as well (i.e. Vijayasarathy, 2004; Amaro & Duarte, 2015). Product guarantee and product variety have derived attention by several researchers in the online shopping field (Amaro & Duarte, 2015; Jensen, 2009; Clemes et al., 2014; Koyuncu & Bhattacharya, 2004). Different online shopping researchers (i.e. Amaro & Duarte, 2015; Mayr & Zins, 2009; Gao et al., 2015; Chen et al., 2015) have paid interest to the role of convenience in shaping customers intention. Finally, service quality has been proposed and supported by good number of researchers of the related area of online shopping (i.e. Gao et al., 2015; Lin & Wang, 2006; Zhou, 2014; Zhou et al., 2013; Lee & Chung, 2009; Zhou, 2011; Shamala et al., 2017).

Accordingly, all of these seven factors: trust, enjoyment, compatibility, product guarantee, product variety, convenience, and service quality are proposed in conjunction with UTAUT factors: performance expectancy, effort expectancy, and social influence as key predictors of the customers' intention to adopt online shopping (see Figure 1). More explanation and justifications of the conceptual model and research hypotheses are presented in the forthcoming subsections.

Figure 1. The Proposed Conceptual Model



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Performance Expectancy

According to Venkatesh et al. (2003), performance expectancy pertains to the extent of how much people perceive a new technology is useful their daily life in terms of having more productivity as well as saving their time and efforts. In validating UTAUT, five constructs [(perceived usefulness (Davis et al., 1989); outcome expectation (Bandura, 1986); extrinsic motivation (Davis et al., 1992); relative advantage (Rogers, 2003), and job fit (Thompson et al. (1991)] capture the role of performance expectancy (Venkatesh et al., 2003). Indeed, either performance expectancy or its similar constructs represent the cognitive benefits perceived in using a new technology (Dwivedi et al., 2011; Rana et al., 2013; Amaro & Duarte, 2015; Tarhini et al., 2015). Importantly, such sort of benefits has been largely noticed to be able to keep their significant influence on the individuals' perception and willingness to adopt different kind of applications (Zhou et al., 2010; Alalwan et al., 2014; Rana et al., 2015). Customers' intention to use online shopping was also found out to be strongly predicted by the role of perceived usefulness as similar construct to performance expectancy (see Lin, 2007; Mandilas et al., 2013; Chong et al., 2012; Ingham et al., 2015; Agrebi & Jallais, 2015; Vijayasarathy, 2004; Rauniar et al., 2013). Further, performance expectancy was proven by Pascual-Miguel et al. (2015) to have a positive significant impact on the behavioural intention to adopt online shopping by both genders. Accordingly, it could be concluded that as long as customers perceive online shopping is more useful in their life, they will be more motivated to adopt it. Thus, the following hypothesis proposed is:

H1: Performance expectancy will positively influence customers' intention to adopt online shopping.

Effort Expectancy

Effort expectancy was identified as the "extent of ease connected with the use of system" (Venkatesh et al., 2003, p.450). Three constructs: perceived ease of use (Davis et al., 1989); complexity (Rogers, 2003); and ease of use (Moore & Benbasat, 1991) were formulated under the concept of effort expectancy in the UTAUT (Venkatesh et al., 2003). Although the usefulness perceived in adopting a new system represents important aspects considered by individuals, the extent of how much such system is simple and easy to use still derives a considerable attention from individuals in this regard (Davis et al., 1989; Venkatesh & Davis, 2000). Further, in the light of the fact that using online shopping requires customers to conduct the purchasing process alone and without any assistance from firms' staff, customers need to enjoy with a certain level of knowledge and skill (Alalwan et al., 2015). Therefore, effort expectancy is supposed to have a considerable impact on the customers' intention to adopt online shopping. This supposition has been supported by Lin (2007) and Ingham et al. (2015) who empirically noticed a significant association between perceived ease of use (as similar factor to effort expectancy) and customer's attitudes toward online shopping. More recently, Pascual-Miguel et al. (2015) approved that female's intention to use online shopping is largely predicted by the role of effort expectancy, yet such relationship is more likely to vanish for male groups. Mandilas et al. (2013) also confirmed a significant direct relationship between perceived ease of use with customer intention to use online shopping. All things considered, this study proposes the following hypothesis:

H2: Effort expectancy will positively influence customers' intention to adopt online shopping.

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Social Influence

Venkatesh et al. (2003, p.450) defined social influence as "the extent to which an individual perceives that important others believe he or she should apply the new system". Conceptually, social influence captures the role of subjective norms, social factors, and image as proposed by Venkatesh et al. (2003) in the UTAUT. As for customer online shopping behaviour, social influence could be addressed under the impact of people (i.e. family, friends, and colleagues) whom customer could ask for either information or social approval to use online shopping (i.e. Lin, 2007; Chong et al., 2012; Algharabat, 2014; Alqasa et al., 2014; Pascual-Miguel et al., 2015; Clemes et al., 2014; Ingham et al., 2015). The impact of social influence on the customer intention to use online shopping has been approved by number of online shopping studies. For instance, Chong et al. (2012) demonstrated that Malaysian consumer's decision was found out to be statistically predicted by the role of social influence. Similar factor to social influence, subjective norms has been also confirmed to have a significant impact on the customers' adoption of online shopping as stated by Clemes et al. (2014). In their meta-analytic review, Ingham et al. (2015) supported that social influence has been able to maintain its significant influence on customers' intention over the most studies that have examined the customers' adoption of online shopping. Thus, the following hypothesis supposes that:

H3: Social influence will have a positive impact on customers' intention to adopt online shopping.

Trust

According to Gefen et al. (2003), trust is more related to the individuals' beliefs that the targeted website has sufficient level of ability, benevolence, and integrity. Arguably, trust has been largely discussed over the prior literature as mechanism adopted by individuals to mitigate the concerns expected in using a new system (i.e. Chen et al., 2015; Hong & Cha, 2013; Ha & Stoel, 2009; Gao et al., 2015; Chiu et al., 2012; Rauniar et al., 2014; Amaro & Duarte, 2015; Chang et al., 2015). Further, using online shopping are most likely to comprise a such kind of financial transaction which could make customers perceive further risk is using these systems (Hong & Cha, 2013). This is in addition to the fact that there is not any kind of human interaction over the online shopping platforms, and accordingly, comprising more uncertainty and vagueness in the results of using online shopping (Algarabat & Zamil, 2013; Chen et al., 2015; Ingham et al., 2015). Thus, it could be concluded that customers are more likely to be less motivated to use online shopping, if they do not fully trust in using such systems. Indeed, several studies that have acknowledged the significant impact of trust on the customer's intention to use online shopping. Such of that, Chiu et al. (2012) established that customers' repeat purchase intention to use online stores is strongly contributed by the role of trust. Another strong relationship between trust and customer' willingness to use online shopping was approved by Hong and Cha (2013). These results have been recently supported by Ingham et al. (2015) who provided more evidences confirming the role of trust on the customers' intention to use online shopping. Therefore, this study suggests the following hypothesis:

H4: Trust will have a positive impact on customers' intention to adopt online shopping.

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Product Guarantee

Customer could not be sure about the results of using online shopping and that products purchased online matches the quality standards identified in the website (Koyuncu & Bhattacharya, 2004). Indeed, using online shopping comprises face to screen interaction, and accordingly, customers are only able to see the targeted products via the screen of computer and mobile phone (Robertson & Shaw, 2009). This is unlike traditional brick and mortar stores where customers can physically look at product prior taking his or her purchasing decision. Further important, customers seem to be more careful and concerns if the targeted products are highly expensive and comprise an extent degree of risk (Koyuncu & Bhattacharya, 2004). Customers are more likely to refuse purchasing these products from the online stores if the firm does not assure him or her that these products are reliable and trustworthy (Koyuncu & Bhattacharya, 2004). According to Clemes et al. (2014) and Koyuncu and Bhattacharya (2004), firms could be more able to mitigate customers concerns and motivating them to use online shopping by using an effective product guarantee police. In this regard, return police was statistically proven by Yingjiao and Paulins (2005) to be a significant factor contributing the customer's adoption of online shopping. Thus, the following hypothesis proposes that:

H5: Product guarantee will have a positive impact on customers' intention to adopt online shopping.

Compatibility

Compatibility is viewed as "the degree to which an innovation is perceived as being consistent with the existing value, past experiences and needs to potential adopters" (Rogers, 2003, p.240). Indeed, as long as customer perceives using online shopping compatible with other systems used by them (i.e. Internet, social media, online banking), compatible with their values and requirements as well, they will express less resistance to use such system and being more interest to adopt it (Vijayasarathy, 2004). The important role of compatibility on the customer's attitudes, intention and behaviour toward new systems has been largely confirmed (Alalwan et al., 2014; Chen & Huang, 2006). As for online shopping, Vijayasarathy (2004) found that customers, who perceive using online shopping is compatible with their life style, need, and values, are more likely to be formulate positive attitudes toward such system. In the line with these results, Lin (2007) established that compatibility has a significant impact on the customers' intention to sue online shopping by mediating role of attitudes. More recently, Amaro and Duarte (2015) empirically confirmed the impacting role of compatibility on the customer's intention to use online shopping. Therefore, the following hypothesis proposes that:

H6: Compatibility will have a positive impact on customers' intention to adopt online shopping.

Convenience

By using the online shopping, customers will be allowed to access a wide range of products, services, and information 24 a day and 7 days a week at any place of the customers' selection (Clemes et al., 2014). Indeed, by removing the time and place restrictions, customers will be more able to do their shopping simpler, easier and faster (Soopramanien & Robertson, 2007; Prasad & Aryasri, 2009). This, in turn, makes customers more motivated to adopt online shopping as stated by Kim et al. (2009); Mee and Huei

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(2015) and Chen (2015). In the line with this, Prasad and Aryasri (2009) demonstrated that customer's penchant to adopt online shopping will reach a high level among those customers who perceive online shopping as more convenient way to do their purchasing process. Convenience was also considered by Schaupp and Belanger (2005) as a one of the main factor predicting the customers experience with online shopping. Accordingly, the following hypothesis proposes that:

H7: Convenience will have a positive impact on customers' intention to adopt online shopping.

Service Quality

According to DeLone and McLean (1992) and Parasuraman et al., 1988 Service quality could be defined as the degree to which customer perceives a system as reliable, empathetic, secure, and creditable (DeLone and McLean, 1992; Shamala, *et al.,* 2017). Both personalisation and interactivity are also other important aspects of service quality that have to exist in any online shopping website to accelerate the customers' online shopping experience (DeLone & McLean, 2004). Service quality plays an important role in contributing the customer trust in the website (Gao et al. 2015). Thus, customers are more likely to be motivated to adopt online shopping if the perceive a high degree of service quality existing in the targeted website. This proposition was early supported by Liao et al. (2010) who indicted that service quality has a statistical significant impact on the customers' willingness to adopt online shopping. By the same token, a positive strong association was noticed by Vijayasarathy and Jones (2000) between service quality and customers' intention to adopt online shopping. As said by Yang and Jun, (2002), security represents the main issues that could hinder or contribute to the non-users' intention to adopt online shopping instead of the reliability aspects which were of the focus of attention of the actual users of online shopping. Further, Lee and Lin (2005) empirically supported a strong positive relationship between service quality and customers' penchant to adopt online shopping. Therefore, the following hypothesis propositions:

H8: Service quality will have a positive impact on the customer's intention to adopt online shopping.

Product Variety

Hansen and Jensen (2009) asserted the importance of accelerating customer online shopping experience by providing a broad range of products and services that customers can select among them. Thus, product variety was noticed as one of the key motives of the customers adoption of online shopping as stated by Szymanski and Hise (2000). According to Van Herpen and Pieters (2002), the way to present the targeted products by firms, product attributes, and repetition frequency, and number of products presented all are key factors predicting the way that customer perceive the aspects related to variety. Cho (2004) confirmed a positive significant relationship between product variety and adoption of online shopping. Users of online shopping were also noticed to pay a considerable attention to aspects related to variety products presented online in comparison with non-users of online shopping. Clemes et al. (2003) have empirically proved the significant impact of product variety on the customer adoption of online shopping. Thus, the following hypothesis proposes that:

H9: Product variety will have a positive impact on the customer's intention to adopt online shopping.

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RESEARCH METHODOLOGY

Participants and Procedure

Data were collected by means of self-administrated questionnaire containing 46 items from 388 online shopping users from England using a convenience sampling technique between February and April 2015. Consent was deemed to be given by participants who indicated that they agreed to take part in this research and that their participation in this study is voluntary. All responses were anonymous and on average, each participant took about 16 minutes to complete the questionnaire. No financial incentive or rewards in kind was offered for completing the survey. The sample age range varies from the mean age range varies from 18 to 52 years old, with 216 (55.67%) Male, and 323 (83.25%) were either has experienced or has some experience in using computers and internet usage.

Instrument

The items used in the proposed research model were adapted from previous studies related to technology adoption and online shopping. More specifically, performance expectancy and effort expectancy were measured using five items, whereas social influence and behavioural intention were measured using four items. These items were adapted from Venkatesh et al. (2012) and related work Venkatesh and Zhang (2010), Mandilas et al. (2013), Zolait (2014), Agrebi and Jallais (2015), Pascual-Miguel et al., (2015). Service quality was measured using four items and was adopted from Chang et al. (2005) and Clemesn et al. (2014). In addition, compatibility, convenience and product variety were also measured using four items and adopted from the work of Lin (2007), Prasad and Aryasri (2009), Amaro and Duarte (2015), Mee and Huei (2015). Finally, TR and PG were measured using four items and were adopted from the work of Koyuncu and Bhattacharya (2004), Yingjiao and Paulins (2005) and Clemesn et al. (2014).

All questions were measured using 7 points Likert scale, ranging from 1-strongly disagrees to 7-strongly agree.

DATA ANALYSIS

This section presents an in-depth analysis of the relationships among the constructs within the proposed research model. Two steps were used during the data analysis process as recommended by Hair et al. (2010). In the first step, the confirmatory factor analysis (CFA) was employed to assess the constructs' validity and reliability and test the model fit. The next step employed the structural equation modeling (SEM) technique to test the hypothesised relationships among the independent and dependent variables. Using a two-step approach assures that only the constructs retained from the survey that have good measures (validity and reliability) will be used in the structural model (Hair et al., 2010).

Descriptive Analyses

Overall, all means were greater than 3.84 which indicate that the majority of participants express generally positive responses to the constructs that are measured in this study. In addition, the standard deviation (SD) values ranged from 1.12 to 1.71 which showed a fairly narrow spread around the mean (see Table 1).

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Table 1. Descriptive statistics of the constructs

Construct	Mean	Standard Deviation
Performance Expectancy (PE)	5.46	1.31
Effort Expectancy (EE)	5.32	1.55
Social Influence (SI)	3.84	1.34
Trust (TR)	4.58	1.28
Product Guarantee (PG)	5.41	1.12
Compatibility (COMP)	4.03	1.42
Convenience (CON)	5.24	1.57
Service quality (SrvQ)	5.38	1.24
Product Variety (PRDV)	5.06	1.63
Behavioural Intention (BI)	5.31	1.71

Analysis of Measurement Model- Examination of Reliability and Validity

A confirmatory factor analysis (CFA) using AMOS 21.0 (Arbuckle, 2009) was conducted to test the measurement model. This study adopted maximum-likelihood estimation (MLE) procedure to estimate the model's parameters where all analyses were conducted on variance-covariance matrices (Hair et al., 2010). The overall model fit was assessed by five goodness-of-fit indices as recommended by Byrne (2013). Table 2 presents the fit indices of the measurement model and the structural model, all of which met the recommended guidelines and suggested a good model fit. The next step is to assess convergent validity, discriminant validity and reliability in order to evaluate if the psychometric properties of the measurement model are adequate.

Table 2. Model fit summary for the measurement and structural model

Fit Index	Recommended Value Hair et al., (2010)	Measurement Model	Structural Model
χ^2 / df	< 5 preferable < 3	2.78	2.76
Tucker-Lewis Index (TLI)	> 0.90	.948	.951
Comparative Fit Index (CFI)	> 0.90	.932	.934
Standardised Root Mean Square Residuals (SRMSR)	< 0.08	.075	.074
Root Mean Square Error of Approximation (RMSEA)	< 0.08	.046	.044

Construct Reliability, Convergent Validity, and Discriminant Validity

Convergent validity refers to the degree to which two measures of constructs that theoretically should be related, are in fact related (Gefen, Straub & Boudreau, 2000). This will ensure unidimensionality of the multiple-item constructs and will help in eliminating any unreliable indicators (Bollen, 1989).

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Whereas, Discriminant validity measures the extent to which constructs differ (Gefen et al., 2000). Hair et al. (2010) states that reliability, convergent validity and discriminant validity can be assessed using composite reliability (CR) and average variance extracted (AVE). According to Kline (2010), a value of 0.7 and above for CR indicate an adequate reliability. In addition, the AVE should be equal or exceed 0.5 and CR is greater than the AVE in order to establish convergent validity. Whereas, the total AVE of the average value of variables should be greater than their correlation value in order to establish adequate discriminant validity (Hair et al., 2010). As can be shown in Table 3, the AVE of all the constructs were above 0.539 and above 0.757 for CR and this indicate that the constructs had adequate reliability and convergent validity. Also, the square root of AVE is higher than their correlation values which indicate that all the constructs in the proposed research model are deemed to be adequate.

Table 3. Construct reliability, convergent validity and discriminant validity

	CR	AVE	PG	PE	EE	SI	COMP	SerQ	CON	BI	TR	PRDV
PG	0.911	0.72	0.848									
PE	0.909	0.714	0.592	0.845								
EE	0.942	0.765	0.627	0.641	0.875							
SI	0.826	0.614	0.451	0.497	0.486	0.784						
COMP	0.764	0.539	0.617	0.634	0.782	0.593	0.84					
SerQ	0.878	0.707	0.135	0.185	0.093	0.037	0.114	0.841				
CON	0.896	0.687	0.709	0.632	0.526	0.429	0.537	0.078	0.829			
BI	0.909	0.769	0.72	0.687	0.705	0.493	0.662	0.159	0.666	0.877		
TR	0.917	0.736	0.496	0.442	0.502	0.427	0.554	0.114	0.44	0.573	0.858	
PRDV	0.757	0.587	0.36	0.392	0.349	0.446	0.397	0.113	0.241	0.347	0.266	0.622

(Factor Correlation Matrix with $\sqrt{}$AVE on the diagonal)

Testing of Hypotheses

The next step after establishing good convergent and discriminant validity was to assess the structural model to test hypothesised relationships.

The results in Table 4 indicate that BI was influenced by PE, CON, SerQ, TR, PG, PRDV and COMP, in their order of influencing strength and all together accounted for 70.4% of the variance in BI. The obtained results indicate that H1, H3, H4, H5, H6, H7, H8, and H9 were supported. Contrary to our expectations, EE and SI did not have an influence on BI. Hence, H2 and H3 were not supported in this study.

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Table 4. The research model results, Coefficients

Number	Proposed relationship	Estimate	Result
H1	PE--- > BI	.181***	Supported
H2	EE--- > BI	.053	Not Supported
H3	SI--- > BI	.066	Not Supported
H4	TR--- > BI	.141**	Supported
H5	PG--- > BI	.127**	Supported
H6	COMP--- > BI	.109*	Supported
H7	CON--- >BI	.172***	Supported
H8	SerQ--- >BI	.150**	Supported
H10	PRDV--- >BI	.123*	Supported

(Notes: * p<.05; ** p<.01; *** p<.001; NS p>.01).PE: Performance Expectancy, EE: Effort Expectancy, SI: Social Influence, TR: Trust PG: Product guarantee, COMP: Compatibility, CON: Convenience, SerQ: Service Quality, PRDV: Product Variety, BI: Behavioural Intention.)

CONCLUSION

This study was conducted with intention to provide further evidences clarifying the adoption of online shopping by UK customers. Indeed, a comprehensive model comprising the most important aspects that could shape the UK customer decision to use such innovative system was the focus of attention of this study. Therefore, factors from UTAUT2 and DeLone-McLean model of IS Success with trust (TR), product variety (PRDV) and product guarantee (PG) were proposed in the current study model. Empirically, statistical results largely support the conceptual model as all fit indices were found to be within their recommended level as well as the model ability to predict about 70.4% of variance in the behavioral intention.

In terms of path coefficient analyses, most factors proposed in the conceptual model were found to be significant in predicting the UK customers' intention to adopt online shopping. Accurately, PE was able to be the most influential factor with coefficient value of 0.18. This evidently expose that the willingness of UK customers to adopt online shopping strongly derived by the extent of how much benefits and utilities perceived in using online shopping. In fact, customers are increasingly noticed to value the modern ways in doing their shopping as well as they are more likely to be concerned regarding the time and efforts spent to do such shopping activities using physical brick and mortar stores. Therefore, it could logical justify why the usefulness and benefits of using online shopping are one of the most important aspects shaping customers' willingness to use online shopping. Theoretically, most studies conducted over the relevant area (i.e. Lin, 2007; Mandilas et al., 2013; Chong et al., 2012; Ingham et al., 2015; Agrebi & Jallais, 2015; Vijayasarathy, 2004; Rauniar et al., 2013; Pascual-Miguel et al., 2015) have provided strong evidences regarding the important role of PE or its captured factors in accelerating the behavioral intention to use online shopping.

With regression weight of 0.172, CON was the second strongest factor influencing the customer willingness to adopt online shopping. This implies that customers highly appreciate the aspects related to the ability of such system in making the shopping experience more convenient and much easier as customer can electronically purchase their needed items at any time from any place. Such issues con-

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tribute to the benefits captured via using online shopping as discussed regarding the role of PE, and accordingly accelerating the customers' intention to use online shopping. Over the prior literature, the role of CON has been proven to be key determinant of the customers' decision to adopt online shopping as reported by Clemes et al. (2014); Prasad and Aryasri (2009); Soopramanien and Robertson (2007); Richard (2005); Mee and Huei (2015); Kim et al. (2009); Chen et al. (2010); and Liang and Lai (2002).

SerQ was among the most influential factor determining the UK customers' willingness to adopt online shopping as well. Indeed, aspects related to service quality have been always the focus of attention for customers and users of website (DeLone & McLean, 1992). To put differently, the extent of how much the targeted website has more security, reliability, sympathetic, and creditability is crucial in enhancing the customer's penchant to adopt commercial website. This is also in addition to the fact that customers are more interested regarding the level of individualization and interactivity that could be captured through using online shopping. Practically, and as discussed in the conceptual model, aspects related to the website SerQ are not only important in predicting the behavioral intention but also in the forming the overall customers' perception toward such website. Therefore, results of the current study are logically justified as well as in the line with what has been approved by IS and online shopping studies (see DeLone & McLean, 1992; Gao et al., 2015; Liao et al. 2001; Vijayasarathy & Jones, 2000; Yang & Jun, 2002; Lee & Lin, 2005).

The UK customers' intention was noticed to be significantly predicted by trust, which means that UK customers are highly motivated to use online shopping if they perceive such technology as trustworthy and dependable to do their shopping. Since Gefen et al. (2003) included and approved trust as an integral construct alongside TAM factors, many studies over the IS and technology acceptance area have proven trust to have a significant impact on the behavioral intention to use different systems and applications. In fact, using online shopping usually requires customer to disclose their private information. Therefore, customers are less likely to disclose their information without a certain level of integrity and benevolence existing in the targeted website. Theoretically, several studies examining the adoption of online shopping have provide solid evidences supporting the role of trust in forming customers' decision to adopt online shopping as stated by Chen et al. (2015); Ingham et al. (2015); Chiu et al. (2012); and Hong and Cha (2013).

Product guarantee was also able to considerably influence the UK customers' intention to adopt online shopping. This means that customers are more willing to depend on such innovative system if they have more assurance guaranteeing the outcomes of using online shopping. This is especially with the absence of hand on experience as well as inability of customer to physically inspect product prior purchasing it (Koyuncu & Bhattacharya, 2004). Indeed, the importance of product guarantee will reach the high level for such kind of highly expensive products that comprises a high degree of risk (Koyuncu & Bhattacharya, 2004). Such thought supporting the impacting role of product guarantee has been largely examined and confirmed by many researchers such as Clemes et al. (2014); Yingjiao and Paulins (2005); and Koyuncu and Bhattacharya (2004).

By the same taken, a significant path was observed between product variety and customer's intention to adopt online shopping. Unlike traditional way of shopping where customer is restricted by few number of products, many more products at different level of quality and prices as well as from many brands are usually available over the online platforms. Therefore, with less time and efforts, customers are more able to have many alternatives, do a comparative process, and select the optimal product. Many researchers (i.e. Szymanski & Hise, 2000; Hoch et al., 1999; Van Herpen & Pieters, 2002; Cho, 2004; Sin & Tse, 2002; Jensen, 2009; Amaro & Duarte, 2015) assured that product variety is one of the

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main dimensions that make customer perceive using online shopping more useful and better than the traditional way of shopping.

Compatibility was the least significant factor predicting the UK customers' intention to adopt online shopping. Increasingly, individuals get more involved with different kinds of technology and more likely to perceive a technology an integral part of their daily life. So that, online shopping is considered as growing technology that is increasingly adopted by customers. This is especially over the developed countries like UK, which in turn, makes such innovative system as more compatible and consistent with customer experience, value, and behaviour. Such results regarding the significant influence of compatibility are in the line with proposition of Rogers (2003) who asserted such strong association between compatibility and individuals' decision to accept or reject new innovation. By the same taken, different online shopping studies (i.e. Vijayasarathy, 2004; Lin, 2007) have validated the impacting role of compatibility as well. This provides further evidences that boost including compatibility among the conceptual model proposed in the current study.

On the other side, efforts expectancy was rejected to have a significant influence on the behavioral intention. That means the UK customers are less concerned regarding the issues related to the extent of much using online shopping is easy to use and complexity. Such results could be returned to the fact that people either worldwide or particularly in the developed countries (i.e. UK) get more engaged with different kinds of technology and as a result of increasing their daily interaction with technology. Therefore, people have a knowledge and experience that enable them to override any complexity or barriers associated with using new systems. This is in the line with what was proposed by Davis et al. (1989) who indicated that the role of perceived ease of use is usually mediated by the impact of perceived usefulness. The nonsignificant influence of effort expectancy has been noticed by different studies that have adopted the UTAUT as a theoretical foundation (i.e. Alalwan et al., 2016; Zhou et al., 2010; Abu-Shanab et al., 2010; Mandilas et al., 2013).

Social influence was also another factor failed to statistically predict the UK customer's intention to adopt online shopping. To put differently, the UK customers seem to be not influenced by the impact of social environment surrounding them. As people have more experience and knowledge, they are more likely to depend on themselves rather than other to take a decision to use or reject a new system. Even though such results are in contrast to with other studies that have approved the role of social influence in shaping customer's intention (i.e. Lin, 2007; Chong et al., 2012; Clemes et al., 2014; Ingham et al., 2015), they were similar to other studies have noticed the same non-significant path (i.e. Alalwan et al., 2016; Lin, 2007; Mandilas et al., 2013; Pascual-Miguel et al., 2015).

Theoretical and Practical Contributions

Online shopping is an innovative system over the marketing area and the successful implementation of such system alongside with adequate rate of adoption will benefit both parties' firms and customers. Therefore, current study was conducted with intention to provide guidelines that hopefully could help organization to accelerate the acceptance of online shopping. According to the statistical results of the current study, there are a number of factors that have to be the focus of attention by marketers and designers. For instance, performance expectancy has received a great deal of interest by customers. Thus, further attention should be paid for the aspects related to the benefits captured by using online shopping. In this regard, marketers should work hard to convince their customers that using online shopping can save their time and efforts relative to the traditional way of shopping. As well as, designers should expand

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the number of services and benefits provided through this channel. Convenience was also an important factor considered by the UK customers. Therefore, the online shopping website should be enjoyed with high the degree of accessibility that enables customers to access these website from using any platforms (i.e. PC, IPad, smart phone) and therefore, customers can do their online shopping whenever and wherever and using any application are available them. Trust was another important issue that could shape the customer decision to use online shopping. Indeed, customer trust will not only impact the customer intention to use online shopping but also will have a future influence on the customer relationship with firms provided their products electronically. This in turn gives clues for firms to spend more efforts in designing their website secure way protecting their customer privacy and information. In this regard, Mohammad et al. (2003) provided number of mechanisms that could help firms to enhance the level of customer trust such as using firms well-known mother brands, third party rating, concentrating more on the customer service, using advanced technology, using encryption and authentication technologies. Results of the current study have provided indication about the important role of product variety. Accordingly, firms should work hard to have more products from different brands at different level of prices which in turn, can attract different segments of customers. Service quality was one of the main factors determining the customers' intention to use online shopping. Hence, the main dimension of this factor has to be developed in a way that could enhance the customer perception toward such system. For instance, firms have to increase the speed where customer requires less time to download the webpage of the screen as well as, firms must decrease problems related to downtime and system crashes. The website ability to be customized by customer should be also enhanced as well as more interactivity should exist in the website. Further, firms have to concentrate to accelerate the level of compatibility online shopping technology. This could be reach by educating customer how the can use such system in addition to enhancing customer experience in this regard. More importantly, firms have to spend more promotional and marketing efforts to let their customer perceive these technologies positively and appropriate with their value, culture, and other technologies used by them. Also, firms have to provide the adequate facilities and technical infrastructural that will help customers to easily and effectively use online shopping.

Limitations and Suggestion for Future Studies

This study has some limitations that should be acknowledged. Firstly, the generalizability of our results to other settings or user groups should be considered with cautious. Future research may verify the generalizability of our findings to other technologies and/or user groups or different developing/developed countries. Secondly, data was collected through a cross-sectional study which limits the ability to measure the temporal changes of the proposed factors over time, especially when the experience of users increase. Therefore, a longitudinal analysis could be performed which allows the factors effecting IB adoption to be monitored and compared over time. Finally, the values of R^2 for BI indicate that there may be a need to explore additional potential factors to better explain the variance in BI. For example, future research can build on our study by including other relevant factors (e.g. self-efficacy, Financial Cost, Resistance to change, Habit) or integrates a set of moderators (e.g. culture, income, educational level) in order to increase the predictive power of behavioral intention in the proposed model.

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REFERENCES

Abbasi, M. S., Elyas, T., & Shah, F. (2015). Impact of individualism and collectivism over the individual's technology acceptance behaviour: A multi-group analysis between Pakistan and Turkey. *Journal of Enterprise Information Management*, *28*(6), 747–768. doi:10.1108/JEIM-12-2014-0124

AbuShanab, E., Pearson, J. M., & Setterstrom, A. J. (2010). Internet banking and customers' acceptance in Jordan: The unified model's perspective. *Communications of the Association for Information Systems*, *26*(1), 5–42.

Agrebi, S., & Jallais, J. (2015). Explain the intention to use smartphones for mobile shopping. *Journal of Retailing and Consumer Services*, *22*(1), 16–23. doi:10.1016/j.jretconser.2014.09.003

Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. doi:10.1016/0749-5978(91)90020-T

Alalwan, A., Dwivedi, Y. K., & Williams, M. D. (2014). Examining factors affecting customer intention and adoption of Internet banking in Jordan. In *Proceedings of United Kingdom Academy of Information Systems UKAIS Conference*, April 7-9, Oxford, UK.

Alalwan, A. A., Dwivedi, Y. K., Rana, N. P., Lal, B., & Williams, M. D. (2015). Consumer adoption of Internet banking in Jordan: Examining the role of hedonic motivation, habit, self-efficacy and trust. *Journal of Financial Services Marketing*, *20*(2), 145–157. doi:10.1057/fsm.2015.5

Alalwan, A. A., Dwivedi, Y. K., & Williams, M. D. (2016). Customers' Intention and Adoption of Telebanking in Jordan. *Information Systems Management*, *33*(2), 154–178. doi:10.1080/10580530.2016.1155950

Algharabat, R. S. (2014). Conceptualising and modelling virtual product experience for online retailers. *International Journal of Internet Marketing and Advertising*, *8*(4), 300–319. doi:10.1504/IJIMA.2014.067660

Alqasa, K. M., Mohd Isa, F., Othman, S. N., & Zolait, A. H. S. (2014). The impact of students' attitude and subjective norm on the behavioural intention to use services of banking system. *International Journal of Business Information Systems*, *15*(1), 105–122. doi:10.1504/IJBIS.2014.057967

Alvesson, M., & Kärreman, D. (2007). Constructing mystery: Empirical matters in theory development. *Academy of Management Review*, *32*(3), 1265–1281. doi:10.5465/AMR.2007.26586822

Amaro, S., & Duarte, P. (2015). An integrative model of consumers' intentions to purchase travel online. *Tourism Management*, *46*(2), 64–79. doi:10.1016/j.tourman.2014.06.006

Arbuckle, J. (2009). *Amos 18 User's Guide. SPSS Incorporated*. London, UK: Wiley Online Library.

Bagozzi, R. P. (2007). The legacy of the technology acceptance model and a proposal for a paradigm shift. *Journal of the AIS*, *8*(4), 244–254.

Bollen, K. A. (1989). *Structural equations with latent variables*. MA: Wiley. doi:10.1002/9781118619179

Byrne, B. M. (2013). *Structural equation modeling with Amos: Basic concepts, applications, and programming*. London, UK: Routledge.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Celik, H. (2016). Customer online shopping anxiety within the Unified Theory of Acceptance and Use Technology (UTAUT) framework. *Asia Pacific Journal of Marketing and Logistics*, *28*(2), 278–307. doi:10.1108/APJML-05-2015-0077

Çelik, H. E., & Yilmaz, V. (2011). Extending the technology acceptance model for adoption of e-shopping by consumers in Turkey. *Journal of Electronic Commerce Research*, *12*(2), 152–164.

Chang, M. K., Cheung, W., & Lai, V. S. (2005). Literature derived reference models for the adoption of online shopping. *Information & Management*, *42*(4), 543–559. doi:10.1016/S0378-7206(04)00051-5

Chang, S. C., Sun, C. C., Pan, L. Y., & Wang, M. Y. (2015). An Extended TAM to Explore Behavioural Intention of Consumers to Use M-Commerce. *Journal of Information & Knowledge Management*, *14*(2), 1–16. doi:10.1142/S0219649215500148

Chen, L. Y. (2015). Exploring the quality of mobile shopping system and its link to the organizational performance. *International Journal of Information Processing and Management*, *6*(1), 19–29.

Chiu, C. M., Hsu, M. H., Lai, H., & Chang, C. M. (2012). Re-examining the influence of trust on online repeat purchase intention: The moderating role of habit and its antecedents. *Decision Support Systems*, *53*(4), 835–845. doi:10.1016/j.dss.2012.05.021

Chiu, H. C., Hsieh, Y. C., & Kao, C. Y. (2012). Website quality and customer's behavioural intention: An exploratory study of the role of information asymmetry. *Total Quality Management & Business Excellence*, *26*(2), 185–197.

Chong, A. Y. L., Chan, F. T., & Ooi, K. B. (2012). Predicting consumer decisions to adopt mobile commerce: Cross country empirical examination between China and Malaysia. *Decision Support Systems*, *53*(1), 34–43. doi:10.1016/j.dss.2011.12.001

Clemes, M. D., Gan, C., & Zhang, J. (2014). An empirical analysis of online shopping adoption in Beijing, China. *Journal of Retailing and Consumer Services*, *21*(3), 364–375. doi:10.1016/j.jretconser.2013.08.003

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, *35*(8), 982–1003. doi:10.1287/mnsc.35.8.982

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace1. *Journal of Applied Social Psychology*, *22*(14), 1111–1132. doi:10.1111/j.1559-1816.1992.tb00945.x

DeLone, W. H., & McLean, E. R. (1992). Information systems success: The quest for the dependent variable. *Information Systems Research*, *3*(1), 60–95. doi:10.1287/isre.3.1.60

Delone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, *19*(4), 9–30. doi:10.1080/07421222.2003.11045748

Delone, W. H., & Mclean, E. R. (2004). Measuring e-commerce success: Applying the DeLone & McLean information systems success model. *International Journal of Electronic Commerce*, *9*(1), 31–47.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Dennis, C., Merrilees, B., Jayawardhena, C., & Wright, L. T. (2009). E-consumer behaviour. *European Journal of Marketing*, *43*(9), 1121–1139. doi:10.1108/03090560910976393

Dennis, C., Morgan, A., Wright, L. T., & Jayawardhena, C. (2010). The influences of social e-shopping in enhancing young women's online shopping behaviour. *Journal of Customer Behaviour*, *9*(2), 151–174. doi:10.1362/147539210X511353

Dwivedi, Y. K., Rana, N. P., Chen, H., & Williams, M. D. (2011). A meta-analysis of the Unified Theory of Acceptance and Use of Technology. In M. Nuttgens, A. Gadatsch, K. Kautz, I. Schirmerand, & N. Blinn (Eds.), *Governance and sustainability in IS, IFIP AICT* (Vol. 366, pp. 155–170). Berlin, Heidelberg: Springer. doi:10.1007/978-3-642-24148-2_10

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison Wesley.

Gao, L., & Bai, X. (2014). An empirical study on continuance intention of mobile social networking services: Integrating the IS success model, network externalities and flow theory. *Asia Pacific Journal of Marketing and Logistics*, *26*(2), 168–189. doi:10.1108/APJML-07-2013-0086

Gao, L., Waechter, K. A., & Bai, X. (2015). Understanding consumers' continuance intention towards mobile purchase: A theoretical framework and empirical study–A case of China. *Computers in Human Behavior*, *53*(9), 249–262. doi:10.1016/j.chb.2015.07.014

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *Management Information Systems Quarterly*, *27*(1), 51–90. doi:10.2307/30036519

Gefen, D., Straub, D. W., & Boudreau, M. C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of AIS*, *4*(7), 1–79.

Ha, S., & Stoel, L. (2009). Consumer e-shopping acceptance: Antecedents in a technology acceptance model. *Journal of Business Research*, *62*(5), 565–571. doi:10.1016/j.jbusres.2008.06.016

Hair, J. F. J., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate data analysis*. New Jersey: Prentice-Hall.

Hand, C., Riley, F. D., Harris, P., & Singh, J. (2009). Online grocery shopping: The influence of situational factors. *European Journal of Marketing*, *43*(9), 1205–1219. doi:10.1108/03090560910976447

Hansen, T., & Jensen, J. M. (2009). Shopping orientation and online clothing purchases: The role of gender and purchase situation. *European Journal of Marketing*, *43*(9), 1154–1170. doi:10.1108/03090560910976410

Hong, I. B., & Cha, H. S. (2013). The mediating role of consumer trust in an online merchant in predicting purchase intention. *International Journal of Information Management*, *33*(6), 927–939. doi:10.1016/j.ijinfomgt.2013.08.007

Ingham, J., Cadieux, J., & Berrada, A. M. (2015). e-Shopping acceptance: A qualitative and meta-analytic review. *Information & Management*, *52*(1), 44–60. doi:10.1016/j.im.2014.10.002

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Jeong, S. W., Fiore, A. M., Niehm, L. S., & Lorenz, F. O. (2009). The role of experiential value in online shopping: The impacts of product presentation on consumer responses towards an apparel web site. *Internet Research*, *19*(1), 105–124. doi:10.1108/10662240910927858

Johns, G. (2006). The essential impact of context on organizational behavior. *Academy of Management Review*, *31*(3), 386–408. doi:10.5465/AMR.2006.20208687

Kim, G., Shin, B., & Lee, H. G. (2009). Understanding dynamics between initial trust and usage intentions of mobile banking. *Information Systems Journal*, *19*(3), 283–311. doi:10.1111/j.1365-2575.2007.00269.x

Kim, H., & Niehm, L. S. (2009). The impact of website quality on information quality, value, and loyalty intentions in apparel retailing. *Journal of Interactive Marketing*, *23*(3), 221–233. doi:10.1016/j.intmar.2009.04.009

Kim, J., & Forsythe, S. (2010). Factors affecting adoption of product virtualization technology for online consumer electronics shopping. *International Journal of Retail & Distribution Management*, *38*(3), 190–204. doi:10.1108/09590551011027122

Kim, M. J., Chung, N., & Lee, C. K. (2011). The effect of perceived trust on electronic commerce: Shopping online for tourism products and services in South Korea. *Tourism Management*, *32*(2), 256–265. doi:10.1016/j.tourman.2010.01.011

Kline, R. B. (2010). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: Guilford Press.

Koyuncu, C., & Bhattacharya, G. (2004). The impacts of quickness, price, payment risk, and delivery issues on on-line shopping. *Journal of Socio-Economics*, *33*(2), 241–251. doi:10.1016/j.socec.2003.12.011

Lee, G. G., & Lin, H. F. (2005). Customer perceptions of e-service quality in online shopping. *International Journal of Retail & Distribution Management*, *33*(2), 161–176. doi:10.1108/09590550510581485

Lee, K. C., & Chung, N. (2009). Understanding factors affecting trust in and satisfaction with mobile banking in Korea: A modified DeLone and McLean's model perspective. *Interacting with Computers*, *21*(5), 385–392. doi:10.1016/j.intcom.2009.06.004

Liao, Z., & Cheung, M. T. (2010). Internet-based e-shopping and consumer attitudes: An empirical study. *Information & Management*, *38*(5), 299–306. doi:10.1016/S0378-7206(00)00072-0

Lim, W. M. (2015). Antecedents and consequences of e-shopping: An integrated model. *Internet Research*, *25*(2), 184–217. doi:10.1108/IntR-11-2013-0247

Lim, W. M., & Ting, D. H. (2012). E-shopping: An analysis of the technology acceptance model. *Modern Applied Science*, *6*(4), 49–62. doi:10.5539/mas.v6n4p49

Lim, Y. J., Osman, A., Salahuddin, S. N., Romle, A. R., & Abdullah, S. (2016). Factors Influencing Online Shopping Behavior: The Mediating Role of Purchase Intention. *Procedia Economics and Finance*, *35*, 401–410. doi:10.1016/S2212-5671(16)00050-2

Lim, Y. M., & Cham, T. H. (2015). A profile of the Internet shoppers: Evidence from nine countries. *Telematics and Informatics*, *32*(2), 344–354. doi:10.1016/j.tele.2014.10.002

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Lin, H. F. (2008). Predicting consumer intentions to shop online: An empirical test of competing theories. *Electronic Commerce Research and Applications*, *6*(4), 433–442. doi:10.1016/j.elerap.2007.02.002

Mandilas, A., Karasavvoglou, A., Nikolaidis, M., & Tsourgiannis, L. (2013). Predicting Consumer's Perceptions in On-line Shopping. *Procedia Technology*, *8*(1), 435–444. doi:10.1016/j.protcy.2013.11.056

Mayr, T., & Zins, A. H. (2009). Acceptance of online vs. traditional travel agencies. *Anatolia*, *20*(1), 164–177. doi:10.1080/13032917.2009.10518902

Moore, G. C., & Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information Systems Research*, *2*(3), 192–222. doi:10.1287/isre.2.3.192

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual. *Journal of Retailing*, *64*(1), 12–40.

Pascual-Miguel, F. J., Agudo-Peregrina, Á. F., & Chaparro-Peláez, J. (2015). Influences of gender and product type on online purchasing. *Journal of Business Research*, *68*(7), 1550–1556. doi:10.1016/j.jbusres.2015.01.050

Prasad, C. J., & Aryasri, A. R. (2009). Determinants of shopper behaviour in e-tailing: An empirical analysis. *Paradigm*, *13*(1), 73–83. doi:10.1177/0971890720090110

Qasem, M., & Zolait, A. H. (2016). Determinants of Behavioral Intentions towards Using E-Government Services in the Kingdom of Bahrain. *Int. J. Com. Dig. Sys*, *5*(4), 345–355. doi:10.12785/ijcds/050406

Ramanathan, R. (2011). An empirical analysis on the impact of risk on customer loyalty in electronic commerce. *International Journal of Services and Operations Management*, *9*(2), 183–201. doi:10.1504/IJSOM.2011.040707

Rana, N. P., Dwivedi, Y. K., Williams, M. D., & Weerakkody, V. (2015). Investigating success of an e-government initiative: Validation of an integrated IS success model. *Information Systems Frontiers*, *17*(1), 127–142. doi:10.100710796-014-9504-7

Rauniar, R., Rawski, G., Yang, J., & Johnson, B. (2014). Technology acceptance model (TAM) and social media usage: An empirical study on Facebook. *Journal of Enterprise Information Management*, *27*(1), 6–30. doi:10.1108/JEIM-04-2012-0011

Robertson, N. L., & Shaw, R. (2009). Predicting the likelihood of voiced complaints in the self-service technology context. *Journal of Service Research*, *12*(1), 100–116. doi:10.1177/1094670509333789

Rogers, E. (2003). *Diffusion of innovations* (5th ed.). New York, NY: Free Press.

Schaupp, L. C., & Bélanger, F. (2005). A Conjoint Analysis of Online Consumer Satisfaction1. *Journal of Electronic Commerce Research*, *6*(2), 95.

Shamala, P., Ahmad, R., Zolait, A., & Sedek, M. (2017). Integrating information quality dimensions into information security risk management (ISRM*). Journal of Information Security and Applications*, *36*, 1–10. doi:10.1016/j.jisa.2017.07.004

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Soopramanien, D. G., & Robertson, A. (2007). Adoption and usage of online shopping: An empirical analysis of the characteristics of "buyers" "browsers" and "non-internet shoppers." *Journal of Retailing and Consumer Services*, *14*(1), 73–82. doi:10.1016/j.jretconser.2006.04.002

Statista. (2015). *Percentage of internet users in selected European countries using online shopping in 2014 and 2017*. Retrieved 15th July 2016 from http://www.statista.com/statistics/221380/share-of-internet-users-shopping-online-in-2010-and-2015-by-european-country/

Statista. (2015). *Statistics and facts about e-commerce and online retail in the United Kingdom*. Retrieved 15 July 2016 from http://www.statista.com/topics/2333/e-commerce-in-the-united-kingdom/

Szymanski, D. M., & Hise, R. T. (2000). E-satisfaction: An initial examination. *Journal of Retailing*, *76*(3), 309–322. doi:10.1016/S0022-4359(00)00035-X

Tarhini, A., Arachchilage, N. A. G., Masa'deh, R., & Abbasi, M. S. (2015). A critical review of theories and models of technology adoption and acceptance in information system research. *International Journal of Technology Diffusion*, *6*(4), 58–77. doi:10.4018/IJTD.2015100104

Tarhini, A., El-Masri, M., Ali, M., & Serrano, A. (2016). Extending the UTAUT model to understand the Customers' Acceptance and Use of Internet Banking in Lebanon: A Structural Equation Modeling Approach. *Information Technology & People*, *29*(4), 23–38. doi:10.1108/ITP-02-2014-0034

Tarhini, A., Hone, K., & Liu, X. (2015). A cross-cultural examination of the impact of social, organisational and individual factors on educational technology acceptance between British and Lebanese university students. *British Journal of Educational Technology*, *46*(4), 739–755. doi:10.1111/bjet.12169

Turner, M., & Callaghan, D. (2006). Is shopping online now risk free for UK consumers? *Computer Law & Security Review*, *22*(4), 333–337. doi:10.1016/j.clsr.2006.05.004

Van der Heijden, H. (2004). User acceptance of hedonic information systems. *Management Information Systems Quarterly*, *28*(4), 695–704. doi:10.2307/25148660

Van Herpen, E., & Pieters, R. (2002). The variety of an assortment: An extension to the attribute-based approach. *Marketing Science*, *21*(3), 331–341. doi:10.1287/mksc.21.3.331.144

Venkatesh, V., Davis, F., & Morris, M. (2007). Dead or alive? The development, trajectory and future of technology adoption research. *Journal of the Association for Information Systems*, *8*(4), 267–286.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *Management Information Systems Quarterly*, *27*(3), 425–478. doi:10.2307/30036540

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *Management Information Systems Quarterly*, *36*(1), 157–178.

Venkatesh, V., & Zhang, X. (2010). Unified theory of acceptance and use of technology: US vs. China. *Journal of Global Information Technology Management*, *13*(1), 5–27. doi:10.1080/1097198X.2010.10856507

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Vijayasarathy, L. R. (2004). Product characteristics and internet shopping intentions. *Internet Research: Electronic Networking Applications and Policy*, *12*(5), 411–426. doi:10.1108/10662240210447164

Wu, J. H., & Wang, S. C. (2005). What drives mobile commerce? An empirical evaluation of the revised technology acceptance model. *Information & Management*, *42*(5), 719–729. doi:10.1016/j.im.2004.07.001

Yang, Z., & Jun, M. (2002). Consumer perception of e-service quality: From internet purchaser and non-purchaser perspectives. *The Journal of Business Strategy*, *19*(1), 19–41.

Yingjiao, X., & Paulins, V. A. (2005). College students' attitudes toward shopping online for apparel products: Exploring a rural versus urban campus. *Journal of Fashion Marketing and Management: An International Journal*, *9*(4), 420–433. doi:10.1108/13612020510620795

Zhou, L., Dai, L., & Zhang, D. (2007). Online shopping acceptance model – a critical survey of consumer factors in online shopping. *Journal of Electronic Commerce Research*, *8*(1), 41–62.

Zhou, L., Zhang, P., & Zimmermann, D. (2013). Social commerce research: An integrated view. *Electronic Commerce Research and Applications*, *12*(2), 61–68. doi:10.1016/j.elerap.2013.02.003

Zhou, T. (2014). Understanding continuance usage intention of mobile internet sites. *Universal Access in the Information Society*, *13*(3), 329–337. doi:10.100710209-013-0313-4

Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain Mobile banking user adoption. *Computers in Human Behavior*, *26*(4), 760–767. doi:10.1016/j.chb.2010.01.013

Zolait, A. H. S. (2014). The nature and components of perceived behavioural control as an element of theory of planned behaviour. *Behaviour & Information Technology*, *33*(1), 65–85. doi:10.1080/01449 29X.2011.630419

Zolait, A. H. S., & Sulaiman, A. (2008). Incorporating the innovation attributes introduced by Rogers' theory into theory of reasoned action: An examination of Internet banking adoption in Yemen. *Computer and Information Science*, *1*(1), 36–51.

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Chapter 20
Design Methodology for Effective User Interface Design for E-Commerce Applications

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ABSTRACT

There are many customers who shop online. Many of these users interact with the system using well-defined user interfaces only. So, there is a need to develop effective user interfaces that are more user friendly, minimize the keyboard operations, and maximize effective interaction with the system. This chapter focuses on designing effective user interfaces by considering human parameters for e-commerce applications.

INTRODUCTION

Electronic commerce is the application of communication and information sharing technologies among trading partners to the pursuit of business objectives. E-Commerce can be defined as a modern business methodology that addresses the needs of organizations, merchants, and consumers to cut costs while improving the quality of goods and services and increasing the speed of service delivery. E-commerce is associated with the buying and selling of information, products and services via computer networks. The effects of e-commerce are already appearing in all areas of business, from customer service to new product design. It facilitates new types of information based business processes for reaching and interacting with customers – online advertising and marketing, online-order taking and on-line customer service etc. It can also reduce costs in managing orders and interacting with a wide range of suppliers and trading partners, areas that typically add significant overhead to the cost of products and

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services. Also, E-commerce enables the formation of new types of information-based products such as interactive games, electronic books, and information-on demand that can be very profitable for content providers and useful for consumers. The explosion in the use of electronic commerce (e-commerce) by the business sector has been tremendous since its inception only a few years ago. From governments to multinational companies to one-person start-ups, e-commerce is increasingly viewed as a key business modality of the future. Ease of transaction, widening markets, and decreased overheads are factors that make e-commerce solutions more and more attractive, as evident with the growth of online sales. Virtual enterprises are business arrangements in which trading partners separated by geography and expertise are able to engage in complex joint business activities, as if they were a single enterprise. One example would be true supply chain integration, where planning and forecast data are transmitted quickly and accurately throughout a multi-tier supply chain. Another example would be non-competing suppliers with a common customer using E-commerce to allow that customer to do "one stop shopping" with the assurance that a single phone call will bring the right materials to the right location at the right time.

Development of E-Commerce (EC) applications started in the early 1970s with electronic funds transfer (EFT), which refers to the computer-based systems used to perform financial transactions electronically. However, the use of these applications was limited to financial institutes, large corporations, and some businesses. Electronic data interchange (EDI) was then developed in the late 1970s to improve the limitation of electronic funds transfer. Electronic data interchange enlarged the pool of participating company from manufacturers, retailers, services, and others. Such systems were called Interorganizational System (IOS). An Interorganizational System (IOS) allows the flow of information to be automated between organizations to reach a desired supply-chain management system, which enables the development of competitive organizations.

The user interface design of website plays a vital role in bringing high volume web traffic to it. Therefore, web designers should give due importance to the user interface of the site which is being designed by them. The use of effective and simple user interface design will be of immense help in achieving the objectives of a website. A good user interface not only increases the site usability but also leads to the smooth completion of any task at hand thereby making everything enjoyable and flexible as per the requirements of users. A fundamental reality of application development is that the user interface is the system to the users. What users want is for developers to build applications that meet their needs and that are easy to use. Constantine (1995) points out that the reality is that a good user interface allows people who understand the problem domain to work with the application without having to read the manuals or receive training. Interface design is important for several reasons. First of all the more intuitive the user interface the easier it is to use, and the easier it is to use the cheaper it is. The better the user interface the easier it is to train people to use it, reducing training costs. The better the user interface the less help people will need to use it, reducing support costs. The better the user interface the more users will like to use it, increasing their satisfaction with the work that have done.

The design of interfaces that attempt to encompass an extensive amount of merchandise has to employ methods where the product is either display successfully in a smaller scope while retaining its informational value. When it comes to e-commerce, User Interface design makes a difference between customers who abandon their carts and the ones that place an order. Elements like high quality product images are useful to persuade users to make a purchase. Clear call to action buttons and Seamless checkouts demonstrate that graphic and intuitive design must combine to make user navigation easy to use. Attention to user interface design details like the shopping cart, images, and call to actions will increase purchases and boost customer satisfaction.

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The web interface becomes a major success factor since customers interface with sellers in cyberspace through the seller's website. There were many of consumer reports frustrations with the lack of interface standard features within e-commerce websites. This phenomenon makes e-commerce sites lose up to 50% of potential online sales because users cannot find what they want.

BACKGROUND

User interfaces are inputs and outputs that more directly involve a system user. Their design varies widely depending on such factors as interface purpose, user characteristics, and characteristics of a specific interface device (Hughes, Brusilovsky & Lewis, 2002).

As increasingly more products and services are sold over the Internet, it becomes all the more important to build up knowledge in e-commerce-specific user interface (UI) and user experience (UX) design. The entire user experience must therefore be designed to induce a positive affective state by strategically addressing consumers' concerns.

In order to explore issue of user interface, identify and analyze features of user interfaces and common location of e-commerce function on e-commerce web sites. In e-commerce, the website is the firm's interface with the customer, and its usability is crucial to the success of the venture (Turban & Gehrke 2000). The web is the primary infrastructure for e-commerce and offers some advantages.

E-commerce site should focus on being functional in navigation and interface, facilitate purchasing speed for both repeat customers and new purchases, be as direct as possible with minimal monetization through advertisements, and put a premium on data security to promote customer confidence in making a purchase through the software.

First, a web site enhances the corporation's image and improves communications with other corporations, thus improving efficiency in business process and reducing cost (Alper, 1999; Zona Research, Inc., 2000). Second, customer interface with sellers in cyberspace through the sellers' web site, therefore a well-constructed web site can determine the user's willingness to stay in a site, revisit it, and buy on the net.

Whereas a poorly constructed web site can lead to lost revenues and negative effect on corporate image (Zona Research, Inc., 2000).

Although there have been many studies focusing on the importance of web site design features (Huang et al., 2006; Kim et al., 2003; Tarafdar & Zhang, 2006; Turban & Gehrke, 2000), there have been few studies that have sought to identify the standard features of user interface in ecommerce web sites.

E-Commerce website design involves complex issues, including shopping carts, large catalogues, payment security issues, etc. Some authors suggest that certain features that make a website effective must be included. Coopee et al (2000) recommend that websites include easy payment processing and website security user tracking. Also: the company information must be easy to find online, customers must have reason to visit the website, the site must be visually appealing to users and navigation must be clear and simple (Cell 2000).

According to Najjar (2001), search, contact us, registration and shopping carts are major features of an e-commerce website. Cyr et al (2004) points out that users have differences in preferences of website design, access to product details, navigation and availability of products.

There are many individuals and organizations have published their own sets of guidelines. Entering the keywords "web design guidelines" into an internet search engine returns about 7,860,000 hits. The

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objective of these guidelines is to help designers make a better design decision that will result in a more usable or useful design. However, many of those guidelines are abstract and open to broad interpretation. Determining what kind of empirical support is available for web design guidelines is particularly challenging.

From 1990s onwards, electronic commerce would additionally include enterprise resource planning systems (ERP), data mining and data warehousing. The term 'electronic commerce' was coined in the early 1990s when Internet became commercialized and users began flocking to participate in the World Wide Web. The earliest example of many-to-many electronic commerce in physical goods was the Boston Computer Exchange, a marketplace for used computers launched in 1982. The first online information marketplace, including online consulting, was likely the American Information Exchange, another pre-Internet online system introduced in 1991.Since 1995, many innovative applications, ranging from direct online sales to e-learning experiences had been developed. Almost every organization in the world has a Web site. In 1999, the emphasis of e-commerce shifted from Business-to-Consumer (B2C) to Business-to-Business (B2B). In 2001, from B2B to B2E, e-government, e-learning, and m-commerce. In 2005, social networks started to rise and so did e-commerce and wireless applications-e-commerce will undoubtedly continue to shift and change in the future (ECommerze, 2008).

The Table 1 describes the evolution of e commerce.

Table 1. Evolution of e-commerce

Year	Event
1984	EDI, or electronic data interchange, was standardized through ASC X12. This guaranteed that companies would be able to complete transactions with one another reliably.
1992	CompuServe offers online retail products to its customers. This gives people the first chance to buy things off their computer.
1994	Netscape arrived. Providing users a simple browser to surf the Internet and a safe online transaction technology called Secure Sockets Layer.
1995	Two of the biggest names in e-commerce are launched: Amazon.com and eBay.com.
1998	DSL, or Digital Subscriber Line, provides fast, always-on Internet service to subscribers across California. This prompts people to spend more time, and money, online.
1999	Retail spending over the Internet reaches $20 billion, according to Business.com.
2000	The U.S government extended the moratorium on Internet taxes until at least 2005.

E-Commerce Pioneers

Companies such as eBay and Amazon began to lead the way in e-commerce, both were among the first to establish prominent e-commerce brands. The most prominent e-commerce categories today are computers, books, office supplies, music, and a variety of electronics.

Amazon.com, Inc., founded by Jeff Bezos, was the original e-commerce pioneer and certainly the most recognizable. In the beginning, Amazon's business model required massive investment in warehousing, delivery and fulfillment capability and took years for Amazon to gain profitability.

Amazon began as just an online bookstore but over the years has extended its offering to a wide variety of product categories, including electronics, software, music, DVD's, CD's, video games, MP3's, cloth-

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ing, shoes, health and beauty products and even household goods. Today, Amazon generates anywhere between 30 to 40% of its total sales revenue from affiliates or third party merchants who list and sell their products on Amazon's web site.

User Interface and Its Principles

User Interface (UI) Design focuses on anticipating what users might need to do and ensuring that the interface has elements that are easy to access, understand, and use to facilitate those actions. UI brings together concepts from interaction design, visual design, and information architecture.

Understanding the User Interface

1. **User-Centered Design:** Design techniques that embody the view that the user interface is the entire system.
2. **Usability:** Degree to which a system is easy to learn and use.
3. **Metaphors:** Analogies between features of the user interface and aspects of physical reality that users are familiar with.
4. **Direct Manipulation Metaphor:** Metaphor in which objects on a display are manipulated to look like physical objects (pictures) or graphic symbols that represent them (icons).
5. **Desktop Metaphor:** Metaphor in which the visual display is organized into distinct regions, with a large empty workspace in the middle and a collection of tool icons around the perimeter.
6. **Document Metaphor:** Metaphor in which data is visually represented as paper pages or forms.
7. **Dialog Metaphor:** Metaphor in which user and computer accomplish a task by engaging in a conversation or dialog via text, voice, or tools such as labeled buttons.

User Interface Design Principles

User Interface needs to be streamlined and easy to use for novice users, it should also not be boring for experienced and educated ones. Constantine and Lockwood describe a collection of principles for improving the quality of your user interface design. These principles are:

1. **The Structure Principle:** Your design should organize the user interface purposefully, meaningfully, useful ways based on clear, consistent models that are apparent, and recognizable to users, putting related things together and separating unrelated things, differentiating dissimilar things and making similar things resemble one another.
2. **The Simplicity Principle:** Your design should make simple, common tasks simple to do, communicating clearly and simply in the user's own language, and providing good shortcuts that are related to longer procedures.
3. **The Visibility Principle:** Your design should keep all needed options and materials for a given task visible without distracting the user with extraneous or redundant information.
4. **The Feedback Principle:** Your design should keep users informed of actions or interpretations, changes of state or condition, and errors or exceptions that are relevant and of interest to the user through clear, concise, and unambiguous language familiar to users.

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5. **The Tolerance Principle:** Your design should be flexible and tolerant, reducing the cost of mistakes and also preventing errors wherever possible by tolerating varied inputs.
6. **The Reuse Principle:** Your design should reuse internal and external components maintaining consistency with purpose rather than merely arbitrary consistency, thus reducing the need for users to rethink and remember.

Choosing Interface Elements

Interface elements include but are not limited to:

- **Input Controls:** These controls are used to select, sort or search particular items in. Examples are: buttons, text fields, checkboxes, radio buttons, dropdown lists, list boxes, toggles, date field
  - **Text Box:** A rectangular box that accepts text typed on a keyboard or recognized from speech input
  - **List Box:** A text box that contains a list of predefined data values
  - **Combo Box:** A text box that contains a predefined list of acceptable entries but permits the user to enter a new value when the list doesn't contain the desired value
  - **Radio Buttons:** A group of choices from which the user selects only one; the system then automatically turns off all other buttons in the group
  - **Check Boxes:** Similar to radio buttons, but the user can select multiple items within the group
  - **Cascading Style Sheets (CSS):** Web page encoding standard that enables a Web site designer to specify parts of a page that will always look the same and parts that will vary by task or audience
  - **Assistive Technologies:** Software (such as text-to-speech and voice-recognition utilities) that adapts user interfaces to the special needs of persons with disabilities
- **Navigational Components:** These are used to move or navigate from one page to other.
  - **Examples:** Slider, search field, pagination, tags, icons
- **Informational Components:** These are used to provide information to the user.
  - **Examples:** Tooltips, icons, progress bar, notifications, message boxes.
- **Containers:** There are times when multiple elements might be appropriate for displaying content. When this happens, it's important to consider the trade-offs.

Defining a User Experience

Here are some of the elements that impact the user experience of your online store.

- Visual appeal. Colors, branding, imagery, layout.
- Search and navigation. Ability to find what you are looking for quickly.
- Site map. How the site is categorized and grouped.
- Content. Quality and quantity of text, images, videos that are associated with products and product categories.
- Ease of use. Can users easily navigate across the site, in and out of the cart, create shopping lists, find shipping costs?

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- Availability of help. Online chat, email help, self service accounts.
- Performance. Is the site fast?
- Payment options and process. Do you offer several payment methods, can users store credit card information, checkout with PayPal Express or other 3rd party payment systems?
- Shopping cart. Is it visually appealing? Is shipping info available?
- Image features. Zoom and pan, alternate images?
- Personalization. Is the store delivering personalized content?
- Merchandising. Are promotional items well displayed and available, using best-seller lists, cross-sells, and up-sells?
- Sale of goods
- Purchase of goods
- Financial assistance
- Advertising
- Sharing of products

The reality is the user experience is impacted by every single element of your website. You can have a well designed site with great navigation and performance, but if your shopping cart is lacking a shipping estimator, you may lose buyers to a poorly designed site that includes one.

Best Practices for Designing an Interface

Once you know about the user, make sure to consider the following when designing the interface:

- **Keep the Interface Simple:** The best interfaces are almost invisible to the user. They avoid unnecessary elements and are clear in the language they use on labels and in messaging.
- **Create Consistency and Use Common UI Elements:** By using common elements in your UI, users feel more comfortable and are able to get things done more quickly. It is also important to create patterns in language, layout and design throughout the site to help facilitate efficiency.
- **Be Purposeful in Page Layout:** Consider the spatial relationships between items on the page and structure the page based on importance. Careful placement of items can help scanning and readability.
- **Strategically Use Color and Texture:** You can direct attention toward or redirect attention away from items using color, light, contrast, and texture to your advantage.
- **Use Typography to Create Hierarchy and Clarity:** Different sizes, fonts, and arrangement of the text to help increase scanability, legibility and readability.
- **Make Sure That the System Communicates What's Happening:** Always inform your users of location, actions, changes in state, or errors. The use of various UI elements to communicate status and, if necessary, next steps can reduce frustration for your user.
- **Think About the Defaults:** By carefully thinking about and anticipating the goals people bring to site, you can create defaults that reduce the burden on the user.

Figure 1 explains user interface design process with an example.

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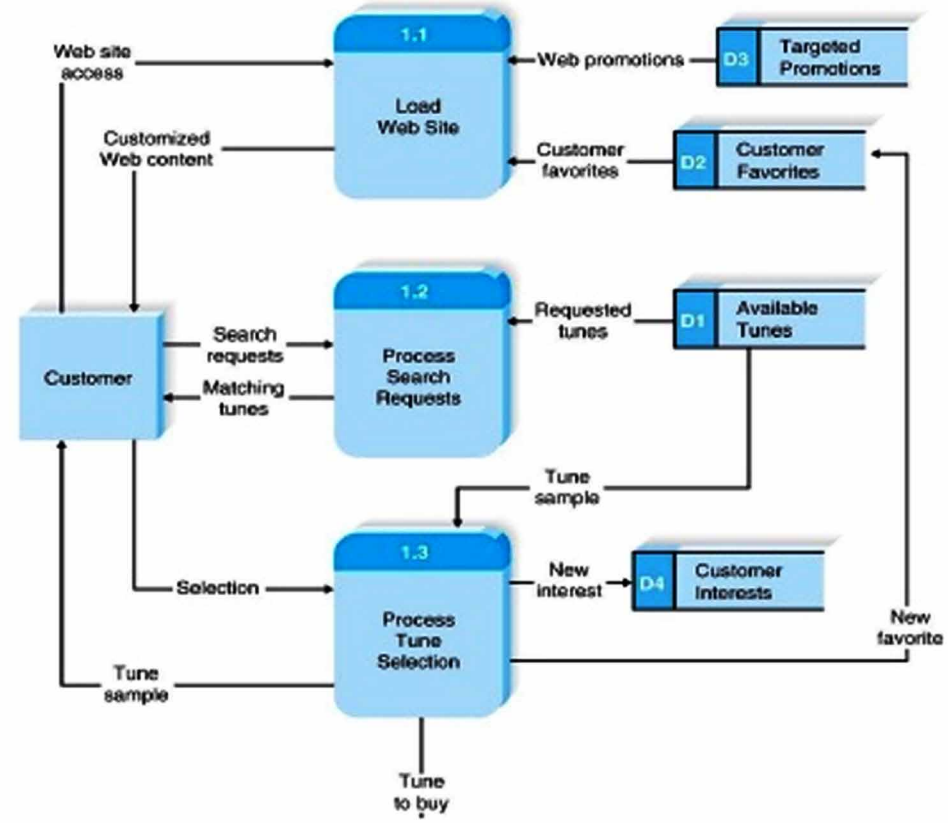
Figure 1. User interface design process example



Guidelines for Designing Windows and Forms

Interface Layout and Formatting

High-quality interfaces are well laid out, with the fields easily identified and understood. As you design your interfaces, you should think about these:

- **Consistency:** All the forms within a system need to have the same look and feel.
- **Labels and Headings:** Labels should also be easy to identify and read.
- **Distribution and Order:** Related fields are usually placed next to each other and can be grouped within a box.
- **Fonts and Colors:** Variations in font face and size can help users distinguish different parts of the form, but only a handful of font and size variations should be used for larger screens and as few as possible should be used for small screens.

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Data Entry

Several types of data-entry controls are widely used in user interfaces, including Text boxes, List boxes, Combo boxes, Radio buttons, and Check boxes.

Guidelines for Web Browser User Interfaces

Consistency

Consistency is especially critical within Web sites because most sites contain a large number of pages that serve many different purposes and audiences. Cascading style sheets (CSS) are a Web page encoding standard, and they enable a Web site designer to specify parts of the site's pages that will always look the same and parts that will vary by task or audience.

Performance Considerations

Performance considerations are also an important issue in Web applications. Web sites in general and browser-based forms in particular are sensitive to application design and to the quality of the network connections between the user's computing device and the servers that host the site. Designers of Web-based user interfaces must perform a careful balancing act, providing embedded programming code within a page to avoid refreshes but not overloading page content so as to avoid long delays when the user moves from page to page.

Pictures, Video, and Sound

Web-based interfaces are often preferred for their inherent ability to mix text, images, and sound. Powerful and compelling interfaces can be constructed, and they are especially important in customer-facing systems. However, heavy use of sound and images exacerbates the previously discussed performance issues and also creates issues of compatibility. Compatibility issues arise for sound and video because there are so many ways in which they can be encoded. Thus, Web site designers must carefully choose which formats and plug-ins will be used.

Users With Disabilities

Designers of all user interfaces must be sensitive to the special needs of persons with disabilities. Because the Web is such a fundamental resource in the modern world, standards have been developed to ensure maximal usability for those who are visually impaired or have limited dexterity. Providing this kind of support is part of the class of software called assistive technologies.

Guidelines for Handheld Devices

Designing Web and app-based user interfaces for handheld devices presents additional design challenges, including:

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- Small screen size
- Small keyboards and touch screens
- Limited network capacity
- App design guidelines and toolkits

The small screen area provides relatively limited space in which to display content. Thus, designers must pare down the user-interface content to ensure readability and to avoid cluttering the screen. Mobile device user interfaces must avoid detailed textual input whenever possible and must provide touch controls that are well spaced and easy to locate.

User Interface Perspective

Being concentrated on not only logic and transitions but also looks and style, UI design stage also contributes much to the success of the e-commerce project. It is the aspect which creates visual performance and sets the solid ground for the desirability of the interface and positive emotional feedback from the buyer. At UI design stage for e-commerce, designers have to find the general stylistic concept which will support UX aspects mentioned before and will give the online point-of-sale the attractive looks. Some aspects, which designers have to take into account in this perspective, are:

- Choice of colors that correspond to the brand image and strengthen emotional feedback
- Setting the style corresponding to the nature of the commercial offer:
- Reaching the website, people should instantly understand if it sells household goods, fresh vegetables, trendy clothes, exclusive devices or anything else
- Visual hierarchy which makes the core zones of interaction instantly noticeable.
- General harmony of perception which sets the feeling of aesthetic satisfaction supporting positive user experience.
- Simple check-list for some essential aspects designers would rather consider working on e-commerce projects:
    - **Know the Buyers:** User research will help to get the needs and wishes of target audience.
    - **Have Users Informed:** Make the screens or pages filled with information and functionality users really need for making purchase.
    - **Keep Design Consistent:** Not only does the website or app itself need consistency of design for all the screens in terms of general branding, but also social networks, print materials and actual point-of-sales appearance if they exist.
    - **Refresh the Experience:** Minor changes or attractive details added to the interface from time to time without breaking general visual consistency can give the feeling of refreshment, like new looks of mannequins do in the window displays of the shop.
    - **Check Your Solutions:** User testing can have a great impact on understanding the factors that boost conversions. Ideally, it should be applied not only in the process of design but also after the launch of e-commerce platform on the basis of real user interactions and troubles which can arise.
    - **Be Careful About Revolutions and Wow-Effect:** The power of habit plays the big role in the products of this kind. Choosing layout, menus or icons, which stand too far from the ones users are generally accustomed to, can bring confusion and frustration. For example, usage

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of any other image instead of the magnifying glass to mark the search field can result in bad user experience as buyers know that visual symbol and will look for it. So, making this sort of experiments, take time to test them well.

- **Respect the Buyers:** Remember, that they are not abstract metrics-every figure in conversion report is about real people. Look for the interface that will respect their time, effort and needs and it will bring positive experience of shopping for both sides.

To summarize designing e-commerce website or mobile app, designers should definitely consider the following aspects:

- Operational simplicity
- Strong branding
- Security of users' data
- Effective use of visual elements
- Clear data presentation via menus, catalogs etc.
- User's ability to leave feedback about goods and services
- Easily available general and contact information about the business providing goods or services
- Design that supports the offer not overshadowing it.

Challenges of Designing a User Interface

Designing the user interface for an e-commerce site is very challenging. Various researches investigating the major determinant features of an effective web site have been done before. Some of them are explained below.

Coopee et al. (2000) suggested that web site designers should include some essential features into any commercial web site they design, as follows: catalog development, users tracking, payment processing, online fulfillment, web site security, privacy, business-business sales models, and business-customer sales models.

Cell (2000) provided some guidelines for creating customer friendly web site: make company easy to find online, keep site navigation simple and clear, give customers a reason to visit the site, make site visually appealing, offer a menu of communications options, and answer e-mail promptly and professionally.

Najjar (2001) stated that designing the user interface for an e-commerce site is very challenging. The major sections to design include the overall page format, navigation, catalog, registration, personalization, checkout, and customer service. In page format, he considers download speed, the use of graphics, scrolling, and highlighted that a web designer should format the page to make it easy for users to interact with the web site by put user interface elements in familiar locations.

Cyr et al. (2004) addressed differences in preferences and perception of web site design across culture. They considered menu layout, access to product info, professional design, logical info presentation, screen design, navigation, sequencing, product attributes, and product availability as an important web site features.

Liu et al., (2003) studied about standard user interface in e-commerce site found that the lack of a standard user interface that can assist users to navigate different e-commerce sites would influence the individual's decision to accept site for online shopping purpose. The results also show a strong relationship between users' perceptions of usefulness and ease of use toward standard user interface.

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Challenges of E-Commerce Applications

Five biggest challenges for launching an e-commerce marketplace are:

1. Seller and buyer retention: The issue of buyer retention can only be solved with the help of marketing efforts, wide ranges of sellers and providing the best shopping experience.
2. How to connect buyers with relevant sellers: To solve this issue different practices and methods are used like:
    a. Modern behavior driven on-site search systems
    b. Personalized matching algorithms and trigger based emails
    c. Auto filling sellers accounts (and tips for their rational filling)
    d. Handy navigation
3. How to make buyers trust sellers: To build trust in your business you should take into account the testimonials, rating, social proof.
4. A Good First Impression: The first impression is the longest lasting, it's very important to provide the best user experience on any device.
5. Shopping experience: The best shopping experience is the essence of all above, with amazingly beautiful multi-device design, intuitive UI and personalization.

Context-based personalization is one of the main trends of the e-commerce in 2016. It can help to map the customer's journey and anticipate their needs, providing shoppers with the information they need, when they need it.

Standardized User Interface

The need to standardize user interface is:

1. Easy access
2. Effective web design
3. Understand web

Standards in web developments are of increasing importance as programmers strive to make their components work across all browsers and accessible by the broadest set of customers (Clary,2003).

A standard ensures users can understand the individual interface elements in an e-commerce site and that customers know where to look for what features. [2]Jakob's law of the web user experience

Jacob Nielsen states:"Users expect 77% of the simpler Web design elements to behave in a certain way". Three different standardization levels according to him are:

1. **Standard:** 80% or more of websites use the same design approach. Users strongly expect standard elements to work a certain way when they visit a new site because that's how things always work.
2. **Convention:** 50-79% of websites use the same design approach. With a convention, users expect elements to work a certain way when they visit a new site because that's how things usually work.

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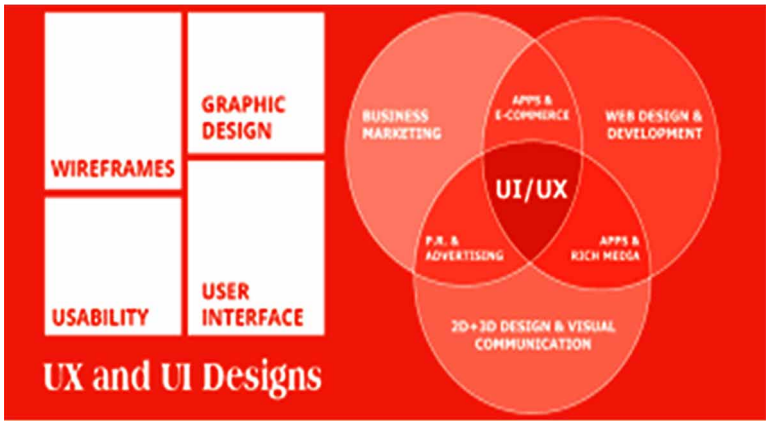
3. **Confusion:** With these elements, no single design approach dominates, and even the most popular approach is used by at most 49% of websites. For such design elements, users don't know what to expect when they visit a new site.

Figure 2. User interface design



Wireframe

A wireframe is a simple line drawing depicting the layout of a website before any decoration is added. It outlines size, placement and orientation of every part of your Web page.

Graphic Design

Graphic design of e commerce website should be visually pleasing as well as functional, usable, and "lightweight" (fast –loading)

Usability

The goal of ecommerce Usability is to fulfill the customer's purchasing needs as quickly and effortlessly as possible. Usability helps to make the site experience seamless for the consumer, which increases sales. Usability powers good user interface design through a user-centered design approach that analyzes the entire ecommerce transaction from the customer's perspective.

User Interface

User Interface (UI) Design focuses on anticipating what users might need to do and ensuring that the interface has elements that are easy to access, understand, and use to facilitate those actions. Website usability is delivered through the user interface design.

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DESIGN OF USER INTERFACE

Prototyping

Prototyping (Ambler, 2001; Ambler, 1998a) is an iterative analysis technique in which users are actively involved in the mocking-up of screens and reports.

The purpose of a prototype is to show people the possible design(s) for the user interface of an application.

There are four steps to the prototyping process:

1. Determine the needs of your users. The requirements of your users drive the development of your prototype as they define the business objects that your system must support. You can gather these requirements in interviews, in CRC (class responsibility collaborator) modeling sessions, in use-case modeling sessions, and in class diagramming sessions (Ambler 2001; Ambler, 1998a; Ambler, 1998b).
2. Build the prototype. Using a prototyping tool or high-level language you develop the screens and reports needed by your users.
3. Evaluate the prototype. After a version of the prototype is built it needs to be evaluated. The main goal is that you need to verify that the prototype meets the needs of your users.
4. Determine if you're finished yet. You want to stop the prototyping process when you find the evaluation process is no longer generating any new requirements, or is generating a small number of not-so-important requirements.

Prototyping Tips and Techniques

1. **Look for Real-World Objects:** Good User Interfaces allow users to work with the real-world objects they are used to. Therefore you should start by looking for these kinds of objects and identify how people interact with them.
2. **Work With the Real Users:** The best people to get involved in prototyping are the ones who will actually use the application when it's done. These are the people who have the most to gain from a successful implementation, and these are the ones who know their own needs best.
3. **Set a Schedule and Stick to It:** By putting a schedule in place for when you will get together with your users to evaluate the prototype, you set their expectations and you force yourself to actually get the work done. A win-win situation.
4. **Use a Prototyping Tool:** Invest the money in a prototyping tool that allows you to put screens together quickly. Because you probably won't want to keep the prototype code that you write, code that's written quickly is rarely worth keeping, you shouldn't be too concerned if your prototyping tool generates a different type of code than what you intend to develop in.
5. **Get the Users to Work With the Prototype:** Just like you want to take a car for a test drive before you buy it your users should be able to take an application for a test drive before it is developed. Furthermore, by working with the prototype hands-on they will quickly be able to determine whether or not the system will meet their needs. A good approach is to ask them to work through some use-case scenarios using the prototype as if it is the real system.

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6. **Understand the Underlying Business:** You need to understand the underlying business before you can develop a prototype that will support it. Perform interviews with key users, read internal documentation of how the business runs, and read documentation about how some of your competitors operate. The more you know about the business the more likely it is that you'll be able to build a prototype that supports it.
7. **There are Different Levels of Prototype:** I like to successively develop three different types of prototypes of a system: A hand-drawn prototype that shows its basic/rough functionality, an electronic prototype that shows the screens but not the data that will be displayed on them, and then finally the screens with data. By starting out simple in the beginning I avoid investing a lot of time in work that will most likely be thrown away. By successively increasing the complexity of the prototype as it gets closer to the final solution, my users get a better and better idea of how the application will actually work, providing the opportunity to provide greater and greater insight into improving it.
8. **Don't Spend a lot of Time Making the Code Good:** At the beginning of the prototyping process you will throw away a lot of your work as you learn more about the business. Therefore it doesn't make sense to invest a lot of effort in code that you probably aren't going to keep anyway.

General Guidelines

- Be consistent in a user interface, it's critical.
- Set user interface standards and stick to them.
- Choose industry standards so as to increase the chance that your applications
- will look and feel like other applications developed externally to your organization.
- Explain the rules of how your application works to your users. If it's consistent,
- then the rules should be simple and few in number.
- Support both novices and experts.
- Word text consistently, positively, and in full English.
- Look at other applications with a grain of salt because not everyone understands good user interface design.
- Display the objects that your users need to do their jobs on the desktop.
- Think in terms of clusters of business objects and their corresponding interface objects, not in terms of applications.
- Interface objects should look, feel, and behave exactly like the real-world objects that they represent.

Screen Design

- Navigation between screens and on screens are both important.
- Understand your widgets so that you know how to apply them properly.
- Use color sparingly and always have a secondary indicator.
- Follow the contrast rule – put dark text on light backgrounds and light text on dark backgrounds.
- Use fonts sparingly and consistently.
- When items are unavailable gray them out, don't remove them if you want your users to form accurate models.

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- Use non-destructive default buttons.
- Left justify edit fields and right justify their labels.
- Right justify integers, decimal-align floating point numbers, and left justify strings.
- Don't create busy/crowded screens.
- Use group boxes and whitespace to group logically related items on the screen.
- Open windows in the center of the action.
- Pop-up menus shouldn't be the only source of functionality.

Experienced developers recognize the importance of all aspects of the user interface and recommend using several techniques that place the user at the center of the development process. These techniques are referred to collectively as user-centered design. User-centered design techniques emphasize three principles:

- Focus early on users and their work.
- Evaluate designs to ensure usability.
- Use iterative development.

The early focus on users and their work is consistent with the approach to systems analysis in this text. User-oriented analysis and design tasks are performed as early as possible and are often given higher priority than other tasks.

The goal of user-centered design is usability, the degree to which a system is easy to learn and use. Ease of learning and ease of use sometimes conflict. For example, a system can be easy to learn but be cumbersome to use all day. Usability is not always easy to achieve.

In general, the usability is a software quality attribute which measures the extent to which an application can be used by users to achieve effectiveness, efficiency and satisfaction in a specified context of use [3],[7]. Furthermore, the usability can be decomposed into five attributes:

1. Learnability, which measures the ease of learning the application functionality;
2. Efficiency, which measures the ease of use and the level of productivity attainable by the user;
3. Memorability, which measures the ease of remembering the application's functionality;
4. Low error rate, which measures how the application support users in making less errors; and
5. User's satisfaction, which measures how the users enjoy the application.

The third principle of user-centered design is iterative development-that is, doing some analysis, then some design, then some implementation, and then repeating the processes. After each iteration, the project team evaluates the work on the system to date. Iterative development keeps the focus on the user by continually returning to the user requirements during each iteration and by evaluating the system after each iteration.

There are many things that go into creating an optimal user interface design. Here's an overview:

- User Experience is the first and most strategic step to an optimized user interface design.
- User Experience conceptualization, planning, and design ensures the site will fulfill your business goals.
- The information architecture wireframes are the functional blueprints of the site.

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- Information architecture also includes the careful planning and definition of the site's navigation, naming conventions and content organization.
- Usability helps to make the site experience as seamless as possible for the visitor to increase site engagement and sales.
- Usability powers good user interface design by promoting a user-centered design approach that analyzes the ecommerce transaction from the customer's perspective.

The design of web sites for effective performance is a complex and highly creative process that blends intuition, experience, and careful consideration of numerous technical issues and investigations (Nielsen, 2000; Sharma & Sharma, 2000; Sklar, 2000; Niererst, 1999).

Graphical features on the web are increasingly important to support information as well as interaction between consumers and business providers. Consumers are interested in information, representing style and interaction with web usage depending on the amount of graphical components. Graphical components support users' understanding and deter mination to purchase products from the web. In global markets, users are sensitive to interaction with product information on the web. Web designers provide information using text, colors, symbols and graphics on the web page.

Del Galdo and Nielson (1996) demonstrated that color and screen design directions have different psychological and social associations in different cultures. More importantly, different users have different concepts of screen usage. Because of the right-to left writing direction of the Arabic language, the common way to design the screen is to start reading from the top right-hand to the left-hand side (Del Galdo & Nielson, 1996). Designing screens normally needs to consider that Latin-based screen design starts from the top left and corner, and Chinese language can start from top right-hand to bottom left-hand or adopt the Latin-based style. However, it is very difficult to provide localized screen designs if they are not included in the original design of the application. As a result Graphic User Interface (GUI) applications need to be considered in localized interface design with globalized information on the web.

Although the cultural background of consumers is very important for interface design, current design practice takes minor account of cultural issues. Consumers' expectations are not taken into consideration in designing the functionality of web sites in Singapore. Singaporean designers emphasized that the graphics (pictures and animations) are important components and hence are heavily used to attract local customers. On the contrary, Australian web designers were less sensitive to the use of graphics on the web. However they preferred creating an image of the company on the web rather than using company's logo to reiterate company's image. Apparently Australian web designers are more customer-oriented in web design, in comparison to Singaporean web designers.

The web sites of leading IT companies did not have their interface to account for different user cultures. The web designers create graphic components on web sites lead to unique conventions leading to evolution of a new culture in expression of ideas on the web based e-market (WBEM).

CULTURAL ISSUES IN WEB DESIGNING

It helps to be able to quantify cultures. Importantly, this is not a way to make blanket statements about people from certain countries, but a way to clarify how groups interact with each other and the internet.

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Designing an excellent user interface for one language in one country offers many challenges. Designing a user interface that can be successfully implemented for several language and several countries is even more difficult.

A company may wonder if it's even possible to design a single user interface that, when implemented, will provide an excellent user experience for the majority of the world's Internet users.

However, it remains an interesting questions to what extent web design should be complies with interface standards within different skill and cultural challenges. Following design standards simply ensures that users know what a company is talking about. User interface standards have become the object of increasingly intense activities in recent years [Abernethy 1988; Holdaway & Bevan 1989]. These activities are part of a general current interest in information processing standards [Berg & Schumny 1990].

Eliminate the confusing design elements and move as far as possible into the realm of design conventions will ensure users know what features to expect, know how these features will look in the interface, know where to find these features on the site and on the page, know how to operate each feature to achieve their goal, don't have to ponder the meaning of unknown design elements, don't miss important features because they overlook a non-standard design element. Cultural factors in information systems are likely to impact on effectiveness through user interface design.

Web interface design and user issues are significant factors in the measurement of systems implementation. Web implementation is not only concerned with developers' ideas but also with consumers' choices. Information on the web relies on both user groups.

In a global context, most interfaces do not promote effective usage due to use of inappropriate metaphors in a global context. Many of the icons, metaphors, shapes, colors of text and background, frame/text locations on screen, etc. employed in systems design are relevant to the culture of origin of the software. Most of these applications are directly translated into different languages at most and distributed to users internationally.

In an international context, the graphic features employed in interface development makes a somewhat lesser impact in the variety of contexts it is concerned with, although it will be very clear to a minor proportion of the population as a whole. This provides an indication that consideration of human factors in the design of user interface for an international user base is an important factor in promoting effective usage of information systems. (Johnston & Johal, 1999; Corbitt & Thanasankit,2001).

User Interface Design Tools

Here is a list of free online design tools for fonts, patterns, logos, images, website design, team collaboration, and design inspiration.

- **Adobe Color:** Adobe Color lets you create color palettes using a handy color wheel. Set the base color and get the four complementary hues. Save your five-color palettes, or explore and edit other popular themes. Use the mobile app to create color schemes from real life images.
- **Pictaculous:** Pictaculous is a color palette generator. Use it to create a color palette from an image. Upload an image with your primary colors, and quickly receive a palette of complementary colors for your theme.
- **Colordot:** Colordot is a handy tool to identify and save colors. Just move your mouse to change colors, click to save. Colordot also has useful mobile app to create and share color palettes.

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- **Google Fonts:** Google Fonts makes it quick and easy for everyone to use web fonts, including professional designers and developers. All of the fonts are open source. Customize them for your own use, or collaborate with the original designer to improve them.
- **Font Squirrel:** Font Squirrel is a website for free, high-quality, designer-friendly, commercial-use fonts. View font lists that are recently added and most downloaded.
- **Fontello:** Fontello is a tool to pack vector images into web fonts. It builds everything necessary to include graphics into your web pages. Also, Fontello has a big built-in collection of open source artworks.
- **Typecast:** Typecast is a tool to design a working prototype using simple visual controls, then export production-ready HTML and CSS or share by URL. Build common HTML elements like headings, paragraph text, block quotes, and lists. Focus on the finer points: precise control over your typography.
- **Modular Scale:** Modular Scale is a tool to help web designers size their type in a more meaningful way. Use the base and ratio controls to adjust a spectrum of typography.
- **Patternizer:** Patternizer is a tool to design your own patterns or browse free featured patterns. Patterns can be saved and shared with anyone, allowing for collaboration and remixing. Patternizer generates code that can be used with patternizer.js to create these patterns on any canvas element.
- **Subtle Patterns:** Subtle Patterns is another free pattern resource. Access over 400 free patterns to download. Sketch and Photoshop formats are ready to export for the web.
- **Freepik:** Freepik is a search engine of free vector designs, icons, and images. Freepik illustrations and graphic resources are selected by its design team to provide users with content that can be used in both personal and commercial projects.
- **Logopond:** Logopond is a website for logo design inspiration. Get ideas on your own logo direction, or find designers to tap.
- **Spaces Logo Maker:** This is a handy tool to easily make your own logo. Just type your brand name into the logo generator, choose a font, choose an icon, and experiment with different options. Spaces also has a variety of other useful generator tools for slogans, QR codes, image resizing, and more.
- **Dribble:** Dribbble is a website to discover, explore, and promote design. Web designers, graphic designers, illustrators, icon artists, typographers, logo designers, and other creative types share small screenshots that show their work, process, and current projects.
- **VSCO:** VSCO is a photo editing app to create, edit, and publish images from your smartphone. VSCO also has a community platform to promote and discover images.
- **Paper:** Paper is a useful free tool to create designs. Create sharp drawings and diagrams with Paper's sketch tools. Draw on photos or quickly spotlight details. Easily create notes — swipe right to create checklists, left to create titles.
- **Niice:** Niice is a website to gather, share, and discuss visual elements. Niice's drag-and-drop interface makes it easy to create boards for design collaboration.
- **Marvel:** Marvel is an app for design, prototyping, and collaboration. Create screens directly in Marvel, add images from Sketch or Photoshop, or sync designs from your cloud storage. Link all your designs together, then add gestures and transitions to make your prototype feel just like a real app or website.

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- **Foundation:** Foundation is a responsive, front-end framework, with a collection of HTML, CSS, and JavaScript design patterns to build upon. Peruse its design gallery to see big brand websites built using Foundation.
- **Evernote:** Evernote is a useful tool to store, access, and share your design content. Snap a picture of a sketch or create a list or note. Keep your design images and plans synced across devices. Share ideas by collaborating seamlessly with your team in a group notebook.

Sample Applications

Vendio: Automated Selling on Amazon, EBay, and Facebook

With a focus on automation, Vendio ecommerce software saves you time with tools to easily put products on eBay, Amazon, Facebook and your own online Web store. List products once and they'll be published simultaneously on the supported marketplaces.

Other Vendio features include inventory control, sales and order management, email marketing, the shopping cart with drag-and-drop features and analytics reporting. Vendio Online Stores provides business owners with marketing features, including Google Analytics and built-in options, while a Vendio-powered Web store is optimized for mobile Apple iOS devices.

The KG TRAINS websites, powered by Vendio, offers a customized layout and a drag-and-drop to shopping cart feature for customers.

Intuit Ecommerce: The Merchant Account

Intuit's ecommerce offering offers a simple point and click interface that makes it easy to create and publish a store that you can update at any time.

With Intuit Websites, you'll get everything needed to design and launch an online store, including the domain name, hosting, the Simple Store ecommerce software, a site builder tool and online payments via Intuit merchant accounts. The merchant account is a big feature, as it enables small businesses to move beyond offering basic PayPal payments at checkout. Another nice feature of Intuit websites is the Facebook extension with which you can create a store a Facebook Business Page that automatically syncs with current store inventory.

Shopify: Advanced SEO and Analytics

Shopify hosted ecommerce lets you pick a template, optimize the design, add a product catalog, organize your products and create blog posts from a single administration dashboard. Shopify feature built-in mobile commerce that includes an iPhone app and mobile storefront. Marketing tools for SEO and coupon codes to help sell items are also available.

Shopify integrates with Google Analytics; this lets you automatically track customer purchases and shopping cart transactions connected to Google Analytics data. It also features built-in analytics to benchmark your online store's performance to help you track ecommerce over time.

The Shopify ecommerce platform powers The Artisan, a Philippine clothing brand that focuses on cut and sewn pieces.

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FINDINGS

E-commerce sector has huge growth potential and Internet is the back-bone of e-commerce. [2] mentioned All of total 120 sites sampled (100%) provided a set of global link to the site's first-level pages.

Global links to the first level were most positioned at the top of pages (78%), presented as navigation bar (40%), and tabs (23%), Global links were most commonly HTML no underlined (71%). Another common practice was text graphics (25%), which give designer greater control over the font type, size, and weight of the text. From 120 sites sample, one hundred and six sites (88%) provided return to home function. 93 sites (78%) provided an explicit link to home. This link mainly positioned at the top of the page (81 sites, 68%) and left side of the page (30 sites, 25%); including implicit home link Thirteen sites (11%) only provide company logo as a link to homepage. Nearly all company logo located in the top left corner of the page, only 3 sites that located its logo in the top right corner of the page. Whereas, 14 sites (12%) did not provide an explicit homepage View cart function provides information about items that have placed in the shopping cart by user. Only 25 sites from total sample that provide view cart function. The placement of this function varied, with the greatest number of sites placing it at the top right of main content area (13 sites, 46%) and on the left side (8 sites, 29%).

Manage account function enable user access information such as their email preferences, billing address, and shipping address. Nineteen sites (16%) provide manage account function. The placement of the page varied, but tended towards the top right area of the page (63%) or on the left side. Common labels used to represent this function were account and login. There were 13 sites used login (68%), whereas the rest sites used account as label.

Get help function provides answer to questions that frequently or may ask by user when they purchase items online. The objective is to help users without having to contact the merchant. This function (including contact us link) was most commonly located at the top of the page on the right side or on the left side.

The search function allows users to enter keyword into a test field and find information that matches the keyword entered. Forty-three sites (36%) provided a search function. Search function primarily found at the top of the page (51%) or on the left side of the page (37%). The rest sites positioned the search function at the main content area and on the right side. None of those sites presented this function with an icon.

Search function commonly presented as a text field labeled "Search" (68%), "Product search" (14%), "Product Find" (5%), and "Keyword Search" (12%). Most sites provided the search function as a text field and button (68%). Catalogue function makes it easy for users to see products. Seventy-two sites (60%) provided catalogue function. Catalogue function usually found at the top of main content area (72%) and on the left side (28%). This function most commonly labeled "Products"; other label includes catalogue, gallery, and collection. Personalization Function rarely provided by the 120 sites sample. Only 29 sites (24%) provided personalization function. Personalization function primarily found on the left side (59%). There were varied label used to representing this function.

Present Status

Many researchers have been using virtual reality (VR) in e-commerce to provide consumers with a new type of mediated experience—a virtual consumer experience. "A virtual consumer experience is a psychological and emotional state that consumers undergo when they interact with products in a 3D environment or within intelligent agents" (Hughes, Brusilovsky & Lewis, 2002). It has the potential to rich

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consumers' experience (Hughes, Brusilovsky & Lewis, 2002). Hughes, Brusilovsky, and Lewis (2002) presented an adaptive navigation support system for using a virtual environment for online shopping, to help ease the consumer's navigation and to help the consumer focus on important product features. They used some detailed technologies-such as direct guidance, hiding, sorting, and annotation-for the adaptive navigation. Cássia, and Fernando [6] presented an adaptive 3D virtual environment with structure and content that changed according to the user's interest and preference and according to its application in e-commerce. They integrated intelligent agents, user models, and automatic content categorizations together in their system. Chittaro and Ranon (2000) presented two design guidelines (massive and walking product) to improve the usability of VR stores. In Sanna, Zunino, and Lamberti [11]'s presented VR e-commerce system which base on 5 Virtual Reality Modeling Language (VRML), an animated virtual human was introduced.

The virtual human was to be used as a virtual shopping assistant for helping online shoppers navigate through an e-commerce environment. Although prior studies show that VR can enhance e-commerce by providing virtual experiences and product interactions, VR technology can still only provide a virtual, not a real, experience. It is important to provide consumers with "real experiences" and "real object interactions".

Limitations

Non-Standard GUI Controls

Basic GUI widgets- command links and buttons, radio buttons and checkboxes, scrollbars, close boxes, and so on - are the lexical units that form dialog design's vocabulary. If you change the appearance or behavior of these units, it's like suddenly injecting foreign words into a natural-language communication.

Inconsistency

Non-standard GUI controls are a special case of the general problem of inconsistent design.

Confusion results when applications use different words or commands for the same thing, or when they use the same word for multiple concepts in different parts of the application.

Asking for the Same Info Twice

Users shouldn't have to enter the same information more than once.

No Default Values

Defaults help users in many ways. Most importantly, defaults can:

- Speed up the interaction by freeing users from having to specify a value if the default is acceptable;
- Teach, by example, the type of answer that is appropriate for the question; and
- Direct novice users toward a safe or common outcome, by letting them accept the default if they don't know what else to do.

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System-Centric Features

- Too many applications expose their dirty laundry, offering features that reflect the system's internal view of the data rather than users' understanding of the problem space.

Reset Button on Web Forms

- The reset button clears the user's entire input and returns the form to its pristine state. Users would want that only if they're repeatedly completing the same form with completely different data, which almost never happens on websites.

FUTURE ENHANCEMENTS

Future e-commerce technologies will definitely introduce more attractive and convenient tools for the customers, but some things remain constant – delivery times will improve, customer service will get increasingly better, and product selection will become ever greater. Graphical images are becoming more important in conveying meaning to a concept on the web sites rather than text. Moreover, graphical components are better suited to be used in certain ways to improve WBEC. Not surprisingly graphic images can also be used to attract customers and increase company's presence in the global e-market. Future - E Commerce have to be made very meaningful and smart, just displaying the product depending on category will not work, interface should be more interactive and need to ask relevant question on basis of their searching pattern or browsing pattern. Cross selling and up selling also need to be smarter.

Designers must start studying the trends of real people, the answers to real trends are those that must be implemented onto the user interface, the designer no longer have full control, the ball has turned and the users are the ones placing demands on how things are to be done. The future of e-commerce can be described simply by saying web mall, made possible by the use of portals. Although shopping on line by simply clicking a button is extreme convenience, users become more demanding as time passes and e-commerce becomes more and more popular. Virtual malls give the users the capability of searching for a wide range of products from a single location. This will eliminate the need to search with different search engines it will be much more like the popular phrase one-stop shopping.

Users are the driving forces of this technology as well as the largest impediment. Like all consumers the demands never seem to end. What seems to be yet another driving force of this technology is the way the users are expecting to view the products.

The success of e-commerce depends on the ability to attract non-computer-literate people to use them with ease. Much like driving a car or talking on the telephone, electronic commerce follows the same rules, the users do not care how the inner workings really work the end result is the important point. Electronic commerce will make significant advantages as long as the interface is kept simple and can be used in the same context a telephone is being used today.

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Users Have Changed

For a long time, we've been using a traditional way of working with media. We have a desk, a computer and the keyboard and mouse as input-devices. We have accepted that the internet is an essential part of our lives and it has become nearly impossible to completely disconnect, even if we would like to.

In the past, in general we had a lot of control over our designs. There is a task and there is a consequence. Web design has become far more complex and it has become important to guide a user through one flow to optimize their user experience. We have to think of behaviour patterns, desired outcomes and potential mistakes the user can make. We're no longer developing a static experience; rather, we're creating living, interacting systems.

Users' behaviour online also has changed incredibly. Google, for example, has divided their users in three main categories:

1. The repetitive user: someone checking the same piece of information over and over again, such as e-mail or stock prices.
2. The bored user: someone who has time to kill.
3. The urgent user: a user with a request to find something specific and fast.

Your online habits make you a repetitive user on certain websites. Social media websites are great examples of this. The games you play online, or the news websites you check sometimes, are a result of you being a bored user. Finally, the urgent user is the target audience we often develop websites for during client work. They want information and they want it fast, such as the price of a product, a service they're specifically looking for, or the closest location of something they need now.

For designing the best user experience, it's always a good idea to keep these principles in mind. You should be able to tailor your website to make repetitive (predictable), bored and fast use as integrated as possible.

Graphical User Interface

The graphical user interface isn't exactly the future, rather it's a current way of designing interfaces. The idea of graphical user interfaces is that you complete visual tasks to receive results, such as clicking on a link to open a new page.

We guide our users through metaphors (such as the shopping cart icon) and standards we use in web design.

Natural User Interface

The natural user interface is the current Natural user interfaces focus more on doing. Users interact with the device or platform to achieve results, ideally enjoying the actual interaction as much as the accomplishment itself. Gestures especially (tools such as the Leap_Motion can play an important role in this) are important assets in natural user interfaces.

Existing examples include websites which have the functionality you can swipe (on tablets for example) to navigate through a gallery slider.

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A key element in natural user interface design is direct manipulation. Users love to have the feeling that they're directly engaging with a screen (use of gestures).

Organic User Interface

While we're still slowly moving from graphical user interfaces to natural user interfaces, a third spectacular evolution is on its way. Although it may take a while before we see and use it, it's closer than might seem at first sight. An organic user interface means that we manipulate the actual physical shape or position of a device to control it.

I'm referring in this case to bendable screens, and although this technology is very much in its infancy, it offers so many incredible opportunities to interact and navigate through devices.

Naturally, an organic user interface offers way more possibilities for input (and even output) than the previous interface concepts. At the moment we're used to point and click, though we're getting more involved with gestures, touch and (thanks to gyroscopes in devices) tilting and rotating, although it's still limited on the web. Eventually, we'll be bending, deforming and manipulating actual physical objects.

The future of e commerce [23] may be Personalization & Experience

Nearly all retail growth in the US at present is driven by ecommerce, and this looks set to continue in the years ahead as more people spend more money online. Greater personalization and a better customer experience will be the holy grail for ecommerce businesses in the future, as it becomes increasingly difficult to secure customers against a backdrop of ever increasing competition. Customers will eventually flock to those offering as close to the in-store experience as possible, and major ecommerce retailers are already striving to make things more personal and more tangible on web.

Delivery Drones

Perhaps one of the most exciting developments in ecommerce is one we are already starting to see in testing – drone delivery. Drones will in the future allow companies to deliver packages much more efficiently and quickly, with delivery times of just 60 or even 30 minutes from order entirely plausible. Drones will be sent out from distribution centres and travel directly to the delivery addresses provided, at significantly lower cost and logistical hassle than at present.

Curation and Pay Monthly Models

Product curation and pay monthly models are likely to continue to form an increasing part of the future of ecommerce. People don't want to buy generic products from you – Amazon is cheaper and quicker. But they do want to buy curated products, lifestyle products, and ecommerce packages where your product knowledge and expertise can create an altogether more enjoyable, rounded experience. Tracking Into Stores

The boundaries between ecommerce and physical commerce, i.e. the retail store, will become less definite as time passes, and companies are already looking at ways of tying together online tracking and customer information with their real-world experience. This also complements the idea of greater customisation of the shopping experience, allowing retailers to use existing online data to personalise their entire relationship – both online and offline.

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Pop Up Shops

Customers are already shopping in new, alternative ways to before. "Showrooming" and "webrooming", where customers visit a local shop then buy online for a cheaper price, or vice versa, present new challenges for retailers, in bridging the gap between the online and offline.

Pop up shops can provide the answer, and can serve as a low-cost way of reaching out to new customers and winning new long-term fans. Pop up shops give customers a chance to connect with your brand in a physical way, while helping you reach corners of your market that might otherwise have been impossible for you through your online channels.

The future of ecommerce is ofcourse still unclear. But any prudent ecommerce business owner should take stock of what analysts are saying about the future direction of their industry, so they can be sure to capitalise on these new opportunities as they arise.

Artificial Intelligence Systems

Ecommerce already enjoys a significant advantage over other types of business, in the sense that there are thousands of high quality apps, all readily integrated into each other so that even small-budget players can rapidly automate the entirety of the process. At the same time, technologies rapidly change and improve, thanks to the strong competitive drive across the industry – after all, another retailer is only a click away.

The next step for ecommerce will be the application of AI systems, running evolutionary algorithms designed to find the absolute optimum.

The upshot for those running ecommerce businesses is to embrace these processes as soon as viable. Where the major players go, smaller retailers follow, and it won't be long before a proliferation of AI driven systems improves the capabilities of the ecommerce industry even further.

Measurement Across All Devices

Not everyone sticks to a single device when buying from you. In fact, more people are moving between devices, from the web to mobile to apps, before turning into paying customers. Measuring analytics across devices is still in its infancy, but it is becoming a more significant field of interest for those in ecommerce.

Once tracking of usage across multiple devices becomes more sophisticated, the processes of testing, tweaking and optimising the user experience still further can be set in motion. This will unlock even more value for ecommerce retailers, through providing further detailed insights into how the same people respond to their offering across platforms.

CONCLUSION

This chapter mainly focuses on web designers and their function appears to be shifting more towards the job of interface designers and information architects. With devices and their interfaces changing, so too will websites and their functionality. One requirement for e-commerce sites is that the contact numbers and addresses should always be displayed. Trust is essential for any type of commerce; trust mechanisms must be developed to give buyers, sellers, and intermediaries an accepted level of confidence of the

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system. The last thing a business wants is the consumer to think that they have something to hide. This chapter demonstrated various ways to design the interface and its features.

In summary a site within the e-commerce environment must always take the user into consideration first. According to Ron Scheer, in "Make your web site easy to use" designers must organize and be ready to reorganize, focused on the purposes and intentions. Always remember your brand, make things easy to find, make content easily understood, anticipate user interactions, if technology makes it possible help users decide what action to perform. When considering the navigation aspects of the site, make it as flat as possible. Make options mutually exclusive make sure the user realizes where the links take them. Create patterns that are easily remembered and make sure that the road from beginning to end does not seem tedious to the users. Designers are not done when the site is implemented and published, tests must be made, regular maintenance should be done to assure up to date content and simplicity. Although these are requirements they do not ensure that the site will be successful, nevertheless they are essential for the opportunity to survive

E-commerce is a new way of conducting, managing and executing business transactions using computer and telecommunications networks. As awareness of the Internet throughout the commercial world and general public increases, competitiveness will force lower entry barriers, continued rapid innovation and expansion of markets. The real key to making electronic commerce over the Internet a normal, everyday business activity is the convergence of the telecommunications, content/media and software industries. E-Commerce is expected to improve the productivity and competitiveness of participating businesses by unprecedented access to an on-line global market place with millions of customers and thousands of products and services.

REFERENCES

Chittaro, L., & Ranon, R. (2000). Virtual Reality stores for 1-to-1 e-commerce. *Proc. Of the CHI2000 Workshop on Designing Interactive Systems for 1-to-1 E-Commerce*.

Costabile, M. (2001). *Usability in the Software Life Cycle. In Handbook of Software Engineering and Knowledge Eng* (Vol. 1). World Scientific Publishing.

Daugherty, T., Li, H., & Biocca, F. (2005). Experiential commerce: A summary of research investigating the impact of virtual experience on consumer learning. In *Society of Consumer Psychology: Online Advertising*. Mahwah, NJ: Lawrence Erlbaum Associates.

Ecommerce Guide. (n.d.). Retrieved from: https://ecommerceguide.com/guides/ecommerce-future/

ECommerze. (2008). *The history and evolution of e-commerce.* Retrieved from: https://ecommerze.wordpress.com/2008/06/12/the-history-and-evoltion-of-e-commerce/

Ess, D. L., & Sudweeks, F. (1998). *Proceedings International Cultural Attitudes Toward Technology and Communication-CaTac'98*. University of Sydney.

Fernandes, T. (1995). Introduction to Culture. Academic Press.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hughes, S., Brusilovsky, P., & Lewis, M. (2002). Adaptive navigation support in 3D ecommerce activities. *Proc. of Workshop on Recommendation and Personalization in ECommerce at the 2nd International Conference on Adaptive Hypermedia and Adaptive Web-Based Systems (AH'2002)*, 132-139.

Kang, K.-S. (2001). Effectiveness of Graphical Components in Web Site E-commerce Application-A Cultural Perspective. EJISDC, 7(2), 1-6.

Nielsen, J. (2000). Designing Web Usability. New Riders Press.

Santos, C. T., & Osorio, F. S. (2004). AdapTIVE: An Intelligent Virtual Environment and Its Application in E-Commerce. *COMPSAC*, *2004*, 468–473.

Shneiderman, B. (1997). Designing information-abundant web sites: Issues recommendations. *International Journal of Sociology*, *47*, 5–29.

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Chapter 21
A Framework to Improve Performance of E-Commerce Websites

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ABSTRACT

The growth of the world wide web has made business functions fast and easier. E-commerce has provided cost effective ways of doing business. E-commerce websites have the advantage of reaching a large number of customers regardless of distance and time limitations. The advantage of e-commerce over traditional businesses is faster speed and lower expenses for both businessmen and customers. The main objective of the chapter is to provide an efficient framework to analyse the performance of e-commerce websites and suggest the factors that need to be incorporated in e-commerce websites for better business intelligence. The purpose of business intelligence is to support better business decision making. In this chapter, a detailed description of business intelligence enables the web developer and end user to know the insights of e-commerce web applications. The methodology is comprehensive and it elaborates all aspects of the performance of a website.

INTRODUCTION

The World Wide Web (WWW) has become an important channel for information retrieval, electronic commerce and entertainment. However, long Web page download times have remained a major cause of frustration among Web users. According to the findings of the surveys conducted by Lightner et al, (1996) and the GVU (Graphic, Visualization and Usability) Centre at Georgia Institute of Technology (GVU, 1998), long download times have always been a major problem experienced by Web users. The survey by Pitkow et al, (1996) also indicates that the most widely cited problem using the WWW was that it took too long to download Web pages (i.e. 69% of respondents cited this problem). This problem is worsened by the exponential increase in the number of Web users over the years and the popularity of multimedia (e.g. video, voice) technology. This problem is so noticeable that Web users often equate

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the "WWW" acronym with "World Wide Wait"! According to The long waiting time for downloading Web pages is often not tolerable even in the wired environment. Due to the increasing and excessive use of multimedia data (i.e. audio and video clips) on Web pages, this concern is continuously growing. The problem of 'long download time' is relevant not only to Web users but also to the authors and designers of websites, as websites that take a long time to download are rarely or less frequently visited (Reaux et al, 1997). The authors (G. Sreedhar et al, 2017) suggested in their research work slow Loading pages affects the sales and longer negative effect and 40% on line shoppers feel comfortable to revisit if the website load quickly.

Objectives

- To study and analyze the components of e-commerce application and relevance of web mining.
- To find insights of Business Intelligence.
- To incorporate the idea of Internet of Things.
- To provide a comprehensive frame work for analyzing the e-commerce website.
- To analyze the performance of e-commerce website through frame work.

BACKGROUND

E-Commerce Web Applications and Web Mining

E-commerce websites have the advantage of reaching a large number of customers regardless of distance and time limitations. The advantage of e-commerce over traditional businesses is the faster speed and the lower expenses for both e-commerce website owners and customers in completing customer transactions and orders. Because of the above advantages of e-commerce over traditional businesses, a lot of industries in different fields such as retailing, banking, medical services, transportation, communication, and education are establishing their business in the web. But creating a successful online business can be a very difficult and costly task if not taking into account e-commerce website design principles, web engineering techniques, and what e-commerce is supposed to do for the online business. Unfortunately, to most companies, web is nothing more than a place where transactions take place. All the e-commerce sites have high traffic. People surf the sites very often but the income is not always very high. So, the web data mining appeared and also nowadays much attention is paid to it. It is very important to apply web data mining to e-commerce in order to gather knowledge about users and rank data accordingly. It is advance successful technology through which information is filtered easier. So, web data mining became a publicly accessible source that gives promising results. With the use of e-commerce through internet, companies find a new and better way to do business. After developing the web site thought companies get benefits, they have to implement Web mining systems to understand their customers' profiles and to identify their own strength and weakness of their E-marketing efforts on the web through continuous improvements. Internet is a gold mine, but only for those companies who realize the importance of Web mining and adopt a Web mining strategy now. Web mining technology has many important roles that should be mentioned. It can automatically find, extract information from the variety web resources. The authors Etnoteam S. et al (2000) said that web mining develops, improves and enhances the quality and the efficiency of search engines, determines web pages or files,

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makes classifications. It can also generate large-scale real-time data. Web data mining discovers useful information from the Web hyperlink and page content. It has already changed the face of many business functions in a modern competitive enterprise. It is obviously easier to make right business decisions or understand the information that came from customers with the help of web data mining. It helps e-commerce to understand how to improve its services for special groups of customers and clients, and what tasks to realize. The e-commerce site can increase the exposure of its product pages and so average order size can be increased. Companies can save percentage of its budget per month owing to knowledge that was received from web mining analysis. Web data mining gathers implicit knowledge about clients and instructs e-commerce in every aspect. Then, it extracts valuable and comprehensible information from huge web resources to instruct e-commerce. It also gathers the information in an automated way and builds models used to predict customer purchasing decisions. Web mining is very precious to the company in the fields of understanding customer behaviour, improving customer services and relationship, launching target marketing campaigns, measuring the success of marketing efforts, and so on. Attractiveness of the site depends on its reasonable design of content and organizational structure. The author TIAN Meirong et al (2010) described that Web Mining can provide details of user behaviour, providing web site designers basis of decision making to improve the design of the site . E-Commerce generally refers to a new business model, where consumer makes online shopping, online transactions between merchants and online electronic payments and a variety of business activities, trading activities, financial activities and related integrated services activities, buyers and sellers are not met to conduct various business activities based on browser/server application mode.

Business Intelligence

The author Jayanthi Ranjan (2009) explained that the term Business Intelligence (BI) refers to technologies, applications and practices for the collection, integration, analysis, and presentation of business information. The purpose of Business Intelligence is to support better business decision making. Essentially, Business Intelligence systems are data-driven Decision Support Systems (DSS). Business Intelligence is sometimes used interchangeably with briefing books, report and query tools and executive information systems. Software elements support reporting, interactive "slice-and-dice" pivot-table analyses, visualization, and statistical data mining. Applications tackle sales, production, financial, and many other sources of business data for purposes that include business performance management. Information is often gathered about other companies in the same industry which is known as benchmarking. Common functions of business intelligence technologies include reporting, online analytical processing, analytics, data mining, process mining, complex event processing, business performance management, benchmarking, text mining, predictive analytics and prescriptive analytics. *Business intelligence* may be defined as a set of mathematical models and analysis methodologies that exploit the available data to generate information and knowledge useful for complex decision-making processes. Figure 1 illustrates the major benefits that a given organization may draw from the adoption of a business intelligence system. With the help of mathematical models and algorithms, it is actually possible to analyze a larger number of alternative actions, achieve more accurate conclusions and reach effective and timely decisions. The components of Business Intelligence are shown in Figure 2.

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Figure 1. Benefits of business intelligence

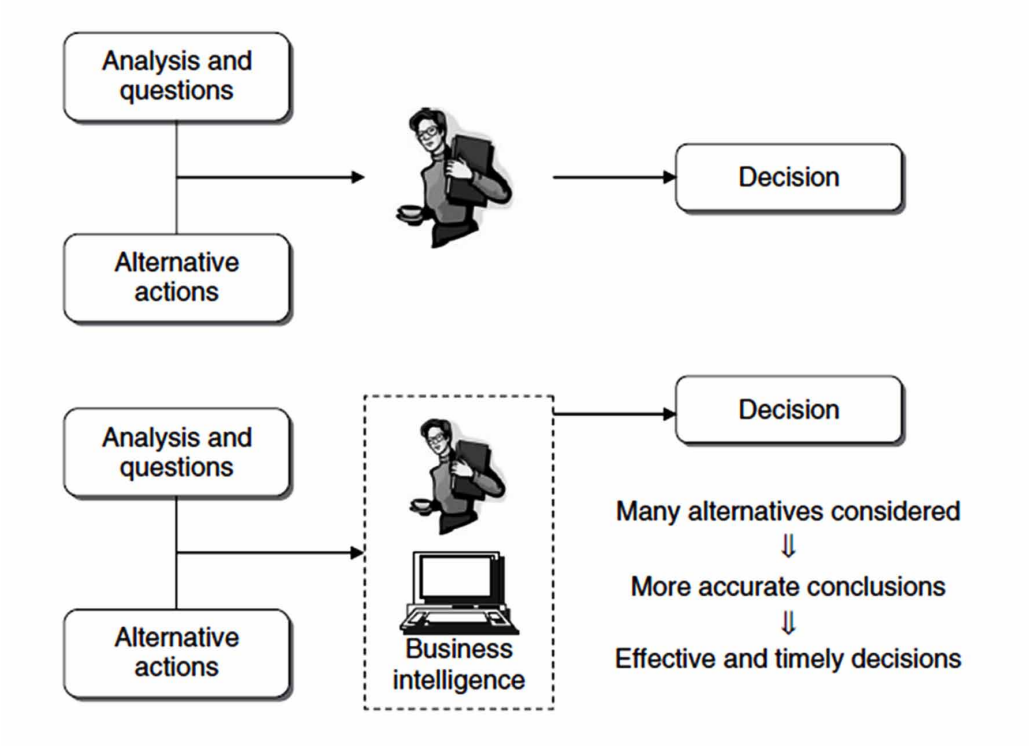
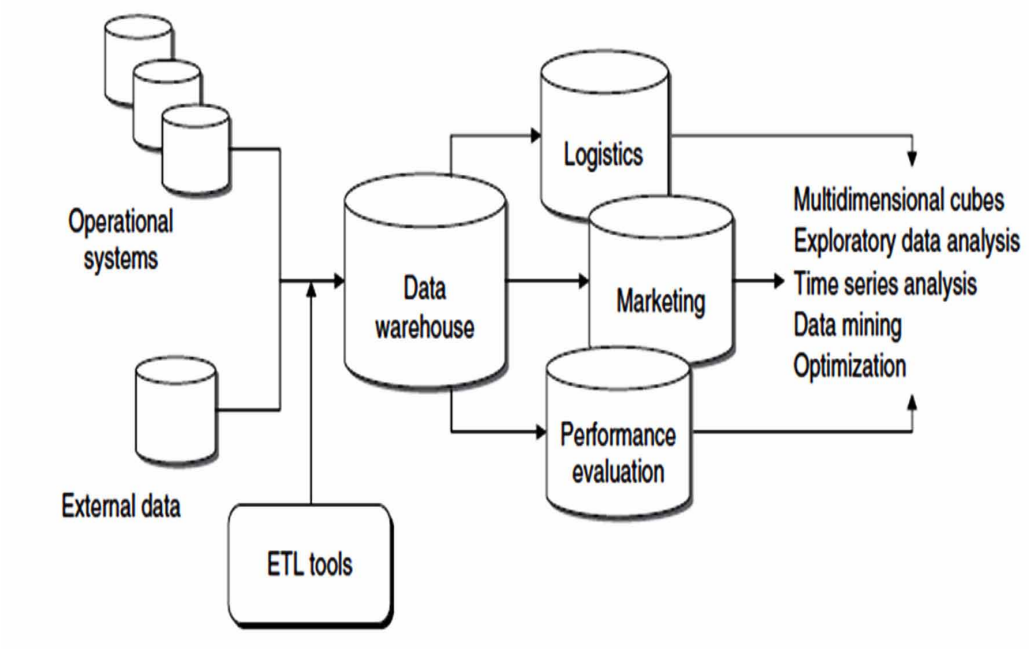


Figure 2. Business intelligence architecture



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Data Warehouses and Data Marts

Using extraction and transformation tools known as *extract, transform, load* (ETL), the data originating from the different sources are stored in databases intended to support business intelligence analyses. These databases are usually referred to as *data warehouses* and *data marts*.

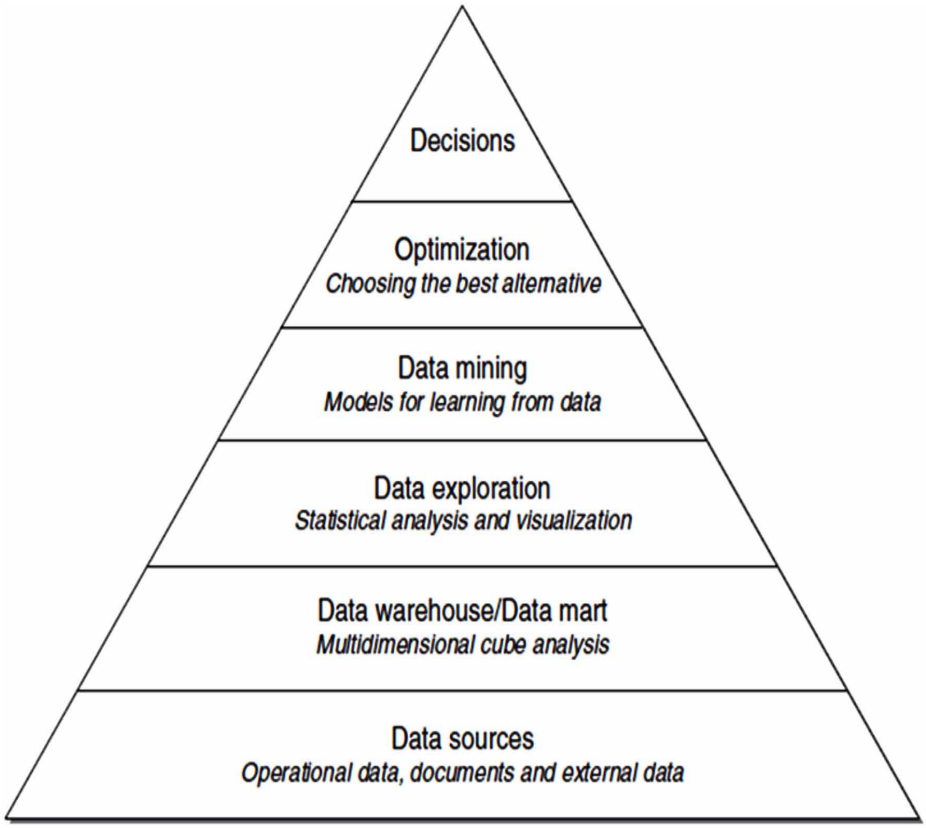
Business Intelligence Methodologies

Data are finally extracted and used to feed mathematical models and analysis methodologies intended to support decision makers. In a business intelligence system, several decision support applications may be implemented.

- Multidimensional cube analysis;
- Exploratory data analysis;
- Time series analysis;
- Inductive learning models for data mining;
- Optimization models.

The pyramid in Figure 3 shows the building blocks of a business intelligence system.

Figure 3. Pyramidical structure of business intelligence system



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Data Exploration

At the third level of the pyramid includes the tools for performing a *passive* business intelligence analysis, which consist of query and reporting systems, as well as statistical methods. These are referred to as passive methodologies because decision makers are requested to generate prior hypotheses or define data extraction criteria, and then use the analysis tools to find answers and confirm their original insight.

Data Mining

The fourth level includes *active* business intelligence methodologies, whose purpose is the extraction of information and knowledge from data. These include mathematical models for pattern recognition, machine learning and data mining techniques. Unlike the tools described at the previous level of the pyramid, the models of an active kind do not require decision makers to formulate any prior hypothesis to be later verified. Their purpose is instead to expand the decision makers' knowledge.

Optimization

The optimization level in the pyramid allow the user to determine the best solution out of a set of alternative actions.

Decisions

Finally, the top of the pyramid corresponds to the choice and the actual adoption of a specific decision and in some way represents the natural conclusion of the decision-making process. Even when business intelligence methodologies are available and successfully adopted, the choice of a decision pertains to the decision makers, who may also take advantage of informal and unstructured information available to adapt and modify the recommendations and the conclusions achieved through the use of mathematical models. The top of the pyramid supports advanced support tools of an active type. At the bottom, the required competencies are provided for the most part by the information systems specialists within the organization, usually referred to as *database administrators*. Analysts and experts in mathematical and statistical models are responsible for the intermediate phases. Finally, the activities of decision makers responsible for the application domain appear dominant at the top. As described above, business intelligence systems address the needs of different types of complex organizations, including agencies of public administration and associations.

Internet of Things (IoT)

The author G. Sreedhar (2017) in his book specified that Internet of Things (IoT) is a network which is composed with Radio Frequency Identification (RFID), infrared sensors, global positioning systems, laser scanners, gas sensors and other information sensing device, according to the agreed protocol, any goods is connected with the Internet for information exchange, communication, IoT is used to make intelligent identification, positioning, tracking, monitoring and management. The schematic diagram IoT is shown in the following Figure 4.

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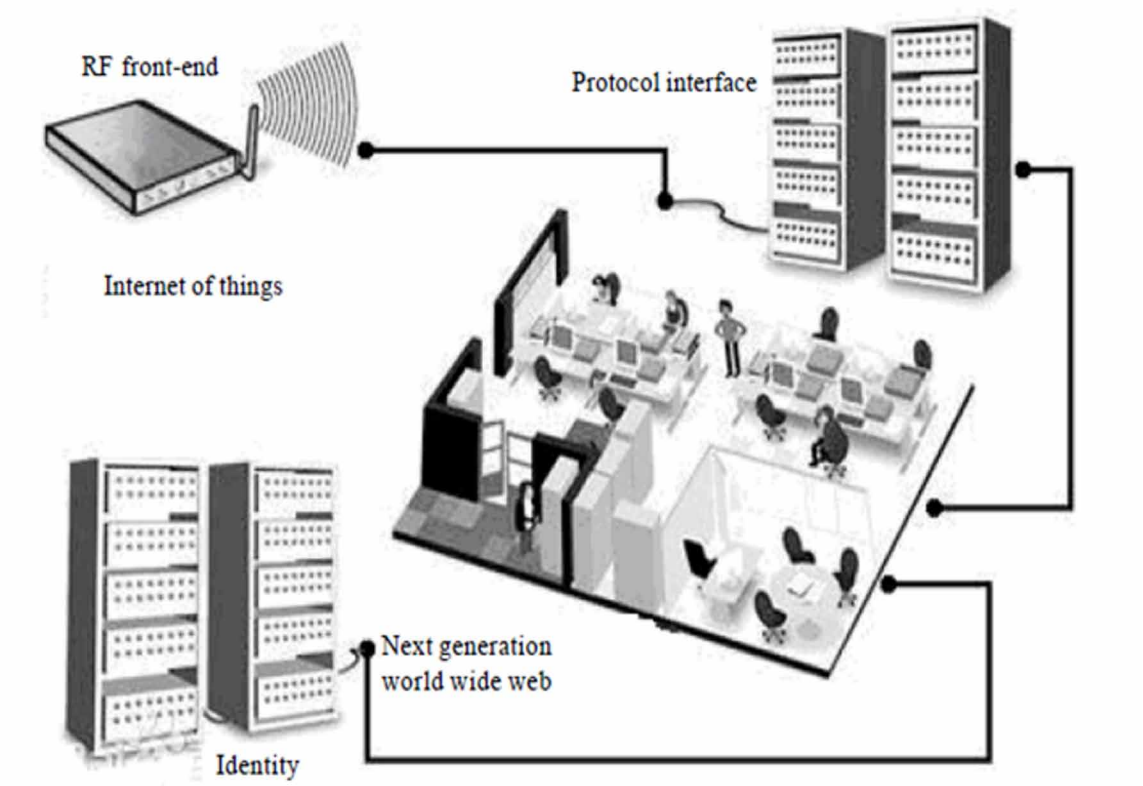
Figure 4. Schematic structure of IoT



With the rapid development of e-commerce, its technology requirements will also increase on all aspects of future e-commerce. Firstly, the e-commerce applications are combined with IoT development and IoT technologies are applied in three important aspects of e-commerce, such as inventory, logistics and payment. An e-commerce system includes inventory, logistics, electronic payment and other important aspects, if IoT technology is used in various aspects of e-commerce, e-commerce will greatly improve the efficiency of the system. The diagram of E-Commerce with components of IoT is shown in the Figure 5.

ANALYZING THE PERFORMANCE OF THE E-COMMERCE WEB APPLICATIONS

In order to improve the performance of the E-Commerce Web Applications, a well defined framework is needed. Following are various modules considered in analysing the performance of E-Commerce Web Applications

1. W3C Validation
2. Search Engine Optimization
3. Security
4. HTTP Compression
5. SURBL Check

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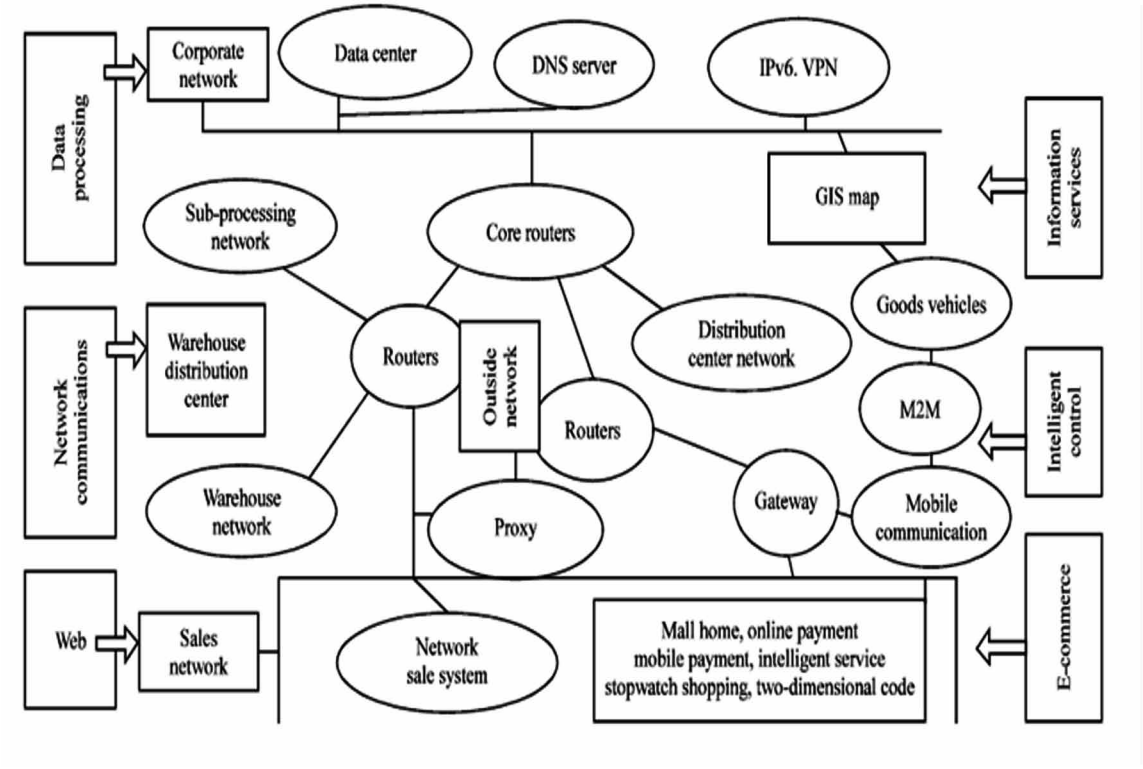
Figure 5: Various components of Internet of Things



W3C Validation

Web standards are rules and guidelines established by the World Wide Web Consortium (W3C) developed to promote consistency in the design code which makes up a web page. Without getting technical, simply it's the guideline for the mark-up language which determines how a web page. Website Standards Association Inc. has been set up to identify the minimum website standards that websites should meet and educate internet users about how to get the most out of their websites. Web standards are the formal, non-proprietary standards and other technical specifications that define and describe aspects of the World Wide Web. The advantages in adhering to these standards are many:

- Web pages will display in a wide variety of browsers and computers, including new technology like iPhones, Droids, iPads, PDA devices, mobile phones, which greatly increases the viewing audience.
- W3C Standards promote the use of "Cascading Style Sheets" (CSS) or design code which is attached to the web page. rather than embedded in the page. The use of style sheets significantly reduces the page file size which means not only a faster page loading time but lower hosting costs for frequently visited sites due to using less bandwidth.
- Design features such as colors and fonts can be easily changed by just modifying one style sheet instead of editing every individual page in a web site, reducing the costs to modify your site.
- Search Engines are able to access and index pages designed to web standards with greater efficiency.

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Search Engine Optimization

Search engine optimization (SEO) is the process of affecting the visibility of a website or a web page in a search engine's unpaid results, often referred to as natural, organic, or earned results. In general, the earlier (or higher ranked on the search results page), and more frequently a site appears in the search results list, the more visitors it will receive from the search engine's users. SEO may target different kinds of search, including image search, local search, video search, academic search, news search and industry-specific vertical search engines.

Security

Security is not an easy thing that you only need to implement or apply. The authors Steve Petite (2002) and Butler W. Lampson (2004) discussed in their research that the cost of securing small static web sites for some organizations could be larger than the organization could pay or think to pay. This high cost came from that you do not only need to protect the customer data but also you need to protect your systems from frequent attacks which may cause to Denial of service attack, that make your web site down. The author Sean-Philip Oriyano (2009) discussed in his research that attacks can prevent some organizations that depend on e-business or e-commerce from doing their Job. Therefore, most of the companies' web applications are likely to be under the risk of attacks. In order to protect these web applications, Sergey Gordeychik (2007) suggested that security experts must have the ability to detect the security threats and the back doors in their web application. After that, they can provide the solution starting with the urgent and highest priority problems such as Denial of service until covering all the security threats according to Caleb Sima (2004). Following protection techniques are suggested by majority authors like Craig Hinley et al (2015) to secure internet and web applications. They are as follows.

- **Intrusion Detection System (IDS):** The Intrusion Detection System (IDS) is used to detect many kinds of attacks behaviour that can compromise the security of the web application system. The author Fernando Esponda (2009) described in his research, these kinds of attacks that can be detected by the IDS include Worms, Viruses, unauthorized logins, access to sensitive files and folders, increase access privileges.
- **Intrusion Prevention System (IPS):** Another automated protection tools is called the Intrusion Prevention System (IPS). The authors Phurivit Sangkatsanee & Chalermpol Charnsripinyo (2011) explained in their research, IPS is usually a device that monitors the network in order to study the behaviour of the authorized user in the network. Therefore, the IPS will prevent unauthorized users from access the web application and the network resources.
- **Passwords:** The passwords strength of security is depending on the users who create them and the combination of characters, letters and numbers. Generally, the easiest method to access a password of web application defences is with inside knowledge. The authors Beate Grawemeyer & Hilary Johnson (2011) explained in their research, the attacker may track someone profile of social web site in order to get information about him to guess his organization web application password. Nowadays, most of the web application that server clients try to show the clients the complexity level of their password when creating their accounts or after that. Other web application also choose a default random password that is very complex and hard to remember from the users

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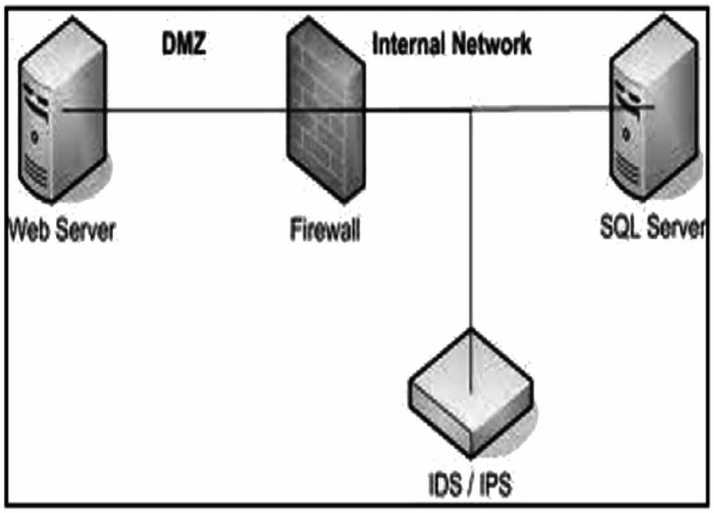
themselves, which make them write it down anywhere cause another threat possibility. Password itself cannot be the only protection technique that a company uses.

- **SSL and Data Encryption:** The authors Xiaowei Li and Yuan Xue (2011) explains that Socket Secure Layer (SSL) protocol and data encryption may secure the customer data during the transmission of these data from the web server to the client machine. The authors Kyu Ho Park and Ki-Woong Park (2011) described in their research the server and the client system need to decrypt these data once they want to read it or modify it. Data encryption same as password cannot be work alone without other protection technique. Usually this encryption and decryption are based on shared key that both the client and the server need to know. Therefore, distribution of this shared key should be also run through a secure process.
- **Firewalls:** As shown in Figure 6 the firewall is like a barrier inside the network to allow only the people who have authorized access to pass through this gate. Firewall can be either hardware device or software tool that can be configured to allow and block certain users, packets, ports, or even Internet Addresses (IPs). The authors Peder Jungck and Simon S.Y Shim (2004) and Alex X. Liu (2012) discussed in their research, the attacker may make a huge process in order to convince the firewall that he is an authorized user to pass through it and this is what usually happens in the Trojan horse virus. In the computer networks, a firewall is working with a router. The firewall scans each network packet to decide whether to forward it toward its destination inside my company network or forbidden its pass. A firewall also includes or works with a proxy server that creates network requests on behalf of the users systems. A firewall is often installed in a specially designated computer separate from the rest of the network so that not any arrived packet can get directly at the servers system in the company network.

Figure 6. Schematic diagram of firewall



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- **Standard Scanning Programs:** The known attacks and security threats are stored in automated tools to scan all the programs and packet sent or received on the clients system. Most of these automated scanners protect the organizations network from known attacks made before on hardware devices and software. Most of these scanners secure your systems from fixed list of threats. Therefore, there is no guarantee to protect your applications and systems from new expected kind of attacks that did not happen before. Sometimes they can alert them users that doing some actions or accessing some file will be vulnerable and security risk. Usually these applications require daily update for its libraries in order to update the list of threats to include the new threats according the authors Marjan Korosec & Joze Duhovnik (2010) that just happen to other computer systems.
- **Internet Service Provider:** Most of the protection techniques are mainly to guarantee securing the systems and data inside an organization. However, what about the internet service providers (ISPs). Most of the ISPs do not care about security same as the application productions companies. Security is not their business. Nevertheless, nowadays most of these third parties start looking for security improvements in order to enhance or keep their reputation in the IT markets as specified by authors Serguei Netessine and Nils Rudi (2006).
- **Code Implementation:** Programmers are not security experts that why they do not consider that much the security threats while developing an application. Some huge development companies apply security testing for their applications after the development phase. While the most of these companies only deals with security after their applications face an attack. However, in order to protect your system you should not only test the code but you need to implement all the validation and verification required in the code development phase. In addition, to secure all the servers and databases that is worked in the background of these applications. Tester mainly are not attacker that why he cannot imagine the complete way of attacking the system. Therefore, the authors Lingli Zhang and Chandra Krintz (2005) and Mu-Woong Lee and Sunghun Kim (2011) suggested that companies should start looking for hiring attacker in their quality assurance departments.

HTTP Compression

HTTP compression is a capability that can be built into web servers and web clients to improve transfer speed and bandwidth utilization. HTTP data is compressed before it is sent from the server: compliant browsers will announce what methods are supported to the server before downloading the correct format; browsers that do not support compliant compression method will download uncompressed data. There are two different ways compression can be done in HTTP. At a lower level, a Transfer-Encoding header field may indicate the payload of a HTTP message is compressed. At a higher level, a Content-Encoding header field may indicate that a resource being transferred, cached, or otherwise referenced is compressed. Compression using Content-Encoding is more widely supported than Transfer-Encoding, and some browsers do not advertise support for Transfer-Encoding compression to avoid triggering bugs in servers.

SURBL Database Check

SURBLs are lists of *web sites* that have appeared in unsolicited messages. Sender lists can be used in a first stage filter to help identify 80% to 90% of unsolicited messages. SURBLs can help find about 75% of the otherwise difficult, remaining unsolicited messages in a second stage filter. Used together with sender lists, SURBLs have proven to be a highly-effective way to detect 95% of unsolicited messages.

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Using SURBLs requires a mail filter that can extract web sites from message bodies and check them against the lists.

IMPLEMENTATION

In order to suggest the status of e-commerce web applications for better business intelligence a web program is developed with the standard tool known as *webcheckme*. The web program accepts the URL of e-commerce website and verifies all the aspects of as mentioned in above section. The web program produces the status of e-commerce website in 10-point scale. The web developer of e-commerce website can improve the performance of website based on the value of 10-point scale and comments. A case study was conducted on some of the popular e-commerce websites and the following table lists these websites.

Table 1. List of e-commerce websites

S.No	E-Commerce Website
1	www.shopclues.com
2	www.paytm.com
3	www.snapdeal.com
4	www.shopbychoice.com
5	www.ebay.com
6	www.irctc.co.in
7	www.flipkart.com
8	www.amazon.com
9	www.zapstore.com
10	www.homeshop18.com

The analysis of web program is shown in Figure 7.

The results of web program on 10 e-commerce websites with 10-point score value are shown in Table 2 and snapshot of 10 e-commerce websites' scores are shown in Figure 8.

CONCLUSION

The chapter identifies the various factors that need to be consider the in analyzing the performance of e-commerce website. The methodology is very much comprehensive and well applicable to e-commerce web application product because web application is the integration of number of different components. In this chapter, a significant effort is made to evaluate status of e-commerce website. The chapter has shown the path and cautiousness to be adopted in web design process for the web designers for better service to the end users. The importance of the quality of Web Design is essential in the light of enormous growth of web applications. In this connection the theme of the chapter shows a direction to improve

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Figure 7. A sample website scan report of e-commerce website

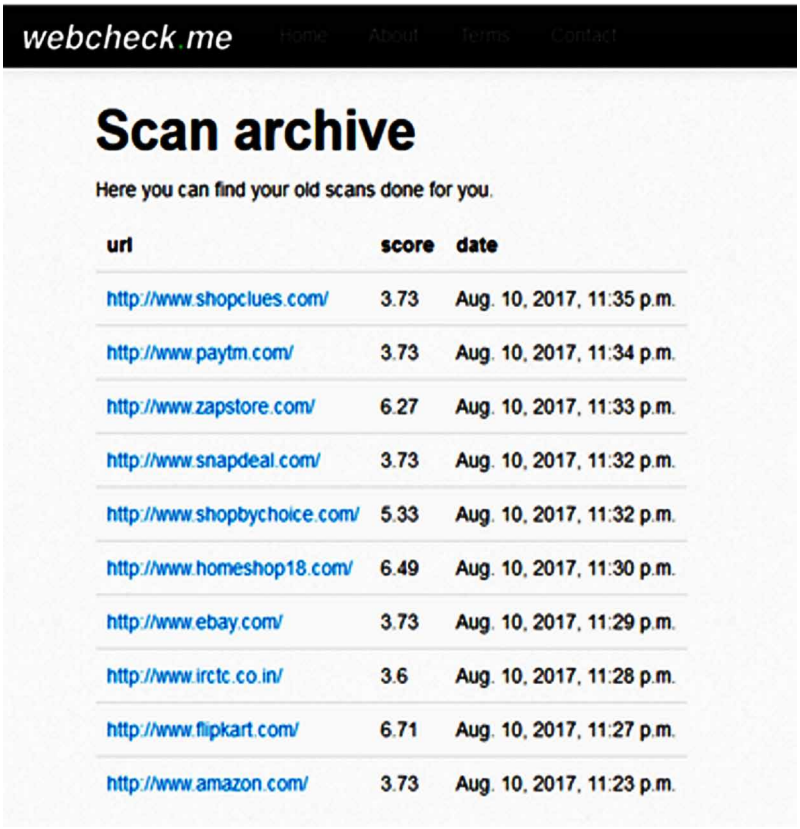

Table 2. E-commerce websites with 10-point score

S.No	E-Commerce Website	10-point Score
1	www.shopclues.com	3.73
2	www.paytm.com	3.73
3	www.snapdeal.com	3.73
4	www.shopbychoice.com	5.33
5	www.ebay.com	3.73
6	www.irctc.co.in	3.6
7	www.flipkart.com	6.71
8	www.amazon.com	3.73
9	www.zapstore.com	6.27
10	www.homeshop18.com	6.49

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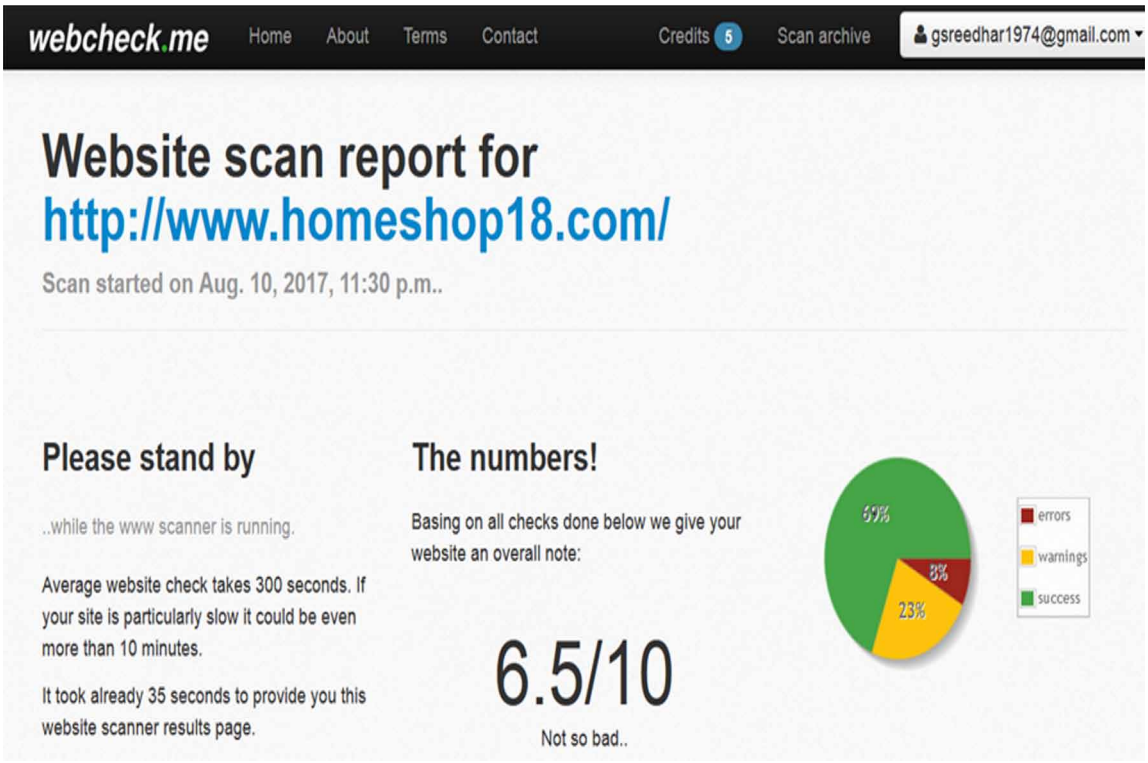
Figure 8. 10-Point Scores of various e-commerce websites



the web applications more viable to the need of common man and to achieve user friendly websites. Thus the presented information in the chapter is quite helpful to for e-commerce web developers in the context of today's business world.

REFERENCES

Esponda, F. (2009). *Immune System Inspired Digital Representations: Storing all but the valuable data*. VDM Verlag Saarbrucken.

EtnoteamS. P. A. (2000). Retrieved from http://ww.etnoteam.it/webquality

Etzioni, O. (1996). The World Wide Web: Quagmire or Gold Mine. Communications of the ACM, 39(11), 65-68.

Gordeychik, S. (2007). *Web Application Security Statistics.* Retrieved September 1, 2017, from http://projects.webappsec.org/w/page/13246989/webapplicationsecuritystatistics

Graphics, Visualization and Usability (GVU) Centre. (1998). *GVU's user surveys*. Georgia Tech Research Corporation. Retrieved from WWW.cc.gatech.edu/gvu/user_ surveys/

Grawemeyer, B., & Johnson, H. (2011). Using and managing multiple passwords: A week to a view. *Journal of Interacting with Computers*, *23*(3), 256–267. doi:10.1016/j.intcom.2011.03.007

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hinley, C., O'Leary, R., & Samdarshi, S. (2015). *WhiteHat website security statistic report 2015*. Retrieved September 1, 2017 from https://www.whitehatsec.com

Jungck, P., & Shim, S. S. Y. (2004). Issues in High Speed Internet Security. In Proceedings of Computing Practices. The IEEE Computer Society.

Korosec, M., Duhovnik, J., & Vukasinovic, N. (2010). Identification and optimization of key process parameters in noncontact laser scanning for reverse engineering. *Journal of Computer-Aided Design*, *42*(8), 744–748. doi:10.1016/j.cad.2010.02.003

Lampson. (2004). Computer Security Security in the real World. Proceedings of IEEE Computer, 37, 37-46.

Lee, M.-W., & Kim, S. (2011), Integrating code search into the development session. *Proceedings of the 27th International Conference on Data Engineering*, 1336-1339. 10.1109/ICDE.2011.5767948

Li & Xue. (2011). *A Survey on Web Application Security (Technical report)*. Vanderbilt University.

Liu, A. X. (2012, March). Firewall policy change-impact analysis. *Journal of ACM Transactions on Internet Technology*, *11*(4), 15.

Meirong, T., & Xuedong, C. (2010). Application of Agent-based Web Mining in E-business. *Second International Conference on Intelligent Human-Machine Systems and Cybernetics*.

Netessine, S., & Rudi, N. (2006). Supply Chain Choice on the Internet. *Journal of Management Science*, *52*(6), 844–864. doi:10.1287/mnsc.1060.0512

Oriyano. (2009). *Anatomy of a Web attack: Understanding the most common attack types*. IBM Corporation.

Park, K. H., & Park, K.-W. (2011). ACCENT: Cognitive cryptography plugged compression for SSL/TLS-based cloud computing services. *Journal of ACM Transactions on Internet Technology*, *11*(2), 7.

Petite, S. (2002). *Anatomy of a Web Application: Security Considerations.* White Paper. Sanctum Inc.

Pitkow, J. E., & Kehoe, C. M. (1996). Emerging trends in the WWW user population. *Communications of the ACM*, *39*(6), 106–108. doi:10.1145/228503.228525

Ranjan, J. (2009). Business Intelligence: Concepts, components, techniques and benefits. *Journal of Theoretical and Applied Information Technology*, *9*(1), 60–70.

Reaux, R. A., & Carroll, J. M. (1997). Human factors in information access of distributed systems. In G. Salvendy (Ed.), *Handbook of Human Factors and Ergonomics* (2nd ed.). New York: Wiley.

Sangkatsanee, P., & Charnsripinyo, C. (2011). Practical real-time intrusion detection using machine learning approaches. *Journal of Computer Communications*, *34*(18), 2227–2235. doi:10.1016/j.comcom.2011.07.001

Sima, C. (2004). *Security at Next Level. Whitepaper*. SPI Dynamic Inc.

Sreedhar, G. (2017). Development of Efficient Decision Support Systems using Web Data Mining. In G. Sreedhar (Ed.), *Web Data Mining and the Development of Knowledge based Decision Support Systems* (pp. 1–11). Hershey, PA: Information Science Publishing. doi:10.4018/978-1-5225-1877-8.ch001

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Sreedhar, G., & Anandaraja Chari, A. (2017). First Look on Web Mining Techniques to Improve Business Intelligence of E-Commerce Web Applications. In *Hand Book of Research on Advanced Data Mining Techniques and Applications of Business Intelligence* (pp. 298–314). Hershey, PA: Information Science Publishing. doi:10.4018/978-1-5225-2031-3.ch018

Zhang, L., & Krintz, C. (2005). The design, implementation, and evaluation of adaptive code unloading for resource-constrained devices. *Journal of ACM Transactions on Architecture and Code Optimization*, *2*(2), 131–164. doi:10.1145/1071604.1071606

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Chapter 22
Creating Utilitarian and Hedonic Value from Website Quality and Online Retail Performance

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ABSTRACT

Although consumer-perceived utilitarian value and hedonic value have been considered essential antecedents of consumer behavior, few studies have investigated the effects of both website quality and online retail performance on consumer-perceived utilitarian value and hedonic value, which in turn affect consumers' relationship commitment. This study analyzed data from 394 online shoppers using structural equation modeling. The results revealed that both utilitarian and hedonic value significantly and positively affected relationship commitment. Information quality, system quality, service quality, and price fairness were revealed to significantly and positively affect the perceived utilitarian value of online stores, whereas system and service quality increased perceived hedonic value.

INTRODUCTION

Because the Internet is a popular shopping medium for consumers worldwide (Chen et al., 2013), retailers are increasingly shifting the focus of their business online. The Internet is thus continually transforming the retail sector (Blázquez, 2014). The number of online stores has grown considerably in the previous few years and the retail environment is increasingly competitive. Ensuring repeated visits from online shoppers and building store loyalty are some of the crucial challenges for online retailers. Consumers' perceived value plays a dominant role in the adoption of technology (Yang et al., 2012) and has received substantial attention in the marketing literature (Iniesta-Bonillo et al., 2012) because consumers' value judgments affect their satisfaction, preference, and loyalty levels (Overby and Lee, 2006). Therefore, online store managers have responded to these challenges by creating value in their online store.

Studies have considered two types of consumers' perceived value in an online shopping environment: utilitarian and hedonic value (Blázquez, 2014). Perceived utilitarian value is related to consumers' overall

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assessment of a purchase—whether it fulfils their needs from a functional perspective—and perceived hedonic value is related to a product's entertainment-related and emotional benefits (Chang and Tseng, 2013). One study emphasized that online vendors should consider whether their website provides adequate utilitarian and hedonic value to consumers during the website's development (Chiu et al., 2009). Many studies have confirmed that perceived utilitarian and hedonic value affects consumers' online shopping satisfaction (Yang and Wu, 2009), attitude toward a website (Chiagouris and Ray, 2010), preference (Overby and Lee, 2006), loyalty (Hung et al., 2010; Chen et al., 2013), online repurchase intention (Chang and Tseng, 2013), mobile Internet use intention (Yang et al., 2012), and Web 2.0 contribution behavior (Hung et al., 2010).

Several studies on online consumers have further explored the antecedent variables of utilitarian and hedonic value because of their demonstrated importance. Studies have revealed that consumers' perceived utilitarian and hedonic value was affected by an e-store's image (Chang and Tseng, 2013), the environmental attributes of the website (Charfi and Lombardot, 2015), e-service quality (Chen et al., 2013), novelty, flow, efficiency, and complementarities (Hung et al., 2010). In addition, recent research has investigated the effects of website quality dimensions (i.e., information, system, and service) on consumer-perceived utilitarian and hedonic value; the results revealed that system and service quality affected utilitarian shopping value, whereas information and service quality affected hedonic shopping value (Kim et al., 2012). The limitations of the study were that exogenous variables accounted for only 20.2% of the variance in hedonic value and 21.6% of the variance in utilitarian value; consequently, the authors suggested that other factors might have also affected the consumers' perceptions of hedonic and utilitarian value. A clearer explanation of consumers' perceptions can be provided by an integrated model that combines different perspectives than a model with a single perspective (Shih and Chen, 2013).

Service quality, product quality, and price fairness have been revealed as the three key retail performance factors affecting consumers' online shopping experience (Kim et al., 2008) and online shopping experiences were demonstrated to produce utilitarian and hedonic value (Blázquez, 2014). The three key factors have been investigated for their direct effect on consumer satisfaction (Yieh et al., Chiu, 2007), transaction risk perceptions (Wang and Tsai, 2014), and retailer trust and loyalty (Yieh et al., 2007) in the context of bricks and mortar shops. Although researchers have asserted that website quality (Kim et al., 2012) and online retail performance (Kim et al., 2008) affect consumer-perceived product value, how the factors of website quality and online retail performance relate to specific value perceptions (i.e., perceived utilitarian and hedonic value) remains unclear.

HYPOTHESES DEVELOPMENT

Information quality refers to the completeness, detail, accuracy, timeliness, and reliability of information provided to customers (Ahn et al., 2003). Perceived utilitarian value is consumers' overall assessment of whether an online shopping experience successfully enabled them to complete their shopping tasks and goals (Dubelaar et al., 2003). Goetzinger et al. (2003) suggested that online consumers' concern about the quality of information available online after having previously received incorrect information can result in their not taking advantage of beneficial product offerings. Thus, high-quality product and service information enables online consumers to make superior purchasing decisions (Fang et al., 2011). Because higher quality information leads to superior buying decisions, researchers have indicated that

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information currency is strongly associated with utilitarian shopping value (Kim et al., 2012). Thus, the following hypothesis was proposed:

H1: The consumer-perceived information quality of an online store positively affects its consumer-perceived utilitarian value.

System quality refers to consumers' overall assessment of the performance of an online store regarding information delivery, response time, and retrieval (Chompis et al., 2014). It represents the functionality of an online store and is assessed according to factors such as the ease of navigation, response speed, and security and accuracy of transactions (Ahn et al., 2003). DeLone and McLean (2003) suggested that accessibility, availability, and reliability are the system quality factors most demanded by users. Previous research has further indicated that system connection stability is positively associated with utilitarian value (Park et al., 2011). Because system quality entails efficiency from an engineering perspective, researchers have additionally suggested that consumers' efficiency perceptions positively affect their utilitarian value perceptions toward a website (Hung et al., 2010). Therefore, the following hypothesis was proposed:

H2: The consumer-perceived system quality of an online store positively affects its consumer-perceived utilitarian value.

Perceived hedonic value is defined as consumers' overall evaluation of whether the online shopping experience is psychologically and emotionally worthwhile (Park et al., 2011). System quality is defined as customers' perceptions of a system's performance from the perspective of effective technological properties, with higher system quality rendering interactions with the system smoother (Chompis et al., 2014). Because accessibility strongly affects online consumers' enthusiasm and online consumers are generally impatient while waiting for data access, the accessibility of websites affects hedonic shopping value (Kim et al., 2012). Therefore, the following hypothesis was proposed:

H3: The consumer-perceived system quality of an online store positively affects its consumer-perceived hedonic value.

Perceived service quality is defined as consumers' evaluation of service received according to service performance standards (Jiang and Wang, 2006) and based on a service that facilitated achieving their shopping objectives (Michon et al., 2015). Evaluating utilitarian value is based on the assessment of the instrumental or functional utility of the service provided (Petruzzellis, 2010). Previous research has suggested that efficient and timely service delivery affects consumer-perceived utilitarian value (Kleijnen et al., 2007). Although perceived service quality was positively associated with perceived value (Kim et al., 2008), some studies have indicated that consumers' service quality perceptions significantly affect their assessments of utilitarian value (Mouakket, 2014). Thus, the following hypothesis was proposed:

H4: Consumers' perceived service quality of an online store positively affects their perceived utilitarian value of the online store.

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Perceived hedonic value is the perceived fun or pleasure obtained while using a product or service (Song et al., 2012) and represents the overall emotional feeling induced and imagery used by the service (Kim et al., 2012). Consumers' perceived hedonic value is their overall assessment of whether using the product or service is enjoyable (Park et al., 2011). Perceived service quality is consumers' overall assessment of the excellence and quality of their shopping experience (Kim et al., 2008), and shopping experiences in the servicescape evoke consumers' emotions (Wu et al., 2015). Thus, service quality may elicit positive consumer emotions, enhance their shopping enjoyment, and prompt positive hedonic shopping benefits (Michon et al., 2015). Service quality perceptions positively affect perceived hedonic value (Babin et al., 2005). Accordingly, the following hypothesis is proposed.

H5: Consumers' perceived service quality of an online store positively affects their perceived hedonic value of the online store.

Utilitarian value is the ability of a product to perform its intended functions for consumers (Kim et al., 2012). In addition, it refers to consumers' cognitive and logical assessment of the product or service performance and functionality (Rauniar et al., 2014) from the perspective of instrumental and functional benefits (Collier et al., 2014). Thus, consumers' perceived utilitarian value relates to their overall evaluation of product or service features (Lee and Overby, 2004) and whether the outcome of the product's or service's use completely fulfils the product or service goal-directed performance (Park et al., 2011). Consumers form opinions of utilitarian value after evaluating product performance parameters such as quality (Pant et al., 2011). Chandon et al. (2000) suggested that utilitarian value is associated with the benefits of product quality. Thus, online shoppers may form opinions of utilitarian value based on whether the online store delivers the promised product quality. Based on these findings, the following hypothesis was proposed:

H6: Consumers' perceived product quality of an online store positively affects their perceived utilitarian value of the online store.

Price has been emphasized as a crucial factor in consumers' perceived value because price savings add the dimension of economic value (Lee and Overby, 2004). Less financial resources are required to fulfil a given need (Sindhav and Adidam, 2012), and consumers usually attempt to find the desired product at a reasonable price. Pant et al. (2011) asserted that utilitarian value can generally be stated in terms of price and cost saving. When consumers find an excellent price or deal, their utilitarian value is satisfied (Sindhav and Adidam, 2012). Thus, consumers may derive utilitarian value by perceiving the price fairness of the product offered.

H7: Consumers' perceived price fairness of an online store positively affects their perceived utilitarian value of the online store.

Consumers' perceived value of a certain service is their primary motivation for using the service (Yang and Lee, 2010). Utilitarian and hedonic value has been proposed as a determinant of brand commitment (Chaudhuri and Holbrook, 2002) and e-shopper commitment (Bilgihan et al., 2013). Therefore, the following hypotheses were proposed:

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H8: Consumers' perceived utilitarian value of an online store positively affects their commitment to the online store.
H9: Consumers' perceived hedonic value of an online store positively affects their commitment to the online store.

The hypothesized model contained three control variables because of their potential effect on consumers' service evaluations: age, gender, and purchase frequency (Scarpi, 2006; Mishra and Srivastava, 2011; Jeannot et al., 2013).

METHOD

Data Collection

Data were collected at the train station of Taichung, a city in the center of Taiwan. The train station was chosen because it is the most important public area in the city and is open for all to enter. Trained interviewers conducted a field survey. Passers-by and passengers at the train station who were existing members of a shopping website were requested to participate. If the passers-by and passengers accepted the invitation, they were administered the one-page questionnaire. A prompter instructed participants to consider their 'currently most-visited online store.' Subsequently, each participant rated their perceptions and attitudes toward the store in terms of information quality, system quality, service quality, product quality, price fairness, utilitarian and hedonic value perceptions, and attitude toward relationship commitment. Although no incentives were offered, 394 online store members voluntarily participated. The survey sample comprised more females than males (70.6% vs. 29.4%). The under-20 age group (47.7%) was the most populous, followed by the 20–29 (43.7%) and 30–39 (6.9%) age groups. Additionally, participants who generally visited the online store in question less than 6 times a year formed the majority (71.3%), followed by those who visited the website 6–10 times (17.0%) and 11–15 times a year (6.1%).

Measures

All measures used were determined using multi-item scales adapted from previous studies. The two 7-item scales designed by Ahn et al. (2003) were employed to measure information quality and system quality. Service and product quality constructs were measured using the 6- and 3-item scales, respectively, developed by Ahn et al. (2004). Price fairness was measured using a 3-item scale (Wang and Tsai, 2014). Utilitarian and hedonic value were measured using two 4-item scales adapted from Paridon et al. (2006). Relationship commitment was measured using a 5-item scale adapted from Holloway et al. (2009).

ANALYSIS AND RESULTS

Measurement Accuracy Analysis

Table 1 presents the descriptive statistics of the research construct measures including individual mean score, standard deviation, and square root of average variance extracted (AVE, on the diagonal) for each

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Table 1. Correlation between research constructs

Research Constructs	Mean	S.D.	Correlation							
			InfQ	SysQ	SerQ	ProQ	PF	UV	HV	RC
Perceived information quality (InfQ)	4.95	0.98	0.84							
Perceived system fairness(SysQ)	5.05	0.95	0.71	0.76						
Perceived service quality (SerQ)	4.65	0.98	0.67	0.64	0.76					
Perceived product quality (ProQ)	4.91	0.95	0.59	0.62	0.51	0.63				
Perceived price fairness(PF)	5.02	1.06	0.51	0.57	0.43	0.55	0.89			
Perceived utilitarian value (UV)	5.18	1.01	0.68	0.70	0.58	0.54	0.52	0.85		
Perceived hedonic value (HV)	4.98	1.14	0.52	0.54	0.55	0.39	0.39	0.61	0.88	
Relationship commitment(RC)	4.90	1.08	0.58	0.60	0.59	0.42	0.46	0.62	0.72	0.82

Note: The square root of AVE for each construct is placed on the diagonal.
Scores: 1 – strongly disagree; 4 – neutral; 7 – strongly agree.

construct and any correlations between the measures. This study evaluated the research framework through structural equation modeling (SEM). For assessing the reliability and convergent validity of the scale items, confirmatory factor analysis (CFA) of the 39 items was conducted. The study used composite reliability (CR) and AVE for evaluating reliability and discriminants. The CFA results of CR and AVE are listed in Table 2. CR $\geq$ 0.6 indicated favorable consistency (Santos-Vijande et al., 2012). All CR exceeded this threshold level; thus, the scale items were reliable. To ensure discriminant validity, the square root of each construct's AVE should exceed its factors of correlation with other constructs (Zhu and Chen, 2012), and Table 1 confirms that this was the case.

Model-Fit Assessment

The model was tested using the linear structural relationships model (LISREL) 8.7 for SEM. The ratio of χ^2 to degrees of freedom (2.68) was less than the cutoff value (5.0), indicating an acceptable fit (Zain et al., 2013). The normed fit index, nonnormed fit index, comparative fit index, incremental fit index, and relative fit index were 0.97, 0.98, 0.98, 0.98, and 0.96, respectively. All these indexes were higher than the minimum value of 0.90 suggested by Hair et al. (1998). The goodness-of-fit index was 0.79, near the cutoff value of 0.80 (Teh and Yong, 2011). Moreover, the root-mean-square error of approximation (0.065) was less than 0.08, indicating an adequate fit (Zain et al., 2013). In summary, all of the indexes matched or were near the recommended values, indicating that the fitness of the model was acceptable.

Results of Hypotheses Testing

SEM using LISREL 8.7 was employed for assessing the hypothesized model, and the results are presented in Figure 1. H1 predicted that information quality has a positive relationship with the perceived utilitarian value of an online store. The results indicate an insignificant relationship ($\gamma_{11} = .23$, $p < .001$). Hypotheses 2–5 predicted the positive effect of system and service quality on the perceived utilitarian value and hedonic value of an online store. These hypotheses were supported, indicating that both system and service quality positively affect utilitarian value and hedonic value (H2: $\gamma_{12} = .43$, $p < .001$; H3:

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Table 2. CFA results of the research construct scales

Research Constructs	Measurement Items	C.R	AVE
Perceived information quality (InfQ)	The online store has sufficient contents which I expect to find	.95	.71
	The online store provides complete information		
	The online store provides detailed information		
	The online store provides accurate information		
	The online store provides timely information		
	The online store provides reliable information		
	The online store communicates information in an appropriate format		
Perceived system quality (SysQ)	The online store has an appropriate style of design for business type	.90	.57
	The online store has an easy navigation to information		
	The online store has fast response and transaction processing		
	The online store keeps transactions secure from exposure		
	I can use the online store when I want to use it		
	The online store has a good functionality relevant to site type		
	The online store keeps error-free transactions		
Perceived service quality (SerQ)	The online store service provider anticipates and responds promptly to user request	.89	.57
	The online store service provider can be depended on to provide whatever is promised		
	The online store service provider instills confidence in users and reduces uncertainty		
	The online store service provider understands and adapts to the user's specific needs		
	The online store service provider provides follow-up service to users		
	The online store service provider gives a professional and competence image		
Perceived Product quality (PQ)	The online store deals products with high quality	.66	.40
	The online store deals various products		
	The online store supports high product availability		
Perceived price fairness(PF)	The products sold on the online store are at a fair price	.92	.79
	The products price on the online store are reasonable		
	The products price on the online store are acceptable		
Perceived utilitarian value (UV)	The shopping trip on the online store was useful	.92	.73
	I was satisfied with the items I purchased from the online store		
	I accomplished just what I wanted to on the shopping trip on the online store		
	While shopping on the online store, I found just the item(s) I was looking for		
Perceived hedonic value (HV)	The shopping trip on the online store was truly a joy	.93	.78
	The shopping trip on the online store truly felt like an escape		
	I had a good time on the online store because I was able to act on the spur of the moment		
	I enjoyed the shopping trip on the online store for its own sake, not just for the items I may have purchased		
Relationship commitment(RC)	I care about the long-term success of this online store.	.91	.67
	I am a loyal customer of this online store		
	I am likely to grow fond of this online store		
	I believe I could develop a good relationship with this online store		
	I think I might become loyal to this online store		

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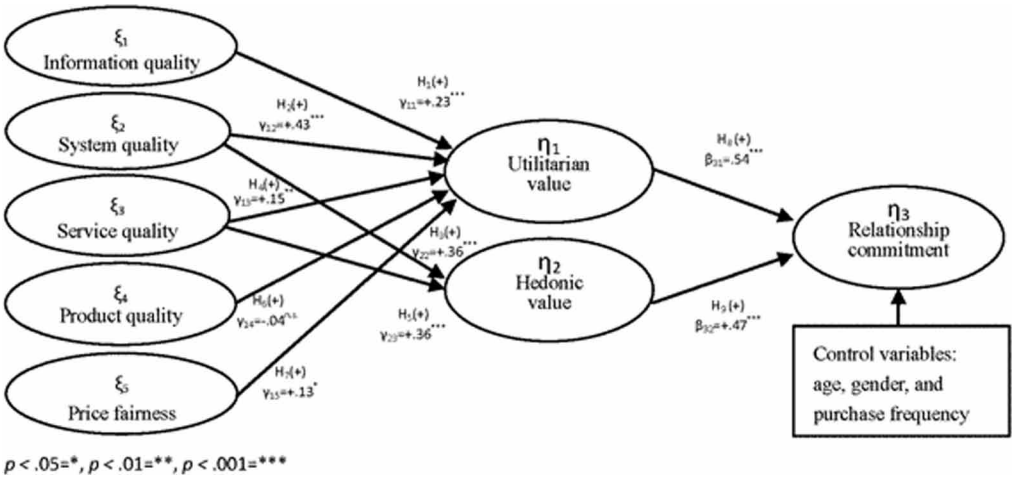
$\gamma_{22} = .36$, $p < .001$; H4: $\gamma_{13} = .15$, $p < .01$; H5: $\gamma_{23} = .36$, $p < .001$). H6 and H7 predicted that product quality and price fairness positively affect the perceived utilitarian value of an online store. The results reveal that price fairness is positively related to perceived utilitarian value (H7: $\gamma_{15} = .13$, $p < .05$); however, product quality was discovered to be unrelated to perceived utilitarian value (H6: $\gamma_{14} = -.04$, nonsignificant). Finally, H8 and H9 predicted that perceived utilitarian and hedonic value positive affect relationship commitment ($\beta_{31} = .54$, $p < .001$; $\beta_{32} = .47$, $p < .001$). Website quality dimensions and online retail performance factors were discovered to have considerable explanatory power as indicators of the utilitarian and hedonic value of an online store (squared multiple correlations of 64% and 44%, respectively), resulting in relationship commitment (squared multiple correlation of 61%).

Figure 1. Conceptual framework and research results



DISCUSSION

While delivering consumer value is an essential marketing and business concept, online marketers should develop a more comprehensive understanding of how consumer value can be delivered from different perspectives. This study investigated the effect of website quality and retail performance on creating consumer-perceived value, which in turn develops relationship commitment. The results demonstrated that the consumer-perceived utilitarian and hedonic value of a retail website determined consumers' relationship commitment. In particular, price fairness and three website quality dimensions (information quality, system quality, and service quality) were antecedent variables of the perceived utilitarian value of online stores, with the amount of explained variance being 62%. Additionally, system and service quality were revealed to affect the consumer-perceived hedonic value of online stores, with the explained variance of this relationship being 40%. Therefore, consumers' assessment of information quality, system quality, service quality, and price fairness positively affected consumers' perceived utilitarian value of online stores, whereas perceived system and service quality positively affected a store's perceived hedonic value. However, perceived product quality was discovered to be unrelated to the consumer-perceived hedonic value of online stores, perhaps because product quality is difficult to assess in the context of an online

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store. The results indicated how the consumer-perceived utilitarian and hedonic value of an online store night be created from website quality and online retail performance perspectives.

Theoretical and Managerial Implications

Previous studies on online shopping have not explained whether website quality or online retail performance affect consumer-perceived utilitarian and hedonic value. Therefore, this study proposed an integrated model to determine the effect of website quality and online retail performance on consumer utilitarian and hedonic value perceptions and consumers' relationship commitment in the context of online stores. Consumer-perceived utilitarian value was positively affected by information, system, and service quality, whereas perceived hedonic value was positively affected by service quality, which was consistent with the results of Kim et al. (2012). Specifically, the study investigated the effect of information quality, system quality, service quality, product quality, and price fairness on utilitarian and hedonic value. Price factors were discovered to induce utilitarian value perceptions. Compared with Kim et al. (2012), the current study's explained variance regarding consumer-perceived utilitarian and hedonic value was substantially improved by introducing the online retail performance factors. Therefore, this study contributes to the literature an integrated approach for exploring how the consumer-perceived utilitarian and hedonic value of online stores can be created from website quality and retail performance perspectives. In summary, conducting integrated research on website quality, retail performance, and consumer-perceived value is crucial to building consumer-perceived value and constitutes a critical topic in marketing research.

Consumers' perceived utilitarian and hedonic value facilitated the building of consumer commitment to an online store. Therefore, online store managers should recognize the importance of building the consumers' perceived utilitarian and hedonic value of their online store. Online firms can create consumer value by improving the quality of their website and their retail performance. Although both system and service quality affect consumer-perceived utilitarian and hedonic value, online store managers should promote consumers' utilitarian value perceptions of their store by providing easy navigation and high functionality relevant to the type of site, thus forming system quality perceptions, anticipating and responding promptly to customer requests for service, and striving to build an image of professionalism and competence, which all increase system quality perceptions. Finally, this study revealed that information quality and price fairness affect perceived utilitarian value; consequently, online store managers should not only sell their products at a fair and acceptable price but also provide sufficient, reliable, and appropriate descriptions of products, thus fulfilling users' expectations and enabling them to form information quality perceptions. Overall, online retailers who wish to increase their customers' relationship commitment should achieve high value perceptions by enhancing their website quality and retail performance.

Further Research Directions

This study had limitations and its results should be carefully interpreted. One possible limitation was the convenience sampling employed, which was not representative of the entire online shopping population, thus limiting the generalizability of the findings. Therefore, research using stratified random sampling is required to confirm the study's findings. Second, product characteristics have been frequently identified as critical factors in the e-commerce literature, and products can be distinguished as hedonic (i.e., involving aesthetic, sensory, or symbolic benefits; e.g., videos, flowers, perfumes, and fine cuisine)

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and utilitarian (e.g., hardware, cameras, and watches) (Cai and Xu, 2011; Lin et al., 2012). Pillai and Mukherjee (2011) extended the concept and demonstrated that an online store can be classified as utilitarian or hedonic based on the store's value proposition. Utilitarian websites, such as search engine and shopping websites, provide goal-oriented information and services, whereas hedonic sites, such as social networking sites and gaming sites (Xu et al., 2012), focus on experiential and sensory stimulation (Sánchez-Franco and Martín-Velicia, 2011).

Furthermore, studies have recognized two dichotomous shopping motivations: the utilitarian motive, underscoring an individual's goal-oriented rationale wherein shopping should be completed in a timely and efficient manner (Xu et al., 2012), and the hedonic motive, relating to an individual's focus on the fun and entertainment of the shopping experience (Francis and White, 2004). Although the present study focused on the role of retail performance in consumers' perceived value regarding online stores, further research should investigate our model in the context of hedonic versus utilitarian online stores; individuals' hedonic versus utilitarian shopping motivations might provide valuable insights. Third, future studies can introduce other antecedent variables of consumers' perceived utilitarian and hedonic value within the model. These other antecedent factors, such as interactivity and the environmental attributes of a website (e.g., social, atmospheric, and design factors), should be identified.

Because of the dramatic increase in online shopping in recent years, the competition between e-stores has become intense and gaining consumer commitment to an online store has become increasingly vital. Delivering product or service value is the ultimate goal of all business entities, so understanding how consumers develop their value perceptions is essential. Investigating the antecedent factors of consumers' perceived values and the moderators of relationships facilitates understanding of Internet-shopping behavior from the perspective of consumers' perceived value.

REFERENCES

Ahn, T., Ryu, S., & Han, I. (2004). The impact of the online and offline features on the user acceptance of Internet shopping malls. *Electronic Commerce Research and Applications*, *3*(4), 405–420. doi:10.1016/j.elerap.2004.05.001

Babin, B. J., Lee, Y.-K., Kim, E.-J., & Griffin, M. (2005). Modeling consumer satisfaction and word-of-mouth: Restaurant patronage in Korea. *Journal of Services Marketing*, *19*(3), 133–139. doi:10.1108/08876040510596803

Bilgihan, A., Sukhu, A., & Kandampully, J. (2013). The role of website features in creating loyalty: The mediating effect of commitment. *International Journal of Service Science, Management, Engineering, and Technology*, *4*(3), 37–50. doi:10.4018/ijssmet.2013070103

Blázquez, M. (2014). Fashion shopping in multichannel retail: The role of technology in enhancing the customer experience. *International Journal of Electronic Commerce*, *18*(4), 97–116. doi:10.2753/JEC1086-4415180404

Cai, S., & Xu, Y. (2011). Designing not just for pleasure: Effects of web site aesthetics on consumer shopping value. *International Journal of Electronic Commerce*, *15*(4), 159–188. doi:10.2753/JEC1086-4415150405

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Chandon, P., Wansink, B., & Laurent, G. (2000). A benefit congruency framework of sales promotion effectiveness. *Journal of Marketing*, *64*(4), 65–81. doi:10.1509/jmkg.64.4.65.18071

Chang, E., & Tseng, Y. (2013). Research note: E-store image, perceived value and perceived risk. *Journal of Business Research*, *66*(7), 864–870. doi:10.1016/j.jbusres.2011.06.012

Charfi, A. A., & Lombardot, E. (2015). Impact of E-atmospheric elements on the perceived value of the online visit. *Journal of Applied Business Research*, *31*(1), 265–274. doi:10.19030/jabr.v31i1.9006

Chaudhuri, A., & Holbrook, M. B. (2002). Product-class effects on brand commitment and brand outcomes: The role of brand trust and brand affect. *Journal of Brand Management*, *10*(1), 33–58. doi:10.1057/palgrave.bm.2540100

Chen, M.-H., Tsai, K.-M., Hsu, Y.-C., & Lee, K.-Y. (2013). E-service quality impact on online customer's perceived value and loyalty. *China - USA. Business Review (Federal Reserve Bank of Philadelphia)*, *12*(5), 473–485.

Chiagouris, L., & Ray, I. (2010). Customers on the web are not all created equal: The moderating role of internet shopping experience. *International Review of Retail, Distribution and Consumer Research*, *20*(2), 251–271. doi:10.1080/09593961003701767

Chiu, C.-M., Chang, C.-C., Cheng, H.-L., & Fang, Y.-H. (2009). Determinants of customer repurchase intention in online shopping. *Online Information Review*, *33*(4), 761–784. doi:10.1108/14684520910985710

Chompis, E., Bons, R. W., van den Hooff, B., Feldberg, F., & Horn, H. (2014). Satisfaction with virtual communities in B2B financial services: Social dynamics, content and technology. *Electronic Markets*, *24*(3), 165–177. doi:10.100712525-014-0160-z

Collier, J. E., Sherrell, D. L., Babakus, E., & Alisha, B. H. (2014). Understanding the differences of public and private self-service technology. *Journal of Services Marketing*, *28*(1), 60–70. doi:10.1108/JSM-04-2012-0071

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, *19*(4), 9–30. doi:10.1080/07421222.2003.11045748

Dubelaar, C., Leong, M., & Alpert, F. (2003). Impact of interactivity on the stickiness of online gift stores. *Journal of Asia-Pacific Marketing*, *2*(2), 22–41.

Fang, Y.-H., Chiu, C.-M., & Eric, T. G. (2011). Understanding customers satisfaction and repurchase intentions. *Internet Research*, *21*(4), 479–503. doi:10.1108/10662241111158335

Francis, J. E., & White, L. (2004). Value across fulfillment-product categories of internet shopping. *Managing Service Quality*, *14*(2), 226–234. doi:10.1108/09604520410528644

Goetzinger, L., Park, J., Yun, J. L., & Widdows, R. (2007). Value-driven consumer e-health information search behavior. *International Journal of Pharmaceutical and Healthcare Marketing*, *1*(2), 128–142. doi:10.1108/17506120710762988

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate Data Analysis*. New York, NY: MacMillan Publishing Company.

Holloway, B. B., Wang, S., & Beatty, S. E. (2009). Betrayal? Relationship quality implications in service recovery. *Journal of Services Marketing*, *23*(6), 385–396. doi:10.1108/08876040910985861

Huber, F., Fischer, M., & Herrmann, A. (2000). Satisfaction and loyalty in secondary markets for buyers using the internet as information source: Results of an internet based study. A*merican Marketing Association Conference Proceedings*, *11*, 157-165.

Hung, W. T., Tsang, S. S., & Liu, H. Y. (2010). Website characteristics and the impact of user perceived value on user behavior in Web 2.0. *Academy of Information and Management Sciences Journal*, *13*(1), 1–18.

Iniesta-Bonillo, M., Sánchez-Fernandez, R., & Cervera-Taulet, A. (2012). Online value creation in small service businesses: The importance of experience valence and personal values. *Service Industries Journal*, *32*(15), 2445–2462. doi:10.1080/02642069.2012.677833

Jeannot, A. K., Kumar, M., & Sofiah, A. R. (2013). Measuring shopping values of Malaysian retail consumers. *Asia Pacific Journal of Marketing and Logistics*, *25*(2), 200–224. doi:10.1108/13555851311314022

Jiang, Y., & Wang, C. L. (2006). The impact of affect on service quality and satisfaction: The moderation of service contexts. *Journal of Services Marketing*, *20*(4), 211–218. doi:10.1108/08876040610674562

Kim, C., Galliers, R. D., Shin, N., Ryoo, J., & Kim, J. (2012). Factors influencing internet shopping value and customer repurchase intention. *Electronic Commerce Research and Applications*, *11*(4), 374–387. doi:10.1016/j.elerap.2012.04.002

Kim, C., Zhao, W., & Yang, K. H. (2008). An empirical study on the integrated framework of e-CRM in online shopping: Evaluating the relationships among perceived value, satisfaction, and trust based on customers perspectives. *Journal of Electronic Commerce in Organizations*, *6*(3), 1–19. doi:10.4018/jeco.2008070101

Kim, I., Jeon, S. M., & Sunghyup, S. H. (2012). Chain restaurant patrons well-being perception and dining intentions. *International Journal of Contemporary Hospitality Management*, *24*(3), 402–429. doi:10.1108/09596111211217888

Kleijnen, M., Ko, R., & Wetzels, M. (2007). An assessment of value creation in mobile service delivery and the moderating role of time consciousness. *Journal of Retailing*, *83*(1), 33–46. doi:10.1016/j.jretai.2006.10.004

Lee, E.-J., & Overby, J. W. (2004). Creating value for online shoppers: Implications for satisfaction and loyalty. *Journal of Consumer Satisfaction. Dissatisfaction and Complaining Behavior*, *17*(1), 54–67.

Lin, T. M. Y., Lu, K.-Y., & Wu, J.-J. (2012). The effects of visual information in eWOM communication. *Journal of Research in Interactive Marketing*, *6*(1), 7–26. doi:10.1108/17505931211241341

Michon, R., Chebat, J., Yu, H., & Lemarié, L. (2015). Fashion orientation, shopping mall environment, and patronage intentions. *Journal of Fashion Marketing and Management*, *19*(1), 3–21. doi:10.1108/JFMM-09-2012-0055

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Mishra, A. A., & Srivastava, M. K. (2011). Shopping value, satisfaction and its behavioral outcomes in the purchase of private label branded products: A theoretical framework. *Journal of Marketing and Operations Management Research*, *1*(3), 237–254.

Mouakket, S. (2014). Investigating the motives of customers continuance intentions towards online reservation: The role of E-service quality. *Journal of Organizational and End User Computing*, *26*(2), 18–40. doi:10.4018/joeuc.2014040102

Overby, J. W., & Lee, E.-J. (2006). The effects of utilitarian and hedonic online shopping value on consumer preference and intentions. *Journal of Business Research*, *59*(10), 1160–1166. doi:10.1016/j.jbusres.2006.03.008

Pant, A., Chiu, H., Hsieh, Y., & Huang, Y. (2011). Desires of an adopter's heart: Which product characteristics influence brand loyalty among different types of adopters? *Competition Forum,* 9(2), 442-453.

Paridon, T. J., Carraher, S., & Carraher, S. C. (2006). The income effect in personal shopping value, consumer self-confidence, and information sharing (word of mouth communication) research. *Academy of Marketing Studies Journal*, *10*(2), 107–124.

Park, J., Snell, W., Ha, S., & Chung, T. (2011). Consumers' post-adoption of m-services: Interest in future m-services based on consumer evaluations of current m-services. *Journal of Electronic Commerce Research*, *12*(3), 165–175.

Petruzzellis, L. (2010). Mobile phone choice: Technology versus marketing. The brand effect in the Italian market. *European Journal of Marketing*, *44*(5), 610–634. doi:10.1108/03090561011032298

Pillai, A., & Mukherjee, J. (2011). User acceptance of hedonic versus utilitarian social networking web sites. *Journal of Indian Business Research*, *3*(3), 180–191. doi:10.1108/17554191111157047

Rauniar, R., Rawski, G., Yang, J., & Johnson, B. (2014). Technology acceptance model (TAM) and social media usage: An empirical study on Facebook. *Journal of Enterprise Information Management*, *27*(1), 6–30. doi:10.1108/JEIM-04-2012-0011

Sánchez-Franco, M. J., & Martín-Velicia, F. A. (2011). The interaction effects of ego involvement on the relationships between aesthetics, usability and commitment. *Online Information Review*, *35*(2), 194–216. doi:10.1108/14684521111128005

Santos-Vijande, M., López-Sánchez, J. Á., & González-Mieres, C. (2012). Organizational learning, innovation, and performance in KIBS. *Journal of Management & Organization*, *18*(6), 870–904. doi:10.1017/S183336720000050X

Scarpi, D. (2006). Fashion stores between fun and usefulness. *Journal of Fashion Marketing and Management*, *10*(1), 7–24. doi:10.1108/13612020610651097

Shih, Y., & Chen, C. (2013). The study of behavioral intention for mobile commerce: Via integrated model of TAM and TTF. *Quality & Quantity*, *47*(2), 1009–1020. doi:10.100711135-011-9579-x

Sindhav, B., & Adidam, P. T. (2012). Hedonic and utilitarian values of a service experience with a nonprofit: The role of identification. *International Management Review*, *8*(1), 37–43.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Song, P., Zhang, C., & Xu, H. (2012). How to exploit the user base for online products: A product integration perspective. *Journal of Electronic Commerce Research*, *13*(4), 356–372.

Teh, P., & Yong, C. (2011). Knowledge sharing in is personnel: Organizational behavior's perspective. *Journal of Computer Information Systems*, *51*(4), 11–21.

Wang, E. S.-T., & Tsai, B.-K. (2014). Consumer response to retail performance of organic food retailers. *British Food Journal*, *116*(2), 212–227. doi:10.1108/BFJ-05-2012-0123

Wu, S., Huang, C., & Chen, Y. (2015). Leisure-service quality and hedonic experiences: Singing at a karaoke house as a form of theatre. *Total Quality Management & Business Excellence*, *26*(3-4), 298–311. doi:10.1080/14783363.2013.814290

Xu, C., Ryan, S., Prybutok, V., & Wen, C. (2012). It is not for fun: An examination of social network site usage. *Information & Management*, *49*(5), 210–217. doi:10.1016/j.im.2012.05.001

Yang, H. E., & Wu, C. C. (2009). Effects of image interactivity technology adoption on e-shoppers behavioural intentions with risk as moderator. *Production Planning and Control*, *20*(4), 370–382. doi:10.1080/09537280902843755

Yang, K., & Lee, H. (2010). Gender differences in using mobile data services: Utilitarian and hedonic value approaches. *Journal of Research in Interactive Marketing*, *4*(2), 142–156. doi:10.1108/17505931011051678

Yang, S., Lu, Y., Gupta, S., & Cao, Y. (2012). Does context matter? The impact of use context on mobile internet adoption. *International Journal of Human-Computer Interaction*, *28*(8), 530–541. doi:10.1080/10447318.2011.627299

Yieh, K., Chiao, Y.-C., & Chiu, Y.-K. (2007). Understanding the antecedents to customer loyalty by applying structural equation modeling. *Total Quality Management & Business Excellence*, *18*(3), 267–284. doi:10.1080/14783360601152400

Zain, O. M., Jan, M. T., & Ibrahim, A. B. (2013). Factors influencing students' decisions in choosing private institutions of higher education in Malaysia: A structural equation modeling approach. *Asian Academy of Management Journal*, *18*(1), 75–90.

Zhu, Y.-Q., & Chen, H. (2012). Service fairness and customer satisfaction in internet banking. *Internet Research*, *22*(4), 482–498. doi:10.1108/10662241211251006

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Chapter 23
Web Content Analysis of Online Grocery Shopping Web Sites in India

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ABSTRACT

This article evaluates online grocery shopping web sites catering to customers primarily in India. The process of evaluation has been carried out in 3 parts using Rapidminer. In part A, the authors have studied the similarity in content that resides on the grocery shopping web sites. Using unstructured data from homepage of grocery shopping websites and the keywords specified for the web sites, the authors have made an effort to establish a cosine similarity index amongst them. In part B, the authors have analysed the customer reviews from the web sites. Studying the resulting association rules, authors have attempted to identify the attributes that drive customer happiness. In part C, the authors have documented the web traffic metric parameters (attributes) measured by search engine optimization (SEO) tool web sites. Hence, the created a correlation matrix to determine the parameters that are significantly impacting per day revenue for the web sites.

INTRODUCTION

Shopping for grocery and everyday household products is an integral part of life. In India, buying from a nearby kirana store (small retail store in the neighbourhood in India), ordering products via phone call from the kirana store, picking up groceries from the supermarket are some of the methods adopted by consumers for grocery shopping. The retail market for grocery in India is currently growing at a rate of 10% CAGR (Compounded Annual Growth Rate) which is about the size of 400 billion dollars. Online grocery accounts for only 0.1% of it. However, it is expected to grow to 10 billion dollars in the next 4

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years and significantly be concentrated in the urban areas of India. With changing time, consumers have started becoming technology savvy, resulting in widespread use of Internet and mobile phones (Ravish, 2017). E-tailers have identified an opportunity to reach consumers via the online platform, thus beginning the era of online shopping in India. The food and grocery (F&G) market has witnessed the entry of many online players, but over the years only a few have remained operational. However, statistics suggest the growth to increase in the next few years (Thmmiya & Kulkarni, 2017). The online grocery portals provides to prospective customers features such as comparative and competitive pricing, deals and coupons, home delivery options which are otherwise rare in grocery stores. According to a Nielsen survey (Terron, 2012), the urban and affluent consumers in India have opted for the e-commerce as an alternate means of shopping for many such advantages. This digital platform has provided the Indian customer the product, service, query resolutions, content all under the same umbrella of digital shopping.

Grocery market growth in the online space presents a challenge for supermarket chains competing for share, where their investments in online and offline need to be balanced (Francesca & Rettie, 2009). Earlier research related to internet grocery shopping has concentrated on comparing online and offline purchase behaviour in various ways like the importance of brand names (Degeratu et al., 2000), brand loyalty (Danaher et al., 2004), shopping pattern (Andrews & Currim, 2004), and consumers' perceptions of the advantages and disadvantages of online grocery shopping (Ramus & Nielsen, 2005). Study has also been conducted on consumer traits of internet shoppers, either in terms of their general shopping orientation (Brown et al., 2003) their web-usage-related lifestyle (Brengmen et al., 2005), or psychographic characteristics (Barnes et al., 2007). Additionally, literature (Rohm & Swaminathan, 2004) has attempted to develop a typology of internet grocery shoppers, based upon motivations for shopping online.

Another Nielsen survey (Swedowsky, 2009) evaluated the parameters that drive increased consumer interest in online grocery shopping. Convenience, selection, and savings have been stated as primary reasons for choosing online grocery over store shopping. Shipping costs, inability to inspect perishables, and having to wait for deliveries to arrive, have been mentioned as disadvantages of online grocery shopping. There is a significant number of people who continue to shop from stores in-person and have not yet experienced online shopping. Reasons stated have been the habit and preference of the individual or insufficient means to use it due to lack of awareness/availability of online grocery options.

There is opportunity for growth of online grocery shopping due to the following reasons:

1. **Convenience:** Online grocery shopping from home avoids the trips that have to be made to the grocery stores. It frees up the time for other activities and maintain better work life balance.
2. **Generation Y:** Generation Y has a large number of online users. Hence habit and preference of in store shopping that exists with earlier generations is less with Generation Y. Usage of the internet and mobile applications are leading to increase in online shopping.
3. **Broadband and Media:** Growth and penetration of Internet has increased at a rapid pace. Technology savvy customers have ventured into the online shopping space looking for information. Advertisements on media have promoted the advantages of online shopping.
4. **Customization:** Online grocery shopping tracks customer purchase behaviour and hence is able to provide customized recommendations to the customer during following visits to the web site based on previous shopping habits (e.g., product recommendations or promotions for combinations of offerings/kits).

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With growing number of e-tailers providing online platform for grocery shopping in India, there is increased competition within the online grocery shopping market. Research and academic discussion forums debate competitive strategies for their growth and survival. Business Analytics has been used by decision makers to derive insights from customer data leading to survival and growth in a competitive environment. Ramsey and Bapna (2016) have discussed how customers can be identified and text mining/analytics methods that are needed to manage and maximize the processes related to cultivating relationships with these customers. Their paper discusses a means for extracting useful information from text notes captured within a CRM (Customer Relationship Management) system that can be used to segment and thus target groups of customers likely to respond to cross-selling campaigns. These notes often contain text that is indicative of customer intentions.

Analytics is usually defined in practice as any fact-based deliberation which leads to insights and possible implications for planning future actions (Banerjee & Banerjee, 2017). It could range from routine tracking and monitoring of business performance, "nice to know" validation facts regarding the business domain, to more directed diagnosis of 'root cause' of business problems as well as strategic prediction about future business initiatives. The commonality across all these exercises is that it is significantly driven by facts obtained as a part of business and market data collection initiatives by firms. The need for factual evidence-based inference as an input to the business decision process has been in vogue from early times of management history. With the advent of better information gathering process and processing tools, more structured insight building from information is currently the standard expectation in the industry. Large scale digital data is confined mainly to organizations in the e-commerce industry. For grocery shopping websites, some of the common attributes of measuring online presence in a competitive market include the bouquet of product categories offered, the ability to service PAN India, competitive pricing, on time delivery of products and services, discounts offered through deals and coupons, maintaining quality, managing suppliers, handling consumer complaints effectively. While the content displayed on the web site is important along with the look and feel, easy loading of pages, quick navigation between web page links, appearing in searches, referrals from other web sites and a desirable revenue model; equally important is to maintain the optimum products in the inventory, on time delivery, cashback options, deals and discounts, payment options and handling customer queries and complaints. All of these activities generate a huge amount of data that are structured as well as unstructured in nature. Some of the data is consciously captured by the organizations which are used by their Analytics teams to do descriptive and predictive analysis and devise competitive strategies and metrics for measurement of their success online.

A huge amount of data exists in unstructured form like the textual data of the website content, customer buying habits, queries and complaints and so on. Analysts have developed ways of mining this rich source of data for developing insights that can be useful for business growth and profitability. With the advancement of technology, Dashboards have become popular in organizations as visualization methods. From simple analysis to displaying complicated metrics, there has been a slow and steady transition across the industry value chain. What it essentially does is, summarizing the information available from various sources and presenting it in a user-friendly form. Decision makers have appreciated the dashboards as it allows collecting, analysing and presenting huge amount of data being captured by organizations daily and additionally real-time availability of the information (Banerjee & Banerjee, 2017). Statistical methods like web and text mining for evaluating web and textual content on the web sites have become important in analysing unstructured data.

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Text mining, also known as text data mining or knowledge discovery in textual databases, is the semi-automated process of extracting patterns (useful information and knowledge) from large amount of unstructured data sources. Text mining is the same as data mining in that it has the same purpose and uses the same processes, but with text mining, the input to the process is a collection of unstructured (or less structured) data files such as Word documents, PDF files, text excerpts, XML files and so on. In essence, text mining can be thought of as a process (with two main steps) that starts with imposing structure to the text-based data sources followed by extracting relevant information and knowledge from this structured text-based data using data mining techniques and tools.

The World Wide Web is perhaps the world's largest data and text repository, and the amount of information on the Web is growing rapidly every day. A lot of interesting information can be found online: whose homepage is linked to which other pages, how many people have links to a specific Web page, and how a particular site is organized. In addition, each visitor to a website, each search on a search engine, each click on a link, and each transaction on an e-commerce site creates additional data. Although unstructured textual data in the form of Web pages coded in HTML or XML are the dominant content of the Web, the Web infrastructure also contains hyperlink information (connections to other Web pages) and usage information (logs of visitors' interactions with Web sites), all of which provide rich data for knowledge discovery. Analysis of this information can help us make better use of Web sites and also aid us in enhancing relationships and value to the visitors of our own Web sites. Web mining (or Web data mining) is the process of discovering intrinsic relationships (i.e. interesting and useful information) from Web data, which are expressed in the form of textual, linkage, or usage information (Turban et al., 2011).

This paper evaluates 10 online grocery shopping sites in India comparing the content on their homepages, customer reviews and also analysing their business performance as summarized on public websites that use search optimization tools and analytical processes. The authors have observed from existing literature that the number of online grocery shopping sites that have currently remained operational across India are few in number. Many of them operate within small geographical areas while others have presence across India. A sample choice of 10 online grocery shopping sites will be able to represent the complete population. This paper aims to study attributes from structured and unstructured data that lead to success of online grocery business in India.

The public web sites that have been considered for this study are as follows:

1. **Bigbasket.com (Bangalore, Mumbai, Delhi, Mysore, Chennai, Hyderabad, Pune, Madurai, Coimbatore, Vijayawada, Ahmedabad, Nashik, Lucknow & Vadodara.):** bigbasket.com has over 18,000 products and over 1000 brands in their catalogue that include fresh Fruits and Vegetables, Rice and Dals, Spices and Seasonings to Packaged products, Beverages, Personal care products, Meats (Bigbasket, n.d.).
2. **Aaramshop.com (97 cities):** AaramShop is a hybrid retail platform that is completely focused on ensuring that customers can shop for daily essentials & grocery brands from the comfort of their homes or offices (Aaramshop, n.d.).
3. **Reliancefreshdirect.com (Mumbai):** Reliance Fresh Direct provides the convenience of ordering groceries online or on phone. Customers can buy various brands and pack sizes of fruits and vegetables, dairy and bakery, staples, packaged food, household and personal care products (Reliancefresh, n.d.).

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4. **Askmegrocery.com (Pan India):** Askmegrocery.com aims at fulfilling customers' daily grocery requirements and brings a gamut of products ranging from staples, dairy products, personal care products to other household utilities and thousands of brands (Askmegrocery, n.d.).
5. **Zopnow.com (Bangalore, Hyderabad, Mumbai, Navi Mumbai, Thane, Pune and Gurgaon.):** As a starting point for their vision they plan to achieve first mission of delivering "daily needs" items at customers' doorstep in less than 3 hours. They currently carry items ranging from home needs, personal needs, staples, beverages, spices, edible oil, cleaning utilities, baby products and many more (Zopnow, n.d.).
6. **Fabgrocery.com (Kolkata):** Fabgrocery.com a virtual departmental store, serving across Kolkata. Fabgrocery.com is created to fit into the lifestyle of every Kolkatan. They want to ease the grocery shopping experience for every household with wide range of products, on time delivery, competitive prices and much more (Fabgrocery, n.d.).
7. **Bazaarcart.com (Delhi, Noida, Gaziabad):** At BazaarCart.com one can expect the best prices in Delhi/NCR on favourite grocery items because when they sell online, they can sell stuff cheaper (Bazaarcart, n.d.).
8. **Grocermax.com (Gurgaon):** They promptly deliver what you really want, from an assortment of 10,000+ quality merchandise, at customers' doorsteps, always at a price less than the MRP (Grocermax, n.d.).
9. **Naturesbasket.co.in (Mumbai, Delhi, Bangalore, Hyderabad, Pune):** Godrej Nature's Basket is the retail venture of Godrej Group started in 2005 as a single fresh food store. They have today morphed into a 36-store chain of premium gourmet stores strategically located at high street locations in Mumbai, Delhi/NCR, Pune, Hyderabad and Bangalore and have created online presence via this portal (Godrej, n.d.).
10. **SaltnSoap.com (Kolkata):** SaltnSoap, a BlueBeaks initiative, intends to provide its consumers a convenient, social, enjoyable and rewarding experience of shopping their daily grocery needs online from the comfort of their home and offices (SaltnSoap, n.d.).

Definition of terms used in this research study:

1. **Cosine Similarity index:** Cosine similarity is a measure of similarity between two vectors of an inner product space that measures the cosine of the angle between them. The cosine of 0° is 1, and it is less than 1 for any other angle Wikipedia (n.d.). It is thus a judgment of orientation and not magnitude: two vectors with the same orientation have a cosine similarity of 1, two vectors at 90° have a similarity of 0, and two vectors diametrically opposed have a similarity of -1, independent of their magnitude. Cosine similarity is particularly used in positive space, where the outcome is neatly bounded in [0,1]. In information retrieval and text mining, each term is notionally assigned a different dimension and a document is characterized by a vector where the value of each dimension corresponds to the number of times that term appears in the document. Cosine similarity then gives a useful measure of how similar two documents are likely to be in terms of their subject matter.
2. **Images on Site:** Search engines send out automated programs called "spiders" that crawl web sites and search for what type of content it contains (Roy, 2016). Although spiders aren't able to "see" images, they are able to read the text which is associated with those images.
3. **Alexa Traffic Ranking:** Alexa Traffic Rank is traffic rank of a site. The traffic rank is based on 3 months of historical traffic data collected from the users of Alexa Toolbar. It is combined with

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different traffic data source and page views (Agrawal, 2017). Alexa counts the number of visitors and number of page views of all the sites for Alexa traffic rank.

4. **Page Load Time:** Page speed can be described in either "page load time" (the time it takes to fully display the content on a specific page) or "time to first byte" (how long it takes for your browser to receive the first byte of information from the web server) (MOZ, n.d.). No matter how you measure it, a faster page speed is better.
5. **Revenue Per Day:** Revenue of the web site on a daily basis. This is mentioned on each of the SEO websites for the respective online grocery site.
6. **Web Site's Worth:** There are several factors that determine the website valuation price. These include age of the website, domain authority, SEO analysis, Page Rank, traffic Rank, social media interaction, website content and many other factors. These factors are all considered to calculate the estimate of how much the website is worth.
7. **Number of Unique Visitors:** A visit is one individual visitor who arrives at your web site and proceeds to browse. A visit counts all visitors, no matter how many times the same visitor may have been to your site. A unique visit will tell you which visitors are visiting your site for the first time. The website can track this as unique by the IP address of the computer. The number of unique visits will be far less that visits because a unique visit is only tracked if cookies are enabled on the visitors' computer.
8. **Number of Page Views:** Once a visitor arrives at a web site, they will search around on a few more pages. On an average, a visitor will look at about 2.5 pages. Each individual page a visitor views is tracked as a page view (Tendenci, n.d.).
9. **Traffic Source via Organic Search:** This indicates the percentage of visitors who visit the site via a search engine (Tendenci, n.d.). There are primarily four different types of traffic sources (the way visitors find the web site):
    a. **Direct Navigation:** (type URL in traffic, bookmarks, email links w/o tracking codes, etc.)
    b. **Referral Traffic:** (from links across the web, social media, in trackable email, promotion & branding campaign links)
    c. **Organic Search:** (queries that sent traffic from any major or minor web search engines)
    d. **PPC:** (click through from Pay Per click sponsored ads, triggered by targeted key phrases)

METHODOLOGY

The authors have conducted this study in 3 parts, all based on secondary data collected from public web sites.

Part A: In part A, the authors have captured unstructured data (textual) from homepage of 10 grocery shopping web sites using the Rapidminer tool's web mining operators. Hence established a cosine similarity index amongst them. The obtained result guide the authors to understand the similarity in terms of the homepage content and keywords amongst the web sites.

The authors have observed that web sites that are designed as retail interface for online grocery shopping have certain design aspects in common. A quick look at the websites indicates that certain content like product categories, product names, login corner, payment link, mobile app link and so on appear

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in all the pages. In this research work, in part A, the authors have attempted to identify the similarity amongst the homepage textual content of the web sites, thus indicating the difference that exists between them in terms of the online interface content. Using Rapiminer operators, the authors have used the web crawler to connect to the specified web sites and read the content from the homepage. A comparative statistical analysis of the textual content obtained using web mining establishes the similarity index as shown in Table 1.

Output of the Analysis for Part A: From the result obtainined from Rapidminer (Table 1), it can be concluded that the web sites are significantly different in terms of content on the homepage. The highest similarity is seen between the 2nd (askmegrocery.com) and 5th (fabgrocery.com) web sites of 8.1%. The least similarity is seen between the 1st (bigbasket.com) and 2nd (aaramshop.com) and the 3rd (naturesbasket.com) and 5th (fabgrocery.com) websites of 0.28%.

Table 1. Similarity index in %

First website	Second website	Similarity in %
1. Bigbasket.com	2. Askmegrocery.com	0.28
1. Bigbasket.com	3. Naturesbasket.co.in	1.03
1. Bigbasket.com	4. Bazaarcart.com	0.5
1. Bigbasket.com	5. Fabgrocery.com	0.72
1. Bigbasket.com	6. Saltnsoap.com	1.91
2. Askmegrocery.com	3. Naturesbasket.co.in	1.63
2. Askmegrocery.com	4. Bazaarcart.com	3.27
2. Askmegrocery.com	5. Fabgrocery.com	8.13
2. Askmegrocery.com	6. Saltnsoap.com	1.89
3. Naturesbasket.co.in	4. Bazaarcart.com	3.93
3. Naturesbasket.co.in	5. Fabgrocery.com	0.28
3. Naturesbasket.co.in	6. Saltnsoap.com	1.25
4. Bazaarcart.com	5. Fabgrocery.com	0.77
4. Bazaarcart.com	6. Saltnsoap.com	0.94
5. Fabgrocery.com	6. Saltnsoap.com	1.68

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In addition to homepage content, the keywords specified for organic search for the respective web sites have been documented in Table 2. Organic search is used by majority of online users for seeking information by typing search words in search engines. In India, due to the recent interest and growth of online shopping, search keywords becomes an important dimension of web site design. Keyword optimization (the act of researching, analysing and selecting the best keywords to target to drive qualified traffic from search engines to your website) is an important consideration in the overall web site design for reaching maximum number of prospective customers. It is observed that the most common keywords appearing across all the sites are "online grocery shopping", "home delivery" and "supermarket".

Table 2. List of keywords

NO	WEB SITE	KEYWORDS
1	Bigbasket.com	**online supermarket**, online grocery store, buy groceries online**, grocery online**, Buy food online, grocery, online grocery **shopping**, online grocery, food shopping online, online grocery shopping india[29]
2	Aaramshop.com	CPG, FMCG, FREE **Home Delivery**, **online grocery shopping**, aaramshop, india, lizol, neighborhood retailers, hybrid commerce, allout mosquito repellent[30]
3	Reliancefreshdirect.com	reliance fresh, buy grocery online**, online grocery shopping**, online grocery, reliance one card[31]
4	Askmegrocery.com	**grocery shopping online**, online grocery store, online grocery **shopping**, online grocery store in india, online vegetable shopping, Online Fruits shopping, askme grocery, askmegrocery, ask me grocery, askme grocery offers[32]
5	Zopnow.com	buy online, **supermarket**, Grocery delivery, ZOP, hypermarket, grocery, **online grocery shopping**, online grocery, tata tea gold, zopnow[28]
7	Fabgrocery.com	online grocery kolkata, best online grocery store in kolkata, **online grocery shopping** in kolkata, online grocery store Kolkata, grocery store in Kolkata, grocery shopping in Kolkata, online grocery products in Kolkata, fabgrocery, grocery product kolkata, grocery **home delivery** in kolkata[33]
8	Grocermax.com	vegetables, frozen, grocery online, non veg, grocery, **online grocery shopping**, online grocery, online grocery gurgaon[35]
9	Saltnsoap.com	online supermarket, online grocery store, buy grocery online, grocery, **online grocery shopping**, grocery store india, home delivery, best online grocery store, online grocery kolkata, grocery store Kolkata[34]
10	Naturebasket.co.in	**online grocery shopping**, grocery shopping online, online grocery, online **supermarket**, food online, gourmet food india[27]

Part B: In part B, the authors have analysed customer reviews from the online grocery web sites. Fourteen customer reviews have been considered for the study. The authors have used Rapidminer's text mining operators and association rules operators to analyse them and establish association rule from the textual content. Association rule mining finds interesting associations and correlation relationships among large sets of data items. Association rules show attribute value conditions that occur frequently together in a given data set. They provide information in the form of if-then statements and are probabilistic in nature. In addition to the antecedent (if) and the consequent (then), an association rule has two numbers that express the degree of uncertainty about the rule. In association analysis, the antecedent and consequent are sets of items (called item sets) that are

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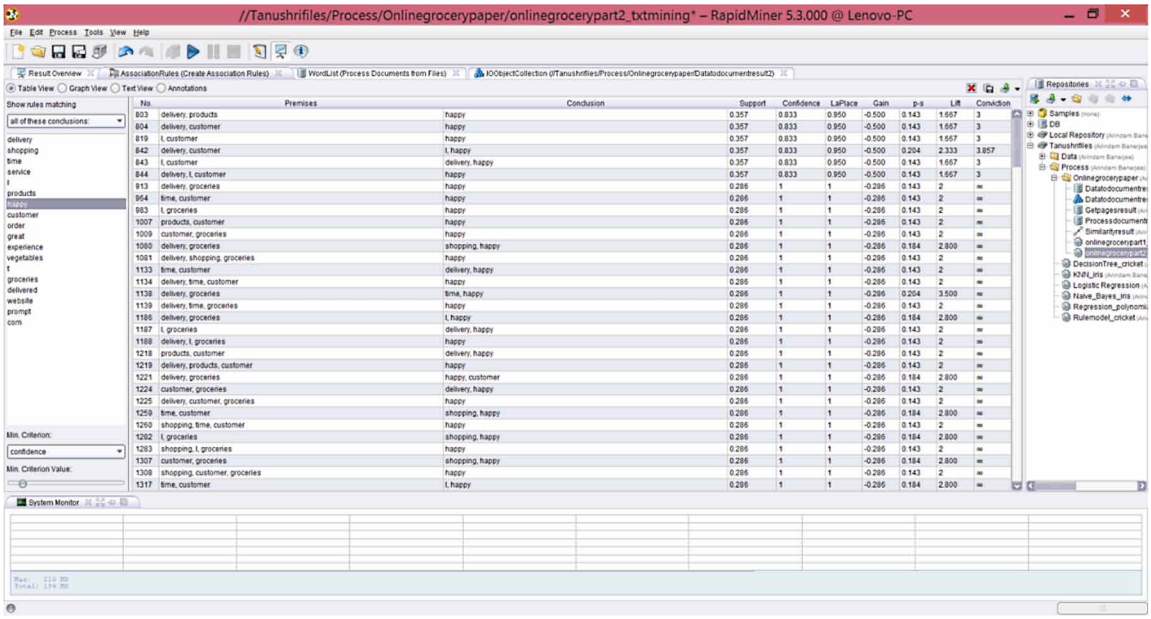
disjoint (do not have any items in common). The first number is called the "Support" for the rule. "Support" is the number of transactions that include all items in the antecedent and consequent parts of the rule. The other number is known as the "Confidence" of the rule. Confidence is the ratio of the number of transactions that include all items in the consequent, as well as the antecedent (the support) to the number of transactions that include all items in the antecedent. "Lift" is a value that gives us information about the increase in probability of the then (consequent) given the if (antecedent) part. The authors have evaluated the customer reviews using these parameters and text mining operators of Rapidminer.

The shopping experience of a customer who shops online is considered satisfactory only when the customer is happy with the overall shopping experience. The authors have addressed this hypothesis from the textual content documenting the customer reviews. The grocery websites have a page for displaying customer testimonials. These are either in text form or video files. The video files have been documented to convert them into text files. Then text mining has been used on the complete set of text files. Using "happy" as the indicator to test their hypothesis, the authors have identified the words that are associated with happiness. The strength of the "Support" of those words existing together across the reviews indicates the areas of focus for the e-tailer to provide an overall satisfactory experience to their customers. The authors have further evaluated the "Confidence" and "Lift" for the associated words that have high "Support" value.

Output of the Analysis from Part B: Analysing the "Support", "Confidence" and "Lift" values from association rule for conclusion word "happy" identifies the words to which happiness of a customer is associated. As seen from Figure 1, the "Support" value is 35.7%, meaning 35.7% times of the customer reviews, the word "happy" exists together with the words "delivery" and "products". This

Figure 1. Association rule output from rapidminer



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indicates that the mention of happiness due to delivery of products has been made only in 35.7% of the total number of reviews. The authors have further noted that there is an 83.3% chance of "happy" existing in customer reviews that mention delivery of products indicating a "Confidence" value of 83.3%. This indicates that the if the customer mentions about delivery of products, there is 83.3% chance of them mentioning happiness. Additionally, the value of "Lift" is 1.667, indicating that occurrence of words "delivery" and "products" has a positive effect on the occurrence of "happy" or that they are positively correlated. We also note that words "delivery" and "groceries" along with "time" and "happy" has a "Lift" value of 3.5, indicating that customers who receive delivery of groceries view it as time saving and are happy with the experience.

Part C: In part C, the authors have captured the parameters (attributes) used by search engine optimization) SEO sites for analysing the online grocery web sites. Then we have tried to identify the correlation amongst these attributes. Several online sites like stattools.com, statvoo.com, informer.com, similarityweb.com and so on have used website usage metrics information and have analysed it using SEO tools and statistical methods. Information used for our study include the following parameters for the 10 websites: daily visitors, daily page views, Alexa rank, page speed score, images on the site in % compared to other content on the site, traffic source on the website of which organic search traffic in %, web site worth in dollars, income per day in dollars. The parameters have been defined in the Methodology section. Using a correlation matrix, the authors have tried to understand the relationship between income per day in dollars made by the web sites to the other parameters, thus identifying the ones that are strongly (> 0.9) correlated. The parameters that have strong correlation to income per day in dollars are the ones that have higher impact on the revenue.

Output of the Analysis from Part C: The correlation matrix in Table 3 indicates a strong correlation between "Daily page views" – 0.97, "Daily visitors" - 0.98, "web site's estimated worth in dollars" – 0.99 to "income per day in dollars". The Alexa ranking is negatively correlated as less the Alexa ranking more visited is the web site. However, from the findings, the Alexa ranking does not seem to be affecting the income per day. Similarly, the number of images on the website, the time taken by the pages to load and the traffic source via search engines do not have significant impact.

Table 3. Correlation matrix

	INCOME PERDAY ($)	DAILY VISITORS	DAILY PAGEVIEWS	ALEXA RANK	PAGE SPEED SCORE (%)	ESTIMATED WORTH ($)	IMAGES (%)	SEARCH TRAFFIC (%)
INCOME PERDAY ($)	1							
DAILY VISITORS	0.978	1						
DAILY PAGEVIEWS	0.970	0.998	1					
ALEXA RANK	-0.392	-0.366	-0.338	1				
PAGE SPEED SCORE (%)	0.225	0.161	0.167	-0.103	1			
ESTIMATED WORTH ($)	0.988	0.969	0.968	-0.313	0.277	1		
IMAGES (%)	-0.459	-0.436	-0.452	0.278	-0.318	-0.523	1	
SEARCH TRAFFIC (%)	-0.077	-0.152	-0.155	0.022	0.768	-0.051	-0.270	1

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RESULTS

The research conducted led to the following outcomes. The summary of the results can be stated as follows:

In part A, analysis provides the following results:

1. Maximum similarity between the homepage content of online grocery shopping websites (10 considered for this study) is 8.1% and minimum similarity is 0.28%
2. The most common keywords appearing across all the 10 web sites are "online grocery shopping", "home delivery" and "supermarket"

In part B, analysis provides the following results:

1. Happiness with the experience of using the online grocery web site is positively correlated to delivery of groceries.
2. The correlation is stronger when the delivery of the grocery is done timely.

In part C, analysis provides the following results:

1. The income per day in dollars made by the e-tailers of grocery online is strongly correlated to number of visitors on the website, number of page views and web sites' worth in dollars.
2. It is not affected by Alexa ranking, images on the website, the time taken by the pages to load and the traffic source via organic search engines.

DISCUSSION OF RESULT

Results of the study will help identify the keywords that e-tailers of grocery online anticipate the Indian consumers to use while using a search engine to get to online grocery web sites. Common keywords used in search engines would fetch all the web sites containing the keywords. Thus, the results will encourage e-tailers to uniquely differentiate from competitor websites by keyword optimization. It will also identify consumer preferences from the customer review analysis. With the statistically obtained result, the e-tailer is reassured that timely delivery of groceries makes an Indian customer happy. It may be important to identify what else is associated with happiness which did not show significantly due to the limited number of samples used for the study. The result obtained from the correlation matrix will help identify the parameters that drive per day revenue for the online retailer. Due to the limited sample size, further statistical analysis could not be carried out to establish the strength of the impact of the independent variable on per day revenue, however the strength of the correlation identifies the impacting variables. Further studies can help devise creative strategies for optimizing web site metrics for increasing revenue.

CONCLUSION

Originality/value: While study on individual online grocery shopping sites in India have been conducted, the authors have not come across a comparative study of the sites both from the point of content analysis

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as well as usage information. Results obtained from the study will be useful for online retailers in designing their web sites for generating more revenue and increase number of happy customers. The similarity index will identify the similarity in terms of textual content that exists between their and competitor web sites. The keywords similarity and difference highlight what competing sites use to show up in organic searches. The academic researchers who work in online retailing space can use the results of the study to carry out similar research with larger data sets.

Future Directions and Limitation of Study: Online grocery shopping web sites catering to customers are at its nascent stage and small in number in India. Hence, the limitation of this study has been the small sample size both in terms of the number of grocery online web sites and the number of customer reviews available from the web sites. Similar studies can be carried out with other e-tailer web sites and web portal sites (assortment of products from different vendors) that are comparatively larger in number. Larger data sets and sample size thus obtained can be used to test the association rule and the correlation matrix for further statistical outcomes.

REFERENCES

Aaramshop. (n.d.). Retrieved January 10, 2018, from http://www.aaramshop.com/

Adrian, T. & The Nielsen Company. (2012). Nielsen featured insights: The advent of 'me'-tailing and how India's shoppers are now buying online. Retrieved February 24, 2016, from http://www.nielsen.com/content/dam/corporate/india/reports/2012/Me-tailing-and-how-India-shoppers-are-now-buying-online.pdf

Agrawal, H. (2017). How can I improve my Alexa ranking. Retrieved January 5, 2018, from https://www.shoutmeloud.com/how-can-i-improve-my-alexa-ranking.html

Andrews, R. L., & Currim, I. S. (2004). Behavioural differences between consumers attracted to shopping online versus traditional supermarkets: Implications for enterprise design and marketing strategy. *International Journal of Internet Marketing and Advertising*, *1*(1), 38–61. doi:10.1504/IJIMA.2004.003689

Askmegrocery (n.d.). Retrieved March 4, 2016, from www.askmegrocery.com

Banerjee, A., & Banerjee, T. (2017). *Weaving Analytics for Effective Decision Making* (1st ed.). SAGE Publications India Pvt Ltd.

Barnes, S. J., Bauer, H. H., Neumann, M. M., & Huber, F. (2007). Segmenting cyberspace: A customer typology of the internet. *European Journal of Marketing*, *41*(1/2), 71–93. doi:10.1108/03090560710718120

Bazaarcart (n.d.). Retrieved March 4, 2016, from https://www.bazaarcart.com/

Bigbasket (n.d.). Retrieved January 10, 2018, from https://www.bigbasket.com/

Brengman, M., Heuens, M., Weijters, B., Smith, S. M., & Swinyard, W. R. (2005). Segmenting internet shoppers based on their web-usage related lifestyle: A cross cultural validation. *Journal of Business Research*, *58*(1), 79–88. doi:10.1016/S0148-2963(02)00476-9

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Brown, M., Pope, N., & Voges, K. (2003). Buying or browsing - an exploration of shopping orientations and online purchase intention. *European Journal of Marketing*, *37*(11/12), 1666–1684. doi:10.1108/03090560310495401

Danaher, P. J., Wilson, I. W., & Davis, R. A. (2004). A comparison of online and offline consumer brand loyalty. *Marketing Science*, *22*(4), 461–476. doi:10.1287/mksc.22.4.461.24907

Degeratu, A., Rangaswamy, A., & Wu, J. (2000). Consumer choice behavior in online and traditional supermarkets: The effects of brand name, price and other search attributes. *International Journal of Research in Marketing*, *17*(1), 55–78. doi:10.1016/S0167-8116(00)00005-7

Fabgrocery. (n.d.). Retrieved March 4, 2016, from http://www.fabgrocery.com/

Francesca, R., & Rettie, R. (2009). Online grocery shopping: The influence of situational factors. *European Journal of Marketing*, *43*(9/10), 1205–1219. doi:10.1108/03090560910976447

Godrej Nature's basket (n.d.). Retrieved January 10, 2018, from http://www.naturesbasket.co.in/

Grocermax. (n.d.). Retrieved March 4, 2016, from https://grocermax.com/

MOZ. (n.d.). Page speed. Retrieved February 25, 2016, from https://moz.com/learn/seo/page-speed

Ramsey, G., & Bapna, S. (2016). Text mining to identify customers likely to respond to cross selling campaigns. *International Journal of Business Analytics*, *3*(2), 33–34. doi:10.4018/IJBAN.2016040102

Ramus, K., & Nielsen, N. A. (2005). Online grocery retailing: What do consumers think? *Internet Research*, *15*(3), 335–352. doi:10.1108/10662240510602726

Reliancefresh. (n.d.). Retrieved January 10, 2018, from http://www.reliancefresh.co.in/

Rohm, A. J., & Swaminathan, V. (2004). A typology of online shoppers based on shopping motivations. *Journal of Business Research*, *57*(7), 748–757. doi:10.1016/S0148-2963(02)00351-X

Roy, J. (2016). Alt tags and other image optimization tools. Retrieved February 24, 2016, from http://seositecheckup.com/articles/alt-tags-and-other-image-optimization-tools

SaltnSoap. (n.d.). Retrieved January 10, 2018, from http://saltnsoap.com/

Swedowsky, M. (2009). Analyst report: online grocery shopping: ripe time for resurgence. Retrieved February 24, 2016, from http://www.nielsen.com/content/dam/corporate/us/en/newswire/uploads/2009/10/Nielsen-OnlineGroceryReport_909.pdf

Tendenci. (n.d.). Meaning of hits, visits, views, traffic sources - web analytics definitions. Retrieved February 25, 2016, from https://www.tendenci.com/help-files/meaning-of-hits-visits-page-views-and-traffic-sources-web-analytics-definitions/

Thmmiya, P. P., & Kulkarni, M. (2017). Online grocery market set for big action in 2017. *Financial Express*. Retrieved January 2, 2018, from http://www.financialexpress.com/industry/online-grocery-market-set-for-big-action-in-2017/616867/

Turban, E., Sharda, R., Delen, D., & King, D. (2011). Business Intelligence: A Managerial Approach. (Second ed., Indian subcontinent vers.). PEARSON.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Wikipedia. (n.d.). Cosine similarity. Retrieved February 25, 2016, from https://en.wikipedia.org/wiki/Cosine_similarity

Zopnow. (n.d.). Retrieved January 10, 2018, from https://www.zopnow.com/

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Chapter 24
Online Store Attribute Preferences:
A Gender Based Perspective and MCDM Approach

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ABSTRACT

This article describes how purchasing from an online store depends on various attributes of the online store. The relative importance given to a particular factor may vary across gender. Thus, it generates a scope of inquiry for understanding the consumer behavior while making an online purchase. Hence, this article tries to understand the relative importance of the factors affecting consumers buying behaviors while shopping online. This article utilizes Fuzzy AHP and TOPSIS for finding relative weights of criteria and ranking of the alternatives available respectively. The results were analyzed for finding the relative importance of factors across gender. The article finds that security of transactions is the topmost priority for both males and females, but they put a different level of importance on rest of the factors. The results provide valuable insights which can help the online stores in prioritizing the important factors for future improvements.

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1. INTRODUCTION

In the internet based commerce or shopping, the consumers are in direct contact with the online store but cannot experience the products directly unlike the brick and mortar shop. This lack of experiencing or touching the product creates various barriers in the minds of consumers towards purchasing online. Therefore, the online stores have to improve various aspects of their services to attract or retain the customers. In other words, the online store cannot provide the direct experience of the product, but it can work on other concerned aspects affecting the purchase intentions of customers.

Currently in India, with the increasing penetration of internet services, the number of consumers buying online is growing at a remarkable pace. According to Forrester report on online retail forecast 2016-2021, Indian e-commerce market is set to grow at the fastest pace in the Asia Pacific region. As reported by IBEF, Indian retail industry is expected to increase at CAGR of 16.7% over 2015-2020. The size of the retail market is projected to be US$1.3 billion by 2020. With the penetration of internet and changes taking place in lifestyle of people, more people are going for an online purchase. Indian online retail sector is projected to grow from US$6 billion to the US $70 billion during FY15- FY20 (www.ibef.org, 2017). These numbers show the potential of this vast market. Therefore, it becomes necessary to study various aspects related to online shopping because of its growing importance.

There are diverse factors which affect the behavior of consumers in a market. The existence of diverse and large number of factors makes it difficult for the online shopping stores to focus their attention on all of them. Therefore, there is need to understand the most important factors which are highly relevant for the consumers. Final decision made by a consumer is based on more than one factor, and this makes it a multi-criteria decision-making (MCDM) problem. AHP is one of the extensively used MCDM methods for decision making, but it is deterministic. As the store attributes like product information quality, security of transactions, etc. are subjective, and it becomes difficult for the consumer to quantitatively allocate a number to these factors. To circumvent with this problem, this paper makes use of the fuzzy AHP approach.

This paper discusses the use of fuzzy AHP to understand the relative significance of various store attributes for a consumer buying online. This is done by computing the weights of some relevant factors affecting the consumer behavior. Weighing the factors helps in prioritizing them for business improvement and make better business decisions (Cheng & Li, 2001). Hence, the main aim of this study is to find relative importance of store attributes for shoppers (males and females).

The paper is structured as follows. The first section gives a brief introduction about the online buyer behavior with special reference to India. The second section reviews the relevant literature on store attributes, consumer behavior in online shopping and their relationships. It also involves the review of studies focusing on studying the effect of gender in shopping behavior. The third section describes the design of study and method used to prioritize the factors. The fourth and fifth sections present the analysis of data. The last section concludes and discusses the implications of findings for online stores or e-commerce websites.

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2. LITERATURE REVIEW

2.1. Online Shopping Behavior

The growing importance of online shopping has led the researchers to increasing study and analyse this aspect. There are many studies which focus on understanding the factors which affect the behavior and purchase intentions of the shopper or consumers. These studies help the online shopping websites to improve upon various aspects related to their services. One of the factors which play an important role in consumer response is the experience gained by the customer. This is because of the fact that shopping is not only a mechanical process, but also an enjoyable experience for many customers. This experience of the customer gets affected by many other factors (Won Jeong, Fiore, Niehm, & Lorenz, 2009). Jeong et al. (2009) studied the impact of website features like product presentation on the responses of the consumers. The experiential value gained by the consumer changes with the types of product presentations on apparel websites.

The business model of e-commerce players is such that they aim to create an online shopping habit which they could encash in the future. This industry is still at nascent stage, and it is emerging. The present study proposes to study the impact of gender on various factors affecting the purchase behaviors. This type of study is relevant because as the consumers gain experience in online shopping then their socioeconomic characteristics like age, gender and income do not moderate the perceptions of e-commerce (Hernández, Jiménez, & José Martín, 2011). However, as the industry is at the nascent stage now, it becomes imperative to study the effect of gender or other socioeconomic factors on their intentions.

The content and the way of presentation of products on website impacts the consumers' willingness to go to a particular online store (Park & Kim, 2003). As the number of players in online shopping industry is increasing, the competition is going to be fierce in future. As the customers become more experienced in online shopping, they shift their focus from within chain across multiple channels to across multiple stores within the online channel, making the assortment and attractiveness more imperative in selection (Melis, Campo, Breugelmans, & Lamey, 2015). The competitors will have to differentiate their store from others to make more and more customers choose their store. Because the website with unpleasant visual and navigational design and lack of information about the product may irritate the customers (Hasan, 2016), it may have a negative impact on purchase intentions of the consumer. Therefore, it is vital to devote attention to the attributes of online stores. The characteristics of online stores have been categorized into four categories: Merchandise, navigation, customer service, and convenience, and security (Lohse & Spiller, 1998):

- **Merchandise:** This attribute includes product-related aspects like variety and assortment of the products and product information available. Customers prefer a large variety of products to select from (Lohse & Spiller, 1998). According to Lohse and Spiller (1998), most sellers do not exploit the opportunity of providing detailed product information on the store. The online stores should give some emphasis on the informational content of websites to make certain that customers are not provided with unnecessary information (Hasan, 2016), which may lead to distraction and irritation;

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- **Service:** This is the second attribute of online store, which indicates the level of service responsiveness of the store (Lohse & Spiller, 1998). Various aspects involved in service attribute are payment policies, response to FAQs, information about the shipping and quality of the products, gift services, promotions, and offers. The promotion may include the frequent buyer schemes, product related tips, and events to attract the customers;
- **Navigation and convenience:** The convenience attribute includes the store design, organization characteristics and simplicity of use. This may also involve the checkout in the least possible time and help indicators wherever required. Navigation has been characterized by features like product search, overall site design, organization, and reliable navigation links to browse the website faster. The user interface is the only thing through which the customer interacts with the store and vice versa, and it is the first thing which forms an impression on consumers' mind. Therefore, it becomes highly essential to improve the user interface to minimize the effort of the user by focusing on navigation and convenience. As shopping is not a process only, it is a fun activity for many shoppers;
- **Security:** Risk perceptions regarding internet privacy and security are emerging nowadays. It has been recognized as an important concern for both new and veteran users (Miyazaki & Fernandez, 2001). Buyers want to be assured of the protection of their private information and secure transactions while buying something. Consequently, users' perception of the security features of a particular online store will also impact their purchase decisions.

The present study will find the order of preference of these attributes of an online store so that the retailers can focus on improving the highly preferred attributes. The existing literature explains the gender differences in purchase intentions, and various factors that are affecting both the genders differently. In that context, this paper tries to find how the gender differences create a difference in the preference order of the attributes.

Majority of the existing studies have been performed for the shopping of apparel products online. The acceptance of online shopping differs across the categories of products (Lian & Lin, 2008). Accordingly, the criteria affecting the purchase intention may also differ across the category of products. Without any doubt, apparel is one of the major categories of products sold online. However, there are other types of products frequently bought over the internet like electronic products. There is a need to study the factors affecting the purchase intentions towards electronic products. Future studies may look at more than one product categories.

The attributes of online stores do not convey their complete meaning from their names because they include many sub-factors in them. Therefore, to make it more feasible for the decision makers, the subfactors have been chosen to convey the meaning of those attributes. For symbolizing merchandizing attribute, product variety and amount of product information provided have been chosen as the criteria. Similarly, to indicate the service and promotion attribute, payment policies and offers and schemes have been chosen. From convenience and navigation attribute, ease of using the website is taken. Then the last security attribute is framed as the security of transactions. In addition to this parameter, one extra parameter which is included is the trust towards e-commerce brand or company. Gefen et al. (2003) have pointed out that along with other aspects like ease of use and perceived usefulness, trust is also an important factor for online shopping.

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2.2. Differences in Gender

Many studies have reported the difference in the online shopping behaviors of males and females. The difference in orientations and willingness to purchase (Hansen & Møller Jensen, 2009), different attitudinal components (Hasan, 2010) and risk perceptions and acceptance of recommendations (Garbarino & Strahilevitz, 2004) for males and females have been studied. Women perceive more risk in the online purchase and are frequent in buying products recommended by their friends. Also, there is a difference in the level of internet usage across the genders. A quite significant gender difference has been reported in the cognitive attitudes of persons. It is found that females value the usefulness of online shopping less as compared to males (Hasan, 2010). Also, females more often shop for fun and men are the quick shoppers (Hansen & Møller Jensen, 2009).

The perceived ease of purchasing online has more significant effect on attitude and buying intentions of females vis-à-vis males. However, the impact of personal awareness of the security is more in males (Chiu, Lin, & Tang, 2005).

3. METHODOLOGY

As it is clear from the extant literature, some factors affect the decision-making process of the consumers. With the increasing competition, it is of paramount importance for online retailers to attract customers to their website. It is clear that there are a large number of factors which affect the user intention. In this paper, we aim to find out the most significant factors which affect the user intention. The insights derived from this study would help the retailers in improving their services and making better decisions. To achieve this purpose, the present study uses one of the multi-criteria decision-making models as the decision made by the users is based on multiple parameters. AHP provides the means to prioritize the factors and identify the interrelationships that exist among them (Saaty, 1988).

3.1. Modified Delphi Method

Delphi method obtains and examines the results presented in written, oral and feedback formats by anonymous specialists (C.-W. Chang, Wu, & Chen, 2008). Delphi method involves five steps: "1) selecting the anonymous experts; 2) conducting the first round of survey; 3) conducting the third round of questionnaire survey; 4) conducting next round of survey; 5) integrating the expert opinions to reach consensus" (Sung, 2001). According to Murry and Hammons (1995), the minimum size of panel is suggested to be 10 and maximum can be 25-30. As the chances of new idea generation in a homogenous group decrease when the size approaches thirty participants. Therefore, the number of participants selected for the present study is limited to 25. In order to study the impact of gender, 25 males and females have been selected to participate in the panel. To make sure that the participants are capable enough to express an opinion about online shopping of electronic goods and online store attributes, the selection criteria are that they must have bought an electronic gadget like TV, mobile phone, etc. online during the period of last three months.

In the first round of the survey, the participants were requested to assess the available criteria on a scale of 1-5 based on its importance while making an online purchase. After this round, top 7 criteria were selected for applying fuzzy AHP approach. In next round, males and females were provided with the

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Table 1. Fuzzy linguistic scale

Linguistic Scale	TFNs	Reciprocal TFNs
Equally important	(1,1,1)	(1,1,1)
Weakly more important	(2/3,1,3/2)	(2/3,1,3/2)
Strong more important	(3/2,2,5/2)	(2/5,1/2,2/3)
Very strong more important	(5/2,3,7/2)	(2/7,1/3,2/7)
Absolutely more important	(7/2,4,9/2)	(2/9,1/4,2/7)

questionnaire containing pairwise comparisons of the criteria selected in the last step. Then Fuzzy AHP was applied to responses of each of the participant and aggregated result of the panel was presented. In the third round of the survey, the participants were allowed to change the selections made in last round. Again, the results of third round were presented, and participants were allowed to make further changes. After the fourth round, the responses of the participants showed significant convergence. Thus, the cycle of the survey was stopped. The responses of last round of survey were then used to calculate the final weight of the criteria by using Fuzzy AHP Approach.

3.2. Fuzzy AHP (Analytic Hierarchy Process)

To make complex decisions based on multiple criteria, some organization is needed. This can be the hierarchical representation of factors and alternatives (Saaty, 1988). This hierarchy of goals, characteristics, and issues provides a full picture of the intricate problem and assesses whether issues at one level are of the same scale (Saaty, 1990). According to Saaty (1990), "AHP is how to derive relative scales using judgment or data from the standard scale and how to perform arithmetic on such scale avoiding useless number crunching." In AHP, the decision maker is probed to assign pairwise comparison ratios to the attributes or factors at each level of hierarchy because the pairwise comparison concentrates on the judgment. These comparisons can be done on the basis of criterions recognized in memory through experience (Saaty, 1990).

The traditional AHP is used for the deterministic and crisp situations, but the situations involving some degree of vagueness cannot be dealt with normal AHP. In that case, Fuzzy AHP is used, in which the pairwise comparisons are expressed in terms of fuzzy numbers. Then these comparisons are aggregated, and final priority vector is synthesized.

In the extent analysis method proposed by Chang (1996), the degree to which an object can achieve a goal is considered. This extent is quantified by using triangular fuzzy numbers. The Triangular Fuzzy numbers (TFNs) are used for expressing the pairwise comparisons among the criteria or attributes. TFNs are denoted as (l, m, u) where l<= m<= u for a fuzzy event. The TFN scale used in the present study is shown in Table 1.

Using this TFN scale the fuzzy comparison matrix is constructed for all the attributes. As there are seven attributes to be compared in the present study, so the 7x7 matrix is constructed for them. The fuzzy judgement matrix A={aij} is of the form:

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$$A=\begin{bmatrix} 1 & a12 & \dots & a1n \\ a21 & 1 & \dots & a2n \\ \vdots & & & \vdots \\ an1 & \dots & \dots & 1 \end{bmatrix}$$

Here aij if a TFN of form aij=(lij,mij,uij). For each TFN, the membership function is continuous mapping for real number $-\infty \le x \le \infty$ to the closed interval [0,1]. The membership function, μa(x) is given by:

$$\mu a=\begin{cases} \dfrac{x-l}{m-l}, l \le x \le m \\ \dfrac{u-x}{u-m}, m \le x \le u \\ 0, otherwise \end{cases}$$

The responses collected from multiple experts are combined by using the fuzzy geometric mean method as suggested by Buckley (1984). In the next step, the fuzzy synthetic degree values are obtained by using following formula:

$$Si=\sum_{j=1}^{m} M_{gi}^{j} \otimes \left[\sum_{i=1}^{n}\sum_{j=1}^{m} M_{gi}^{j}\right]^{-1}$$

The degree of possibility of $M2 \ge M1$ is defined as:

$$V\left(M2 \ge M1\right) = \sup_{y \ge x} \min\left(\mu_{M1}\left(x\right), \mu_{M2}\left(y\right)\right) \text{w'(Si)}$$

$$\mu_{M2} = \begin{cases} 1, & if\ m2 \ge m1 \\ 0, & if\ l1 \ge u2 \\ \dfrac{l1-u2}{\left(m2-u2\right)-\left(m1-l1\right)}, & otherwise \end{cases}$$

Each w'(S) value represents the relative weight or preference of one criterion over another. These weights are then normalized to obtain $W=(w(S1),w(S2),\ldots,w(Sn))^T$. These weights are required to calculate the rank or score of the attributes.

To ensure the consistency in the responses of the decision makers, consistency ratio (CR) is computed for comparison matrix. CR is ratio of Consistency Index (CI) and Random Consistency index (RI). The values of RI have been suggested by Saaty (1990) depending on some criteria compared. If CR is less than 10%, then the comparisons are acceptable:

$$CI = \frac{\lambda_{max} - n}{n-1}$$

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Table 2. Aggregated response matrix for male responses

	Variety of Products	Product Information	Mode of Payment	Offers	Ease of Use	Security of Transaction	Trust
Variety of products	(1,1,1)	(0.73,0.9,1.14)	(1.04,1.29,1.59)	(0.68,0.85,1.07)	(0.74,0.96,1.25)	(0.40,0.46,0.52)	(0.56,0.69,0.87)
Product information on website	(0.88,1.09,1.36)	(1,1,1)	(0.81,0.98,1.17)	(0.57,0.73,0.94)	(1.14,1.51,1.96)	(0.42,0.48,0.56)	(0.68,0.85,1.06)
Mode of payment	(0.62,0.77,0.96)	(0.84,1.01,1.22)	(1,1,1)	(1.01,1.18,1.38)	(0.59,0.76,0.98)	(0.6,0.74,0.9)	(0.6,0.77,1.00)
Offers or discounts offered	(0.93,1.18,1.47)	(1.06,1.37,1.75)	(0.72,0.84,0.98)	(1,1,1)	(1.20,1.56,2.00)	(0.54,0.66,0.8)	(0.77,0.97,1.24)
Ease of use of website	(0.79,1.04,1.34)	(0.51,0.66,0.87)	(1.02,1.31,1.68)	(0.5,0.64,0.83)	(1,1,1)	(0.56,0.69,0.85)	(0.52,0.58,0.67)
Security of transaction performed	(1.90,2.19,2.47)	(1.77,2.07,2.39)	(1.10,1.35,1.66)	(1.24,1.53,1.86)	(1.17,1.45,1.78)	(1,1,1)	(0.97,1.18,1.4)
Trust on online store	(1.15,1.45,1.79)	(0.94,1.18,1.47)	(1.00,1.29,165)	(0.81,1.03,1.31)	(1.48,1.71,1.92)	(0.71,0.85,1.03)	(1,1,1)

The fuzzy eigenvector of A matrix is calculated by using:

$$Vi = \left(\prod_{j=1}^{n} aij \right)^{1/n}$$

$V_1=(a_{11}*a_{12}*.....*a_{1n})^{1/n}$

.....

$Vn=(a_{n1}*a_{n2}*.....*a_{nn})^{1/n}$

The Eigenvector V_i is compounded as $V = (V_1, V_2,.....V_n)$. For testing the consistency, Saaty proposed following relation:

$\lambda m_{ax} = V * w$

Here, w is computed by summing the columns of preference matrix. For example, for responses from males, the aggregated response matrix is shown in Table 2.

W= ((7,9,10) (7,8,10) (7,8,10) (6,7,8) (7,9,11) (4,5,6) (5,6,7))

V = ((0.70,0.84,1.1) (0.74,0.90,1.07) (0.734,0.87,1.05) (0.86,1.04,1.26) (0.67,0.81,0.99) (1.26,1.48,1.72) (0.98,1.18,1.41))

$\lambda m_{ax=}$ (5.15, 7.36, 72.8)

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If the central number is taken as a crisp number corresponding to $\lambda m_{ax,}$ then CI = 0.06 and CR = 0.05 < 0.1. Hence, the comparison matrix is consistent. Similarly, for the comparison matrix for females' responses were also consistent.

3.3. TOPSIS

Topsis (Technique for Order performance by the similarity of Ideal solution) is one of the multi-criteria decision making or multi-attribute decision-making methods. In this method, the decision makers structure the problem to be solved, and then after comparison, rankings of the alternatives are calculated. This ranking is calculated by relative closeness to positive and negative ideal solutions. Because of sound logic, simple computation process and a scalar value that accounts for both positive and negative ideal solution, Topsis is a major MCDM approach among others (Shih, Shyur, & Lee, 2007).

Topsis is a practical technique for selecting the alternatives based on multiple criteria of evaluation. The calculation is based on the method of estimating the distance of each alternative from best solutions (both positive and negative). The solution should be nearest to the positive ideal solution and farthest from the negative ideal solution. This method has several advantages over other MCDM/ MADM approaches like a scalar value is used which takes into account both positive and negative ideal solutions simultaneously. Also, the computation is more straightforward and can be done quickly in a spreadsheet. It further helps to integrate various measurement units into one dimensionless unit (Kim, Park, Chan, & Yun, 1997).

As in most of the practical decisions, more than one decision makers are involved. Therefore, the alternative preferences of various decision-makers need to be combined. According to TOPSIS extension proposed by Shih et al. (2007), the separation measures can be calculated after calculating the geometric or arithmetic average of the individual responses. In the present study, the responses of the DMs have been combined by taking the arithmetic means of individual responses.

In TOPSIS, the collected responses are normalized using:

$$r_{ij} = x_{ij} / \sum x_{ij}^2$$

x_{ij} is score of an option i with respect to criterion j and there are m number of options and n number of criteria. After this step, the weighted normalized decision matrix is created:

$$v_{ij} = w_j * r_{ij}$$

Then, the separation measure is calculated for each alternative which indicates the separation of an alternative from the positive and negative ideal solutions. These measures are obtained as:

$$S_i^* = \left[\sum_j \left(v_j^* - v_{ij}\right)^2\right]^{\frac{1}{2}}, i = i,\ldots,m alternatives$$

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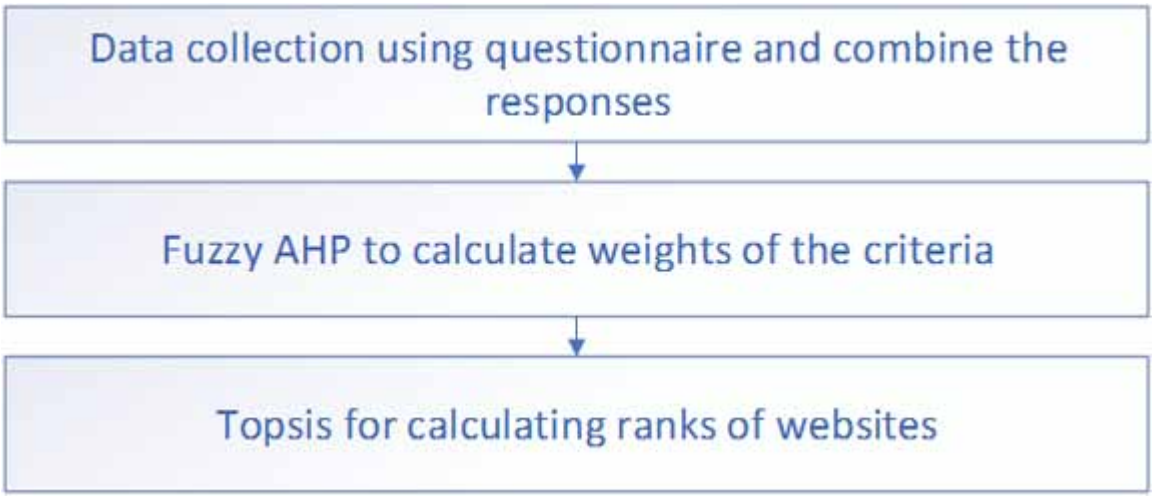
Figure 1. Flow of study



Here v_j^* corresponds to positive ideal solution values. Similarly, the separation values S_i^{*-} can be calculated from negative ideal solution. By using these separation values the relative closeness to ideal solution C_i^* is calculated by using:

$$C_i^* = \frac{S_i^{*-}}{S_i^* + S_i^{*-}}, 0 < C_i^* < 1$$

Based upon the values of closeness index, the alternatives are ranked. The highest value of closeness index implies the best alternative among the available options.

4. PROPOSED MODEL

In this era of targetting a particular segment of customers, it becomes highly essential to classify and target them based on gender. The extant literature also clearly points out that the gender plays an important role in consumer choice making, and males and females behave differently while shopping. However, the question is how they should be targetted in the online scenario, where there is no direct contact with the customer. In case of online shopping, the customer interacts through the interface and comes across various store attributes like merchandise, services, etc. It is of great consequence to know about the dominant attributes influencing the consumers with different genders. This study helps to address this need. The results will help online stores to improve their characteristics and attract more customers.

Figure 1 shows the flow of study.

First, the Delphi method is used to collect the responses about various store attributes and their relative importance. Then, these responses from both genders are subjected to fuzzy AHP application, and final weights of the factors are calculated. These weights act as input for next step, i.e., TOPSIS. In this step, the alternative online shopping websites are compared based on the criteria or factors selected in

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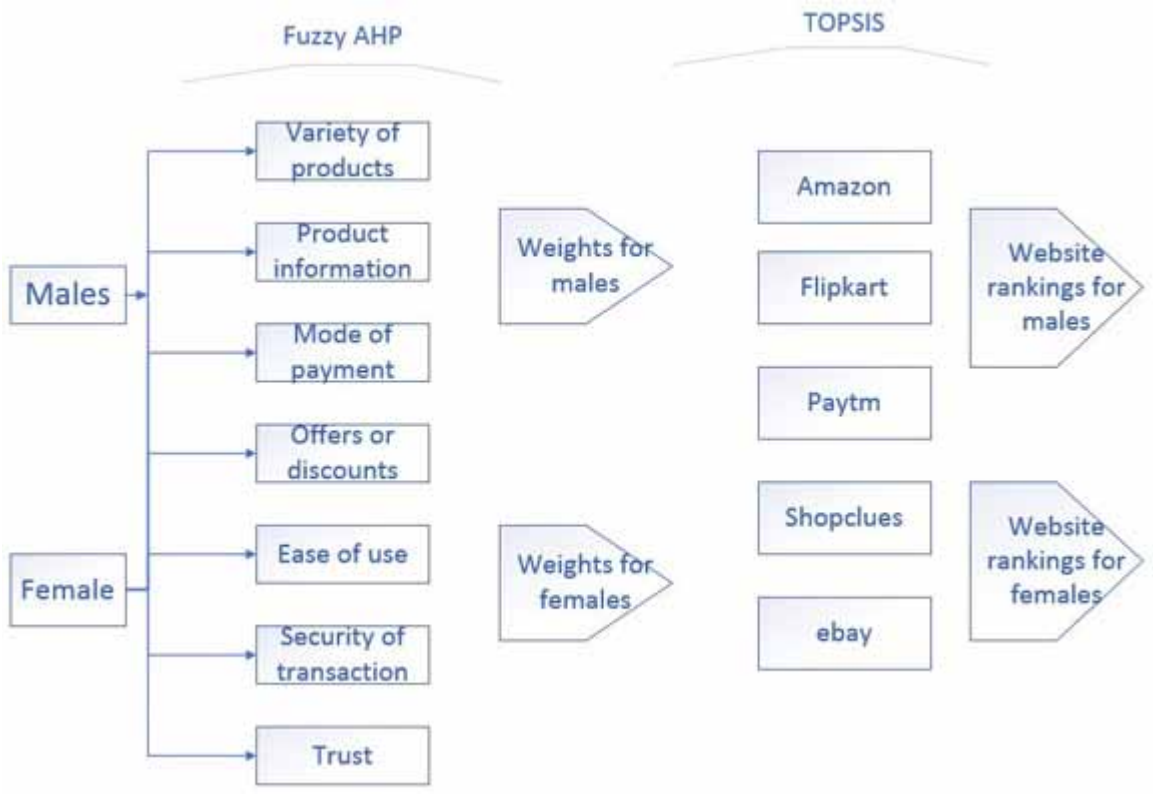
Figure 2. Detailed architecture of study



previous steps. Finally, this leads to the priority list of the alternatives for the consumers. However, the primary focus of the study is to find relative importance of factors, which is the result of the second step (see Figure 2).

Steps to be performed:

Step 1: Data collected on the preference of criteria (from both the genders) is converted from linguistics to corresponding fuzzy numbers and is subjected to fuzzy AHP method.
Step 2: Eigenvector method is used for calculating the weights of criteria.
Step 3: Major market players, who sell electronic products along with other products, in the e-commerce industry are selected.
Step 4: Data collected about the e-commerce website ratings on selected criteria is then subjected to TOPSIS for selecting the most preferred one.
Step 5: Calculation of S* (positive ideal solution) and S*- (negative ideal solution).
Step 6: Then by using S* and S*-, compute the closeness ratio to select the best alternative finally.

Although, the results can be obtained by using only fuzzy AHP for both calculating the weights and evaluating the alternatives yet the present study adopts a hybrid model of fuzzy AHP and TOPSIS. This is because the prime motive of the study is to find the relative significance of attributes, rather

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Table 3. Weights of the store attributes for both males and females respondents

Attribute	Males	Females
Variety of products	0.068	0.122
Product information on website	0.105	0.158
Mode of payment	0.07	0.148
Offers or discounts offered	0.166	0.156
Ease of use of website	0.057	0.122
Security of transaction performed	0.32	0.165
Trust on online store	0.21	0.129

than evaluating the performance of few stores with respect to those attributes. Also, TOPSIS has some advantages as compared to other MCDMs. Therefore, the hybrid model is used in this study.

5. RESULTS AND DISCUSSION

After the first round of the survey, the seven criteria selected are variety of products offered, product information provided on the website, mode of payment, offers and discounts, ease of use of the website, security of the transaction performed and trust for the online store. The relative weights of these criteria for males and females are shown in Table 3.

The 'security of transactions' performed is the priority for both males and females. This may be due to the spread of awareness about the risk related to security and privacy of online transactions among the young population. For males, the 'trust' on store is the second highest factor, while for females it is 'offers and discounts'. This finding is in line with that of Hasan (2010) showing that females are less utility oriented buyers as compared to males. This encourages females to get more attracted towards 'of-

Figure 3. Graph showing the difference between the preferences of males and females

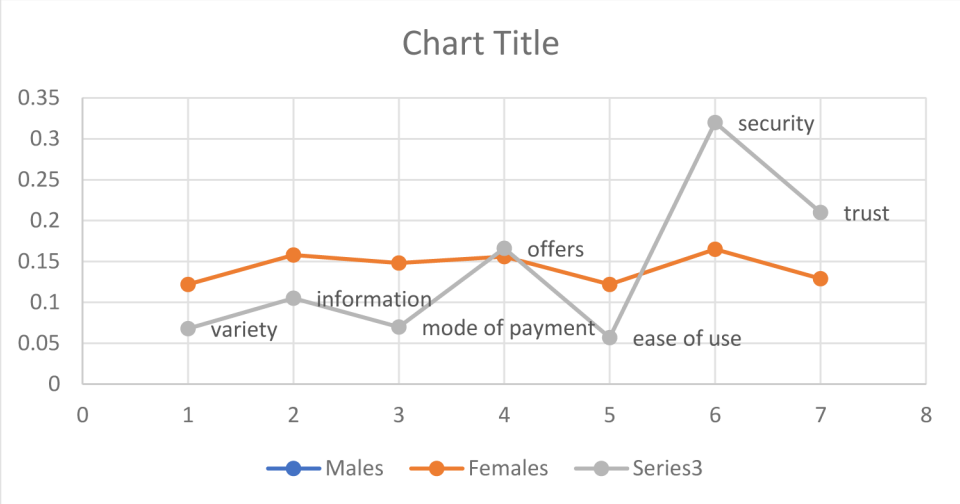

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Table 4. Weights of top four store attributes assigned by rural and urban customers

	Rural	Urban
Product information	0.166434	0.159847
Offers & discounts	0.246154	0.227621
Security of transaction	0.370629	0.41688
Trust for online store	0.216783	0.195652

fers and discounts' while males look for 'trust' towards the online store so that they can get the assurance of maximum utility of the purchase. The females place relatively more weight on 'product information' on the website as compared to males, which may be attributed to their spectrum of awareness. The males are generally more aware of the characteristics of electronic products while the females have to rely more on the information provided on the website. Both of them give low importance to the 'ease of use' and 'variety of products'. This may be attributed to the fact that the quality of technology and store interface has improved a lot, over past few years. This makes the 'ease of use', a taken for granted factor. Because absence of this factor implies that the store does not have a proper infrastructure to cater to needs of customers and thus it cannot survive for long in the market. Moreover, the electronic goods are high investment products, so the consumers made their mind about the type of product they want to buy. Consequently, the availability of a variety of products does not make much difference (see Figure 3).

As evident from the graph that, for both males and females the top four criteria are 'product information', 'offers & discounts', 'security of transactions' and 'trust' for the online store. For further digging into the data, the responses were divided based on the type of area of residence of the participant, i.e., Urban or Rural. Table 4 and Figure 4 show the relative weights of these four criteria:

Figure 4. Weights assigned by rural and urban customers for four attributes

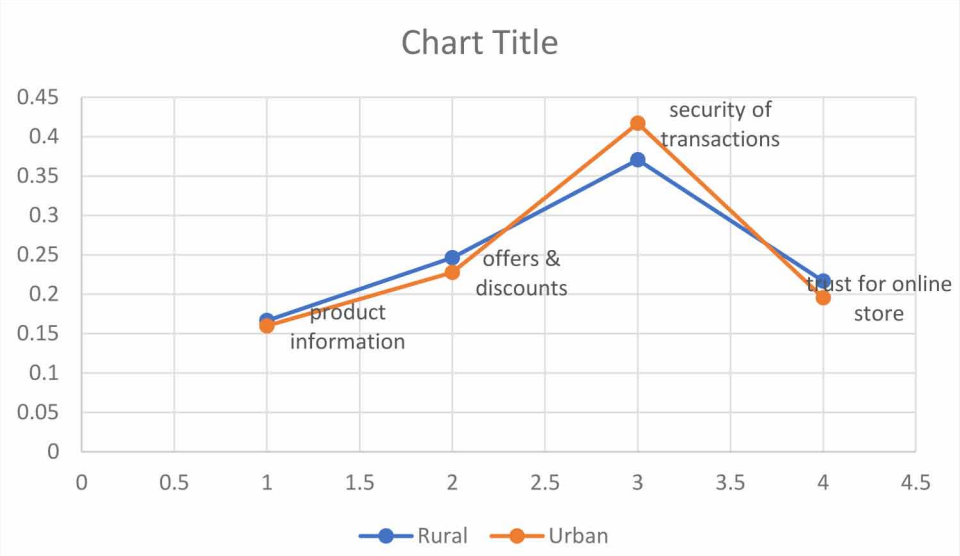

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Table 5. Ranks of the five alternatives using TOPSIS

	C_i (m)	C_i(f)	Rank(M)	Rank (F)
Amazon	0.91	0.93	1	1
Flipkart	0.63	0.76	2	2
Shopclues	0.13	0.29	4	4
Paytm	0.45	0.32	3	3
Ebay	0.09	0.13	5	5

For the second step of the study, five top e-commerce websites have been chosen as alternatives. The participants were asked to rate the websites on a scale of 1-5 for each criterion studied in the first phase. Then, the TOPSIS is applied to their responses to get final ranks of the websites. In TOPSIS, the alternatives are evaluated by its relative closeness to the positive ideal solution. The closeness is indicated by calculating a parameter called closeness index (Ci) (see Table 5).

The ranks of the websites came out to be equal, and the possible explanation for this is that the consumers perceive Amazon as best at almost all the criteria and the last ranked website bad on almost all criteria. This does not give the useful insight about the consumers, but the first part of study offers useful insights for online stores.

6. IMPLICATIONS AND FUTURE RESEARCH

The results of present study indicate, the male and female consumers behave differently while shopping online. They assign different weights to various factors. Therefore, it is essential to deal with them separately. The results of the study can be helpful in forumulating advertising schemes and promotional offers. Both males and females should be fortified against the security and privacy attacks online. The 'offers and discounts' entice the female consumers whereas the 'brand reputation' and 'trust' attract male customers. Another important implication is that the female customers should be provided with more relevant information about the product on the website.

The future research work can focus on incorporating the other product categories. Also, the relative importance of the store attributes can be empirically tested to verify the results. The analysis of the customers' choice based on other demographic characteristics can be performed. The future studies can also focus on analysing the differences in the preferences of the rural and urban customers and further categorizing them according to gender. Another demographic factor that can play a role in customer preferences is age group of the customers. It is highly likely that the customers will exhibit different preferences. This may help in further customizing the services according to the needs of the customers.

REFERENCES

Buckley, J. (1984). The multiple judge, multiple criteria ranking problem: A fuzzy set approach. *Fuzzy Sets and Systems*, *13*(1), 25–37. doi:10.1016/0165-0114(84)90024-1

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Chang, C.-W., Wu, C.-R., & Chen, H.-C. (2008). Using expert technology to select unstable slicing machine to control wafer slicing quality via fuzzy AHP. *Expert Systems with Applications*, *34*(3), 2210–2220. doi:10.1016/j.eswa.2007.02.042

Chang, D.-Y. (1996). Applications of the extent analysis method on fuzzy AHP. *European Journal of Operational Research*, *95*(3), 649–655. doi:10.1016/0377-2217(95)00300-2

Cheng, E. W. L., & Li, H. (2001). Analytic hierarchy process. *Measuring Business Excellence*, *5*(3), 30–37. doi:10.1108/EUM0000000005864

Chiu, Y., Lin, C., & Tang, L. (2005). Gender differs: Assessing a model of online purchase intentions in e-tail service. *International Journal of Service Industry Management*, *16*(5), 416–435. doi:10.1108/09564230510625741

Garbarino, E., & Strahilevitz, M. (2004). Gender differences in the perceived risk of buying online and the effects of receiving a site recommendation. *Journal of Business Research*, *57*(7), 768–775. doi:10.1016/S0148-2963(02)00363-6

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *Management Information Systems Quarterly*, *27*(1), 51–90. Retrieved from https://dl.acm.org/citation.cfm?id=2017185 doi:10.2307/30036519

Hansen, T., & Møller Jensen, J. (2009). Shopping orientation and online clothing purchases: The role of gender and purchase situation. *European Journal of Marketing*, *43*(9/10), 1154–1170. doi:10.1108/03090560910976410

Hasan, B. (2010). Exploring gender differences in online shopping attitude. *Computers in Human Behavior*, *26*(4), 597–601. doi:10.1016/j.chb.2009.12.012

Hasan, B. (2016). Perceived irritation in online shopping: The impact of website design characteristics. *Computers in Human Behavior*, *54*, 224–230. doi:10.1016/j.chb.2015.07.056

Hernández, B., Jiménez, J., & José Martín, M. (2011). Age, gender and income: Do they really moderate online shopping behaviour? *Online Information Review*, *35*(1), 113–133. doi:10.1108/14684521111113614

Kim, G., Park, C. S., & Yoon, K. P. (1997). Identifying investment opportunities for advanced manufacturing systems with comparative-integrated performance measurement. *International Journal of Production Economics*, *50*(1), 23–33. doi:10.1016/S0925-5273(97)00014-5

Lian, J. W., & Lin, T. M. (2008). Effects of consumer characteristics on their acceptance of online shopping: Comparisons among different product types. *Computers in Human Behavior*, *24*(1), 48–65. doi:10.1016/j.chb.2007.01.002

Lohse, G. L., & Spiller, P. (1998). Electronic shopping. *Communications of the ACM*, *41*(7), 81–87. doi:10.1145/278476.278491

Melis, K., Campo, K., Breugelmans, E., & Lamey, L. (2015). The Impact of the Multi-channel Retail Mix on Online Store Choice: Does Online Experience Matter? *Journal of Retailing*, *91*(2), 272–288. doi:10.1016/j.jretai.2014.12.004

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Miyazaki, A. D., & Fernandez, A. (2001). Consumer Perceptions of Privacy and Security Risks for Online Shopping. *The Journal of Consumer Affairs*, *35*(1), 27–44. doi:10.1111/j.1745-6606.2001.tb00101.x

Park, C., & Kim, Y. (2003). Identifying key factors affecting consumer purchase behavior in an online shopping context. *International Journal of Retail & Distribution Management*, *31*(1), 16–29. doi:10.1108/09590550310457818

Saaty, T. L. (1988). What is the Analytic Hierarchy Process? In *Mathematical Models for Decision Support* (pp. 109–121). Berlin, Heidelberg: Springer Berlin Heidelberg; doi:10.1007/978-3-642-83555-1_5

Saaty, T. L. (1990). How to make a decision: The analytic hierarchy process. *European Journal of Operational Research*, *48*(1), 9–26. doi:10.1016/0377-2217(90)90057-I

Shih, H. S., Shyur, H. J., & Lee, E. S. (2007). An extension of TOPSIS for group decision making. *Mathematical and Computer Modelling*, *45*(7–8), 801–813. doi:10.1016/j.mcm.2006.03.023

Sung, W. C. (2001). Application of Delphi method, a qualitative and quantitative analysis, to the healthcare management. *Journal of Healthcare Management*, *2*(2), 11–19.

Won Jeong, S., Fiore, A. M., Niehm, L. S., & Lorenz, F. O. (2009). The role of experiential value in online shopping. *Internet Research*, *19*(1), 105–124. doi:10.1108/10662240910927858

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Chapter 25
Analysing Critical Success Factors for Supporting Online Shopping

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ABSTRACT

Online shopping is nowadays is a highly frequent action but there are several critical factors that have to be considered for enabling websites and platforms to be able to offer all necessary requisites for guaranteeing user friendly, secure and also enjoyable shopping experiences to clients, offering them exactly what they expect to buy, and quickly find, among a huge offer available online. In this paper, a set of considered critical success factors are analysed on a set of top ranked websites, about luxurious furniture, to understand to what extent these critical factors are satisfied. The results can be taken into consideration for implementing a successful business through e-commerce from herein analysed perspectives.

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1. INTRODUCTION

Online shopping is growing fast as an interesting alternative way of buying experience, which has emphasized the relevance of the growing instrumentalization usefulness of the web through websites and platforms for supporting e-commerce (Alturas, Santos & Brites, 2006). Essentially, e-commerce is a type of e-business involving goods, services and information in which the parties involved do not always meet physically but interact electronically. The benefit of e-commerce is of course evident. For example, the potential of placing orders, transferring sales data and inventory information, and conducting the transactions online can significantly reduce business operations cost and increase the speed of business activities.

Given the existing competitiveness in the nowadays global market context, there is an increasing need to reach the maximum number of customers within particular niche markets (Abdallah & Jaleel, 2014). E-commerce provides many opportunities for business to reach markets that have never been possible to reach before the Internet age. Therefore, e-commerce can create significant value and generate extra sales through the virtual marketplace. Although e-commerce is already being widely explored, there is still considerable margin of growth to its maturity (Ascensão, 2011). Furthermore, there is no guarantee that companies selling their products and services through Internet channels will be successful. Many businesses have now realized that installing computer networks inside the company and creating a website may appear easy. But building a profitable business to fulfil customer's orders online is actually a lot harder. A major challenge for e-commerce success lies in the question of how to use e-commerce to help create a sustainable competitive advantage (Bandyopadhyay, 2010).

There are a vast number of studies demonstrating the successful implementation of e-commerce, in many industrial sectors (Ascensão, 2011), which led to a strong motivation for this work, in order to further the study of the critical success factors for implementing successful businesses through e-commerce from multiple perspectives.

Thus, in this paper, a study of the whole process of online shopping, with special focus on critical success factors analysis is presented and discussed. The paper is organized as follows. In section 2, a brief description of the market behind e-commerce is presented. In section 3 an extensive review on the state of the art is included, with the research gap identified. Section 4 proposes a multi-perspective critical success factor analysis and discusses, in detail, each of the critical success factors to be considered when putting forward an online shop. In section 5 are presented and briefly discussed some results obtained regarding the main critical success factors studied through a questionnaire carried out in this work. Finally, section 6 puts forward some main conclusions and planned further work.

2. MARKET DESCRIPTION

The competitive global market of today requires companies to be in all parts of the world at the same time. E-commerce is a sophisticated tool for opening new business opportunities with a considerable competitive advantage over local markets (Becerra & Korgaonkar, 2011). Although there is already a great adherence and growth of e-commerce, it is expected that this still has a high degree of progression.

The demand for niche markets and marketing allies could revolutionize the new e-commerce. Recent technological changes allow cementing online business by providing payment procedures in a safer way up to highly effective logistic companies. The whole process of creating online stores involves many

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techniques and multidisciplinary areas, requiring a synergy of skills for obtaining the desired result (Brege, Brehmer & Rehme, 2008). Thus, much attention has to be paid to a variety of subjects related with this issue, including the study of implications of e-commerce at different levels of impact, particularly in terms of human behaviour and preferences, as well as the analysis of alternatives for its implementation.

Understanding what drives an online shopper to buy online through a website, as an alternative to traditional commerce is one of the goals that distinguish a successful project, from an inconsequential attempt. A well-known challenge for a successful online business provider is that it needs involvement from multiple disciplines, such as engineering, design, computing, communications, logistics, marketing and even psychology.

Along with the increasing success of e-commerce in global markets in recent years, especially since middle 1990s, it has been recognized that e-commerce success has been hampered by a number of reasons. One of which is the lack of conceptual frameworks that can develop and provide effective success measures (Varela et al., 2016). The work presented in this paper is motivated by this recognition and aims to contribute to the development and provision of an integrated view to define critical success factors for online shopping. The following section will provide a comprehensive literature review on the topic (Burgess, 2008).

3. REVIEW ON E-COMMERCE

E-commerce has not evolved at the same rate in quality, although there has been a rapid growth in terms of quantity. The possibility of creating an online store and start selling immediately, without huge investment cost as an obstacle, has provided many people with no relevant knowledge to invest in this area. It is easy to prove this observation by searching online stores which, for instance, simply do not allow the understanding of how one can buy a product when being faced with a confusing website that encourages the user to immediately close the web page, even before taking a look on its contents.

Therefore, there is still much room for improvements, by applying the logic of critical success factors. Although there are some online stores performing relatively well, designing an online store without any insightful investigation of potential success factors may turn out to be hard to succeed.

There has been a considerable amount of work carried out to identify, to measure and to evaluate critical success factors in e-commerce during recent years. Those identified, measured and evaluated success factors can be classified using a number of classification schemes (see for example, Cebi, 2013; Chen & Chou, 2012; Clements, Dean & Cohen, 2009; Duncan, 2011; Fang, Chiu & Wang, 2011; ISO, 1998; Joma, 2009; Kawasaki, 2004).

The mainstream on our research in this paper classified success factors into five main categories, i.e. technology acceptance factors, social factors, cognitive factors, ethical factors and environmental factors.

Firstly, technology acceptance factors are mainly focused on the websites, including website quality and website design. Majority of the work identified information quality and system quality as the two main factors to reflect website quality (Cebi, 2013; Chen & Chou, 2012). Some work extended the website quality to also include service quality (Clements, Dean & Cohen, 2009). Originally, five dimensions were defined for physical marketplace service quality: tangibles, reliability, responsiveness, assurance and empathy (Kawasaki, 2004). In e-commerce context, methods of measuring success differ from physical marketplace service. E-service quality is therefore defined as the overall customer assessment and judgment of e-service delivery in the virtual marketplace (Clements, Dean & Cohen, 2009). Website design

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factors have been diverse; they range from usability and usefulness to interactivity and explicitly (Joma, 2009). Among which, usability is probably the widely discussed factor. For example, does the website have a good structured navigation system for customers to explore the website contents and easily find their desired products or services? Of course, website design and website quality are closely related to each other. Some authors have suggested that website design, fulfilment/ reliability, privacy/ security and customer services are the determinants of customer judgments of quality and satisfaction, customer loyalty and attitudes towards a company's online business (Lee & Kozar, 2006).

In terms of social factors, those on the top of the list include the sense of virtual community, and the use of social media in online shopping, for example, in the luxury online shopping (Fang, Chiu & Wang, 2011). Online shoppers use blogs, customer reviews etc. to help their purchase decisions. By interacting with other customers, online shoppers feel a strong sense of community and gain satisfaction from others' feedback on the products or services that an online shop provides. Some shoppers think that peer-customers' words are more trustworthy than what specialists' marketing pitches (Lee & Lin, 2005).

Many other authors have, however, identified trust as an ethical factor. Trust perhaps has been one of the most discussed factors and that is why it spans across both social and ethical categories (Machado, 2011; Ngai, 2003). No matter to which category should trust belong, the basic meanings of trust in the e-commerce context are almost the same, i.e. about practicing privacy policies, describing products and services online objectively and honestly, and maintain transparency of the online business operations (Nielsen, 1994). Some research has even investigated the relationship between knowledge and trust and found a positive relationship between them. Therefore, a suggestion is made that online retailing practice should make the public more knowledgeable e.g. about the online transaction security mechanisms in order to build up user's trust in online shopping (Olson & Boyer, 2005).

Environmental factors to ensure e-commerce success have not been discussed as widely as the other four categories. Only recently, a research on e-commerce trends and development to enhance online customer's satisfaction in China observed three important environmental success factors: government regulations, payment systems, and logistics systems (O'Reilly & Marx, 2011).

Another interesting classification of success factors is based on the process stages of online shopping. It seems that most research in the context of B2C context agrees on a four-stage process model for online shopping: information, agreement, settlement, and after-sale stages (ISO, 1998; Parasuraman, Zeithaml & Berry, 1988). A process model for C2C e-commerce (online auction) defined the four stages as information, communication, distribution and transaction (Shahabuddin, 2010). New critical success factors developed in the process models include trade safety, governance and order, reputation and scale, communication channel, information search, transaction process and copious information.

A third classification scheme is more generic, which only have two categories of success factors: customer-centric factors and website-centric factors (Duncan, 2011). The work based on the case of Japan finds out that customers are more concerned about the customer – centric factors, especially customer's education level, creativity, and net-orientation. It seems that Japanese customers do not worry about that much about e-service quality, which is a key success factor in the website-centric category.

Based on the above comprehensive review on literature, it is evident that there have been a huge number of success factors for e-commerce being defined, and that those factors are often discussed in isolation or from a particular perspective, which limits the contribution of existing work to online shop design and implementation practice. E-commerce is a complex e-business process, which requires knowledge from multiple disciplines to make it successful. Therefore, there is a clear need to develop a more advanced framework that can integrate critical success factors from multiple perspectives for

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online shopping. It is expected that such a multi-perspective integrated framework can provide effective guidance to e-commerce provider's design and implementation of successful online stores, as referred in (Burgess, 2008).

4. ONLINE SHOPPING CRITICAL SUCCESS FACTORS

E-commerce is undoubtedly the future that most companies will have to face. However, the fact of creating an online store does not mean guaranteed success.

E-commerce presents fresh challenges that set around a multidisciplinary environment and that must be in harmony, as there are complementary aspects arising from each area, which have to be considered and integrated, as a requirement for success (Torkzadeh & Dhillon, 2002; Suntornpithug, Todorovic, & Sherrell, 2010).

Just like a real physical shop, also in e-commerce it is not just the commercial part that is implied but a whole set of assumptions that must be guaranteed and controlled. The internet is a medium with its own characteristics, where every detail must be thought out carefully so that the final result is as expected.

Burgess (2008) proposed a multi-perspective model (MPCSF) for critical success factors, which is the base model used in this paper for carrying out a study of critical success factors, included in the MPCSF model that have been considered in an integrated and summarized manner, in the context of online shopping and corresponding websites analysis. The authors of this paper (Burgess, 2008) believe that all the success factors should be considered simultaneously from multiple perspectives (technological perspective such as web design usability, social perspective such as social networks, etc.), across different e-commerce life cycle stages (e.g. pre-sale, information stage and supply chain). Their proposed interdisciplinary model includes branding and marketing in Business Management discipline; communication support in Technology and Engineering discipline; and quality data processing in Science discipline. After it is combined with the classification schemes discussed earlier in Section 2 (i.e. customer-centric and website-centric, and process-based classification).

As stated in (Burgess, 2008), the concept of e-commerce can be viewed as being similar to the solar system, where the e-commerce is the central star and it must include on its orbit all the other stars. Once one of the surrounding stars disappears from its orbit the whole system's stability can be checkmated. Whether for lack of credibility, poor branding concept or simply due to a poor visibility, any failure on one of the factors implies that the project may not work properly and there are plenty of online stores that just do not sell (Burgess, 2008). Next, a summarized view of over an aggregated set of 8 main critical success factors, based on the detailed list of critical success factors described in (Varela et al, 2016) is presented.

4.1. Payment Security

With the exponential growth of the Internet shopping, security has been the major concern of users. However, increasingly more money transactions take place and the systems are becoming considerably safer. Selecting safe payment methods and be at the forefront of information technology about security issues, is a competitive advantage on online selling. Thus, if the client is aware about the online shop concerns to ensure secure payment transactions, the brighter the image of trust and responsibility will be passed to potential clients.

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Although the world is aware that issues about security breaches continue to rise on data computing and Internet transactions, and as even the most protected systems are transposable, we must maintain the dedication to guarantee purchases as much secure as possible. Moreover, to attract online customers e-commerce business should understand the customers' real wishes and expectations and what payment methods each type of segment of users does prefer. Each marketplace has its peculiarities and consumers tend to create common purchasing habits with which they feel more comfortable, e.g. "to use the online shopping cart" (Thorleuchter & Van Den Poel, 2012).

4.2. Website Userfriendliness

Websites user-friendliness is nowadays a growing exigency of customers, as social networks have changed the way people communicate, enabling to reinvent something we did naturally, with a slower speed. The initial idea was aimed at friends to join on a virtual network where they could communicate about everyday's life. This phenomenon has exceeded expectations and inevitably began to move towards the business world. If customers are concentrated on a particular community, nothing is more natural than participating on it.

Nowadays, all major brands present themselves within this environment, trying to reach a huge market with a multiplying growing effect (Suntornpithug, Todorovic & Sherrell, 2010). Applying the phenomenon of social networks to e-commerce, has the additional advantage of reaching people that are already regular users of the Internet, and to capture their attention to new products and services requires a good communication and marketing strategies to be implemented. Thus, one can gain customers through these communication engines, enhancing the target market.

Another important aspect of websites' user-friendliness relies on the underlying website's usability. In an online, shop the customer interface occurs via the website, therefore, their expectations have to be met as they easily may move away to the competition. Therefore, one crucial issue on the design of any information system is the usability of the user's interface. According to ISO 9241 - Part 11 (1998) usability is defined as the effectiveness, efficiency and satisfaction with which specific users achieve goals in particular environments. These definitions relate directly with 3 questions: How can users perform their tasks? What resources must users spend to achieve a given outcome (e.g., time, effort)? How well do users like the application?

Besides the economical costs (i.e. a system that is hard to understand is also hard to sell, and may involve many expensive problems in its life cycle), the lack of care about users needs can lead to solutions that tend to cause errors or that provide users with inadequate information. For e-commerce, this is particularly harmful because it implies losing customers (Thorleuchter & Van Den Poel, 2012).

Usability is an essential critical success factor to take in consideration in the design of websites because it is not a single, one-dimensional property of a user interface. Usability has multiple components and is traditionally associated with five usability attributes: learnability, efficiency, memorability, errors, and satisfaction (Tu, Yen & Hou, 2010).

4.3. Business Brand and Confidence

Knowing our business can help to know, "where we are" and "where we want to go" (Alturas, Santos & Brites, 2006). Measuring performance at each step of business allows adjusting measures to consider and values to obtain, through a sustained growth. This measurement is only possible if there are pre-

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defined and measurable goals for market trends. Therefore, it is necessary to know if it is a marketplace of thousands, millions or billions.

The more information available the better our position will be to support good decision making strategies. Understanding the marketplace is the first step, setting goals is the second one and nothing serves the former if there is no continuous analysis of results obtained.

In order to completely fulfil the whole requirements inherent to a successful business, it is of upmost importance to know the world of brands, as it moves millions, as increasingly more companies look for convincing brands, to better affirm themselves among competitors (Suntornpithug, Todorovic & Sherrell, 2010). In e-commerce the paradigm does not change, to buy online, you need something to push you to finalize your purchase. It is not enough to think that a brand is just a cute name or a futuristic logo, the whole communication with the surroundings has to be well thought, and the care and concern about the customers need to be visible in order to enable to construct a loyalty based relation with them (Suntornpithug, Todorovic & Sherrell, 2010).

The concept of a brand has to have the objective to be a precise way to reach the clients and establish a collaborative interaction with them by enabling integration of different areas. Impact, desire and trust are the ingredients that may enable a common brand to become a benchmark worldwide. If the main purpose of the brand is not describable by a few words, it is most probably not well designed.

4.4. Website Effectiveness

Regarding expectations of users to find the products they are looking for website's effectiveness plays a crucial role because once achieved the complete flow of the market to the online shop, there is still another important but less explored subject, which consists on being able to convert a visitor into a customer (Tsai, Cheng & Chen, 2011).

With the tools available on the market it is possible to analyze many details about visits to a website. From the time each user wastes browsing, up to the number of visitors per day, broken down by country and other indicators, many different kind of analysis are possible.

When the number of visits to a website is big and the sales have not risen, something must be done to reverse potential customer's bad attention. Issues related to websites effectiveness and usability, communication and marketing problems must be completely revised to ensure e-commerce success.

4.5. Marketing Strategy

Using an appropriate marketing strategy along with an improved business offered and other non-technological areas are crucial multidisciplinary requirements for the success of e-commerce. Moreover, once a brand is defined – and this applies to any product - it needs to be recognized as a reference. A well structured marketing plan, with a well-defined line and an innovative and credible image are essential success factors for promoting any brand or product (Alturas, Santos & Brites, 2006).

From videos and images up to workshops and international conferences, it is worth using all channels of communication to solidify the brand on the market. Thus, it becomes a necessity to innovate and to re-invent the way we present ourselves to the world (Wolfinbarger & Gilly, 2003).

Although a segment of the Marketing, the Web- Marketing deserves special mention, for conceiving a fantastic store, in terms of design and image, may seem to be good enough for becoming very success-

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ful. However, imagine how disastrous it would be if no one would pass on the street where the shop is located and the same may happen regarding online stores (http://www.acepi.pt).

Search engines provide the initial dialogue between consumers and online stores; therefore a good positioning or ranking of a website is of utmost importance. Search engines, like Google, also have tools to measure how many times certain words are searched and analyze all statistical data about the number of visitors about a given online store. Hence, improving search strategies is another important success factor.

There are several ways for enabling good rankings of websites within searching engines, which turns out to be even more important when a website includes sponsored links. The best way to attract potential customers is to accurately know the market where it operates, so that the whole effort is focused in favour of the business (Suntornpithug, Todorovic & Sherrell, 2010).

4.6. After-Sales Support Service

When buying on an online store, its success is only possible if there is a satisfactory level of communication support along the entire supply chain, which must be synchronized and integrated (Wu, Tao & Wang, 2007). A climate of trust and sharing must prevail, so that the whole quality of the system is reflected on the final consumer (Yuen, 2010).

If the manufacturer and all intermediaries are not sharing the same values, the whole communication within the supply chain may be compromised and the concept of a successful online store will most probably fall. Imagine how disastrous it would be having a well-designed online store, with a powerful marketing and numerous customers and the delivery due dates of the products were constantly being violated (O'Brien, 2015).

Only the skilled ones can be a part of the successful communication and supply chain, for each one, on its "core business", to provide its best possible contribution, always focused on reaching integration and common objectives and customer satisfaction.

The clients and their satisfaction must be constant concerns of any company aspiring to reach a sustainable growth (Torkzadeh & Dhillon, 2002). Moreover, in a medium like the internet, additional concerns about the fact that many users still do not feel comfortable buying products they cannot physically see, have to be kept on mind. One central concern of a consumer is about knowing if the website provides support to clarify questions about products or services; and, in particular, issues related to product returns or simply about how to get more direct information about the provided products and/ or services. With the growth of the Internet there are also many online shops whose quality standards do not meet customer requirements, installing uncertainty on the marketplace.

It is of utmost importance to provide a full-service support, before, during and after purchase. This way the clients feel supported and understood and not afraid to repeat the experience and buy through the same website.

The word "guarantee" frightens many entrepreneurs; however, this paradigm must change as people buy more if they feel fully supported and "safe" and in the majority of online stores the rates about product returns are quite low company aspiring to reach a sustainable growth (Torkzadeh & Dhillon, 2002).

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4.7. Company's Credibility

Regarding marketing strategies to incentivize anyone to buy through an online store, there are still many entrepreneurs targeting cost reduction instead of investing on that direction to enrich online stores' credibility. A shop with an "amateur" aspect easily distracts consumers that are more already suspicious about online shopping.

A good call centre, setting up a company with physical office, a registered trademark and the overall design and functionality of the website should not be jeopardized due to a low budget. Moreover, being professional and combining all these details will help strengthen the credibility of the store. Another key factor consists on joining forces and partnering with credible companies (Wu, Tao & Wang, 2007).

The overall credibility of an online store is visible when it is working perfectly, without any bugs or links that do not work. When usability is jeopardized and something stops working and confuses the user this may compromise the quality of the whole website and the underlying information system project, along with the correct functioning of the communication channels and the underlying operation of the supply chain, which is essential to gain the users confidence.

Moreover, the quality of the delivered product and/or services can be compromised while lacking quality data processing, therefore, it is also of upmost importance to ensure quality data processing (Schubert, 2002).

4.8. General Website Quality

The website is a showcase of the online store, which has to take into account to whom it should attract attention, as its mere existence does not mean its success. The whole construction of the website must be developed by a multidisciplinary team because there are several areas that will be involved for achieving the final product with the intended image and functionality. For example: the programmer may build the website quite clearly, without any bugs or technical problems, but if the designer does not provide an efficient interface it probably will fail (Schubert, 2002).

Therefore, all those multidisciplinary areas should be taken in consideration on the creation of any website, so that each area can provide an important contribution to its final result. Any successful e-commerce website must be robust, complete, appealing and balanced to ensure passing an image of a serious and credible company, without any tendentious reflection just about a particular area or concern.

The next section presents the study undertaken and analyses the impact of these main critical success factors on existing websites.

5. DATA ANALYSIS AND DISCUSSION

In this study 12 websites (WS1 to WS12) about luxurious furniture, were analysed in order to understand the set of 8 main characteristics on these websites. These 8 main critical success factors (CSF1 to CSF8), are given utmost importance, for evaluating websites, according to the description previously presented. Table 1 provides a list of the 12 websites and the corresponding links.

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Table 1. Websites analyzed

WS number	Website link
WS1	http://www.bernadettelivingston.com/
WS2	http://www.williams-sonoma.com/
WS3	http://www.juliettesinteriors.co.uk/
WS4	http://www.taylorllorentefurniture.com/
WS5	http://www.horchow.com/
WS6	http://www.luxuryfurnitureandlighting.com/
WS7	http://www.scalaluxury.com/
WS8	https://www.savannahcollections.com/
WS9	http://www.ikandi-interiors.com.uk/
WS10	http://www.greenfront.com/
WS11	http://www.furniture.mj777.com/index_en.htm
WS12	http://www.ramobili.it/

The 8 main critical success factors (CSF) that were analysed along the 12 websites are:

CSF1) Payments security
CSF2) Website user friendliness
CSF3) Business brand and confidence
CSF4) Website effectiveness
CSF5) Marketing strategy
CSF6) After-sales support service
CSF7) Company's credibility
CSF8) General website quality

In this study, a set of 70 qualified users on systems analysis were inquired, about each of the 8 main CSFs, for being evaluated on the 12 websites referred above, on a range from 0 to 3, as follows:

0 – the CSF is not applied
1 – the CSF is fairly applied or satisfied
2 – the CSF is suitably applied or satisfied
3 – the CSF is completely applied or satisfied

The results obtained for each CSF are presented in the next sections. The evaluations attributed to each CSF by the inquired individuals in a range varying from 0 to 3 points, are graphically represented in the following eight graphics.

5.1. Payments Security

The results obtained for the payment security critical success factor (CSF1) are shown in Figure 1.

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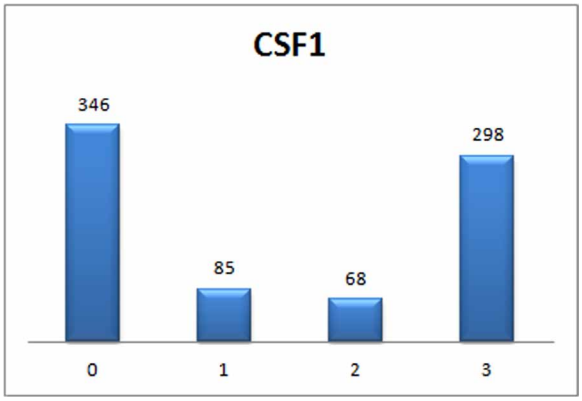
Figure 1. Payment security results (CSF1)



As we can realize through the results presented on Figure 1, for this CSF1, about payment security, around 43.4% of the answers reveal that payment security is not applied; 10.7% of the answers reveal that it is fairly applied or satisfied; 8.5% of the answers reveal that it is suitably applied or satisfied; and 37.4% of the answers reveal that it is completely applied or satisfied.

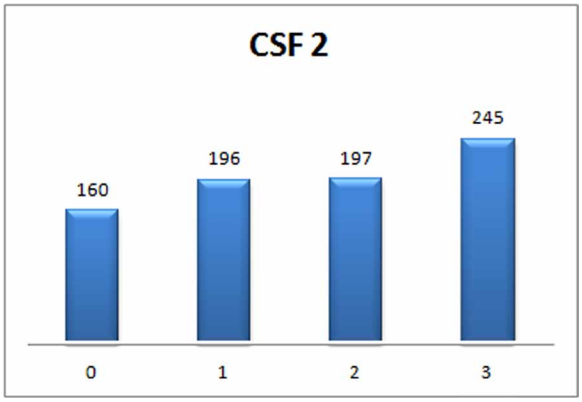
According to the results obtained we may realize that payment security is a CSF that is not always clearly satisfied, which can drastically penalize online stores.

5.2. Website User-friendlyness

The results obtained for the website user-friendliness critical success factor (CSF2) are shown in Figure 2.

As we can realize through the results presented on Figure 2, for this CSF2, about website user-friendliness, around 20.0% of the answers reveal that website user-friendliness is not existing; 24.6% of the answers reveal that it is fairly existing; 24.7% of the answers reveal that it is suitably existing; and 30.7% of the answers reveal that it is completely existing or satisfied.

Figure 2. Website user-friendliness (CSF2)



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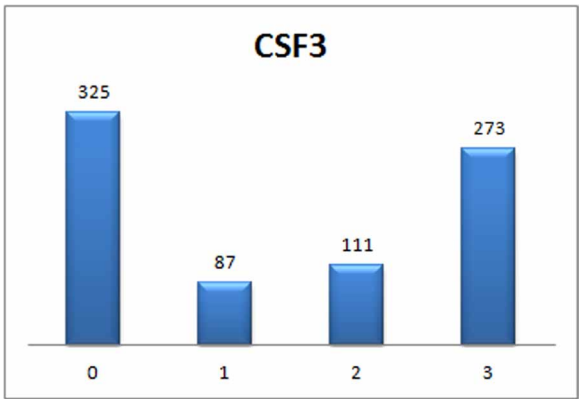
According to the results obtained we may realize that although we can notice a good strength regarding website user-friendliness improvement is a CSF that is not always clearly satisfied, which can punish online stores.

5.3. Business Brand and Confidence

The results obtained for the business brand and confidence critical success factor (CSF3) are shown in Figure 3.

Figure 3. Business brand and confidence (CSF3)



As we can realize through the results presented on Figure 3, for this CSF3, about business brand and confidence, around 40.8% of the answers reveal that business brand and confidence is not existing or satisfied; 10.9% of the answers reveal that it is fairly existing or satisfied; 13.9% of the answers reveal that it is suitably existing or satisfied; and 34.4% of the answers reveal that it is completely existing or satisfied.

According to the results obtained we may realize that business brand and confidence is a CSF that does not always undoubtedly exist, which can severely reprimand online shopping.

5.4. Website Effectiveness

The results obtained for the website effectiveness critical success factor (CSF4) are shown in Figure 4.

As we can realize through the results presented on Figure 4, for this CSF4, about website effectiveness, around 8.8% of the answers reveal that website effectiveness does not exist or satisfied; 28.1% of the answers reveal that it is fairly existing or satisfied; 18.9% of the answers reveal that it is suitably existing or satisfied; and 44.2% of the answers reveal that it is completely existing or satisfied.

According to the results obtained we may realize that website effectiveness is a CSF that does seem, in general, to be quite acceptably satisfied, which reveals a growing effort taken in the direction of persuading potential clients to buy online.

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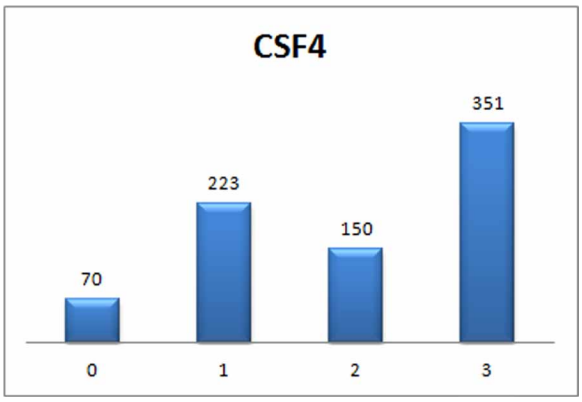
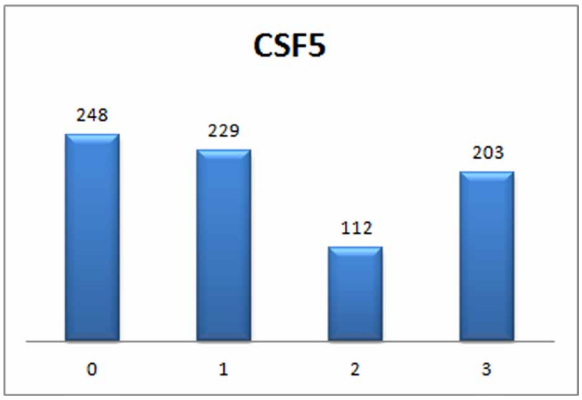
Figure 4. Website effectiveness (CSF4)



5.5. Marketing Strategy

The results obtained for the marketing strategy critical success factor (CSF5) are shown in Figure 5.

Figure 5. Marketing strategy (CSF5)



As we can realize through the results presented on Figure 5, for this CSF5, about marketing strategy, around 31.3% of the answers reveal that marketing strategy is not applied or visible; 28.9% of the answers reveal that it is fairly applied; 14.2% of the answers reveal that it is suitably applied or satisfied; and 25.6% of the answers reveal that it is completely applied or satisfied.

According to the results obtained we may realize that although we can notice a good strength regarding market strategy concerns is a CSF that is not always clearly satisfied, which can negatively affect online stores.

5.6. After-Sales Support Service

The results obtained for the after-sales service critical success factor (CSF6) are shown in Figure 6.

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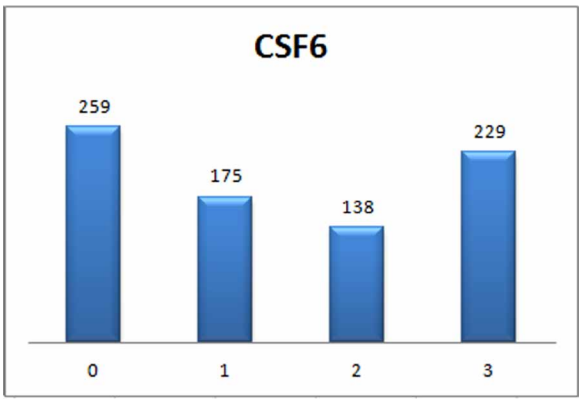
As we can realize through the results presented on Figure 6, for this CSF6, about after-sales service, around 32.3% of the answers reveal that after-sales support service does not exist; 21.9% of the answers reveal that it is fairly existing; 17.2% of the answers reveal that it is suitably implemented; and 28.6% of the answers reveal that it is fully implemented.

Figure 6. After-sales support service (CSF6)

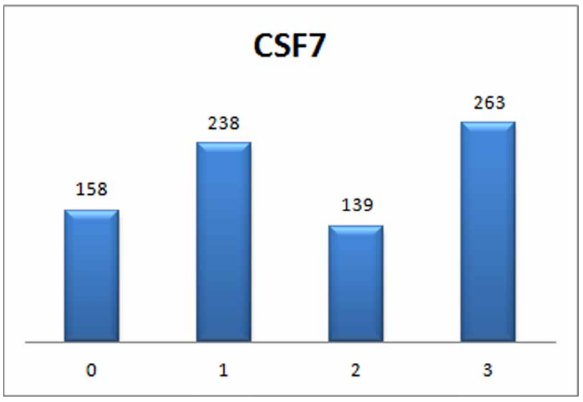


According to the results obtained we may realize that after-sales support service is a CSF that does not always clearly exist, which can penalize the success of online stores.

5.7. Company's Credibility

The results obtained for the company's credibility critical success factor (CSF7) are shown in Figure 7.

Figure 7. Company's credibility (CSF7)



As we can realize through the results presented on Figure 7, for this CSF7, about company's credibility, around 19.8% of the answers reveal that company's credibility is not visible; 29.8% of the answers

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reveal that it is fairly visible; 17.4% of the answers reveal that it is suitably visible; and 33.0% of the answers reveal that it is completely noticeable.

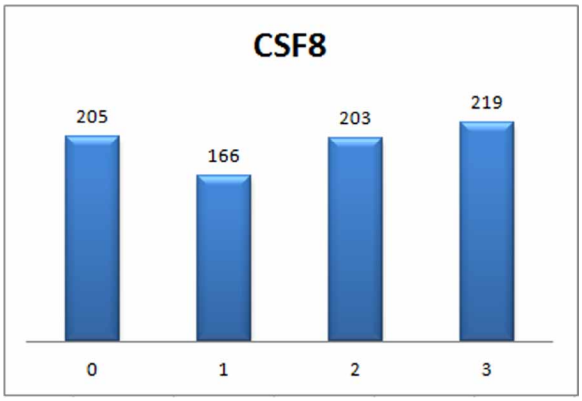
According to the results obtained we may realize that company's credibility is a CSF that does seems, in general, to be a concern of companies for being satisfied, in order to attract potential clients to buy online.

5.8. General Website Quality

The results obtained for the general website quality critical success factor (CSF8) are shown in Figure 8.

As we can realize through the results presented on Figure 8, for this CSF8, about the general website quality, around 25.9% of the answers reveal that general website quality is very poor; 20.8% of the answers reveal that it is fairly satisfactory; 26.6% of the answers reveal that it is good; and 27.6% of the answers reveal that it is excellent.

Figure 8. General website quality (CSF8)



According to the results obtained we may realize that general website quality is a CSF that appears to be a concern of companies. Although a growing effort has to be taken in this direction to improve quality of online shopping services.

6. CONCLUSION

As represented in the overall representation of Figure 9, the critical success factor "Website effectiveness" is the only one presenting a graduation of suitably satisfied (1.99), and the worse ranked are "Marketing strategy" (1.34) and "Payment security results" (1.40).

Knowing the necessary ingredients for success in e-commerce is crucial to build a highly profitable and consistent e-commerce business strategy. Building an online shop based on a fully satisfied critical success factors will enable a successful online business and transmit confidence to potential online clients.

Therefore, it is of upmost importance not to distract customers, while compromising the balance of a whole website. There is still plenty of room for improvement in the market of online shops, as more

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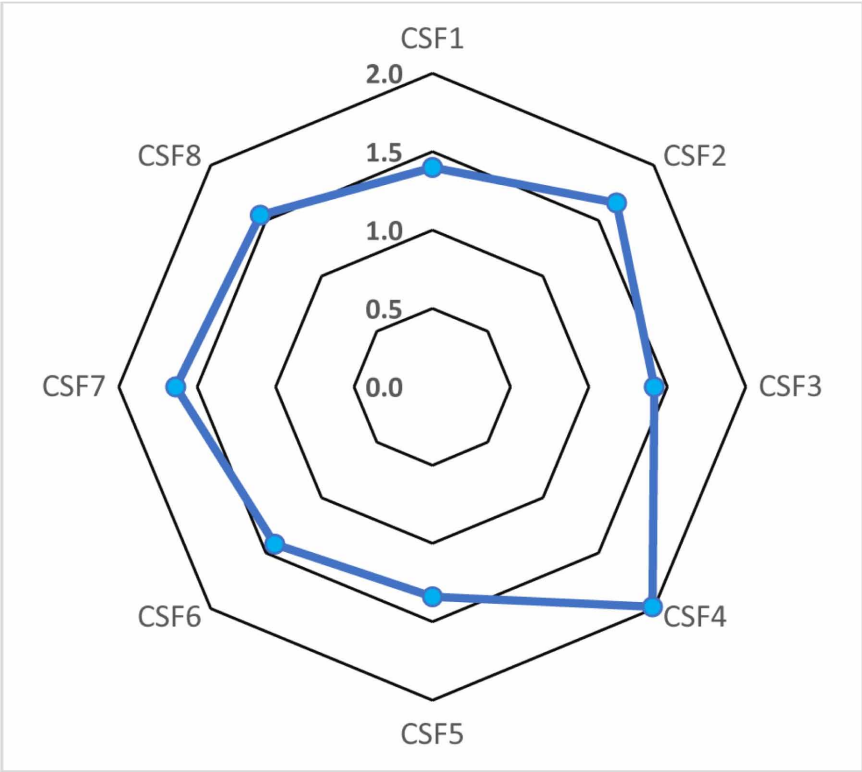
Figure 9. Weighted average evaluation for the eight CSF



and more people choose this way of shopping, which enables entrepreneurs to get closer to its market, while presenting an appropriate solution for their clients' expectations. Moreover, it is necessary to pay attention to aspects for enabling a good e-commerce practice. Often those aspects are under estimated due to lack of analysis and investigation regarding a set of proposed success factors described through this work.

The proposed set of main critical success factors described and analysed in this paper are not only related to the website itself, its design and usability, but also to other considered very important ones, such as: the brand; the marketing and web-marketing strategies; including social networks reaching; concerns about the whole supply chain integration; concerns regarding consumers conversion, communication and support; looking at quality data processing and secure payment methods; and enabling a favourable image for reaching online shop credibility. Compared with existing conceptual models for e-commerce success factors in the literature, there are some relevant contributions of our proposal, including: The definition of proposed critical success factors such as converting customers and credibility; the proposal to include stages beyond the existing online shopping life cycle, i.e. it considering not only the information phase, agreement phase, transaction phase and delivery phase, but also the pre- and after-sale phases; also incorporating the critical success factors from multiple perspectives – technology, social and ethical perspective; and integrating knowledge from multiple disciplines such as Engineering, Science and Technology, and Business Management. Therefore, the proposed critical success factors can provide a more comprehensive understanding of online shopping in order to achieve business success.

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In addition, it has been identified that a more professional attitude is needed, as all these factors are of major importance for ensuring the difference between a modest online store and an online empire.

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REFERENCES

Abdallah, S., & Jaleel, B. (2014). Online Shopping in the United Arab Emirates. *International Journal of Web Portals*, *6*(1), 1–20. doi:10.4018/ijwp.2014010101

Alturas, B., Santos, M. D. C., & Brites, R. (2006). Direct Selling: Finding Consumer Segments. In *Proceedings of the EIRASS International Conference*.

Ascensão, C. P. (2011). Google Marketing: A arma mais poderosa para atingir os seus clientes.

Bandyopadhyay, N. (2010). A conceptual understanding of the impact of marketspace on the four Ps of marketing. *International Journal of Electronic Customer Relationship Management*, *4*(1), 33–42. doi:10.1504/IJECRM.2010.031380

Becerra, E. P., & Korgaonkar, P. K. (2011). Effects of trust beliefs on consumers online intentions. *European Journal of Marketing*, *45*(6), 936–962. doi:10.1108/03090561111119921

Brege, S., Brehmer, P. O., & Rehme, J. (2008). Managing supplier relations with balanced scorecard. *International Journal of Knowledge Management Studies*, *2*(1), 147–161. doi:10.1504/IJKMS.2008.016447

Burgess, S. (2008). Determining website content for small businesses: Assisting the planning of owner/managers. *International Journal of Knowledge Management Studies*, *2*(1), 128–146. doi:10.1504/IJKMS.2008.016449

Cebi, S. (2013). Determining importance degrees of website design parameters based on interactions and types of websites. *Decision Support Systems*, *54*(2), 1030–1043. doi:10.1016/j.dss.2012.10.036

Chen, Y. T., & Chou, T. Y. (2012). Exploring the continuance intentions of consumers for B2C online shopping: Perspectives of fairness and trust. *Online Information Review*, *36*(1), 104–125. doi:10.1108/14684521211209572

Clements, M. D., Dean, D. L., & Cohen, D. A. (2009). Supplier selected relationships: Choosing friends, over family. *International Journal of Manufacturing Technology and Management*, *19*(1-2), 47–67.

Cruz-Cunha, M. M., & Putnik, G. D. (2009). Environments for virtual enterprise integration. In M. M. Cruz-Cunha (Ed.), *Social, Managerial, and Organizational Dimensions of Enterprise Information Systems* (pp. 194–211). Hershey, PA: IGI-Global. doi:10.4018/978-1-60566-856-7.ch010

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Cunha, M. M., Putnik, G. D., & Gunasekaran, A. (2003). Market of resources as an environment for agile/virtual enterprise dynamic integration and for business alignment. In Knowledge and information technology management: Human and social perspectives (pp. 169–190).

Duncan, K. (2011). *Marketing Greatest Hits* (1st ed.).

Fang, Y. H., Chiu, C. M., & Wang, E. T. (2011). Understanding customers satisfaction and repurchase intentions: An integration of IS success model, trust, and justice. *Internet Research*, *21*(4), 479–503. doi:10.1108/10662241111158335

Ferreira, L., Putnik, G., Cunha, M., Putnik, Z., Castro, H., Alves, C., . . . Varela, M. L. R. (2013). Cloudlet architecture for dashboard in cloud and ubiquitous manufacturing. In *Procedia CIRP*, *12*. doi:10.1016/j.procir.2013.09.063

ISO, W. (1998). 9241-11. Ergonomic requirements for office work with visual display terminals (VDTs). *The international organization for standardization*, 45.

Joma, S. I. (2009). Research on e-commerce trends and development to enhance online customer satisfaction in China. In F.G. Duserick (Ed.), *Proceedings of the 8th Wuhan International Conference on E-business*, Wuhan, China, May 30-31 (pp. 94-99).

Kawasaki, G. (2004). The Art of the Start.

Lee, G. G., & Lin, H. F. (2005). Customer perceptions of e-service quality in online shopping. *International Journal of Retail & Distribution Management*, *33*(2), 161–176. doi:10.1108/09590550510581485

Lee, Y., & Kozar, K. A. (2006). Investigating the effect of website quality on e-business success: An analytic hierarchy process (AHP) approach. *Decision Support Systems*, *42*(3), 1383–1401. doi:10.1016/j.dss.2005.11.005

Machado, A. T. M. 2011. Usability: Impact on E-commerce [PhD Thesis]. Technical University of Lisbon.

Ngai, E. W. T. (2003). Selection of web sites for online advertising using the AHP. *Information & Management*, *40*(4), 233–242. doi:10.1016/S0378-7206(02)00004-6

Nielsen, J. (1994, April). Usability inspection methods. In *Conference companion on Human factors in computing systems* (pp. 413–414). ACM. doi:10.1145/259963.260531

OBrien, T. (2015). Accounting for Data Quality in Enterprise Systems. *Procedia Computer Science*, *64*, 442–449. doi:10.1016/j.procs.2015.08.539

Olson, J. R., & Boyer, K. K. (2005). Internet ticketing in a not-for-profit, service organization: Building customer loyalty. *International Journal of Operations & Production Management*, *25*(1), 74–92. doi:10.1108/01443570510572259

OReilly, K., & Marx, S. (2011). How young, technical consumers assess online WOM credibility. *Qualitative Market Research: An International Journal*, *14*(4), 330–359. doi:10.1108/13522751111163191

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual. *Journal of Retailing*, *64*(1), 12–40.

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Schubert, P. (2002). Extended Web Assessment Method (EWAM): Evaluation of electronic commerce applications from the customer's viewpoint. *International Journal of Electronic Commerce*, *7*(2), 51–80.

Shahabuddin, S. (2010). Supply Chain Management and its effect on company's performance. *International Journal of Logistics Systems and Management*, *8*(1), 101–117. doi:10.1504/IJLSM.2011.037421

Suntornpithug, N., Todorovic, Z. W., & Sherrell, D. L. (2010). Revisiting the concept of person interactivity through social psychology and social telepresence theory. *International Journal of Electronic Business*, *8*(1), 31–50. doi:10.1504/IJEB.2010.030715

Thorleuchter, D., & Van Den Poel, D. (2012). Predicting e-commerce company success by mining the text of its publicly-accessible website. *Expert Systems with Applications*, *39*(17), 13026–13034. doi:10.1016/j.eswa.2012.05.096

Torkzadeh, G., & Dhillon, G. (2002). Measuring factors that influence the success of Internet commerce. *Information Systems Research*, *13*(2), 187–204. doi:10.1287/isre.13.2.187.87

Tsai, M. T., Cheng, N. C., & Chen, K. S. (2011). Understanding online group buying intention: The roles of sense of virtual community and technology acceptance factors. *Total Quality Management & Business Excellence*, *22*(10), 1091–1104. doi:10.1080/14783363.2011.614870

Tu, H. J., Yen, W. C., & Hou, J. J. 2010. Measuring the operating efficiency of internet channels with DEA. Int. J. Logistics Economics and Globalisation, 2(2). doi:10.1504/IJLEG.2010.032426

Varela, M. L. R., Ferreira, M. F., Vieira, G. G., Manupati, V. K., & Manoj, K. (2016, June). A multi-perspective integrated framework of critical success factors for supporting online shopping. In *Proceedings of the 2016 11th Iberian Conference on Information Systems and Technologies* (CISTI). AISTI. 10.1109/CISTI.2016.7521370

Varela, M. L. R., Putnik, G. D., & Cruz-Cunha, M. M. (2012). Web-based technologies integration for distributed manufacturing scheduling in a virtual enterprise. *International Journal of Web Portals*, *4*(2), 19–34. doi:10.4018/jwp.2012040102

Wolfinbarger, M., & Gilly, M. C. (2003). eTailQ: Dimensionalizing, measuring and predicting etail quality. *Journal of Retailing*, *79*(3), 183–198. doi:10.1016/S0022-4359(03)00034-4

Wu, Y. L., Tao, Y. H., & Wang, T. C. 2007. Critical success factors for online C2C auction websites – a consumer's perspective. In *Proceedings of the 6th WSEAS International Conference on Applied Computer Science* (pp. 54-59).

Yuen, S. S. (2010). Development of electronic marketplace for collaborative supply chain: A conceptual framework. *International Journal of Enterprise Network Management*, *4*(1), 59–67. doi:10.1504/IJENM.2010.034476

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Chapter 26
Exploring the Factors Influencing Customers Purchase Intention in Online Shopping

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ABSTRACT

Online shopping has increasingly become popular in Bangladesh with the introduction of globalization. Many people, specifically the younger generation, are purchasing various types of products every day online as it is convenient and saves time. Consumers are influenced to purchase online as a result of many factors including time-savings, fast delivery, ease of the transaction, and a website's user friendliness, and many more. The consumer evaluation is important to explore why a consumer intends to purchase online. The present study is an attempt to determine the factors that influence consumers' online shopping in Dhaka. Through this process, this study attempts to identify the critical factors that influence consumers' online shopping in Dhaka and to evaluate the association between these factors and consumers' online shopping habits. It also tries to determine the importance of these factors on consumers' online purchasing habits and to identify problems and suggest possible recommendations. The factors that are being considered include convenience factors, psychological factors, promotional factors, technical factors, and motivational factors. Each factor has some distinct variables. Convenience factors include less time, home delivery, and ease of transaction. Psychological factors include domain specific innovativeness, and opinion of friends and peers. Promotional factors include online ads, and social media exposure. Technical factors include user-friendliness of websites, and display of product details. Motivational factors encompass utilitarian and hedonic values. For this study the Multiple Regression Analysis Model was used. A structured questionnaire survey was conducted on 120 consumers to obtain consumers' opinion regarding how their purchase habits are sparked by different factors. The results reveal that only the home delivery system and utilitarian value of online shopping makes customers consider purchasing online. The other important influences were opinion of friend and peers, social media exposure, and display of product details. This study can hopefully shed some new insights into consumers' online purchasing habits.

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INTRODUCTION

Since the advent of science and modern technology (Schlesinger and Rahman, 2015), a parallel world has been taking a form which may be called 'the virtual world'. Today it is not merely forming, rather it is extraordinarily enriched. People now possess two lives at the same time. One is the real human life and the other is virtual life. It would seem like they are more into the latter one. Internet has given a new life to almost half the population of the whole world. This new life has started from the countless options that the internet has given to us through its astonishing ability to connect the north hemisphere with the south hemisphere. The internet created so many new trends that have become the inseparable parts of human life. Without them our lives cannot even be imagined today. Some of the, influences include E-mail, online entertainment, social media, online shopping and search engine browsing.

Among these trends, online shopping has become a new option for the consumers. Today a good number of organizations have their online sales option. Beside brick-and-mortar, numerous companies are showing up as click-only. These are offering consumers a wide range of products from clothes to books to even cars. Advancement of technology has given people the opportunities to connect to the internet anytime through more than one device including desktops, laptops, smart phones, and tablets (Akhter et al., 2014). Online shopping has opened a new horizon for entrepreneurs. Internet has become a great means for them to sell their products to customers anywhere. There are obviously a lot of drawbacks for offline shopping. Numerous research studies were conducted on the comparison of these two extremes. Nevertheless, online shopping has also many advantages for customers to consider.

The use of online shopping is new to Bangladesh due to the protocol of Bangladesh government, it has become much easier for the businesses and customers to take part. It has a growing market of 2 billion BDT. The introduction of 3G sped up the growth of the online retail industry significantly. "There are a number of free classified websites and online shopping marketplaces in Bangladesh that sell almost all types of goods and services. For example, Othoba.com, Ekhanei.com, Bikroy.com, 'Lamudi', 'Carmudi' and 'Kaymu'." (E-Commerce Directory, 2014). "About 1.5 to 2 million people shopped online every year, and the market was growing by 15% to 20%." (Shah, 2014).

By definition, online shopping takes place through websites over the internet. Generally online retailers can be categorized in two types: click-and-mortar and click only. The click-and-mortars are those firms that have both physical stores and online channels. These firms generally started their business physically as click and motor and when online business concept showed up, they simply adopted the new idea and created a new communication and distribution channel over the internet. On the contrary, clicks-only are those firms that only have online presence. It is clear that these firms initiated their businesses online. However, sometimes clicks-only also open their physical stores. In Bangladesh, most of the clicks-only are online superstores. They sell variety of products of different brands. Examples are daraaz.com, kaymu.bd, bagdoom.com. All of them offer different products of different brands such as, men's wear, women's wear, shoes, cosmetics, watches, bags, toys, and electronics. International online stores also operate in Bangladesh. A big example is Amazon.com which first started selling books and is now one of the world's biggest business giants as a retailer of various kinds of products. Some online shops are specialty stores also. For example, some sell only saree, some sell only 'kameez' and some sell only books. A notable example can be rokomari.com that earned its huge reputation and revenue also by selling books. However, recently it has started offering electronics and other home products. There are also some Facebook-based retailers such as He & She, 'Rongoboti,' etc. Generally, the Facebook-based online stores happen to be specialty stores such as, He & She sells jewelry and Rongoboti sells cosmet-

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ics. Again, the online retailers operating through their own websites also maintain their Facebook pages through which they sell products using Facebook-authorized button "Shop Now".

Now-a-days, online shopping can be performed on personal computers and mobile phones. The development of mobile phone technology has given the consumers the facility to order goods from literally anywhere anytime (Rahman et al., 2014). The development of mobile-optimized web services gave marketers the competitive edge over those who did not introduce mobile optimization. This technology has enabled web developers to create a mobile version of a website. The mobile version takes less space eliminating unnecessary formatting and layout of the original version of the website and displaying limited advertisements. This mobile version also makes sure that the consumers can easily navigate through the website and choose their products, view the specifications, and finally order them with the help of touching the screen. Above all, the era of smart phones compelled the marketers to give consumers easier experience on tiny mobile screens compared to the large computer monitors. Besides, traditionally consumers use desktops and laptops to access online shops and order their products. However, day by day consumers are leaning more toward mobile phones than personal computers. The reason might be the mobility of the device that lets consumers use their spare time on shopping while sitting in a traffic jam or waiting for a meeting.

On personal computers, a consumer generally enters into the website of the particular retailer. These websites naturally categorize the types of products in their menu bar. The consumer then goes to his desired product section. A desired product section again has more than one category such as, price range, brand etc. The consumer chooses a certain category according to his needs and abilities. Then the products' images show up on the webpage. Almost all the retailers keep more than one type of a particular product based on its color, size and other features. If the consumer clicks a certain product image, he is redirected to a webpage that contains all the specifications of and relevant information about the product. Generally, most of the consumers pause here and revert to the product category again. They compare the specifications and images with other types of that product. Sometimes, consumers revert more and go to the main category section and compare the product quality of different prices. Even sometimes they open new tabs to visit other online retailers' websites and compare its price, quality or specifications with those of the previously visited ones. When a consumer finally chooses a particular product and gets determined to order it, he hovers over the 'Buy now' or 'Shop now' button to order. Once he clicks it, he has to register with the website if previously not done and then log into the site with his newly made official account. This official account is required to proceed to the payment method and delivery. Sometimes, order is taken over telephone with recording consumer tracking numbers or accounts. The payment method can be of many types such as, cash-on-delivery, mobile banking, or credit card. Cash-on-delivery is the system in which the payment is made with cash to the delivery man at the time of product delivery. Cash-on-delivery is a widely trusted payment method that allows users to test the product at the time of delivery and return order if any problem is noticed. The delivery of product can also be in many forms, such as delivery man, using parcel services, courier, lifting from the nearby both of the company etc.

All these steps are similar in case of shopping on mobile phones. Now-a-days, many retailers are introducing their own apps for the consumers to install them into their phones and order products more easily by simply tapping the respective icon and order accordingly. In this case consumers do not need to open the browser and typing the website address and follow other procedures. The online retailers also introduced the concept of 'shopping list' or 'shopping cart' by which a consumer can easily list his desired products to order later at a time.

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Shopping in Facebook pages also requires the same procedures. In this case one advantage is that consumers can take part in conversations with other consumers to know better about the quality of products. The number of likes of a particular product also indicates the favorability of that product to the consumers. All these things prepare a field for the consumer to make a purchasing decision. Sometimes Facebook pages are considered to be negative. An example of this is when consumers raise their voices against a particular product to express their dissatisfaction with the product or service. This results in the retailer losing many consumers who will more than likely never visit this shop ever again. Selling through Facebook pages reaches a lot more customers than does own websites. But in the former case, the marketer has to maintain the word-of-mouth to flow in a positive and healthy manner.

This study is an overview of online shopping which will examine its various aspects and try to measure the effects of several factors on people choosing online shopping.

BACKGROUND OF THE STUDY

The ability to bring the outer world on the nose of the users can be considered as the biggest contribution of the internet. Whatever happens in the universe can easily come to people sitting at their computers at Dhaka, Delhi, Texas or Cairo. The latest addition to this phenomenon is to enable people to choose their things sitting at their home not going to the physical shops down the lane. That is how people get started purchasing things online. At the beginning of the online shopping era, only young people were into online shopping. But recent statistics show that people of all ages are being accustomed to online shopping. Online shopping took people of all ages by storm. Depending on this craze, numerous online retailers have lifted their heads up. They are getting customers too. Here the biggest question is that which aspects of online shopping are liked by people and which are not. It is evident that neither all aspects of online shopping are liked by people nor all the customers are evenly patronizing it. A good number of studies have been conducted on investigating the effects of different factors of online shopping on customers and on investigating how factors of online shopping influence the intention, attitude and behavior of customers. However, no specific studies are found on the effect of factors on consumers purchasing online in the context of Dhaka. This study will try to investigate which specific factors influence consumers to purchase things online in Dhaka, Bangladesh. The possible factors were extracted from the analysis of some related literature.

LITERATURE REVIEW

In a study on analysis of factors affecting online shopping behavior based on Iran, Javadi et al. (2012) categorized some risk factors under "perceived risks" that influence consumers' online shopping behavior. These risks are financial risk, product risk, convenience risk and non-delivery risk. Among these, according to the study, the effects of product and convenience risks are not significant on attitude toward online shopping. Results furthermore indicated that infrastructural variables (after sales service, cyber laws and shipping fees) and return policy were not significant either. However, the results showed significant influence of domain specific innovativeness and opinion of friends and peers on online shopping behavior. Strong relationship between opinion of friends and peers and purchase intention was also supported by another study covering the mediating role of online purchase intention (Lim et. al., 2016).

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This study also supported the low significance of product risks. It found out that usefulness of products had weak relationship with online purchase intention.

Another study (Forsythe and Shi, 2003) provides a completely opposite result in case of product risks and convenience risks. According to this study, these two risks are very significant on consumers' frequency of purchasing online. This study also examines another risk called psychological risk, the effect of which is not significant on consumers.

A study on online shopping behavior of consumers (Uzun and Poturak, 2014) concluded that price is the most important factor for consumers to purchase online. The study concluded that consumers' future buying is not affected by web design and delivery time rather by last experience. This study also declared the convenience of products as one of the most influencing factors to satisfy consumers.

An interesting insight was found in a study on e-commerce factors influencing consumers' buying decision (Baubonienė and Gulevičiūtė, 2015). According to this study lower price is more valued by women, whereas time and convenience are more important to men. The study also concluded that 25–34-year-old people more often chose online shops because of lower prices and greater variety of products.

Another study covering the same area (Akbar and James, 2014) categorized the factors of online shopping under three stages, information search stage, alternative evaluation stage and purchase decision stage. The result indicated that price, brand and convenience under the alternative evaluation stage strongly influence online purchase behavior. Under the purchase decision stage, security and refund had a moderate effect and promotion had a weak effect on online purchasing.

A study on the same area based on Kolkata (Sen, 2014) concluded that cost factor was the most significant factor to influence online purchase decision. It suggested that price reduction, offer, discount and sales promotional techniques positively influence online purchase decision. After cost, it put importance on convenience factors such as time, secure payment, cash on delivery and product information. It declared the seller related factors as the least significant factors to influence online purchase decision.

A different perspective was examined by a study (Topaloglu, 2012) covering consumer motivation and concern factors for online shopping in Turkey. It identified two broad factors, namely, motivation factors and concern factors, to examine whether they influence online search and purchase intention. Motivation factors included utilitarian value and hedonic value. On the other hand, concern factors included privacy and security.

CONCEPTUAL FRAMEWORK

Based on the above-mentioned studies conducted previously, five types of very important factors can be identified. These factors are convenience factors, psychological factors, promotional factors, technical factors, and motivational factors. Each factor has some distinct variables. Convenience factors include less time, home delivery, and ease of transaction. Psychological factors include domain specific innovativeness, and opinion of friends and peers. Promotional factors include online ads, and social media exposure. Technical factors include user-friendliness of websites, and display of product details. Motivational factors include utilitarian and hedonic values. How these variables influence consumers' online shopping intention is the topic of this study.

So, these factors containing the above-mentioned variables act as independent variables and consumers' online shopping intention act as dependent variable. On the basis of this frame, the conceptual framework was developed (Figure 1).

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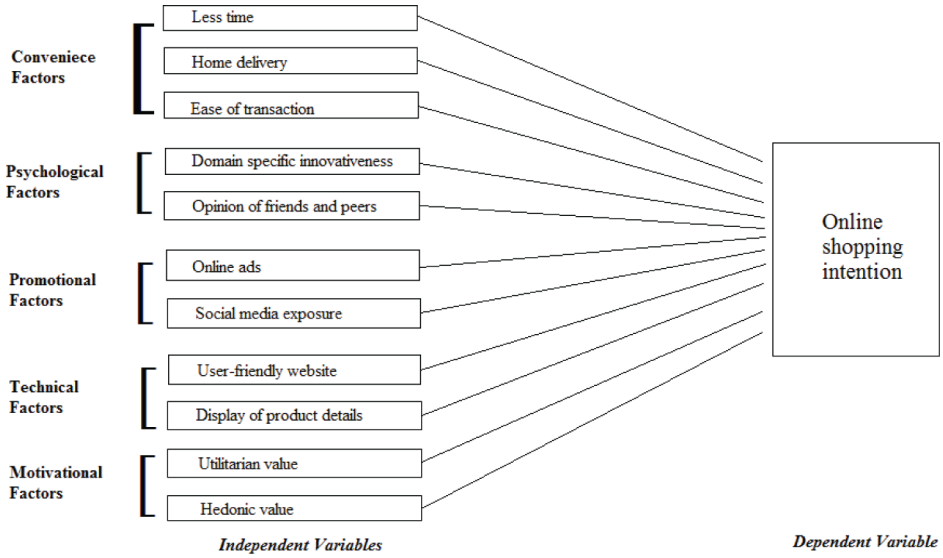
Using this model, the hypotheses can be developed as below:

H_0: Factors of online shopping do not significantly influence consumers' shopping intention.
H_1: Factors of online shopping significantly influence consumers' shopping intention.

Figure 1. Conceptual framework



SCOPE OF THE STUDY

This study discussed about the factors that influence consumers to shop online. It also identified the significant factors that instigated consumers to purchase online. This study is confined to only the samples taken from people residing in Dhaka, Bangladesh. The study focused on product retailing only. Online service delivery was not covered.

RESEARCH OBJECTIVE

The broad objective of this study is to measure the strength of the factors that influence the consumers to purchase online. This is divided into four specific objectives that this study tried to achieve. They are as follows:

- To identify the factors which are considered as the most significant ones in terms of influencing consumers to purchase online;
- To examine whether these particular factors apply in the context of Bangladeshi consumers;
- To obtain an understanding of the expectations of Bangladeshi consumers from the online retailers.

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METHODOLOGY

Nature of the Study

This is a descriptive study since it tries to find out the influence of factors on consumers to purchase online. Descriptive research is "a type of conclusive research that has as its major objective the description of something- usually market characteristics or functions" (Malhotra, 2015).

Type of Data

Both primary and secondary data were used to conduct this study. Secondary data were collected from other studies related to online shopping. Primary data were collected from respondents who purchased online using a survey. The target population of this study was the consumers who purchase online. The number of target population, for that reason, is uncountable.

Sample Size and Sampling Technique

Since this kind of test-marketing studies use 150-200 respondents, the sample size for this study was determined as 150. Non-Probability sampling technique was used to select the samples. The reasons for selecting non-probability sampling technique are 1) the variability in the population is low, 2) population size in undefined, 3) time and cost issues are available. Among the non-probability sampling techniques, convenience sampling was used.

Sample Element and Sample Unit

In this study, the sample element is a consumer who has the experiences of purchasing online. So, the sample unit here is an active Internet user who purchased online more than once.

Sampling Frame

The sampling frame is the Facebook friends of the researcher because these users have the greatest possibility of purchasing online. However, it was ensured that each respondent purchased online at least once.

Method of Data Collection

The data collection method was survey using questionnaire as the instrument. The questionnaire consisted of statements representing independent and dependent variables.

Type of Questions

The questionnaire is a structured questionnaire containing multiple choice questions. Since the study was supposed to find out the influence of factors of online shopping on customers, it required objective answers from the respondents for the analysis. Therefore, answers were numbered according to a measurement scale so that numerical findings come out.

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Scale of Measurement

A 5-point Likert scale was used that ranged from 1 to 5 in which "1" denotes "strongly disagree", "2" denotes "disagree", "3" denotes "neutral", "4" denotes "agree" and "5" denoted "strongly agree". These categories were used to measure the level of agreement of the respondents with the statements.

Data Analysis Method and Statistical Tool

For analysis, Multiple Linear Regression Model was used to measure the influence of factors of online shopping. For performing regression model, SPSS version 16 software was used.

LIMITATION OF THE STUDY

While conducting the study, following limitations had to be faced:

1. **Time limitation:** Conducting a study on a population comprising of all the online shoppers of a country needs more time whereas the time limit of this study was only 3 months;
2. **Lack of experience:** In order to conduct such a large-scale project, previous experience helps a lot. However, the researcher lacks in that;
3. **Sampling limitation:** Since the population size was unknown, probability sampling techniques could not be employed. As a result, nonprobability sampling technique was used.

DISCUSSIONS, ANALYSIS AND FINDINGS

In this study quantitative analysis has been performed. The analysis method used for this study is Multiple Linear Regression Model. Here the strength of association between Facebook marketing and consumers' purchase intention has been measured. For data processing the IBM SPSS Statistical Software version 16.0 package has been used. Table 1 shows the model summary of the research.

Table 1. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.556[a]	.310	.239	.920

Explanation

Here, by stating the model summary of the research, an attempt was made to identify the association between factors of online shopping and purchase intention created in consumers. R is called the correlation coefficient that represents the strength of association between dependent variable and independent

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variables. Its value ranges between -1 and +1. When the value of R is positive, it suggests a positive association between dependent variable and independent variables (Malhotra and Dash, 2012-2013). From the above table, we can see that the value of R is .556 which indicates that there is a positive association between Facebook marketing and consumers' purchase intention in Bangladesh.

From the aforementioned figure, it can be observed that the value of R square is .310 which means that dependent variable is weekly associated with independent variables, i.e. 31.0% of variation in dependent variable is explained by independent variables. "The strength of association is measured by the coefficient of determination, R^2. It varies between 0 and 1 and signifies the proportion of the total variation in Y that is accounted for by the variation in X" (Malhotra, 2015).

Here, the value of adjusted R square is .239. As moderate difference between R square and adjusted R square can be noticed, there are opportunities to add more variables. "R^2 is adjusted for the number of independent variables and the sample size to account for diminishing returns. After the first few variables, the additional independent variables do not make much contribution" (Malhotra, 2015).

ANOVA Table

According to Malhotra (2015), "the F test is used to test the null hypothesis that the coefficient of multiple determination in the population R^2_{pop} is zero. This is equivalent to testing the null hypothesis." The significance level in the model was 0.00 which is less the 5% level of significance used in the model. It therefore follows that the model is statistically significant in predicting how the independent variables affect consumers' online purchase intention. On the other hand, F critical at 5% significance level is 3.17 while the F-calculated is 4.402. It therefore follows that the overall model is significant since the F-calculated is greater than the F-critical. Table 2 shows the ANOVA model.

Table 2. ANOVA

ANOVA						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	40.974	11	3.725	4.402	.000[a]
	Residual	91.392	108	.846		
	Total	132.367	119			

Coefficient Analysis

Using the values shown in Table 3, the regression model becomes the following:

Consumers' purchase intention = .997 (Constant) - .030 (less time) + 0.482 (home delivery) - 0.204 (ease of transaction) - 0.358 (domain specific innovativeness) + 0.237 (opinions of friends and peers) + 0.068 (online ads) + 0.108 (social media exposure) – 0.038 (user-friendly website) + 0.148 (display of product details) + 0.334 (utilitarian value) + 0.054 (hedonic value) + e_i (error term)

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Table 3. Coefficient chart

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.997	.478		2.085	.039
	Less time	-.031	.131	-.030	-.237	.813
	Home delivery	.473	.115	.482	4.129	**.000**
	Ease of transaction	-.179	.127	-.204	-1.405	.163
	Domain specific innovative ness	-.335	.121	-.358	-2.764	.007
	Opinions of friends and peers	.206	.118	.237	1.747	.083
	Online ads	.059	.134	.068	.441	.660
	Social media exposure.	.100	.113	.108	.887	.377
	User-friendly website	-.029	.088	-.038	-.329	.743
	Display of product details.	.116	.102	.148	1.137	.258
	Utilitarian value.	.323	.100	.334	3.238	**.002**
	Hedonic value	.045	.084	.054	.544	.588

a. Dependent Variable: I would like to purchase things from online stores next time

The beta coefficients are the partial regression coefficients obtained. It "denotes the change in the predicted value, Y, per unit change in X when the other independent variables are held constant" (Malhotra, 2015).

Standardized coefficients calculated for each predictor variables, showing the percentage of variation in the dependent variable caused by the individual independent variables. It can be revealed that only the variable *'home delivery'* and *'utilitarian value'* are significant at *5%* level. The Standardized beta coefficient of home delivery is *0.482*(the highest) which means it is also the most important variable that influences purchase intention. The second most important variable is *'utilitarian value'* having a standardized coefficient of *0.334.* The third most important variable is *'opinions of friends and peers'*. Its standardized coefficient is *0.237.* The next important variable is *'display of product details'* having a standardized coefficient of *0.148.* Less time, ease of transaction, domain specific innovativeness and user-friendly website– these variables have negative standardized beta coefficients.

Correlation Matrix Analysis

From the correlation matrix (Appendix-2), we can see that maximum values are less than 0.5. We know that if the maximum values of correlation matrix exceed 0.5, then we must say that the research result is suffering from multi-collinearity problem. "Multicollinearity arises when the inter-correlations among the predictors are very high" (Malhotra, 2015). So, we can conclude that the research result is not suffering from the multi-collinearity problem.

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HYPOTHESES TESTING

H_0: Factors of online shopping do not significantly influence consumers' purchase intention H_1: Factors of online shopping significantly influence consumers' purchase intention.

From the coefficient table, the significance values for the two independent variables are 0.000 and 0.004. So, we can reject the null hypothesis (There is no significant impact of factors of online shopping on consumers' online purchase intention). So, it can be concluded that Factors of online shopping marketing has significant impact on consumers' online purchase intention.

RECOMMENDATIONS

1. Customers do not think that online shopping is time saving. So, marketers must try to reduce the overall time needed to process the order and deliver the product so that time is saved on their part;
2. Customers are highly influenced by the opinion of friends and peers. So, marketers must try to spread word-of-mouth to attract more customers to shop online;
3. Social media exposure proved to be a vital medium to serve for online shopping for the customers. So, marketers might also use this medium as wisely as possible to generate a huge amount of visit by the customers.

CONCLUSION

Online shopping is getting more popular day by day. And it will not be surprising if it replaces the popularity of offline shopping. In this study several problems of online shopping have been identified. If marketers can properly eliminate these problems and utilize the field, it can generate huge revenue for them. Already we can see the omnipresence of the social media. It can also be a good medium for online shopping as well. If the overall perception of online shopping can be slightly changed, people can willingly prefer online shopping to offline provided that the ever-increasing traffic jam of Bangladesh is day by day making the movement of cars slow to impossible. Besides, huge number of people always go for shopping that creates an awkward gathering of people in shopping malls. In order to avoid all these inconveniences online shopping can be a sigh of relief for the consumers in Bangladesh. So, it can be a great opportunity for the online marketers to turn these consumers to online shopping.

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REFERENCES

Akbar, S., & James, P. T. J. (2014). Consumers' attitude towards online shopping: Factors influencing employees of crazy domains to shop online. *Journal of Management and Marketing Research*, 1–11.

Akhter, S., Rahman, N., & Rahman, M. N. (2014). Competitive strategies in the computer industry. *International Journal of Technology Diffusion*, *5*(1), 73–88. doi:10.4018/ijtd.2014010106

Baubonienė, Z., & Gulevičiūtė, G. (2015). Commerce factors influencing consumers' online shopping decision. *Social Technologies*, *5*(1), 78–80.

e-Commerce Directory. (2014). Computer Jagat, e-commerce fair. Retrieved from http://e-commercefair.com/wp-content/uploads/2014/07/E-Commerce-Directory.pdf

Forsythe, S. M., & Shi, B. (2003). Consumer patronage and risk perceptions in Internet shopping. *Journal of Business Research*, *56*(11), 867–875. doi:10.1016/S0148-2963(01)00273-9

Javadi, M. H. M., Dolatabadi, H. R., Nourbakhsh, M., Poursaeedi, A., & Asadollahi, A. R. (2012). An analysis of factors affecting on online shopping behavior of consumers. *International Journal of Marketing Studies*, *4*(5), 81–98.

Lim, Y. J., Osman, A., Salahuddin, S. N., Romle, A. R., & Abdullah, S. (2016). Factors influencing online shopping behavior: The mediating role of purchase intention. *Procedia Economics and Finance*, *35*, 401–410. doi:10.1016/S2212-5671(16)00050-2

Malhotra, N. K. (2015). *Marketing research: An applied orientation* (7th ed.). Pearson, Inc.

Rahman, N., Rutz, D., Akhter, S., & Aldhaban, F. (2014). Emerging technologies in business intelligence and advanced analytics. *ULAB Journal of Science and Engineering*, *5*(1), 7–17.

Schlesinger, P. A., & Rahman, N. (2015). Self-Service business intelligence resulting in disruptive technology. *Journal of Computer Information Systems*, *56*(1), 11–21. doi:10.1080/08874417.2015.11645796

Sen, R. A. (2014). Online shopping: A study of the factors influencing online purchase of products in Kolkata. *International Journal of Management and Commerce Innovations*, *2*(1), 44–52.

Shah, J. (2014, December 29). Online shopping increases. *Prothom Alo*.

Topaloglu, C. (2012). Consumer motivation and concern factors for online shopping in Turkey. *Asian Academy of Management Journal*, *17*(2), 1–19.

Uzun, H., & Poturak, M. (2014). Factors affecting online shopping behavior of consumers. *European Journal of Social and Human Sciences*, *3*(3), 163–170.

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APPENDIX A: QUESTIONNAIRE

Questionnaire

Welcome to this survey. Please give your answers by choosing from multiple choices under the following statements. Your answers will be used only for research purpose.

1. Online shopping requires less time than shopping from physical stores

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	6

2. The option of home delivery is the most convenient thing about online shopping

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	6

3. I find the transaction process in online shopping more secure

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	6

4. I feel interest in purchasing new products in new ways

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	6

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5. The opinion of friends and peers are useful for me to take decisions

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	6

6. Online ads make me interested in an online store by giving me useful information about the product and the brand

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	6

7. Social media, in my opinion, is a perfect place for an online store to get exposure

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	6

8. A user-friendly, easily navigable and searchable website is necessary for me to think of online shopping

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	6

9. If the features of a product cannot be examined in detail, it is risky to shop online

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	6

10. Shopping online can be considered as a needed part of our life

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	6

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11. As a consumer, I think online shopping has the ability to give me pleasure and excitement and make me look 'cool'

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	6

12. I would like to purchase things from online stores next time

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	6

APPENDIX B: CORRELATION MATRIX

Table 4. Correlation Matrix

	DV	Less Time	Home Delivery	Ease of Transaction	Domain Specific Innovativeness	Opinions of Friends and Peers	Online Ads	Social Media Exposure	User-Friendly Website	Display of Product Details	Utilitarian Value	Hedonic Value
DV	1.000	.147	.291	.185	.112	.165	.172	.298	.208	.253	.374	.260
Less time	.147	1.000	.572	.762	.385	.242	.311	.319	.153	.218	.151	.101
Home delivery	.291	.572	1.000	.666	.325	.026	.173	.201	.146	.144	.050	.117
Ease of transaction	.185	.762	.666	1.000	.392	.249	.362	.349	.223	.319	.194	.118
Domain specific innovativeness	.112	.385	.325	.392	1.000	.604	.717	.418	.343	.512	.283	.188
Opinions of friends and peers	.165	.242	.026	.249	.604	1.000	.787	.312	.339	.389	.156	.108
Online ads	.172	.311	.173	.362	.717	.787	1.000	.428	.404	.481	.185	.185
Social media exposure.	.298	.319	.201	.349	.418	.312	.428	1.000	.607	.667	.389	.278
User-friendly website	.208	.153	.146	.223	.343	.339	.404	.607	1.000	.635	.199	.283
Display of product details	.253	.218	.144	.319	.512	.389	.481	.667	.635	1.000	.332	.119
Utilitarian value	.374	.151	.050	.194	.283	.156	.185	.389	.199	.332	1.000	.505
Hedonic value	.260	.101	.117	.118	.188	.108	.185	.278	.283	.119	.505	1.000

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Chapter 27
Best Customer Experience in E-Retailing:
A Knowledge-Based Empirical Model

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ABSTRACT

The main purpose of the research is to empirically test a model for assessing the association between outcomes as well as antecedents of online customer experience (OCE) in e-commerce websites in the case of KSA. The theoretical implications of customer online shopping behaviour have largely been discussed in the previously conducted studies however less consideration has been provided to the antecedents of e-retailing shopping and its effect on customer online shopping experience pertaining to KSA. The study has incorporated a quantitative method under which the data has been collected through primary sources using the survey. The sample of 150 respondents has been incorporated who provided their responses through a survey questionnaire. The questionnaire consisted of 13 questions and included five-point Likert scale in order to incorporate responses. The technique of analysis incorporated demographic analysis, correlation analysis and SEM model using SPSS and SmartPLS. It was identified that providing efficient online shopping experience through Tele-presence, ease of use and perceived benefit has a significant positive impact on consumer shopping experience pertaining to the shoppers of KSA.

1. INTRODUCTION

With the advancement in the technology, the competition in businesses is also increasing and in this essence, the emergence of e-retailing is prominent (Rose et al., 2012; Srikanth and Dhanapal, 2011). E-retailing can be deemed as a phenomenon which incorporates sales through online or electronic channels of the products and services (Dixit, 2016; Sarkar and Das, 2016). Therefore, with technological integration, the businesses are found to be keen to incorporate effective management strategies that can result in better customer experience (CE) (Hicks, 2018). The concept pertaining to customer experience deriving

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from online channels is now regarded as online customer experience (OCE) as stated by the research of (Salehi et al., 2013; Bleier et al., 2019). It has been due to the fact that better customer experience with the brand can lead to higher performance. Rose et al. (2011) in this essence stated that OCE is one of the significant factors that is affecting the aggregate performance of the organisations. Hence, this research is aimed to test a model empirically for assessing the association between outcomes and antecedents of OCE in e-retailing shopping website and the impact of those antecedents on CE in the case of Kingdom of Saudi Arabia (KSA). There are limited researches that have underpinned KSA's case, for instance; the research of Palací et al. (2019) considered the subject of customer satisfaction's (CS) antecedents and fragmented them into effective and cognitive tradition. Besides, the research of Rose et al. (2012) analysed OCE's antecedents' effect on OCE while considering the dimension of repurchase intention in the case of Malaysia. However, the researches in the same context on KSA are limited, therefore, the following research has addressed this gap due to increase in KSA's online shopping appetite of shoppers. According to a survey conducted by Mastercard (2014), there was a rise in online shopping in KSA and as per statistics at least every person e-shopped in a year. Therefore, this study has been focused on finding the antecedents of e-retail market and creating an empirical model to show the relationship of these antecedents with OCE as well as the impact of the former on the latter considering KSA which will be beneficial for the upcoming e-retailers to devise their strategies and the existing one to mend them. The main objectives of the research paper are stated as follows:

- To study the concept and idea of online customer engagement;
- To identify the components of online customer engagement;
- To assess the relationship between the factors of OCE associated with e-retailing based on antecedents and outcomes variables in the case of KSA.

2. LITERATURE REVIEW

2.1. Online Customer Experience

According to the study conducted by Novak, Hoffman and Yung (2000), the concept of customer experience is the subjective and internal response of the customers that are received by the indirect or direct connection with the company. Customer experience has also been regarded as the psychological construct in the literature that is also associated with customer involvement with the company or a brand. On the other hand, the study of Rose et al. (2012) professed that online customers often experience the receiving of sensory data on the website of the brand in the form of video, visual imagery and content-based information. It has also been posited in the research of Lim and Ayyagari (2018) that customer interprets and makes assumptions about the data for available on the websites and creates perceptions about the products and service of the brands. The study further explained that these perceptions and interpretations create overall OCE in either a positive or negative manner. The study of Yarimoglu (2014) has regarded OCE as the notion of total time spent by the customer on a single website that further affects their repurchasing behaviour. Therefore, the theoretical underpinnings of OCE have been associated with a customer experience which has been largely discussed in the literature.

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2.2. Antecedents and Outcomes of E-Retailing

The antecedents of e-retailing shopping experience have been taken from various studies such as Novak, Hoffman, and Yung (2000), Koufaris, Kambil and LaBarbera (2001) and Al-Debei, Akroush and Ashouri (2015). First, the study conducted by Novak, Hoffman, and Yung (2000) has been analysed in order to obtain theoretical support underpinnings of this research and to formulate the hypothesis. The research has undertaken the model called flow and included the variables in this model. It has been identified that flow is the effective way of enhancing OCE through the flow of information and it is also regarded as the state in which the customer is entirely engrossed in the activity. Therefore, the model proposed by Novak, Hoffman, and Yung (2000) has consisted of the variables such level of challenge, interactivity speed, Tele-presence and skills. This research has included the speed of interactivity and Tele-presence as the two variables amongst the five identified variables. The research of Lim and Ayyagari (2018) stated that Tele-presence in OCE is the use of virtual reality on the websites that will clearly show the customers all the basic attributes of the product. On the other hand, Changal (2005) stated that the speed of interactivity can impact OCE. Therefore, the hypothesis (H1) has been formulated in Table 1.

The remaining variables have been taken from the study of Koufaris, Kambil and LaBarbera (2001) in which the researchers have included the five variables namely ease of use, customisation, connectedness, perceived and aesthetic benefits. Amongst all these variables, the present research has undertaken ease of use, connectedness and perceived benefits in order to identify their impact on OCE. The various studies such as Prashar, Sai Vijay and Parsad (2017), Nagra and Gopal (2013) and Lin (2006) have supported the inclusion of connectivity in the context of customer experience where the study of Prashar, Sai Vijay and Parsad (2017) has explained the connectivity can be regarded as the way through which the companies create values on their website and hence affect the customer online behaviour. On the other hand, studies such as Akhlaq and Ahmed (2014), Shanthi and Desti (2015), Rizwan et al. (2014) and Ibrahim et al. (2013) have emphasised the ease of use as the major variable that can impact the effectiveness of online shopping behaviour. Lastly, the studies such as Al-Debei, Akroush and Ashouri (2015), Doolin et al. (2005) and Santana and Loureiro (2010) have emphasised perceived benefits as the major variable that can impact the efficiency of online shopping behaviour. Doolin et al. (2005) have further identified that the perceived benefits such as price comparison, convenience, saving time and enjoyment can impact OCE and can significantly impact the relationship between the retailer and the customer. Therefore, Table 1 shows the hypotheses (H1 to H5) created for testing how each variable has impacted OCE in e-retail market.

The research underpins the assessment of the effect of OCE's antecedents on the OCE while considering the case of KSA. The research of Rose et al., (2012) explained some of the e-retailing antecedents which have been considered in this study including connectedness, telepresence, speed of interactivity, ease of use and perceived benefits. However, the antecedents were not tested in the case of KSA. The statements presented under building hypotheses are representing the empirical analysis of the study which can be deemed as the proposed statements. Therefore, the hypotheses have been formulated to examine the case of KSA's OCE and e-retailing antecedents which are effective in improving OCE for profitable organisational performance.

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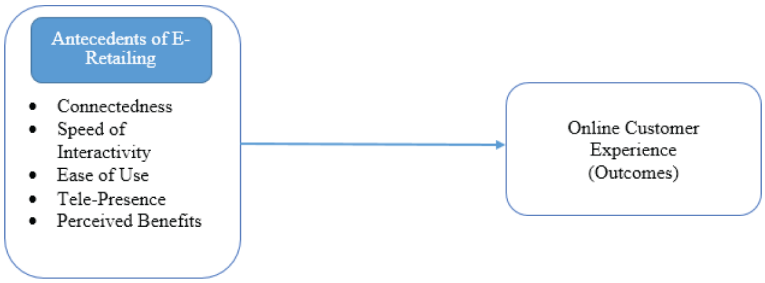
Table 1. Hypotheses formulation

Building Hypothesis	Key Supporting Literature	Hypothesis Formulation
The higher the experience of the Tele-presence by the customers at Internet shopping websites, the higher is the OCE	Novak, Hoffman and Yung (2000), Lim and Ayyagari (2018) and Liu and Teo (2004)	**H1**: Tele-presence has a significant positive impact on OCE in the case of KSA
The higher the experience of the Speed of interactivity by the customers at Internet shopping websites, the higher is the OCE	Novak, Hoffman and Yung (2000), Changal (2005) and Islam (2009)	**H2**: Speed of interactivity has a significant positive impact on OCE in the case of KSA
The higher the Ease of use by the customers at Internet shopping websites, the higher is the OCE	Koufaris, Kambil and LaBarbera (2001), Akhlaq and Ahmed (2014), Shanthi and Desti (2015), Rizwan et al. (2014) and Ibrahim et al. (2013)	**H3**: Ease of use has a significant positive impact on OCE in the case of KSA
The higher the Level of connectedness by the customers at Internet shopping websites, the higher is the OCE	Koufaris, Kambil and LaBarbera (2001), Lin (2006), Prashar, Sai Vijay and Parsad (2017) and Nagra and Gopal (2013)	**H4**: Level of connectedness has a significant positive impact on OCE in the case of KSA
The higher Perceived benefits by the customers at Internet shopping websites, the higher is the OCE	Al-Debei, Akroush and Ashouri (2015), Doolin et al. (2005) and Santana and Loureiro (2010)	**H5**: Perceived benefits have a significant positive impact on OCE in the case of KSA

2.3. Conceptual Framework

Pertaining to the variables discussed in the literature and hypotheses, the model has been formulated in Figure 1.

Figure 1. Conceptual framework



The figure displayed above is the conceptual framework of the study comprised of variables both independent and dependent. The independent variable named antecedents of e-retailing. As per the framework, the variable "antecedents of e-retailing" is divided into the speed of interactivity, Tele-presence, ease of use, connectedness and perceived benefits. On the other hand, the dependent variable of the study, as shown in the conceptual framework is OCE outcomes which can be either in terms of trust, satisfaction or repurchase intention of the consumers.

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3. METHODOLOGY

This research is based on a quantitative research design where a close-ended questionnaire was designed for data collection. The questionnaire has been based on the variables adopted from different studies whereas the scale was being set on five points Likert scale including strongly agree, agree, neutral, disagree and strongly disagree. The researcher accumulated primary data from where the respondents were online shoppers residing in KSA. According to Asharq Al-Awsat (2017), there are approximately 26 billion internet users in KSA while 88% of them use e-commerce. This forms approximately 22.88 billion yet this population was inaccessible for the researcher. Therefore, the researcher used convenience sampling so the participants were chosen from the proximities of the researcher's place. The distribution of the sample took a week where online channels were used while some questionnaires were distributed physically as well. Initially, it was distributed to 250 participants, however, 38 of them refused to take part, 29 did not return the questionnaire and 33 were incomplete, therefore, those responses had to be omitted for final analysis. The time to collect and organise the data took 3 months which initiated in mid of March 2018. Thus, the sample size of the research study has been sanctioned to 150 customers which has been estimated through Statistical Package for the Social Sciences (SPSS) software for basic statistics and SmartPLS have been used for SEM model along with correlation analysis. Therefore, the techniques incorporate SEM, correlation and demographic analysis.

4. RESULTS

The results have been presented in three sections where the first one deals with demographic analysis, the second section is related to correlation analysis and the third one is related to the structural model.

4.1. Demographics

The sample consists of 55.33% males while 44.67% are females. In addition, the people belonging to 25 to 30 years form 30%, 21 to 35 years form 34.67%, 36 to 40 years form 22.67% and 41 years and above forms 12.67%. The graphical presentation of the data can be seen in Figures 2 and 3.

Figure 2. Gender of the respondents

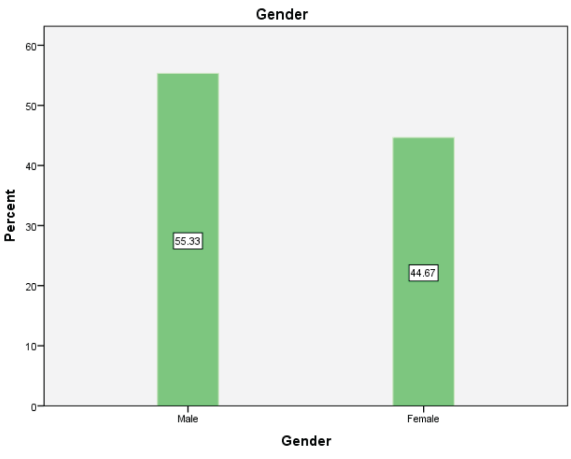
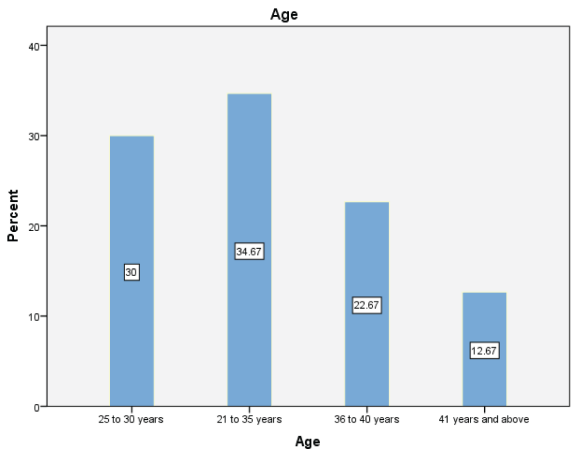


Figure 3. Age of the respondents



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4.2. Correlation Analysis

In order to analyse the association of e-retailing antecedents with the OCE, the correlation has been conducted. Correlation analysis has been defined as the scientific and statistical method that is used in order to find the relationship between the study's variables (Silverman, 2018). The main variable of the study is OCE which has been explored therefore, the association of connectedness with OCE is found to have a value of 0.564. The association is positive and moderate asserting that both variables would navigate in the same direction. The link of OCE with ease of use is found to be 0.689 which is strongly moderate and positive so, both will move in the same direction with a stronger magnitude. The case with perceived benefits and OCE is also similar to previously mentioned relationship because it has a value of 0.645, however, the association is found to be strongly moderate and positive. The antecedent of the speed of interactivity is positive but quite weak as the value if 0.135. Moreover, the variable of telepresence has a positively moderate association with OCE. Hence, all correlations are positive in the case of KSA. Table 2 shows the correlation analysis.

Table 2. Correlation analysis

	Connectedness	Ease of Use	OCE	Perceived Benefits	Speed of Interactivity	Tele-Presence
Connectedness	1.000					
Ease of Use	0.797	1.000				
OCE	0.564	0.689	1.000			
Perceived Benefits	0.813	0.789	0.645	1.000		
Speed of Interactivity	0.165	0.153	0.135	0.081	1.000	
Tele-Presence	0.639	0.778	0.673	0.624	0.264	1.000

4.3. Structural Model

Firstly, the reliability of the instrument based on the variables of the study has been tested. The acceptable value of the constructs' reliability is 0.6 which is stated by Ursachi et al., (2015) and Hair et al (2016). Hence, all variables have reliability above the threshold of 0.6. In addition, the composite reliability is also computed to be significant as the values are extremely high. The convergent validity is recognised using Average Variance Extracted (AVE) which according to threshold should be above 0.5 (Huang et al., 2013). Besides, the threshold for factor loadings according to Kline (2015) is 0.5. Hence, all factor loadings are significant of all variables of the study. The results can be viewed in Table 3.

Another significant concept while analysing a structural model is discriminant validity which opines that the variables should be unrelated to each other to produce better outcome and results with reduced errors (Wang, 2015). In this case, the research of Henseler et al. (2015) asserted that HTMT ratio should be below 0.9 to surpass the acceptability criterion. All the values mentioned below in the table are lower than 0.9 therefore, the discriminant validity is also proven of the variables, as shown in Table 4.

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Table 3. Reliability, validity and factor loadings

Variables	Indicators	Factor Loadings	AVE	Cronbach Alpha	Composite Reliability
Connectedness	C1	0.940	0.894	0.941	0.962
	C2	0.951			
	C3	0.946			
Ease of Use	EU1	0.911	0.762	0.694	0.865
	EU2	0.834			
OCE	OCE1	0.695	0.690	0.925	0.939
	OCE2	0.785			
	OCE3	0.828			
	OCE4	0.882			
	OCE5	0.914			
	OCE6	0.888			
	OCE7	0.804			
Perceived Benefits	PB1	0.947	0.909	0.900	0.952
	PB2	0.960			
Speed of Interactivity	SI1	0.820	0.743	0.661	0.852
	SI2	0.903			
Tele-Presence	TP1	0.761	0.629	0.804	0.871
	TP2	0.845			
	TP3	0.781			
	TP4	0.783			

Given this, the model description based on path analysis has been presented as follows. The table illustrates that the significant variables include ease of use, perceived benefits and telepresence concerning KSA's OCE. The effect of all the variables can be seen as positive referring to then significant ones. This surmises that improvement is any of the significant antecedents whether ease of use, perceived benefits or telepresence would lead to betterment in the OCE of the KSA shoppers. The significance has been deduced as per the p-value whose threshold is 0.05 as per the study of Cheng (2017), and Spokoiny and Dickhaus (2015) specifically when the confidence level is undertaken to be 95%. Therefore, speed of interactivity and connectedness have been found to be insignificant in these scenarios. Table 5 dispays the table of path coefficients.

For the purpose of assessment of the model's quality, the value of adjusted R-squared and R-squared have been presented as follows. The research of Gordon (2012) and Schumacker and Tomek (2013) demarcated the concept of both by stating that the variation in the predictors explaining the variation in the predictand can be deemed as R-squared whereas, adjusted R-squared is its modification which exhibits more accurate value because it adjusts the values with every increase in the predictors. Hence, the variation in e-retailing antecedents is explaining 55.3% variation in OCE related to KSA which is further declined to 53.7% subsequent to the adjustment. The Table 6 presents the results.

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Table 4. Discriminant validity using HTMT ratio

	Connectedness	Ease of Use	OCE	Perceived Benefits	Speed of Interactivity
Ease of Use	1.012				
OCE	0.562	0.810			
Perceived Benefits	0.883	1.011	0.655		
Speed of Interactivity	0.222	0.243	0.185	0.107	
Tele-Presence	0.726	1.002	0.748	0.717	0.376

Table 5. Table of path coefficients

	Path Coefficients	T Statistics	P Values
Connectedness -> OCE	-0.142	0.848	0.397
Ease of Use -> OCE	0.274*	2.009	0.045
Perceived Benefits -> OCE	0.328*	2.314	0.021
Speed of Interactivity -> OCE	-0.001	0.029	0.977
Tele-Presence -> OCE	0.346*	3.384	0.001

Table 6. R-squared and adjusted R-squared

	R Square	R Square Adjusted
OCE	55.30%	53.70%

Table 7. Hypothesis formulation

Hypothesis Formulation	Decision
H1: Tele-presence has a significant positive impact on OCE in the case of KSA	Supported
H2: Speed of interactivity has a significant positive impact on OCE in the case of KSA	Unsupported
H3: Ease of use has a significant positive impact on OCE in the case of KSA	Supported
H4: Level of connectedness has a significant positive impact on OCE in the case of KSA	Unsupported
H5: Perceived benefits have a significant positive impact on OCE in the case of KSA	Supported

Thoroughly analysing the data, the summarised table whether the hypotheses are accepted or negated are presented below. The first statement of hypothesis underpinned telepresence's significant impact on OCE which is supported because the p-value was 0.001 (p-value < 0.05). The next hypothesis pertaining to speed of interactivity is unsupported because the p-value is 0.97. The third hypothesis is regarding ease of use which is supported as the p-value is 0.045 and the fourth hypothesis is rejected with p-value 0.397. The last hypothesis regarding perceived benefits is supported with a p-value of 0.021. Therefore,

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pertaining to KSA, ease of use, telepresence and perceived benefits have been found to be significant and positively affecting the OCE. Table 7 shows the hypothesis formulation.

5. DISCUSSION

The main purpose of conducting this research was to develop and test a model empirically for assessing the relationship between outcomes and antecedents of OCE within e-retail shopping websites by drawing upon the extensive research. For this purpose, the conceptual model has been developed along with the empirical analysis of data collected from the customers of different communities who prefer to purchase through online websites. The study has offered new insights into the results and provided theoretical and practical implications for both practitioners and academics. The results of the study have coincided with the results of the researches conducted by Novak, Hoffman and Yung (2000), Changal (2005) and Islam (2009), Lim and Ayyagari (2018) and Liu and Teo (2004), Koufaris, Kambil and LaBarbera (2001), Lin (2006), Prashar, Sai Vijay and Parsad (2017) and Nagra and Gopal (2013). The study has also made the various contributions amongst which the most important has been the addition of new knowledge horizons into OCE in the case of KSA. For instance, the study has made the combination of those variables that were not being studied in any previous study; Koufaris, Kambil and LaBarbera (2000), Novak, Hoffman and Yung (2000) and Changal (2005); especially with respect to OCE.

6. CONCLUSION

The main purpose of conducting this study is to develop and test a model empirically for assessing the relationship between outcomes and antecedents of OCE within internet shopping websites. The results have achieved through correlation, regression and factor analysis and identified that speed of interactivity; Tele-presence, ease of use; connectedness and perceived benefits are the main antecedents of the e-retail market and have a significant impact on OCE. These antecedents have been derived from various studies in order to create a conceptual model and to apply the empirical tests in order to obtain results. The theoretical contribution of this research is associated with the proposed model indicating the factors such as Tele-presence, ease of use and perceived benefits having an impact on OCE pertaining to KSA shoppers. This is a major contribution of this research to the existing body of knowledge that does not show theory combining all these factors as the antecedents of online shopping impacting customer online shopping experience. In theory, all the identified antecedents have been regarded as important in the e-retailing sector; but, OCE has not been set as the measuring scale for identifying the success of the antecedents of online shopping in the case of KSA. Appendix A includes the Survey Questionnaire, and Appendix B shows the Path Models.

This research also has a number of managerial implications such as the various e-retailers would be allowed to distinguish amongst the factors that can make a difference between online and offline customer experience. Using these factors, the organisations will be able to offer a convenient and exciting shopping experience to customers allowing them to continuously and consistently purchase from their brand. Organisations using online retailing would be able to analyse and understand the perceptions of the customers regarding the benefits of e-retailing. With regard to this, different perceived benefits can be turned into actual benefits offered to the customers inclining them to make more purchases from the

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online shopping website. However, there have also been a number of limitations such as the study has not included the respondents from the age group of generation Y (18-24 years) whereas the sample size of the study has also been limited to 150 respondents. For future researchers, it has been recommended to incorporate different age groups, larger sample size and some qualitative aspects of the research as well.

REFERENCES

Akhlaq, A., & Ahmed, E. (2014). Online Shopping: A Global Perspective. *Journal of Basic and Applied Sciences*, *4*, 153–160.

Al-Debei, M. M., Akroush, M. N., & Ashouri, M. I. (2015). Consumer attitudes towards online shopping: The effects of trust, perceived benefits, and perceived web quality. *Internet Research*, *25*(5), 707–733. doi:10.1108/IntR-05-2014-0146

Asharq Al-Awsat. (2017). *Saudi Arabia's E-Commerce Market Grows to $7.9 Billion in 2017*. Retrieved from https://aawsat.com/english/home/article/1279636/saudi-arabia%E2%80%99s-e-commerce-market-grows-79-billion-2017

Bleier, A., Harmeling, C. M., & Palmatier, R. W. (2019). Creating Effective Online Customer Experiences. *Journal of Marketing*, *83*(2), 98–119. doi:10.1177/0022242918809930

Changal, K. R. (2005). *Effect of perceived interactivity of online stores on purchase intention*. Washington State University.

Cheng, R. (2017). *Non-standard parametric statistical inference*. Oxford University Press. doi:10.1093/oso/9780198505044.001.0001

Dixit, S. (Ed.). (2016). E-retailing Challenges and Opportunities in the Global Marketplace. Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9921-2

Doolin, B., Dillon, S., Thompson, F., & Corner, J. L. (2005). Perceived risk, the Internet shopping experience and online purchasing behavior: A New Zealand perspective. *Journal of Global Information Management*, *13*(2), 66–88. doi:10.4018/jgim.2005040104

Gordon, R. A. (2012). *Applied statistics for the social and health sciences*. Routledge. doi:10.4324/9780203135297

Hair, J. F. Jr, Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage publications.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135. doi:10.100711747-014-0403-8

Hicks, N.R., 2018. Customer relationship management in the e-retailing environment.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Huang, C. C., Wang, Y. M., Wu, T. W., & Wang, P. A. (2013). An empirical analysis of the antecedents and performance consequences of using the moodle platform. *International Journal of Information and Education Technology*, *3*(2), 217–221. doi:10.7763/IJIET.2013.V3.267

Ibrahim, A. S., Khan, A. H., Rahman, M. K., & Ramezanie, E. (2013). Accessing the effectiveness of online shopping among Malaysian consumers. *Australian Journal of Basic and Applied Sciences*, *7*(7), 603–612.

Islam, H. (2009). Effects of website interactivity on online retail shopping behavior. In *Value Creation in E-Business Management* (pp. 131–142). Berlin: Springer. doi:10.1007/978-3-642-03132-8_11

Kline, R. B. (2015). *Principles and practice of structural equation modeling*. Guilford publications.

Koufaris, M., Kambil, A., & LaBarbera, P. A. (2001). Consumer behavior in web-based commerce: An empirical study. *International Journal of Electronic Commerce*, *6*(2), 115–138. doi:10.1080/10864415.2001.11044233

Lim, J., & Ayyagari, R. (2018). Investigating the determinants of telepresence in the e-commerce setting. *Computers in Human Behavior*, *85*, 360–371. doi:10.1016/j.chb.2018.04.024

Lin, P. W. 2006. *The effects of consumers' online shopping goals and their characteristics on perceived interactivity and shopping behaviors* [Doctoral dissertation]. University of Missouri--Columbia.

Liu, X., & Teo, H. H. (2004). Impact of telepresence on consumer learning: a consumer information processing approach. In PACIS 2004 Proceedings. Academic Press.

MasterCard Social Newsroom. (2014). *Online shopping on the rise in Saudi Arabia: MasterCard Survey*. Retrieved from https://newsroom.mastercard.com/mea/press-releases/online-shopping-on-the-rise-in-saudi-arabia-mastercard-survey/

Nagra, G. & Gopal, R. (2013). An study of Factors Affecting on Online Shopping Behavior of Consumers. *International journal of scientific and research publications, 3*(6), 1-4.

Novak, T. P., Hoffman, D. L., & Yung, Y. F. (2000). Measuring the customer experience in online environments: A structural modeling approach. *Marketing Science*, *19*(1), 22–42. doi:10.1287/mksc.19.1.22.15184

Palací, F., Salcedo, A., & Topa, G. (2019). Cognitive and Affective Antecedents of Consumers' Satisfaction: A Systematic Review of two Research Approaches. *Sustainability*, *11*(2), 431. doi:10.3390u11020431

Prashar, S., Sai Vijay, T., & Parsad, C. (2017). Effects of online shopping values and website cues on purchase behaviour: A study using S–O–R framework. *Vikalpa*, *42*(1), 1–18. doi:10.1177/0256090916686681

Rizwan, M., Umair, S. M., Bilal, H. M., Akhtar, M., & Bhatti, M. S. (2014). Determinants of customer intentions for online shopping: A Study from Pakistan. *Journal of Sociological Research*, *5*(1), 248–272. doi:10.5296/jsr.v5i1.6565

Rose, S., Clark, M., Samouel, P., & Hair, N. (2012). Online customer experience in e-retailing: An empirical model of antecedents and outcomes. *Journal of Retailing*, *88*(2), 308–322. doi:10.1016/j.jretai.2012.03.001

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Rose, S., Clark, M., Samouel, P., & Hair, N. (2012). Online customer experience in e-retailing: An empirical model of antecedents and outcomes. *Journal of Retailing*, *88*(2), 308–322. doi:10.1016/j.jretai.2012.03.001

Rose, S., Hair, N., & Clark, M. (2011). Online customer experience: A review of the business-to-consumer online purchase context. *International Journal of Management Reviews*, *13*(1), 24–39. doi:10.1111/j.1468-2370.2010.00280.x

Salehi, M., Salimi, M., & Haque, A. (2013). The impact of online customer experience (OCE) on service quality in Malaysia. *World Applied Sciences Journal*, *21*(11), 1621–1631.

Santana, S., & Loureiro, S. (2010). Assessing benefits and risks of online shopping in Spain and Scotland. *Portuguese Journal of Management Studies*, *15*(2), 161–172.

Sarkar, R., & Das, S. (2016). E-Retailing: Boon or Bane? *International Journal of Management Research and Reviews*, *6*(1), 9.

Schumacker, R., & Tomek, S. (2013). *Understanding statistics using R*. Springer Science & Business Media. doi:10.1007/978-1-4614-6227-9

Shanthi, R., & Desti, K. (2015). Consumers' perception on online shopping. *Journal of Marketing and Consumer Research*, *13*, 14–21.

Silverman, B. W. (2018). *Density estimation for statistics and data analysis*. Routledge. doi:10.1201/9781315140919

Spokoiny, V., & Dickhaus, T. (2015). *Basics of modern mathematical statistics*. Heidelberg: Springer.

Srikanth, V., & Dhanapal, R. (2011). A business review of e-retailing in India. *International Journal of Business Research and Management*, *1*(3), 105–121.

Ursachi, G., Horodnic, I. A., & Zait, A. (2015). How reliable are measurement scales? External factors with indirect influence on reliability estimators. *Procedia Economics and Finance*, *20*, 679–686. doi:10.1016/S2212-5671(15)00123-9

Wang, X., French, B. F., & Clay, P. F. (2015). Convergent and discriminant validity with formative measurement: A mediator perspective. *Journal of Modern Applied Statistical Methods*, *14*(1), 11. doi:10.22237/jmasm/1430453400

Yarimoglu, E. K. (2014). Online customer experience. In Marketing in the cyber era: Strategies and emerging trends (pp. 129–141). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-4864-7.ch009

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APPENDIX A: SURVEY QUESTIONNAIRE

The following questionnaire has been adopted from the study of Rose et al. (2012).

Demographics

Age

- 25-30
- 31-35
- 36-40
- 41 and above

Gender

- Male
- Female

Antecedents of E-Retail Market

Speed of Interactivity

1. Pages on e-retailing websites typically load speedily that ultimately impacts my shopping experience
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree
2. The internet shopping website can allow to interact faster with the brands and provide me the best opportunity to experience their services
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree

Tele-Presence

3. I forget about my instant surroundings when I use e-retailing shopping websites
    - Strongly agree
    - Agree
    - Neutral
    - Disagree

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- Strongly Disagree

4. Using e-retailing shopping website is like a great journey that often inclines me to come back for making purchases
   - Strongly agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree
5. Internet shopping often makes me forget where I am
   - Strongly agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree
6. Using Internet shopping websites creates a new world for me
   - Strongly agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

Ease of Use

7. Internet shopping allows me to easily shop for what I want and it enhances my experience as well
   - Strongly agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree
8. Navigation is often quick as well as easy when I shop on the Internet
   - Strongly agree
   - Agree
   - Neutral
   - Disagree
   - Strongly Disagree

Connectedness

9. Observing the product orientations of other customers who use e-retailing shopping websites is helpful.
   - Strongly agree
   - Agree
   - Neutral

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- Disagree
- Strongly Disagree

10. Being able to connect with other consumers who share similar benefits in the same products is an encouraging component of Internet shopping
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree
11. Viewing the comments of other consumers who use Internet shopping websites is essential for my shopping experience
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree

Perceived Benefits

12. I can obtain information about which products are appropriate for my needs in comparison to other products by surfing Internet shopping websites.
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree
13. The suitability of Internet shopping is a key benefit.
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree

Online Customer Experience

14. Internet shopping through e-retailing shopping websites is a trustworthy experience and it has made my experience better throughout the journey
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree
15. I am satisfied with the purchase experience of Internet shopping through e-retailing websites

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- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

16. I regularly repurchase from the same websites if my experience is better every time I use internet websites
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree
17. I am satisfied with the pre-purchase experience of Internet shopping websites
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree
18. I am satisfied with the post-purchase experience of Internet shopping websites
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree
19. I anticipate the benefits for repurchasing from Internet shopping websites in near future
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree
20. It is a benefit when the content of e-retail shopping websites is somewhat predisposed by the community that use it
    - Strongly agree
    - Agree
    - Neutral
    - Disagree
    - Strongly Disagree

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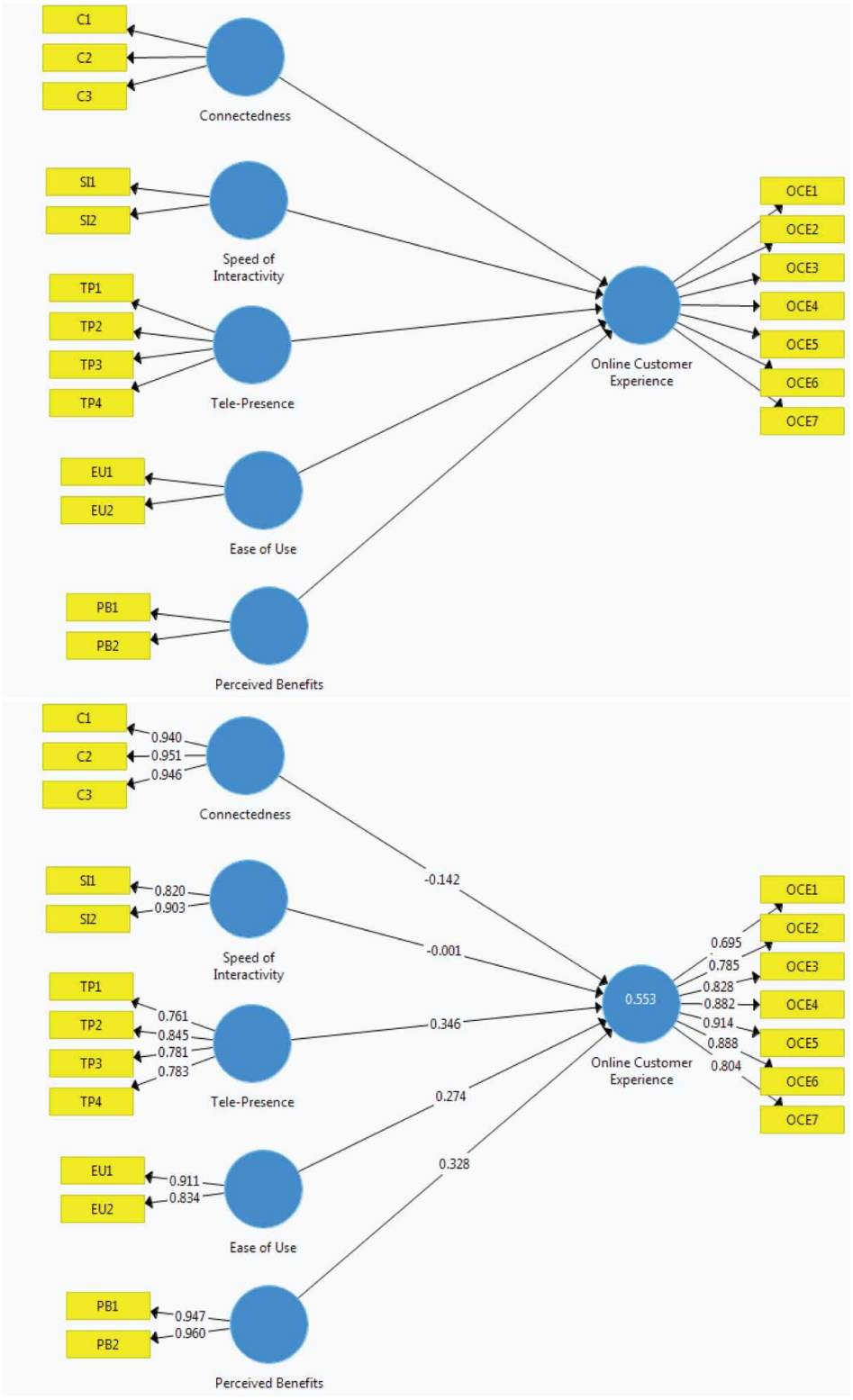
APPENDIX B: PATH MODELS



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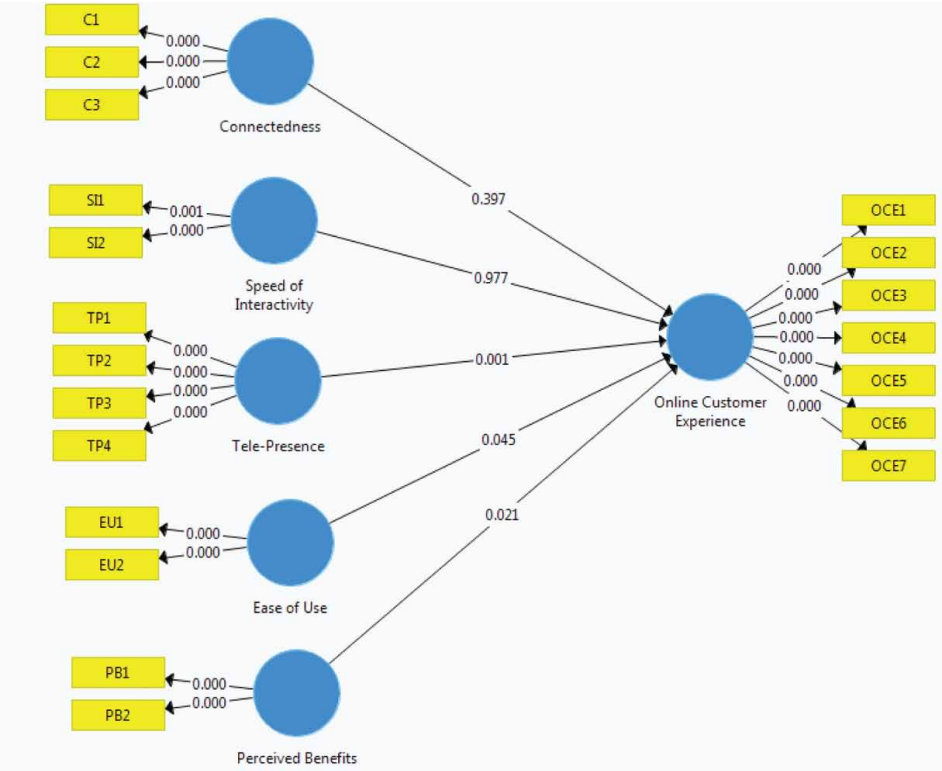

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Chapter 28
The Online Reviews' Effects on Internet Consumer Behavior:
An Exploratory Study

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ABSTRACT

Consumer behaviors have always been the hot spot of the study. With the arrival of the network age and the popularity of e-commerce, the consumption pattern of shopping online is beginning. Until December of 2014, there were 649 million Internet users in China, and it's increasing. In the year of 2014, the number of most mainstream online shoppers has increased by 23.7% and shopping online has become an irresistible trend. New consumption mode can produce a new research subject, the study of Internet consumer behaviors becomes very important. This article used LocoySpider, a data mining software, to mine Taobao online reviews. Through the analysis of online reviews, we can study the effect of online reviews on consumer behaviors. During the study, we set the risk perception as intermediary variable. By the study, we can help the electronic commercial enterprises to attract customers, retain customers and reduce the information search cost.

INTRODUCTION

With the development of the Internet, we have entered the e-commerce age. Great changes have taken place in people's lives: sites like Alibaba, Amazon, Jingdong have changed people's consumption patterns. According to CNNIC, the number of Internet users has reached 649 million by December 2014 in

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China. Compared with the previous year, the growth rate is 5%. The number of active buyers on Alibaba platform has reached 255 million. Only in the third quarter of 2015, Taobao's GMV has arrived 438,000 million yuan, it's growth rate is 15% year-on-year. From the data above, we can see that shopping online has become a hot trend. When the consumers go shopping online, they would browse online reviews to find the merchandise news which can help them know more information about the goods. The historical and cultural environment of our country has great influences on the consumers, so consumers' purchase decisions are easily affected by others. According to the survey by Deloitte's Consumer Products, we can see that there will be 67% of Internet users to browse online reviews, 82% of them think that online reviews can affect their purchase decisions directly. So, online reviews have important influences on consumers' purchase decisions. So, it has great importance to study online reviews.

Through the study of online reviews, we can know the characteristics of online reviews, so that we can grasp the focus of consumers. Based on the understanding the mechanism of reviews' influences on consumer behaviors, the online merchants can find out their disadvantages. So, they can improve the quality of products and services and control the influences of online reviews dissemination effectively. Some specialists have made some studies about online reviews, for examples Gu and Xu (2015) built the index system of online reviews from two dimensions which are the quality of content and the value of the reviewers. The online reviews can be divided into four categories. They are efficient reviews, suspicious comments, potential comments and invalid comments. Through the analysis of their usefulness, we can distinguish the efficient comments and use them. Mudambi and Schuff (2010) published a paper in MISO, it has defined the concept of online reviews' usefulness. They used the theories of information economics and the framework of decision-making uncertainty. Based on the data of Amazon, their analysis showed that the extreme comments and the length of the comments has directly influences on online comments' usefulness. At the same time, they researched the regulatory effects about search products and experience products. Yan, Zhang, and Zhang (2015) studied whether the content of online reviews has impacts on the usefulness of comments. They found that the deeper and more objective the online comments are, the higher the usefulness of comments is. The higher the product matches the description degrees and the more information of product characteristics the reviews have, the higher are the usefulness of comments. Chen and Xu (2014) studied the online comments from two perspectives, they are the characteristics of review and the information of reviewers.

They analyzed the factors that could affect the online review to acquire online comments' useful votes. From the study, they found that the comment score has a negative effect on online reviews' useful votes and the richness of comment information. The historical evaluation has a positive influence on its usefulness. Hao, Ye, and Li (2010) had set up the model of influential factors of online comments usefulness. They found that positive emotional tendency, the higher mixed degree of the positive and negative emotion, the higher mixed degree of subjective and objective expression and the longer the average sentence have significant positive effect on the usefulness of comments. Ning and Sun (2014) studied the influences of negative online comments on online consumers' purchase intention from the aspects of the number of negative comments, the degree of its negative, the contents, etc. On this basis, Zhou, Li, and Mou (2015) took the psychological distance as intermediary variables to study online reviews' influences on online consumers' purchase intention. They also studied the mediation comments' influences on online purchase intention which is under the regulation of different commodity types. Mo and Li (2015) studied the number of mixed reviews, favorable reviews and unfavorable reviews. Thus, it is concluded that the number of them has effects on consumer purchase intention. These studies made great contributions to the study of online reviews later.

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Even though some specialists have made great achievements in the study of online comments, some of their studies only focus on the usefulness and authenticity by mathematical models. Other specialists studied the influences of online reviews on consumer behaviors from the perspective of psychology without intermediary variables. This article will take the risk perception as the intermediary variable to study the effects of online reviews on consumers' purchase intentions (David P. MacKinnon, 2008; Chang, Cheung & Tang, 2013). It is different from traditional data-collection method, we will use the date acquisition software, LocoySpider, to collect online reviews. Then carry out the empirical analysis (Chen, Xu, & Fan, 2012). With the utilization of big data technology, the research can be more objective and real.

LITERATURE REVIEW

Online comment is also called network comment or Internet word of mouth, which refers to personal experience, the evaluation of the product, the discussions and products promotion information spreading on the Internet concerned about products, services and enterprise brands. As the summaries of purchase experiences, both online reviews and the traditional reviews have many similarities. For example, they made conclusions about the characteristics of products' quality, price, price ratio, and so on. But as a product of new era, online comments are different in some degree. Compared with the traditional comments, online reviews are fast, informative, storable, anonymous, measurable. Many scholars have investigated the online reviews from different aspects.

The Risk Perception

Risk perception is a concept of psychology, many scholars have taken risk perception as variables to study consumer behaviors. In this paper, we take risk perception as intervening variable to study the online reviews' influences on Chinese consumers' purchase intentions. Some scholars usually believe that there are two kinds of risks, one is the subjective risk and the other is the objective risk. Among the amount of the studies, Chen (2013) studied online trade willingness from aspects of risk perception and website trust. Dong (2005) put forward the four dimensions of risk perception: the risk of online retail service, the attendant risk, the risk of personal privacy and the fake goods risk, etc. Based on the classification standard of Dahai Dong, we set up three indexes to measure risk perception. They are the risk of service, the risk of quality and the risk of logistics.

The Characteristics of Online Reviews and Reviewers

The characteristics of online reviews and reviewers are the important indicators to take the study, setting up the measurements of online reviews and reviewers is the basis of online reviews' research. Many scholars have established many indicators in the process of research, as it is shown in Table 1:

Based on online reviews' indicators in Table 1 and taking all the factors into consideration, we set up three indexes of online reviews' characteristics which are the length of the reviews, the strength of the reviews' tone and the richness of the description. We use the credit score to measure the characteristics of the reviewers. And we use the degree of satisfaction, purchase intention and likable degree to measure consumers' purchase intention.

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Table 1. Research indicators of online reviews

View of research	Index of research	Literature
The quality of online reviews	Extreme comments, The depth of the review, Comment on the release time	Ghose & Iperotis, 2007
The reviewers and the quality of online reviews	The reputation of reviewers	O'Mahony & Smyth, 2009
The comments' utility of commenting community	The quality of online reviews: The depth of the review, The strength of the reviews' tone, the consistency of the comment The reviewers: Recency, Frequency, Monetary	Gu & Xu, 2015
The influences of the number of comments' useful votes	Reviews' score, readability of the review, average stroke number of the word, length of average sentence, number of the words with multi-stroke-characters, richness of review information, number of the review, usefulness of the historical comments	Chen & Xu, 2014
The influences of the quality of online reviews	The quality of online reviews: Relevancy, Detailed, Timeliness, Reliability	Wu, Xu & Liang, 2012
The usefulness of online reviews	Review's positive and negative emotions, The subjective or objective forms of perspective sentences, Objective description and evaluation, The title of the comment, The comments' released days, The length of average sentence	Hao, Ye & Li, 2010
The usefulness of online reviews	length of the review, Timeliness, Reviewers' network center, diversity of reviewers' relationship, experience skills of the reviewers, differences of average star	Yin, 2012
The credibility of online reviews	credibility of online reviews, quality of online reviews, structure of the reviews, etc.	Guo, Chen &He, 2010
The quality of online reviews and the credibility of online reviews	quality of online reviews: consistency of the comment, Time, number of the votes its acquired, length of the review credibility of online reviewers: publication of reviewers' identity, Reviewers' credit rating	Wang, 2015
Online reviews and risk awareness	credibility of online reviewers, timeliness of the online comments, risk awareness of online reviews receiver	Yu, Xia & Wang, 2014
The influences of negative review	The degree of unfavorable reviews, number of unfavorable reviews, Relevance of the unfavorable reviews, professions of unfavorable reviews	Ning & Sun, 2014

HYPOTHESES AND RESEARCH MODEL

The Influences of Risk Perception on Purchase Intention

The risk perception is the psychological assessment on the risk of shopping online, when network consumers face the uncertainty Internet environment. The risk perception contains the risk of quality, the risk of service and the risk of logistics.

The risk of quality refers to the network consumers' psychological assessment that if the products' actual quality is consistent with the description of the goods. Shopping online has the characteristics of fast, convenient and meeting the demand without leaving home. Shopping online has brought many conveniences to people's lives, but the characteristics of it lead to the separation of time and space in the process of it. When we choose the product, without touching and getting the perception of its quality closely, we can only evaluate the quality of product through the descriptions. So, it may exist the conditions that products' quality are not in conformity with description of actual situation. And consumers will determine whether the quality of the goods and the description are consistent or not according to

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the description of online reviews. The consumers' risk perception about the quality of the goods will affect the online consumers' purchase intention.

The risk of logistics refers to network consumers' psychological assessment of the possible risk in the process of logistics. Because shopping online has the characteristic of spatial separation, consumers could not immediately get the product after buying them. It needs to go through the logistics process before consumers get the goods. During the process of delivery some problems may come up. Although the economic loss of logistics is not bearing by consumers, the consumers still perceive the risk. For example, the loss of the goods and the speed of logistics can affect the consumers' mood, it may delay the time of using the goods and take consumers more time costs. So, the risk of logistics will affect consumers' purchase intentions.

The risk of service refers to the network consumers' psychological assessment of the risk in the process of service. Due to the spatial isolation of shopping online, consumers cannot take actual experience on the products, consumers can consult a lot of questions about the products in the process of the shopping online. The attitude of merchants and the timeliness of answering the questions will affect consumers' purchase intention. The convenience of shopping online determines that consumers can turn to other merchants easily with a low cost of clicking the mouse. For example, if it has long response time or their attitudes are bad, the consumers may feel that they are not respected. Then the purchase intentions of the customers will reduce. If the sellers can answer the questions in time and their services are very enthusiastic, they will acquire more trust from the consumers, which will increase consumers' willingness to buy goods and help consumers make their purchase decision.

The risk of quality, the risk of service and the risk of logistics can present the risk perception. So, the risk perception can affect the consumers' purchase intention. If the risk perception of the consumers is smaller, their purchase intention will be stronger. On the contrary, if the risk perception of the consumers is bigger, they will give up buying the goods. Thus, we propose the following Hypothesis:

H1: The risk perception has negative influences on consumers' purchase intention.

The Influences of Online Reviews on Risk Perception and Purchase Intention

Online reviews have a significant impact on Internet consumer behavior, which are suggestions offered by a third party besides the sellers and buyers. Compared with the suggestions offered by the sellers, the product introductions provided by consumers will be more objective. Because the reviewers and the browsers are in the same position, reviewers' opinions were more likely to be accepted by the browsers. We will reveal the online reviews' influences on Internet consumption behavior below.

In the process of shopping online, the online reviews have great influences on consumers' risk perception and purchase intention. In this paper, we will study the online reviews from the following aspects.

Online reviews are the feelings of consumers after buying and using the commodities. Then the consumers write them in the text form and provide references for helping the following consumers. The characteristics of online reviews refer to some essential properties of online reviews, such as the number of the total words, the number of emotional words and their emotional color, the description dimension of the commodities, and so on. We can use the strength of the reviews' tone, the length of the reviews, the richness of the description to measure the characteristics of online reviews.

The length of the reviews refers to the number of online reviews' word. If the consumers have more feelings about the quality of the goods and characteristics of the products, they will tend to use more

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words to describe the products. If their experiences are not deep, the consumers often comment it with less words and even do not post reviews. Some retailers have realized online reviews' influences on consumers. In order to get favorable reviews, the sellers will adopt the method of cash back to encourage consumers to give high praises. Some consumers will give favorable reviews in order to get cash back rewards in the condition that the goods don't deserve. On this occasion, the reviews could be more perfunctory and have a little of words. Mentally, consumers think that the more words the online reviews have, the more credible the comments are. The deeper the review is, the smaller the risk perception of consumers is. Then they will increase the consumers' purchase intention further.

The strength of the reviews' tone refers to the number of emotional words and their emotional color. When consumers comment on products, they often use a variety of modal particles, such as dislike, like, like it very much, and so on. These words give consumers different feelings in psychological. If the tone of online reviews is stronger, the reviews will get other people's identity easily, and it will have strong persuasiveness. We can judge whether the online reviews are authentic according to the strength of the reviews' tone. And its authenticity can reduce the risk of consumers' awareness and increase consumers' purchase intention.

The richness of the description is the dimensions of online reviews that describe the goods or services. Some consumers focus on the fabrics; some of them think logistics is very important; some of them think service is important to customers. Only a few people make the reviews in a comprehensive way. The tremendous amount of online comments can affect consumers' awareness of the commodities. The larger the comments' richness is, the easier they can reduce consumers' risk perception and enhance their purchase intention.

From the measurement indexes above, we can see that the characteristics of online reviews have great influences on consumers' risk perception and consumers' purchase intention. If the characteristics of online reviews is very good, it will reduce consumers' risk perception and increase consumers' purchase intention. On the contrary, it will increase consumers' risk perception and reduce consumers' purchase intention. Thus, we propose the following hypotheses:

H2: The characteristics of online reviews have negative influences on consumers' risk perception.
H3: The characteristics of online reviews have positive influences on consumers' purchase intention.

The depth of online reviews, the strength of the reviews' tone and the characteristics of the reviewers will affect consumers' psychological distance. The deeper and stronger reviews and the reviewers with higher credit scores can make consumers' psychological distance closer. This phenomenon will reduce the risk perception of consumers and increase trust perception. Plus, the number of comments and month sales volume will increase the influences on consumers' purchase intention. It will prompt consumers to make purchase decisions. The process of online reviews' influences on network consumers is continuous, so we should plan it as a whole system when we study it. Then we can get the following Hypothesis:

H4: The characteristics of online reviews can affect consumers' purchase intention through the risk perception.

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Online Reviewers' Influences on Internet Consumption Behavior

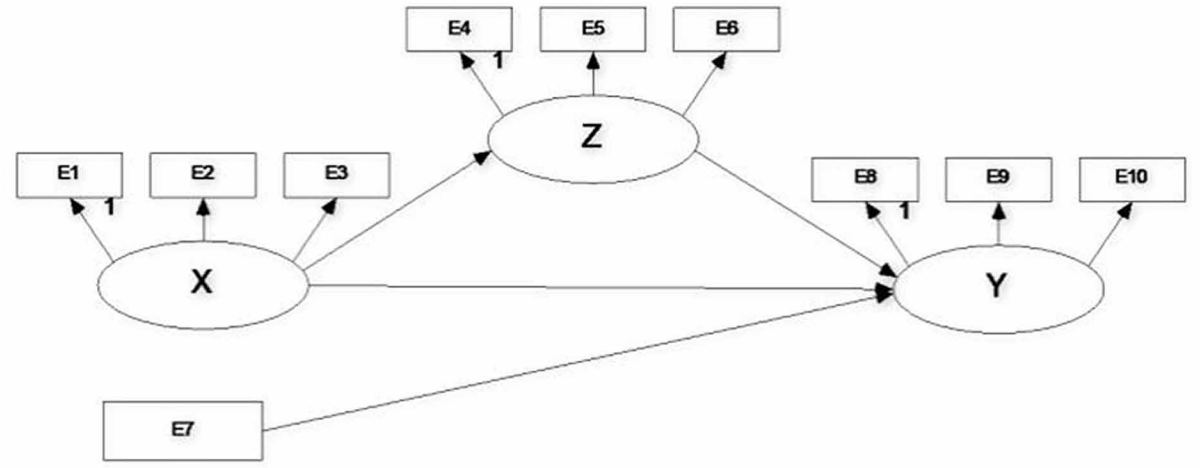
The depth of online reviews, the strength of the reviews' tone and the richness of the description are studied based on the characteristics of the online comments. Addition to these characteristics of reviews, the reviewers who have many experiences and credibility of shopping online could also affect consumers' risk perception and purchase intention. In this paper, we use the credit score to represent the consumers' experiences and credibility of shopping online. Credit score refers to the evaluation of the network consumers after they go shopping online. Every time they go shopping online, they will have one chance to acquire evaluation. The reviewers with high credit scores tend to have rich experiences in making online reviews. They know more information about how to discuss the products. Due to their high credibility and rich experiences, the reviewers with high credit scores may have a position of authority. Therefore, they tend to get consumers' trust and recognition more easily. So, they can affect consumers' purchase intention. Otherwise, the reviewers with low credit scores tend not to be trusted. Then we can get the following Hypothesis:

H5: The credit score has positive influence on consumers' purchase intention.

The Model

From the Hypotheses above, we can get the theory model about the impacts of online reviews on consumer behavior. The model is shown as Figure 1:

Figure 1. The model diagram of online comments' influences on the consumer behavior



- X: The characteristics of online reviews
- Y: Consumers' purchase intention
- Z: Risk perception
- E1: The strength of the reviews' tone

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- E2: The length of the reviews
- E3: The richness of the description
- E4: The risk of quality
- E5: The risk of service
- E6: The risk of logistics
- E7: The credit score
- E8: The degree of satisfaction
- E9: Purchase intention
- E10: Likable degree

DATA COLLECTION AND ANALYSIS

Data Collection

In this paper, we apply data mining technology to collect the data that we need. We use the LocoySpider as the mining tool, the collection objects are the online comments of Taobao, then we catalogue the useful data. Because Taobao has a huge amount of data, we randomly selected a kind of clothes to analyze. One of the selection criteria is bigger volume, the other is if it has large amount of reviews. The large volume reflects a trend of taste of the consumers. To some extent, it can ensure the quality and quantity of comments. At the same time, if the product has many reviews, we will have more chance to choose the reviews. We randomly selected 25 pages to study from the large amount of comments. There are 20 articles per page, and we collect a total of 500 comments. Then we use Likert 5 to organize the reviews and analyze it with SPSS17.0 and AMOS17.0.

Data Analysis

In this article, we use SPSS17.0 to analyze the data of 10 indexes in order to measure the reliability of the inspection item, the Cronbach's α value concluded is shown in Table 2.

Table 2. The measurement of reliability

Variables	The number of the index	Cronbach's α
X	3	0.686
Z	3	0.609
Y	3	0.824

From Table 2, we can see that Cronbach's α is bigger than 0.6, it shows a good internal consistency, so the data has strong reliability.

As Table 3 shows, the value of KMO is bigger than 0.6, so it is acceptable. Bartlett test of sphercity is used to judge the data's normal distribution of multiple abnormal or to check whether the correlation

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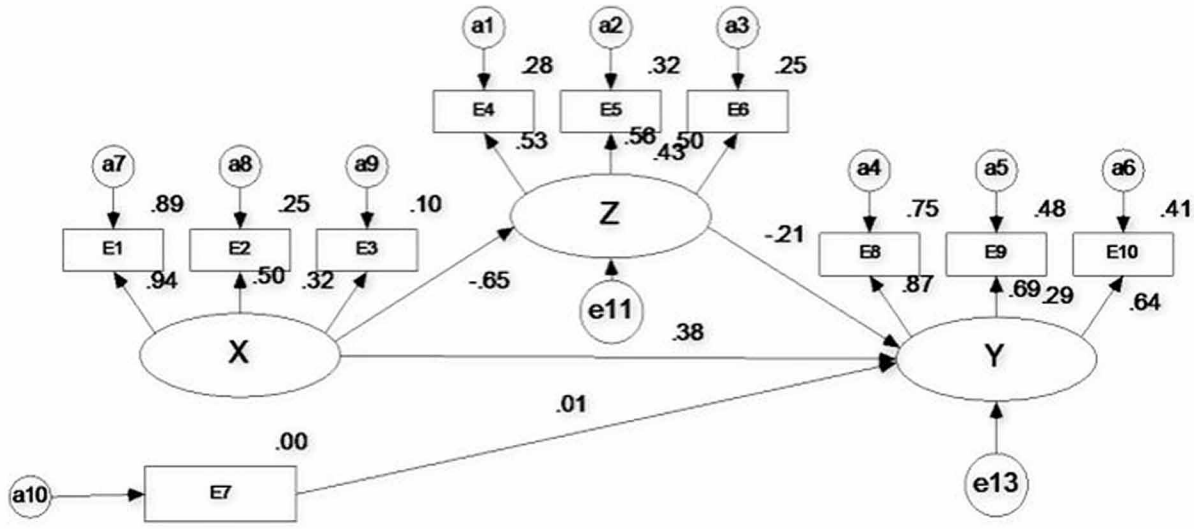
Table 3. KMO & Bartlett

Measurement Index	KMO	Bartlett test of sphercity	df	Sig.
X	0.615	278.834	3	0.000
Z	0.623	170.061	3	0.000
Y	0.721	564.604	3	0.000
Total	0.737	1355.176	45	0.000

Table 4. The fit of the model parameters

Test Rating	The estimated value	The suggestive value
Goodness of Fit Index (GFI)	0.964	>0.90
Adjusted Goodness of Fit Index (AGFI)	0.924	>0.90
Normed Fit Index (NFI)	0.932	>0.90
Comparative Fit Index (CFI)	0.949	>0.90
Root Mean Square Error of Approximation (RMSEA)	0.072	<0.08

Figure 2. The path coefficient of AMOS



coefficient matrix is suitable for factor analysis or not. Because the value Sig. is less than 0.05, it is suitable for factor analysis.

We use AMOS17.0 to analyze the fit of the model, GFI, AGFI, NFI, CFI are all bigger than 0.9, RMSEA is 0.072, it is smaller than 0.08, so the fit of the model is very good. The result is shown in Table 4.

At last, we use AMOS17.0 to make the hypotheses testing, and the result is shown in Figure 2.

As it is shown in Figure 2, the direct effect of comment features to purchase intention is 0.38, which is obvious. The direct effect of comment features on risk perception is -0.65, which is obvious. The direct

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Table 5. The results of the hypotheses

Hypothesis	Content	Result
H1	The risk perception has negative influences on consumers' purchase intention.	Favorable
H2	The characteristics of online reviews have negative influences on consumers' risk perception.	Favorable
H3	The characteristics of online reviews have positive influences on consumers' purchase intention.	Favorable
H4	The characteristics of online reviews can affect consumers' purchase intention through the risk perception.	Favorable
H5	The credit score has positive influence on consumers' purchase intention.	Unfavorable

Table 6. Standardized total effects (Group number 1 - Default model)

	X	E7	Z	Y
Z	-0.654	0.000	0.000	0.000
Y	0.519	0.013	-0.206	0.000
E3	0.316	0.000	0.000	0.000
E2	0.503	0.000	0.000	0.000
E1	0.944	0.000	0.000	0.000
E10	0.332	0.008	-0.132	0.639
E9	0.360	0.009	-0.143	0.693
E8	0.449	0.011	-0.178	0.866
E6	-0.326	0.000	0.498	0.000
E5	-0.369	0.000	0.564	0.000
E4	-0.349	0.000	0.534	0.000

effect of risk perception on purchase intention is -0.21. The influence is also obvious. So, the model of comment features' influences on purchase intention is incomplete mediation.

From Figure 2, we can see that in addition to H5, the rest of the hypotheses are all established, it is shown in Table 5.

From Table 6, we can see that the total effect of comments' characteristics on purchase intention is 0.52. Because the direct effect of comments' features on purchase intention is 0.38 (as it is shown in figure 3), the indirect effect of comments' characteristics on purchase intention is 0.19. So the direct influence is greater than the indirect effect. Sellers should pay more attention to the direct effect of reviews' characteristics on consumers' purchase intention. We can formulate a series of measures based on the online reviews, which will work well. The most influential variables of the online reviews' characteristics is the strength of the reviews' tone. The sellers should guide reviewers in order to increase the frequency of modal particle that they use in the reviews, such as good, very good, and so on. It can reassure consumers and increase their confidence in shopping online. The depth of online reviews is important as well. Online marketers can take actions to encourage reviewers to make reviews with more words. There are many measures, such as cashback, daily deals, and so on. For the richness of comments, merchants can survey what the consumers focus on to set necessarily review dimensions,

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then it can increase persuasive comments. In this article, we take clothes as an example to analyze. The consumers concern many aspects of the clothes, such as whether it has chromatic aberration, whether it lose its color, workmanship is good or not, and so on. So the sellers can transform the variables into the form of Likert 5. In this way, it is not only taking consumers conveniences to make online reviews, but also making consumers more conveniences to find what they care about when they go shopping online.

As an intermediate variable, risk perception is also very important which the effect on purchase intention is -0.21. As a psychological perception, risk perception is a kind of subjective feeling. The only thing we can do is to abate it. Risk perception of shopping online usually comes from these factors, such as the logistics, the quality of the products, and so on. Online merchants can make the delivery faster or cooperate with the reputable logistics companies in order to reduce the risk of logistics. If the service staffs answer consumers' questions in time, their service attitude and the rationality of their suggestions will directly affect the purchase intention of consumers. So, they can train the consumer-service staffs. The speed of returns should be faster, their service attitude should be enthusiasm. Then the risk perception will reduce easily. At the same, we should set separately dimensions based on logistics, service and the quality of the products. And we should guide the reviewers to make reviews from the strength of reviews' tone and the depth of reviews in order to reduce the risk perception of consumers.

In contrast to the theoretical hypotheses, credit score has little impact on purchase intention, which can be neglected. This is because some Internet consumers don't want to post online comments. There are many factors can affect whether consumers make online reviews. Some consumers with high credit score may not want to spend much time posting online reviews because of the high time costs. At the same time, some of the comments published by the reviewers who are newcomers or inactive ones. These reviewers will be more careful when they make online comments. So, the comments will be more comprehensive, the content will be with high quality and the reviews will have a certain reference value. These factors cause inconsistent with the theoretical hypotheses.

CONCLUSION

In this paper, we choose online reviews of clothes in Taobao as the research object. We analyzed the online reviews' influences on consumers' purchase intention. The results prove that the factors that affect consumers' purchase intention include the depth of online reviews, the strength of the reviews' tone, the richness of the description, the credit score of reviewers. Meanwhile the risk of quality, logistics and service will also impact consumers' purchase intention. So online sellers should not only find their own shortcomings that consumers provide in online reviews and correct it, but also guide the consumers to make online reviews in a positive way. So, the credibility of online comments will be higher. It will reduce the risk perception of consumers more easily and increase the reliability, which will become a virtuous cycle.

Online merchants can encourage consumers to make online reviews through the method of giving cashback, offering a discount, providing coupon. They should fully tap the potential of reviewers' ability of making comments and encourage the reviewers to post the comment seriously. At the same time, they can set up review template to guide consumers to make comments. Towards the characteristics of reviews, they can set the number of words requirements on reviews. But today's comments for 15 words is too short to make comprehensive evaluation for goods. The number is more suitable between 25 and 30. If too short, it will appear to be elaborate unconvincing. The strength of tone represents the

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subjective feeling of the reviewers. Based on the 5 scales of overall comments, the online merchants can set 5 scales for specific comments. It is not only easy to post review, but also convenient to observe the results. The richness of the description refers to the dimensions of online reviews that describe the goods or services. From the richness of the description, consumers can understand the performance of the goods more clearly. These performances are needed most by the consumers. We should guide consumers to make reviews from the aspects of the service, the quality of the product, logistics, and so on. So that we can reduce the risk perception with setting scale level 5 of logistics and service in order to make convenient evaluation. And we can also encourage the consumers who have high credit scores to make reviews. Because their influences on network consumers' purchase intention are bigger than the ones whose credit scores are low.

So, better evaluation system must be established. For example, nowadays, the index of measurement only made a totally evaluation, so we can make 5 scales to measure the speed of shipment, the speed of transport, the speed of the last delivery, the attitude of the deliveryman, the logistics partners' public praise, and so on. The detailed system can make better work to affect the consumer behavior. In the aspect of quality risk, the online merchants can take the most important index to measure. If the product is clothes, we can make the 5 scales to measure the color different of it, the workmanship, the fabric, the size, and so on. In this way, the online review will do a better work.

Reviewers can also make comments on freedom according their shopping experiences to increase the comprehensive nature of the comments.

This study is not only good for online sellers, but also can helps consumers to reduce their search costs. Network consumers can determine the quality of the goods according to the features of online comments and the credit of reviewers. It can avoid the interference of the comments with low credibility on consumers' shopping decisions. In this way, network consumers can reduce the time of searching information, so they can search for the goods in less time, and buy suitable products faster.

REFERENCES

Chang, M. K., Cheung, W., & Tang, M. (2013). Building trust online: Interactions among trust building mechanisms. *Information & Management*, *50*(7), 439–445. doi:10.1016/j.im.2013.06.003

Chen, C.-H. (2013). A study on the effect of perceived website risk control on consumer behavior. *Industrial Engineering and Management*, *18*(6), 91–98.

Chen, X.-P., Xu, S.-Y., & Fan, J.-L. (2012). *Empirical approaches to the study of the organization and management*. Peking University Press.

Chen, Z.-F., & Xu, F. (2014). Study on impact factors of voting for the helpfulness of online reviews in E-commerce. *Journal of Modern Information*, *34*(1), 18–22.

Dong, D.-H., Li, G.-H., & Yang, Y. (2005). Research of the perceived risk facets by consumers in internet shopping. *Chinese Journal of Management*, *2*(1), 55–60.

Ghose, A., & Ipeirotis, P. G. (2007). Designing novel review ranking systems: predicting the usefulness and impact of reviews. In *Proceedings of the International Conference on Electronic Commerce* (Vol. 60, pp.303-310). 10.1145/1282100.1282158

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Gu, B., & Xu, J. (2015). A study on review utility classification model of online review community. *Research on Library Science*, *6*, 19–25.

Guo, G.-Q., Chen, K., & He, F. (2010). An empirical study on the influence of perceived credibility of online consumer reviews. *Contemporary Economy & Management*, *32*(10), 17–23.

Hao, Y.-Y., Ye, Q., & Li, Y.-Y. (2010). Research on online impact factors of customer reviews usefulness based on movie reviews data. *Journal of Management Sciences in China*, *13*(8), 78–88.

MacKinnon, D. P. (2008). *Introduction to statistical mediation analysis*. Routledge.

Mo, Z., & Li, Y.-F. (2015). Research on online reviews on consumer purchase behavior—A perspective of consumer learning. *Journal of Modern Information*, *35*(9), 3–7.

Mudambi, S. M., & Schuff, D. (2010). What makes a helpful online review? a study of customer reviews on amazon.com. *Management Information Systems Quarterly*, *34*(1), 185–200.

Ning, L.-J., & Sun, H. (2014). Impact of purchase intention of online negative review on network consumer. *Technology Economic*, *33*(3), 54–59.

O'Mahony, M. P., & Smyth, B. (2009). Learning to recommend helpful hotel reviews. In *Proceedings of the ACM Conference on Recommender Systems* (pp. 305-308). ACM.

Wang, Q.-Q. (2015). Information credibility of online reviews: A new ranking method. *Journal of Intelligence*, *34*(3), 181–185.

Wu, Q.-Q., Xu, Y. K., Liang, J.-J., & Zhang, L. (2012). Research on the impact of online review quality and website image in the internet condition. *Scientific Management Research*, *30*(1), 81–83.

Yan, J.-Y., Zhang Li, & Zhang Lei. (2012). An empirical study of the impact of review content on online reviews helpfulness in E-commerce. *Information Science*, *30*(5), 713–716.

Yin, G.-P. (2012). What kind of online reviews is more helpful do the consumers think? — The effect of social factors. *Management World*, *12*, 115–124.

Yu, L.-P., Xia, Z.-J., & Wang, B.-B. (2014). Research on online review purchase intention on the internet. *Journal of Modern Information*, *34*(11), 34–38.

Zhou, M.-H., Li, P.-M., & Mou, Y.-P. (2015). Effects of online reviews on purchase intention of consumers—the mediation of psychological distance. *Soft Science*, *29*(1), 101–104.

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Chapter 29
Predicting Shoppers' Continuous Buying Intention Using Mobile Apps

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ABSTRACT

The rapid penetration of smartphones and consumers' increased usage/dependence on mobile applications (apps) has ushered favorable opportunities for retailers as well as shoppers. The traditional brick-and-mortar as well as online retailers must attract shoppers to use mobile shopping apps. For this, it is pertinent for retailers to predict users' continuous intention to buy through apps. To address this question, the present study has applied four prominent binary classifiers - logit regression, linear discriminant analysis, artificial neutral network and decision tree analysis to develop predictive models. Findings of the study shall help the marketers in accurately forecasting shoppers' buying behaviour. Various indices have been used to check the predictive accuracy of four techniques. The outcome of the study shows that the models developed using decision tree analysis and artificial neutral network provide better results in predicting consumers' continuous intention to buy through app. Based on the findings, the paper has also provided implications for the retailers.

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1. INTRODUCTION

Of late, mobile applications have become a preferred choice for many consumers in various domains like entertainment, food ordering and delivery, banking, home service, etc. Shoppers' experience through mobile apps is highly different from that through the mobile phone's browser (Natarajan et al., 2017). Providing a personalized user-friendly environment for mobile commerce (Tarasewich, 2003), mobile apps involve many activities, which are not present in mobile browsing through web pages. These include researching products, comparing features, reading reviews, tracking order, getting rewards and loyalty points, retrieving saved coupons, etc. (Natarajan, et al., 2017).

When users download mobile applications in their mobile device, they invite the retailers for communication. Once the application is downloaded, retailers can interact with consumers by sending new product launch offers, promotion offers, reminders based on previously searched products and many other marketing efforts for influencing the attitude of users (Natarajan, et al., 2017). The app providers focus on increasing sales and profits by providing shoppers with more buying opportunities by means of advertising new products and retaining existing customers (Kim et al., 2017). For all this, it becomes pertinent for retailers to comprehend consumers' attitudinal and behavioral intentions. Existing studies on mobile commerce have observed that the intention to buy a product depends on perceived usefulness, perceived ease of use and perceived enjoyment (Agrebi and Jallais, 2015; Chong, 2013; Faqih and Jaradat, 2015; Wang et al., 2015).

Retailers attempt to forecast their sales by predicting shoppers' future intentions to buy, which is based on their previous buying behaviour. However, in case of e-commerce (or m-commerce), it is extremely difficult to predict sales because of its growth pattern, which is non-linear; unpredictable penetration of smartphones; and shoppers' unplanned purchasing behaviour. Nevertheless, in order to survive the competition, online retailers and mobile app providers must predict shoppers' continuous intention to buy.

Extant literature on online shopping is available in the context of websites (Childers et al., 2001, Holzwart et al., 2006; Hong et al., 2014; Hsu et al., 2006; Park and Kim, 2003), shopping through mobile browser (Agrebi and Jallais, 2015; Chong, 2013; Faqih and Jaradat, 2015; Wang et al., 2015). However, very few studies have been carried out in the context of shopping through mobile apps (Kim et al., 2017; Natarajan, et al., 2017). These two quantitative studies have measured the possession and intention to use and purchase using mobile apps. The qualitative study by Fuentes and Svingsted (2017) has determined recent practices adopted by shoppers owing to the introduction of mobile applications. However, existing studies have not examined shoppers' post adoption behaviour, more specifically their continuous intention to use the mobile apps for shopping.

To fill this research gap, the present paper is an attempt to use four binary classifiers - logistic regression, linear discriminant analysis, artificial neural network and decision tree analysis, for predicting shoppers' continuous intention to buy through mobile apps. This study endeavors to develop predictive models based on prominent antecedents influencing consumers' continuous intention to buy using mobile apps. Eight antecedents - performance expectancy, effort expectancy, price and discount, layout, atmosphere, user experience, user satisfaction and 'pay-more-get-more' promotion, have been considered as independent variables, while continuous intention to buy using mobile app is the dependent variable. Thereafter, the study compared the predictive ability (effectiveness) of these techniques in identifying the true positive cases using indices like accuracy, precision, likelihood ratios, diagnostic odds ratio and Younden's index.

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The rest of the paper has been organized as follows. The following section discusses the review of literature pertaining to the factors that have influence on continuous intention to buy, and four forecasting techniques used in the study. After this, research methodology used has been explained along with the deliberation on the results arrived. The subsequent part of the paper presents discussion, conclusion and limitations of the study.

2. LITERATURE REVIEW

2.1. Performance Expectancy

According to Pikkarainen (2004), performance expectancy is "a degree to which using a technology will provide benefits to a consumer in performing certain activities." It has been posited that acceptance of technology increases if consumers find it easy to use. A study by Parboteech et al. (2009) on website characteristics has measured the potential link between perceived usefulness and buying intention. In the context of mobile applications, Hew et al. (2015) observed a direct relationship between behavioral intention and usage of apps. Owing to being need specific and fast performance, shopping on mobile apps is different from website. Hence, the app-based shopping is considered as an extended and easier version of online shopping. It is expected that as shoppers obtain pleasure from the internet-based shopping, their satisfaction increases, which motivates the shoppers to continuously use the system. In the study, Deng et al. (2010) observed a decline in shoppers' satisfaction from a system when it provides experiential and emotional values. On the other hand, when the system provides functional values, shoppers' satisfaction increases.

2.2. Effort Expectancy

Effort Expectancy (EE) is defined as "the degree of ease associated with consumers' use of technology" (Venkatesh, 2012). The study by Pynoo et al. (2011) suggested that the perceived ease of use is like effort expectancy. EE is one of the significant variables prompting shopper's behavioral intention (Hew et al., 2015; Venkatesh, 2012). The consumer's emotions trigger positively as well as negatively, when it is easy to use (Ethier et. al, 2006), and impulse buying has direct impact through these emotions (Verplanken and Herabadi, 2001). Many studies on mobile apps and websites have speculated that the touchscreen quality of the mobile device makes it easier than the other websites (Chang et al., 2012; Islam et al., 2010). The touch panel provides direct control on the touch and makes it easy to use (Brasel and Gips, 2014; Leong et al., 2013). Shen and Chiou (2010) posited that shoppers' intention to adopt internet base shopping depends on the amount of effort and energy expended by them while going through the system.

2.3. Price and Discount

Considered as a significant factor that influence shoppers buying behaviour, low price induces feeling among buyers that they are expending less than the originally planned amount (Stern, 1962). Consumers' mood becomes heightened with the unexpected saving; this increases the number of unplanned purchases (Heilman et al., 2002). According to Verhagen and Dolen (2011), the price of the product and discounts offered on the portal induce hedonic and utilitarian behaviour, and as per Hardesty and Bearden (2003),

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such behaviour stimulates buying behavior. In the context of shopping through mobile app too, price and discount factors can be interpreted as influencers of impulse buying.

2.4. Layout and Atmosphere of App

Atmosphere has been defined as "the conscious designing of space to create certain buyer effects, specifically, the designing of buying environment to produce specific emotional effects in the buyers that enhance purchase probability" Kotler (1973). Marketers design web interface for attracting and enticing shoppers to utilize the web atmosphere (Eroglu et al., 2001). The web atmosphere creates pleasure and arouses desire among consumers (Eroglu et al., 2001). The ambient factors related to the atmosphere have a positive effect on shoppers' behavioral intention (Sherman et al., 1997) and all these have a potential to trigger a desire to purchase impulsively (Eroglu and Machleit, 1993).

In the online context, the design factors are considered as more influencing and visible than ambient factors (Grewal and Baker, 1994). Studies like Wells et al. (2011) and Verhagen and Dolen (2011) have examined the association between website design and shoppers' impulse buying behavior. Sherman et al. (1997) observed that range and visibility of products on web portals influence shoppers and induce their urge to buy. The study by Wu et al. (2013) has noted that the web layout positively affects consumers' purchase intention by enhancing their attitude towards the website. The study has also observed the positive effect of atmosphere on impulse purchase intention.

2.5. User Satisfaction Through Shopping App

As per Olaru et al. (2008), user satisfaction helps "customers evaluate future purchase intention based on the value obtained from episode/contacts, with relationship benefits being a proxy for expectations of future benefits." In the context of online shopping, Khalifa and Liu (2007) examined the relationship between customer experience and customer satisfaction, which leads to purchase intention. On the other hand, the study on branded mobile app by Alnawas and Aburub (2016) noted that the mobile apps make consumer up-to-date, smarter, improve their prestige among peers, lightens their mood, make them feel the part of a community and promote value. All these factors influence their satisfaction towards the mobile platform, which finally shapes future purchase intention. Thus, consumer satisfaction is the key factor that influences buying behaviour (Wu et al., 1970). Agrebi and Jallais (2015) examined shoppers' satisfaction achieved through mobile commerce and its effect on their continuous intention to use. Similarly, study by Hung, Hwang and Hsieh (2007) observed a positive and significant correlation between level of satisfaction and repurchase intention. According to Natarajan et al., (2017), as the performance of the mobile app fulfills consumers' expectation, they tend to develop positive attitude towards the app, which results in satisfaction with the app.

2.6. User Experience with Shopping App

Consumers interact with the environment and surroundings for the sake of growing learning experience (Li et al., 2002). Hassenzahl (2008) defined user experience as "a momentary, primarily evaluative feeling while interacting with a product or service. Good user experience is the consequence of fulfilling the human needs for autonomy, competence, stimulation (self-oriented) through interacting with the product or service (i.e. hedonic quality)." Keng et al. (2011) categorized online experience in two

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categories - direct product experience and indirect product experience. Direct product experience is the information acquired directly from the website. On the other side, indirect web experience contains interaction or willingness to move, which involves shoppers' spending time for reading text and looking at graphics (Huang, 2003). Kahn and Isen (1993) determined the relationship between mood and emotional experience that leads to impulsive buying. Considering mobile app as an extended version of an online shopping website, user experience through app may also influence shoppers' purchase intention.

2.7. 'Pay-More-Get-More' Promotion

According to Yoon and Vargas (2010), almost all the retailers (both e-commerce and traditional brick-mortar stores) attract shoppers by using promotional offers like 'pay-more-get-more' to increase their sales. These offers are given for a very small period of time or during the preliminary installation phase (in case of mobile app) or also when consumers have undertaken a certain amount of purchases. Homburg et al. (2010) suggested that whenever shoppers go to a retailer, they constantly create psychological budgeting that would help them in planning future purchases. Promotional offers such as rebates, bundled offers, buy-more-get-more, etc. influence shoppers' psychological budgeting. These offers tend to increase shoppers' purchase intention that can lead to continuous impulse buying intention (Pentina et al., 2016).

3. TECHNIQUES USED FOR FORECASTING CONTINUOUS IMPULSE BUYING

The following section presents a brief description of select four modeling techniques that have been used for developing analytical models.

3.1. Logistic Regression (LR)

Logistic regression also known as logit model or logit regression is used for determining the connection between independent variable(s) and a dependent variable (categorical variable) (Freedman, 2009). The logistic regression has been used to solve the problem, which has binary or dichotomous dependent variable with two existing categories (Walker and Duncan, 1967). LR is a special case of regression wherein the dependent variable is a binary variable and is influenced by a set of metric independent variables. One of the major advantages of using this technique is that there is no need to satisfy the assumptions of linearity, normality, etc. for the variables. The logistic regression technique has been frequently used in marketing to examine the influence of price tags, to determine the appropriate promotional campaign media, to purchase a product on specific price, identifying the channel for distribution, etc. (Bucklin and Gupta, 1992). While Yeung and Yee (2011) suggested that this technique could be used for predicting consumer purchase propensity, Lee et al. (2012) used this technique for forecasting sales of fresh food.

3.2. Linear Discriminant Analysis (LDA)

Linear discriminant analysis (LDA) is a technique that has been used in "pattern recognition and machine learning" in order to describe a linear combination of variables that help in discriminating two or more classes of patterns (Fisher, 1936). The statistical method used in measuring the group or classification of an object belongs to a group, based on its essential features. It explains the values of continuous

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independent variable as a categorical variable. The technique may have two objectives - descriptive or predictive: it evaluates the acceptability of classification with the given group membership of an object and it allocates objects in one of the classifier. Linear discriminant analysis has been used for delineating the factors, which differentiate one type of customer to other and to draw perceptual maps. With the help of discriminant analysis, Baglione (2014) identified the perception of undergraduate students towards smartphone and its uses. Julian et al. (2015) determined the distinctive dimensions of the relationship marketing like loyalty program, customization, personalization, customer service, and store community.

3.3. Artificial Neural Network (ANN)

The artificial neural network technique is one of the most widely used techniques for measuring the non-linear relationship among all the factors. This technique has been used in numerous fields like marketing, health and medicine, accounting and finance, and manufacturing. Haykin (2001) defined artificial neural network technique as "a massively parallel distributed processor made up of simple processing units, which have a neural propensity for storing experimental knowledge and making it available for use." The basic working of the neural network is similar to the biological brain and its processing. The main features of this computational system are based on the large number of simple processing neurons and a large number of weight connector among the components. The neural network technique tends to provide better prediction results in case of estimating market reaction based on consumer data as compared to that of other techniques (Hruschka, 1993). Chiang et al. (2006) and Prashar et al. (2018) stated that the predictive model developed by using neural networks has greater prediction power as compared to other binary classifiers like logistic regression and linear discriminant analysis. Even though ANN suffers with the problem of over-fitting of training data set, Guido et al. (2011) and Prashar et al. (2015) suggested that this technique is better suited for forecasting because the prediction of response rate is good.

3.4. Decision Tree

Decision tree analysis is a popular data mining method. Mainly used for classification and prediction, this technique systematically analyzes the abundant data source and identifies hidden valuable relationship between the variables (Chen et al., 2003; Chou, 1991). Since decision tree analysis is robust to the data, scales and population distribution, it has been extensively used in various areas as compared to other mining techniques (Berry and Linoff, 2000). In this technique, decisions are made at each node in the form of top-down tree structure. When the analysis of the data starts, each data point flows through the tree in a path determined by a sequence of tests till the time it reaches to the terminal node or leafs of the tree. At this terminal, it gives the result either in the form of continuous or discrete value. The classification tree determines and measures the membership of the cases with the dependent variable based on one or more predictor variables.

4. RESEARCH METHODOLOGY

To predict the continuous intention of shoppers to buy using mobile app (Amazon.in), a cross-sectional study was conducted with the following steps:

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4.1. Step I: Construction of Survey Instrument

Comprehensive review of past literature on adoption and continuous usage of mobile apps for shopping was undertaken to gain insights related to mobile app-based consumer behavior. This resulted in the identification of eight antecedents that have influence on continuous intention to buy through a mobile app. These eight factors were performance expectancy, effort expectancy, price and discount, layout and atmospheric elements of an app, user satisfaction through shopping app, user experience with the app and promotional scheme 'pay-more-get-more.' It was decided to use the existing validated scales for these constructs. Refer to Table 1.

Table 1. Antecedents and Respective Scales

S. No	Construct	Study	No of Items
1	Performance Expectancy	Venkatesh (2012)	3
2	Effort Expectancy	Venkatesh (2012)	3
3	Price and Discount	Venkatesh (2012)	3
4	Layout of App	Wu et al. (2013)	4
5	Atmospheric Elements	Wu et al. (2013)	4
6	User Satisfaction Through Shopping App	Alnawas and Aburub (2016)	4
7	User Experience with the App	Prashar, Parsad and Vijay (2016a)	4
8	'Pay-more-get-more' Promotion	Yoon and Vargas (2010)	10

These thirty-five items were converted into statements, and the respondents' agreement for each of these statements was measured using seven-point Likert's scale, where 1 and 7 represented 'strongly disagree' and 'strongly agree' respectively. For measuring the output variable continuous intention to buy through a mobile app, the respondents were asked whether they will continue to buy using the mobile shopping app (here Amazon.in). The response to this question was solicited through two alternatives – Yes and No. The instrument also had few questions related to the respondents' demographics. The instrument was pre-tested with sixteen students pursuing their doctoral degree in management. Upon their feedback, small modifications were made in the language.

4.2. Step 2: Data Collection

Since, it has been reported that the majority of the mobile shopping app users are below the age of thirty years (Statista, 2017), it was decided to collect data from college students and working executives. The questionnaire was loaded on Qualtrics and using the convenience sampling technique, the link was mailed to the respondents. The data was collected during the three months period of May-July 2017. In all, responses from 495 respondents were received, of which 357 reported Amazon.in to be their preferred mobile shopping app. After removing partially filled instruments, responses from 297 shoppers were used for further analysis.

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4.3. Step 3: Modeling and Analyzing

After randomizing, the data set from 297 respondents was separated into two segments - training set and testing (validation) set. Data from 214 respondents (72.05%) was used as training set to formulate a predictive model. Four binary analytical techniques – logistic regression, linear discriminant analysis, artificial neural network and decision tree analysis were applied using SPSS. The remaining 83 (27.95%) respondents' data was used as a test set to validate the models built. For evaluating the functioning of the algorithm undertaken, contingency/ confusion matrix is prepared. As per Table 2, possible combinations are:

Table 2. Contingency Matrix

	Test Outcome Negative (Hold-out Sample = 0)	**Test Outcome Positive (Hold-out Sample = 1)**
Condition Negative (Prediction = 0)	True Negative (TN)	False Positive (FP)
Condition Positive (Prediction = 1)	False Negative (FN)	True Positive (TP)

5. DATA ANALYSIS

To examine the effectiveness of the models developed using the four binary classifiers, the respective contingency matrices were drawn, as shown in Table 3.

Since, one of the objectives of the present paper is to identify the best predictive technique, it is imperative that the results obtained from four techniques are compared using select comparative indices. There are many indices that can be used to show how well the predictive models, developed by the

Table 3. Contingency Matrix

	Test Outcome Negative (Hold-out Sample = 0)	**Test Outcome Positive (Hold-out Sample = 1)**
Logistic Regression		
Condition Negative (Prediction = 0)	9 (TN)	9 (FP)
Condition Positive (Prediction = 1)	5 (FN)	60 (TP)
Linear Discriminant Analysis		
Condition Negative (Prediction = 0)	12 (TN)	8 (FP)
Condition Positive (Prediction = 1)	11 (FN)	52 (TP)
Artificial Neural Network		
Condition Negative (Prediction = 0)	14 (TN)	6 (FP)
Condition Positive (Prediction = 1)	7 (FN)	56 (TP)
Decision Tree Analysis		
Condition Negative (Prediction = 0)	17 (TN)	3 (FP)
Condition Positive (Prediction = 1)	13 (FN)	50 (TP)

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Table 4. Discriminative Ability

Technique	Accuracy	Precision	Sensitivity	Specificity	LR+	LR-	DOR	Younden's
LR	0.831	0.869	0.923	0.5	1.85	0.15	12.33	0.423
LDA	0.719	0.866	0.825	0.6	2.06	0.29	7.1	0.425
ANN	0.843	0.90	0.889	0.7	2.96	0.158	18.73	0.589
DTA	0.807	0.943	0.793	0.85	5.28	0.24	22	0.643

binary classifiers, forecast the outcome (continuous intention to buy through a mobile app). The most popular indices are accuracy, precision, sensitivity, specificity, likelihood ratios, diagnostic odds ratio and Younden's index. These indices help in determining the discriminative capability of forecasting techniques (Refer Table 4 for the results).

The index accuracy reflects the model's ability in making correct predictions. From Table 4, it is observed that artificial neural network has the highest accuracy level (0.843). This suggests that out of every hundred predictions made by the ANN model, nearly 84.3% turn out to be correct. Logistic regression closely follows ANN with 83.1% accuracy. Precision is defined as the proportion of correctly predicted positive cases. From the results, it is noted that the decision tree has the highest precision (0.943), followed by ANN. The percentage of true and false cases that are correctly recognized are known as sensitivity and specificity respectively. Logistic regression recorded the highest value for sensitivity (0.923) and decision tree had the highest specificity value (0.85).

Besides these regular indices that are used for measuring the discriminative ability of techniques, other prominent indices include likelihood ratios, DOR and Younden's index.

- **Likelihood Ratios:** Likelihood ratio suggests the fact that not all true (or false) expectations are true positive (or negative) predictions. There would be some app users with positive prediction, but they might not buy. In the present study, it indicates the ratio of mobile app shoppers who have continuous intention to buy on shopping app to that of shoppers with no such preference. The ratio of positive test outcomes (LR+) states the likelihood of occurrence of positive prediction result among app users having continuous intention to buy on shopping apps as against those without any such intention. Greater values of LR+ reflect that the model is appropriate for predicting shoppers who have continuous intention to buy using mobile shopping apps. It is suggested that a good predictive model should have LR+ > 10. On the contrary, LR- (likelihood ratio for negative test) signifies the ratio of false negative result to total negative result. Any good forecasting model should have LR- < 0.1 (Šimundić, 2008). The lesser the LR- value, the better is the predictive ability of the model.
- **Diagnostic Odds Ratio (DOR):** The ratio of LR+ and LR-, DOR's values vary between zero and infinity. When values are greater than one, it indicates the effectiveness of the model developed by a predictive technique. The higher values of DOR represent the goodness of the technique (Glas et al., 2003; Šimundić, 2008). In the present study, DOR is the probability of the test being positive when the sampled shopper turns out to have continuous intention to buy as against the likelihood of the test being positive if the same shopper doesn't have intention to buy continuously.
- **Younden's Index:** This index is extensively used for determining a predictive model's effectiveness and for comparing many predictive models at a time (Šimundić, 2008). Younden's index is

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calculated by deducting numeral one (1) from the sum of sensitivity and specificity. If the final value is zero or near zero, it represents poor accuracy; whereas when the Youden's index is equal to one it indicates the goodness of the model (Šimundić, 2008).

6. DISCUSSION

The existing research on mobile apps have mainly focused on the pre-adoption phase, exception being few studies related to stickiness (Furner et al., 2014; Kim et al., 2015) and app recommendation (Xu et al., 2015; Yan and Chen, 2011). Regarding studies related to shopping apps, adoption of such apps is the key topic (Kim et al., 2017; Natarajan et al., 2017). The present research is a pioneer attempt to model and predict mobile users' continuous intention to buy using shopping app. To the best of the researchers' knowledge, none of the existing studies have attempted to predict shoppers' continuous intention to buy. The paper has examined the influence of eight antecedent factors on continuous intention to buy using shopping apps by developing four predictive models. Finally, the study predicts the discriminative ability of four predictive models using various indices.

Accuracy measures the strength of a classifier in correctly identifying or excluding a condition. It reflects the model's ability in making correct predictions. From Table 4, it is observed that artificial neural network technique has the highest accuracy level, followed by linear regression. This is in line with the findings of Prashar et al. (2016b) that has been conducted in the context of impulse buying. Linear discriminant analysis has the least value of accuracy among the four techniques. Precision, on the other hand, measures the proportion of all correct positive cases. Decision tree analysis has the highest precision value, followed by ANN. Thus, the first two indices have identified two different techniques as superior in contrast to the other techniques. This is quite intriguing, since it is expected that all the indices must conclude superiority of a single predictive technique. Therefore, to check for superiority among the predictive techniques, various other indices were calculated and compared.

Sensitivity reflects the real true positive outcomes of a model. From the findings, it is observed that logistic regression has the highest value, indicating its superior ability to correctly identify the shoppers having continuous intention to buy. The other three techniques had values lower than 0.9. On the other hand, specificity helps in identifying the real negative outcomes. This indicates the model's ability to correctly identify the shoppers who are not likely to continue shopping through the mobile app. This index helps in eliminating the false alarm. The model derived using decision tree analysis has a specificity value of 0.85, which is higher than the other three predictive models. This value suggests that the decision tree model will be able to recognize eighty-five percent of all the negative cases that are negative.

Again, with the two differing results for sensitivity and specificity, it was decided to calculate the diagnostic odds ratio (DOR), which is the combination of the results of sensitivity and specificity. All the four techniques in the present study had DOR values greater than one. However, with the value of 22, decision tree analysis showed the best result, followed by artificial neural network technique (18.73).

With the positive likelihood ratio (LR+) score of 5.28, decision tree analysis is found to be a better technique for predicting shoppers who have continuous intention to buy using apps as compared to the other three techniques. Though, the score is more than five, which reflects that it is a good model for predicting shoppers' continuous intention to buy, but the value is much less than the boundary value of ten, indicating that none of the techniques is a strong predictor. The negative likelihood ratio (0.15) of

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two models - logistic regression and artificial neural network technique indicate the superiority of these techniques over other two models. The former outcome cements the finding of Prashar et al. (2016b).

Combining the results of these four indices, it can be concluded that the predictive model developed using decision tree analysis is most effective in predicting mobile users' continuous intention to buy using shopping apps. Finally, the discriminative ability of four techniques is summarized by Younden's index. From the findings, it is noted that two techniques have scored more than 0.5 - decision tree analysis (0.643) and artificial neutral network technique (0.589). This reflects the goodness of these two models in predicting false negative and false positive results.

With the highest value in most of the indices - precision, specificity, LR+, DOR and Younden's index, the predictive model developed using decision tree analysis emerges to be the most appropriate one. This model is successful in predicting both high level of true positive and true negative cases. However, the sensitivity value for decision tree analysis is the least, which reflects its inability to identify the true positive cases for measuring the continuous intention to buy. Remaining indices (accuracy; LR-) are reflective of comparatively better result. The predictive model developed using artificial neural network technique had the maximum accuracy value among the select techniques. This technique ranked second in the remaining indices (precision; sensitivity; specificity; LR+; LR-; DOR; Younden's index). Overall, this model shows a good result for both the true positive and true negative cases.

The third technique, logistic regression had a maximum value for two indices -sensitivity and LR. This shows that the model's predictive power is higher than other techniques and is capable of predicting true positive cases. On the other hand, it had minimum values for specificity, LR+ and Younden's index. The last technique, linear discriminant analysis had the lowest value in most of the indices (accuracy: 71.9%; precision: 0.866; sensitivity: 0.825; LR-: 0.29; DOR: 7.1) except specificity (0.6), LR+ (2.06) and Younden's (0.425) indices. These values indicate that this technique is not very good for predicting continuous intention to buy as compared to the other techniques.

Accuracy of prediction should not be the only criteria for selecting any forecasting technique. According to the literature in the field of medical science, the result of any diagnostic test depends upon the discriminative ability of each of the predictive model. Therefore, linear discriminant analysis and logistic regression are rejected as not good techniques for developing predictive models. Considering all the techniques, based on their discriminative ability, the study observed that decision tree and artificial neutral network techniques are good models for predicting mobile shoppers' continuous intention to buy. The app provider (retailer) can use these two techniques for predicting consumers' continuous intention to buy. For the app provider, retaining existing customers is much more important than getting new customer from the competitive market. Also, it is important for the app provider to get more true positives results than false negative outcomes. Therefore, artificial neural network technique and decision tree analysis may be preferred over other two techniques.

This is the pioneer study, which has compared decision tree and three other techniques in the domain of consumer buying behaviour in the context of mobile shopping application. The eight variables estimated in this study, contribute as an input variable for forecasting shoppers' continuous intention to buy from the same platform. In the context of buying using mobile apps, the shoppers' behaviour frequently changes because of many options/platforms. To overcome such situation, the retailers must use predicting techniques for forecasting high false negative and low false positive. Based on the accuracy value, the model may look perfect. The lower LR- value indicates that the model is equally good in predicting non-purchaser (ANN and LR). The study will reduce the risk of failure for the mobile retailers because of ill preparedness (attentiveness) in terms of technology capability.

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7. CONCLUSION

This paper contributes to app providers and retailers for predicting consumers' continuous buying behaviour. In the study, four predictive techniques have been used for comparing their forecasting ability with regard to consumers' continuous intention to buy through mobile apps. Accordingly, the technique(s) with better forecasting ability will play a significant role for app providers. Based on findings of four select binary classifiers and the objectives app developers seek, it can be concluded that predictive ability of decision tree analysis is comparatively better than the other techniques. The contribution of this study to the literature of mobile app-based buying behaviour incorporates the application of four predictive methods, using eight factors that affect continuous intention to buy, for forecasting actual buyers and comparing the techniques. Apart from predicting the shoppers' continuous buying behaviour, the results of this study can also be used to further investigate their buying pattern while using mobile application.

Like other survey-based studies, the present paper too has few limitations to be acknowledged. Over last few years, the e-commerce market has grown exponentially. Owing to shift in buying pattern from offline to online shopping, the consumer buying behaviour is also changing with time. Being cross-sectional in nature, the study has limitation in capturing the changes in buying behaviour. Undertaking longitudinal study design can overcomes this limitation. The study has been conducted in India, which limits generalizability of the findings. Cross-cultural studies must be undertaken across different markets (nations and consumers). The study has examined variables that affect consumer's intention to buy continuously. Exploratory study in the future shall help in identifying other significant variables that might influence shoppers' continuous intention to buy. The study is limited to students in the age group of 20-33 years. Future research can be widened bringing respondents from other age groups too. Similarly, other demographic and psychographic variables may be incorporated, and results assessed.

REFERENCES

Agrebi, S., & Jallais, J. (2015). Explain the intention to use smartphones for mobile shopping. *Journal of Retailing and Consumer Services*, *22*, 16–23. doi:10.1016/j.jretconser.2014.09.003

Alnawas, I., & Aburub, F. (2016). The effect of benefits generated from interacting with branded mobile apps on consumer satisfaction and purchase intentions. *Journal of Retailing and Consumer Services*, *31*, 313–322. doi:10.1016/j.jretconser.2016.04.004

Baglione, S. L. (2014). Are smartphones a smart marketing buy? *International Journal of Business, Marketing, & Decision Sciences*, *7*(1), 1–18.

Berry, M. J. A., & Linoff, G. S. 2000. Data mining techniques and algorithms. john Wiley & Sons, Inc.: USA.

Brasel, S. A., & Gips, J. (2014). Tablets, touchscreens, and touchpads: How varying touch interfaces trigger psychological ownership and endowment. *Journal of Consumer Psychology*, *24*(2), 226–233. doi:10.1016/j.jcps.2013.10.003

Bucklin, R. E., & Gupta, S. (1992). Brand choice, purchase incidence, and segmentation: An integrated modeling approach. *JMR, Journal of Marketing Research*, *29*(2), 201–215. doi:10.2307/3172570

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Chang, T. Y., Tsai, C. J., & Lin, J. H. (2012). A graphical-based password keystroke dynamic authentication system for touch screen handheld mobile devices. *Journal of Systems and Software*, *85*(5), 1157–1165. doi:10.1016/j.jss.2011.12.044

Chen, Y. L., Hsu, C. L., & Chou, S. C. (2003). Constructing a multi-valued and multi-labeled decision tree. *Expert Systems with Applications*, *25*(2), 199–209. doi:10.1016/S0957-4174(03)00047-2

Chiang, W. K., Zhang, D., & Zhou, L. (2006). Predicting and explaining patronage behavior toward web and traditional stores using neural networks: A comparative analysis with logistic regression. *Decision Support Systems*, *41*(2), 514–531. doi:10.1016/j.dss.2004.08.016

Childers, T. L., Carr, C. L., Peck, J., & Carson, S. (2001). Hedonic and utilitarian motivations for online retail shopping behavior. *Journal of Retailing*, *77*(4), 511–535. doi:10.1016/S0022-4359(01)00056-2

Chong, A. Y. L. (2013). Mobile commerce usage activities: The roles of demographic and motivation variables. *Technological Forecasting and Social Change*, *80*(7), 1350–1359. doi:10.1016/j.techfore.2012.12.011

Chou, P. A. (1991). Optimal partitioning for classification and regression trees. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, *13*(4), 340–354. doi:10.1109/34.88569

Deng, L., Turner, D. E., Gehling, R., & Prince, B. (2010). User experience, satisfaction, and continual usage intention of IT. *European Journal of Information Systems*, *19*(1), 60–75. doi:10.1057/ejis.2009.50

Eroglu, S. A., & Machleit, K. A. (1993). *Atmospheric factors in the retail environment: sights, sounds and smells*. ACR North American Advances.

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2001). Atmospheric qualities of online retailing: A conceptual model and implications. *Journal of Business Research*, *54*(2), 177–184. doi:10.1016/S0148-2963(99)00087-9

Éthier, J., Hadaya, P., Talbot, J., & Cadieux, J. (2006). B2C web site quality and emotions during online shopping episodes: An empirical study. *Information & Management*, *43*(5), 627–639. doi:10.1016/j.im.2006.03.004

Fisher, R. A. (1936). The use of multiple measurements in taxonomic problems. *Annals of Eugenics*, *7*(2), 179–188. doi:10.1111/j.1469-1809.1936.tb02137.x

Freedman, D. A. (2009). *Statistical models: theory and practice*. UK: Cambridge university press. doi:10.1017/CBO9780511815867

Furner, C. P., Racherla, P., & Babb, J. S. (2014). Mobile app stickiness (MASS) and mobile interactivity: A conceptual model. *The Marketing Review*, *14*(2), 163–188. doi:10.1362/146934714X14024778816913

Glas, A. S., Lijmer, J. G., Prins, M. H., Bonsel, G. J., & Bossuyt, P. M. (2003). The diagnostic odds ratio: A single indicator of test performance. *Journal of Clinical Epidemiology*, *56*(11), 1129–1135. doi:10.1016/S0895-4356(03)00177-X PMID:14615004

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Grewal, D., & Baker, J. (1994). Do retail store environmental factors affect consumers' price acceptability? An empirical examination. *International Journal of Research in Marketing*, *11*(2), 107–115. doi:10.1016/0167-8116(94)90022-1

Guido, G., Prete, M. I., Miraglia, S., & De Mare, I. (2011). Targeting direct marketing campaigns by neural networks. *Journal of Marketing Management*, *27*(9-10), 992–1006. doi:10.1080/0267257X.2010.543018

Hardesty, D. M., & Bearden, W. O. (2003). Consumer evaluations of different promotion types and price presentations: The moderating role of promotional benefit level. *Journal of Retailing*, *79*(1), 17–25. doi:10.1016/S0022-4359(03)00004-6

Hassenzahl, M. (2008) September. User experience (UX): towards an experiential perspective on product quality. In *Proceedings of the 20th Conference on l'Interaction Homme-Machine* (pp. 11-15). ACM.

Haykin, S. S. (Ed.). (2001). *Kalman filtering and neural networks* (p. 304). New York: Wiley. doi:10.1002/0471221546

Heilman, C. M., Nakamoto, K., & Rao, A. G. (2002). Pleasant surprises: Consumer response to unexpected in-store coupons. *JMR, Journal of Marketing Research*, *39*(2), 242–252. doi:10.1509/jmkr.39.2.242.19081

Hew, J. J., Lee, V. H., Ooi, K. B., & Wei, J. (2015). What catalyses mobile apps usage intention: An empirical analysis. *Industrial Management & Data Systems*, *115*(7), 1269–1291. doi:10.1108/IMDS-01-2015-0028

Holzwarth, M., Janiszewski, C., & Neumann, M. M. (2006). The influence of avatars on online consumer shopping behavior. *Journal of Marketing*, *70*(4), 19–36. doi:10.1509/jmkg.70.4.19

Homburg, C., Koschate, N., & Totzek, D. (2010). How price increases affect future purchases: The role of mental budgeting, income, and framing. *Psychology and Marketing*, *27*(1), 36–53. doi:10.1002/mar.20318

Hong, W., Thong, J. Y., & Tam, K. Y. (2004). The effects of information format and shopping task on consumers' online shopping behavior: A cognitive fit perspective. *Journal of Management Information Systems*, *21*(3), 149–184. doi:10.1080/07421222.2004.11045812

Hruschka, H. (1993). Determining market response functions by neural network modelling: A comparison to econometric techniques. *European Journal of Operational Research*, *66*(1), 27–35. doi:10.1016/0377-2217(93)90203-Y

Hsu, M. H., Yen, C. H., Chiu, C. M., & Chang, C. M. (2006). A longitudinal investigation of continued online shopping behavior: An extension of the theory of planned behavior. *International Journal of Human-Computer Studies*, *64*(9), 889–904. doi:10.1016/j.ijhcs.2006.04.004

Huang, M. H. (2003). Modeling virtual exploratory and shopping dynamics: An environmental psychology approach. *Information & Management*, *41*(1), 39–47. doi:10.1016/S0378-7206(03)00024-7

Hung, M. C., Hwang, H. G., & Hsieh, T. C. (2007). An exploratory study on the continuance of mobile commerce: An extended expectation-confirmation model of information system use. *International Journal of Mobile Communications*, *5*(4), 409–422. doi:10.1504/IJMC.2007.012788

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Islam, R., Islam, R., & Mazumder, T. (2010). Mobile application and its global impact. *IACSIT International Journal of Engineering and Technology*, *10*(6), 72–78.

Julian, C. C., Ahmed, Z. U., Wel, C. A. B. C., & Bojei, J. (2015). Discriminant Analysis of Antecedents of Customer Retention in Malaysian Retailing. *Journal of Transnational Management*, *20*(3), 190–204. doi:10.1080/15475778.2015.1058694

Kahn, B. E., & Isen, A. M. (1993). The influence of positive affect on variety seeking among safe, enjoyable products. *The Journal of Consumer Research*, *20*(2), 257–270. doi:10.1086/209347

Keng, C. J., Ting, H. Y., & Chen, Y. T. (2011). Effects of virtual-experience combinations on consumer-related "sense of virtual community." *Internet Research*, *21*(4), 408–434. doi:10.1108/10662241111158308

Khalifa, M., & Liu, V. (2007). Online consumer retention: Contingent effects of online shopping habit and online shopping experience. *European Journal of Information Systems*, *16*(6), 780–792. doi:10.1057/palgrave.ejis.3000711

Kim, M., Kim, J., Choi, J., & Trivedi, M. (2017). Mobile Shopping Through Applications: Understanding Application Possession and Mobile Purchase. *Journal of Interactive Marketing*, *39*, 55–68. doi:10.1016/j.intmar.2017.02.001

Kim, S. J., Wang, R. J. H., & Malthouse, E. C. (2015). The effects of adopting and using a brand's mobile application on customers' subsequent purchase behavior. *Journal of Interactive Marketing*, *31*, 28–41. doi:10.1016/j.intmar.2015.05.004

Kotler, P. (1973). Atmospherics as a marketing tool. *Journal of Retailing*, *49*(4), 48–64.

Lee, W. I., Chen, C. W., Chen, K. H., Chen, T. H., & Liu, C. C. (2012). A comparative study on the forecast of fresh food sales using logistic regression, moving average and BPNN methods. *Journal of Marine Science and Technology*, *20*(2), 142–152.

Leong, L. Y., Hew, T. S., Tan, G. W. H., & Ooi, K. B. (2013). Predicting the determinants of the NFC-enabled mobile credit card acceptance: A neural networks approach. *Expert Systems with Applications*, *40*(14), 5604–5620. doi:10.1016/j.eswa.2013.04.018

Li, H., Daugherty, T., & Biocca, F. (2002). Impact of 3-D advertising on product knowledge, brand attitude, and purchase intention: The mediating role of presence. *Journal of Advertising*, *31*(3), 43–57. doi:10.1080/00913367.2002.10673675

Natarajan, T., Balasubramanian, S. A., & Kasilingam, D. L. (2017). Understanding the intention to use mobile shopping applications and its influence on price sensitivity. *Journal of Retailing and Consumer Services*, *37*, 8–22. doi:10.1016/j.jretconser.2017.02.010

Olaru, D., Purchase, S., & Peterson, N. (2008). From customer value to repurchase intentions and recommendations. *Journal of Business and Industrial Marketing*, *23*(8), 554–565. doi:10.1108/08858620810913362

Parboteeah, D. V., Valacich, J. S., & Wells, J. D. (2009). The influence of website characteristics on a consumer's urge to buy impulsively. *Information Systems Research*, *20*(1), 60–78. doi:10.1287/isre.1070.0157

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Park, C. H., & Kim, Y. G. (2003). Identifying key factors affecting consumer purchase behavior in an online shopping context. *International Journal of Retail & Distribution Management*, *31*(1), 16–29. doi:10.1108/09590550310457818

Pentina, I., Zhang, L., Bata, H., & Chen, Y. (2016). Exploring privacy paradox in information-sensitive mobile apps adoption: A cross-cultural comparison. *Computers in Human Behavior*, *65*(1), 409–419. doi:10.1016/j.chb.2016.09.005

Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnila, S. (2004). Consumer acceptance of online banking: An extension of the technology acceptance model. *Internet Research*, *14*(3), 224–235. doi:10.1108/10662240410542652

Prashar, S., Parsad, C., & Vijay, T. S. (2015). Application of neural networks technique in predicting impulse buying among shoppers in India. *Decision*, *42*(4), 403–417.

Prashar, S., Parsad, C., & Vijay, T. S. (2016b). Predicting impulsive buyers: a comparative study of binary classifiers' discriminative ability. *International Journal of Strategic Decision Sciences*, *7*(2), 40–56. doi:10.4018/IJSDS.2016040103

Prashar, S., Vijay, T. S., & Parsad, C. (2015b). Antecedents to online shopping: Factors influencing the selection of web portal. *International Journal of E-Business Research*, *11*(1), 35–55. doi:10.4018/ijebr.2015010103

Prashar, S., Vijay, T. S., & Parsad, C. (2018). Predicting online buying behaviour- a comparative study using three classification methods. *International journal business innovation and research, 15*(1), 62-78.

Pynoo, B., Devolder, P., Tondeur, J., Van Braak, J., Duyck, W., & Duyck, P. (2011). Predicting secondary school teachers' acceptance and use of a digital learning environment: A cross-sectional study. *Computers in Human Behavior*, *27*(1), 568–575. doi:10.1016/j.chb.2010.10.005

Shen, C. C., & Chiou, J. S. (2010). The impact of perceived ease of use on Internet service adoption: The moderating effects of temporal distance and perceived risk. *Computers in Human Behavior*, *26*(1), 42–50. doi:10.1016/j.chb.2009.07.003

Sherman, E., Mathur, A., & Smith, R. B. (1997). Store environment and consumer purchase behavior: Mediating role of consumer emotions. *Psychology and Marketing*, *14*(4), 361–378. doi:10.1002/(SICI)1520-6793(199707)14:4<361::AID-MAR4>3.0.CO;2-7

Šimundić, A. M. (2008). Measures of diagnostic accuracy: Basic definitions. *Med. Biol. Sci.*, *22*(4), 61–65.

Statista. (2017). Number of mobile app hours per smartphone and tablet app user in the United States in June 2016, by age group. Retrieved from https://www.statista.com/statistics/323522/us-user-mobile-app-engagement-age/

Stern, H. (1962). The significance of impulse buying today. *Journal of Marketing*, *26*(2), 59–62. doi:10.2307/1248439

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Svingsted Faqih, K. M., & Jaradat, M. I. R. M. (2015). Assessing the moderating effect of gender differences and individualism-collectivism at individual-level on the adoption of mobile commerce technology: TAM3 perspective. *Journal of Retailing and Consumer Services*, *22*, 37–52. doi:10.1016/j.jretconser.2014.09.006

Tarasewich, P. (2003). Designing mobile commerce applications. *Communications of the ACM*, *46*(12), 57–60. doi:10.1145/953460.953489

Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology.

Verhagen, T., & van Dolen, W. (2011). The influence of online store beliefs on consumer online impulse buying: A model and empirical application. *Information & Management*, *48*(8), 320–327. doi:10.1016/j.im.2011.08.001

Verplanken, B., & Herabadi, A. (2001). Individual differences in impulse buying tendency: Feeling and no thinking. *European Journal of Personality*, *15*(S1), S71–S83. doi:10.1002/per.423

Walker, S. H., & Duncan, D. B. (1967). Estimation of the probability of an event as a function of several independent variables. *Biometrika*, *54*(1-2), 167–179. doi:10.1093/biomet/54.1-2.167 PMID:6049533

Wang, R. J. H., Malthouse, E. C., & Krishnamurthi, L. (2015). On the go: How mobile shopping affects customer purchase behavior. *Journal of Retailing*, *91*(2), 217–234. doi:10.1016/j.jretai.2015.01.002

Wu, L., Kang, M., & Yang, S. B. (1970). What makes users buy paid smartphone applications? Examining app, personal, and social influences. *Journal of Internet Banking and Commerce*, *20*(1), 1–22.

Wu, W. Y., Lee, C. L., Fu, C. S., & Wang, H. C. (2013). How can online store layout design and atmosphere influence consumer shopping intention on a website? *International Journal of Retail & Distribution Management*, *42*(1), 4–24. doi:10.1108/IJRDM-01-2013-0035

Xu, C., Peak, D., & Prybutok, V. (2015). A customer value, satisfaction, and loyalty perspective of mobile application recommendations. *Decision Support Systems*, *79*, 171–183. doi:10.1016/j.dss.2015.08.008

Yan, B., & Chen, G. (2011, June). AppJoy: personalized mobile application discovery. In *Proceedings of the 9th international conference on Mobile systems, applications, and services* (pp. 113-126). ACM.

Yeung, R. M., & Yee, W. (2011). Logistic Regression: An advancement of predicting consumer purchase propensity. *The Marketing Review*, *11*(1), 71–81. doi:10.1362/146934711X565305

Yoon, S., & Vargas, P. (2010). Feeling Happier When Paying More: Dysfunctional Counterfactual Thinking in Consumer. *Psychology and Marketing*, *30*(6), 461–469.

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APPENDIX

Table 5. Discriminative Ability: Formulae for Calculation of Select Indices

Indicators	Calculation
Accuracy Positive Predictive Value (PPV)	(TP + TN)/(TP + FP + FN + TN)
Negative Predictive Value (NPV)	TP/(TP + FP)
Recall or Sensitivity (TPR)	TP/(TP + FN)
Specificity (TNR)	TN/(TN + FP)
False Positive Rate (FPR)	FP/(TN + FP)
False Negative Rate (FNR)	FN/(TP + FN)
Positive LR (LR+)	TPR/FPR
Negative LR (LR-)	TPR/FPR
Diagnostic Odds Ratio (DOR)	LR +/LR −
Younden's Index	TPR+ TNR− 1

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Chapter 30
Structural Equation Modelling of the Factors Influencing the Adoption of E-Commerce in Saudi Arabia:
Study on Online Shoppers

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ABSTRACT

This article presents findings from a study examining the diffusion and adoption of e-commerce in Saudi Arabia. Although the country has the largest and fastest growing information and communication technologies (ICT) sector in the Arab region, growth in e-commerce activities has not progressed at a commensurate rate. In general, e-commerce online shopping has not kept pace with the global growth of online retailing. The authors have conducted research to identify and explore key issues that influence e-commerce in Saudi Arabia in deciding whether or not to adopt online channels. As part of a larger research project using mixed methods, this article focuses on a quantitative analysis of responses obtained from a survey of the online shopping users in Saudi Arabia.

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INTRODUCTION

The current era is often referred to as the Information Age, the Digital Revolution or the New Technological Revolution, depending on the commentator's perspective. These descriptors share the common characteristic of being based on the widespread adoption of computing and computer networking. The arrival of the internet and its rapid development into a globally ubiquitous resource has not only accelerated earlier computer driven change in business and society, but has also introduced additional major changes, including the use of the internet to facilitate, execute, and process business transactions (Delone & McLean, 2004). E-commerce allows businesses to share information, undertake transactions across networks and computer platforms, and work together over geographic boundaries (Berners-Lee et al., 1994; Kalakota & Whinston, 1997). It encompasses business-to-consumer, business-to-business, commerce-to-administration, customer-to-customer, and consumer-to-business (Goel, 2007) activities.

Online shopping is a form of business-to-consumer e-commerce (Nosrati, 2011; Nemat, 2011). It is more limited and exclusively describes the activity of selling and purchasing goods and services online via an e-store (Islam, 2012; Sharma, 2013). Xu (2012) noted that online shopping describes a single aspect of e-commerce; whereas e-commerce can represent any and all business activity conducted using an electronic medium (Ren, 2009).

In 2014 global e-commerce sales increased at a rate greater than 20% per year, influenced by four key factors: internationalization; the renewed popularity of e-commerce IPOs internationally; the rise of the continuously connected consumer; and consumers' ongoing desire to look, touch, and immerse themselves in brand experiences (ATKearney, 2015). Developed countries have already produced sophisticated online shopping malls and e-stores like Amazon and eBay, while the booming marketplace of China offers Ali-baba and Tencent. E-stores such as these are at the top of a list of global online sellers who are either already global brands or rapidly evolving in that direction.

BACKGROUND

As part of a very robust global market space, the Middle East is also experiencing rapid growth in e-commerce (MasterCard Online Shopping, 2014; Ecommerce Show, 2016). Online sales in the Middle East hit US$7 billion in 2014, the largest single share being in the UAE at $2.3 billion, followed by Saudi Arabia at $1.5 billion, and Egypt at $1.4 billion (Payfort, 2014). Some issues known to be particular challenges for e-commerce companies in the Middle East are: fear from users on loss of control; the desire to pay cash on delivery (C.O.D.); high returns and the negative impacts on cash-flow of C.O.D.; the unwillingness or inability of women to answer the door to unrelated male delivery men (PayPal, 2013; Quartz, 2015; The Economic Times, 2015). Setup costs, deployment issues to remote locations, and natural human resistance to change (Aladwani, 2003; Albadr, 2003; MCIT, 2014) are also slowing e-commerce provision and uptake.

Various researchers have sought to understand more fully the factors influencing technology adoption. They have considered factors at the individual level (Klopping & McKinney, 2004; Pantano & Di Pietro, 2012; Susanto, 2012), the firm level (Al-Qirim, 2008; Grandon & Pearson, 2004; Wymer & Regan, 2005) and the country level (Kevin Zhu, Kraemer, & Xu, 2003; Kevin Zhu & Kraemer, 2005). Several studies have concluded that cultural conditions in a nation are important influencers. In a comparison of the organisational cultures of 40 independent nations, Hofstede (Hofstede, 1980) argues that many of the

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differences in management styles and organisational practices of companies throughout the world can be related to differences in the collective mental programming of people in different national cultures. Dunphy and Herbig (1995) note that existing cultural conditions always determine whether, when, how, and in what form, a new innovation will be adopted.

Ein-Dor et al. (2004) conducted a four-country study that included Finland, Israel, New Zealand, and Singapore, and concluded that differences in culture, attitudes toward information and communication technology (ICT), and socioeconomic status all impact the adoption of e-commerce. Furthermore, infrastructure is critical to technology adoption. Molla and Licker (2005) found that in the late 1990s and in the first decade of the 21st century, developing regions lacked sufficient critical infrastructure. Internet speeds were slow. Internet service providers (ISPs) were expensive. And the regulatory environment was poor.

Early studies were conducted in the United States (Grandon & Pearson, 2004), the United Kingdom (Matlay & Addis, 2003), Canada (Sparling, Toleman, & Cater-Steel, 2007) and Italy (Scupola, 2003). Studies focussed on developing countries included Latin America (Davis 1999), Mongolia (Enns & Huff, 1999), Ukraine (Jennex & Amoroso, 2002), Malaysia (Mukti, 2000), Thailand (Wongpinunwatana & Lertwongsatien, 2003), Taiwan (Thatchera, Fosterb, & Zhua, 2006), South Africa (Cloete, Courtney, & Fintz, 2002; Moodley & Morris, 2004), Iran (Ghobakhloo, Arias-Aranda, & Benitez-Amado., 2011), Nigeria (Ma'aruf & Abdulkadir, 2012), and Sri Lanka (Kapurubandara & Lawson, 2006), and very recently on China, where there has been very rapid e-commerce growth (McKinsey, 2013). Most of the studies focused on the macro level (or global) constraints and explored the barriers and motivators in e-commerce adoption.

Several studies have investigated e-commerce in Saudi Arabia in a business-to-business (B2B) environment, while others have studied the business-to-consumer (B2C) context. Behavioural factors associated with e-commerce adoption have also been studied (Al-Gahtani, Hubona, & Wang, 2007; Al-Otaibi & Al-Zahran, 2003; Aleid, Rogerson, & Fairweather, 2010; Alfuraih, 2008; Rayed AlGhamdi, Drew, & Al-Ghaith, 2011; Rayed AlGhamdi, Drew, & Alkhalaf, 2012; Eid, 2011; Sait, Al-Tawil, & Hussain, 2004). Eidt (2011) conducted a study of determinants of e-commerce customer satisfaction, trust, and loyalty in Saudi Arabia. Al-Hudhair and Alkubeyyer (2011) examined both the level of e-commerce adoption in Saudi Arabia and attempted to identify factors that affected its adoption. None of the studies produced a comprehensive picture of the of level of e-commerce adoption in the B2C context, and there are clear gaps in identifying the behavioural factors related to e-commerce adoption. Nor have issues of infrastructure, culture, legislation, technical features, national awareness, or the national economy been examined in connection with the adoption of online shopping.

MAIN FOCUS OF THE ARTICLE

The goal of this study was to understand more fully the factors responsible for slow e-commerce adoption by online shoppers in Saudi Arabia and to develop a model to represent the influence of these factors on e-commerce adoption. The model will potentially assist professionals interested in services supported by ICT, the wider business community, and the government to develop and support comprehensive, effective, and sustainable strategies that promote e-commerce in Saudi Arabia.

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CONCEPTUAL MODEL AND METHOD

Development of Hypotheses

A conceptual demand side model was developed to identify factors influencing e-commerce adoption in Saudi Arabia using a mixed model method. The basic concepts of the model were taken from several other models, including the theory of planned behaviour (TPB) (Ajzen, 1991), the decomposed theory of planned behaviour (DTPB) (Taylor & Todd, 1995), the technology acceptance model (TAM) (Davis, 1989), and the unified theory of acceptance and use of technology (UTAUT) model (Venkatesh et al., 2003). Each of these models has been developed and validated in Western nations.

To develop the conceptual model of the study, some hypotheses were initially developed related to the cultural context of Saudi Arabia. Culture in Saudi Arabia is tightly bound by Islamic belief and norms, and there are strict rules and regulations governing behaviour for different groups of people based on age and gender. To adequately address these issues, this study acknowledged that factors such as age, gender, and internet proficiency might influence the adoption of e-commerce. In addition to demographic and cultural factors, research has produced established theories on innovation diffusion and technology

Table 1. Independent constructs of the hypothetical model

Broad Area	Sub-Dimension/ Contrasts	Defining Aspects	Adopted From
Perceived characteristics of innovation	Payment security and convenience	Payment system available for online shopping and e-commerce transaction, their reliability and easiness for safe and secure transactions.	Ajzen, 1991; Rogers, 2003; Taylor & Todd, 1995; Venkatesh et. al., 2003; Hua, 2009; Al-Ghaith et al., (2010); Lee, 2009; Gibbs & Kraemer, 2004
	E-commerce infrastructure	The website, cell phone application, internet facilities, access facilities and ease of use.	Rogers, 2003; Venkatesh et. al., 2003; Al-Ghaith et al., 2010; Gibbs & Kraemer, 2004
	Delivery system efficiency	Product delivery facility, maintaining schedule, cost of delivery, effectiveness of delivery system, delivery geographic coverage.	Kshetri, 2008; Hawk, 2004; Bayles & Bhatia, (2000); Rutter & Southerton, 2000; Rogers, 2003; Taylor & Todd, 1995
	Product availability	Divers type products, need based products, availability and storing facilities.	Schoenbachler & Gordon, 2002; Cox & Dale, 2001; da Silveira, 2003
Normative beliefs and motivation to comply	Trust	Trust on the online vendor, trust on delivery channel, having observability, trust on transaction medium, trust on online security and privacy.	Al-Ghaith et al., 2010; Siddiqui, 2008; Belkhamaz & Wafa, 2009; Palvia, 2009; Kim et al., 2008; Trocchia & Janda, 2003
	Perceived enjoyment	Degree of pleasure when using online shopping websites, Motivation for online shopping, attractiveness of e-commerce	Park & Kim, 2003; Venkatesh, 2000; To et al., 2007; Moon & Kim, 2001; Davis et. al., 1992; Cheng et al., 2006; Turle et al., 2007; Rouibah, 2008
Control belief and perceived facilitation	Prior experience	Familiarity with e-store website, Experience in using products from e-store, previous trust and service quality experience, overall experience of using online shopping.	Luhmann 2000; Gefen 2000; Hernández et al., 2010; Al-Ghaith et al., 2010; Rogers, 2003; Liaw& Huang, 2006
	E-commerce service quality	Service delivered through online service providers, Easy service features on website, quality for satisfaction and trust.	Flick (2009); Ha and Stoel, (2009); Molla, and Licker, (2001); Delone & Mclean, (2004); Parasuraman, (2002)

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adoption that might help explain features of e-commerce adoption in Saudi Arabia (Rogers, 2003; Al-Ghaith et al., 2010; Flick, 2009; Liaw & Huang, 2006).

Influential factors related to innovation diffusion and technology adoption were considered in this study across three broad dimensions, including the perceived characteristics of innovation; normative beliefs and motivation to comply; and control beliefs and perceived facilitation. Each of these broad areas contains sub-dimensions, which were defined and tested through the study hypotheses. The sub-dimensions and their use in this study are outlined in Table 1.

Hypotheses to specifically examine the interaction of these factors were developed. The hypotheses developed for this study were:

Hypothesis One: There will be a significant difference between e-commerce user groups (high volume, moderate and low usage) in terms of age.

Hypothesis Two: There will be a significant difference between online shopping user groups (high volume, moderate and low usage) in terms of gender (male and female).

Hypothesis Three: There will be a significant difference between e-commerce user groups (high volume, moderate and low usage) in terms of their ability to shop online.

Hypothesis Four: There is a direct and positive relationship between well-established e-commerce infrastructure and the level of users' online shopping adoption in Saudi Arabia.

Hypothesis Five: Inefficient financial systems and reduced payment safety have a significant direct and negative influence on the adoption of e-commerce.

Hypothesis Six: Poor delivery systems have a significant negative effect on the adoption of e-commerce.

Hypothesis Seven: Product availability has a significant positive effect on the adoption of e-commerce.

Hypothesis Eight: Trust in online shopping service providers has a significant direct and positive relationship with e-commerce adoption.

Hypothesis Nine: Enjoyment or a sense of pleasure has a significant direct and positive relationship with e-commerce adoption.

Hypothesis Ten: Prior experience has a significant direct and positive relationship with e-commerce adoption.

Hypothesis Eleven: Service quality has a significant direct and positive relationship with e-commerce adoption.

Hypothesis Twelve: There is a significant direct and positive relationship between delivery system and product availability.

Hypothesis Thirteen: There is a significant direct and positive relationship between trust and payment system.

Hypothesis Fourteen: There is a significant direct and positive relationship between prior experience of service quality and the use of e-commerce.

The model was developed based on the relationships of the hypotheses to be tested in order to shed light upon the factors that explain individual adoption of online shopping services in Saudi Arabia. The sub-dimension constructs outlined in Table 1 acted as the independent variables within the model. As such, they defined the level of acceptance of e-commerce in the form of online shopping uptake in Saudi Arabia. The sub-dimensions were defined and tested through the hypotheses, and the research model tested the interactions between individual sub-dimensions. With regard to the dependent variables in the model, a construct was developed to reveal the level of e-commerce adoption, which explores consum-

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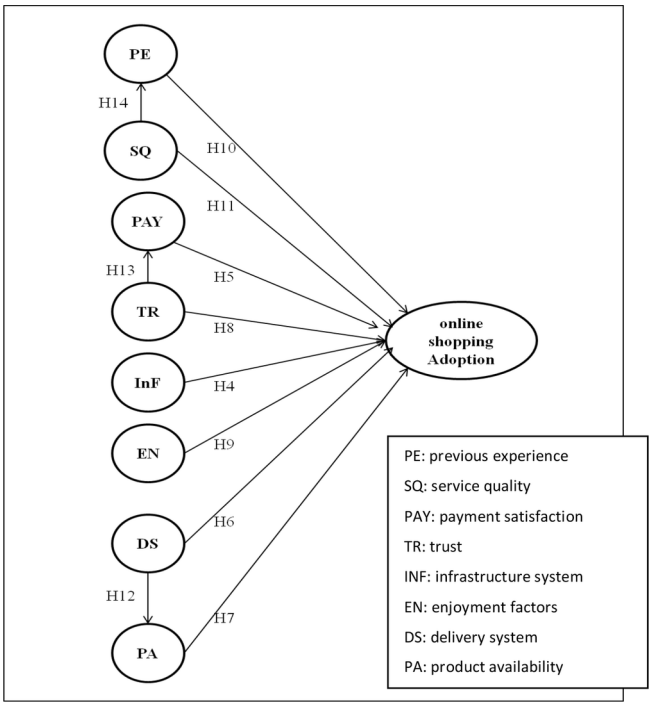
Table 2. Dependent constructs of the hypothetical model

Construct	Defining Aspects	Adopted From
Online shopping usability or e-commerce adoption level	Access to e-commerce (online shopping) infrastructure and facilities, level of usage for internet and online stores, time and money spent for on e-commerce, knowledge of using e-commerce, concerns for online security.	Limayem et al., (2000); Pereay Monsuwé et al., (2004); Li et al., (1999); Swinyard & Smith (2003); Klopping& McKinney, (2004); Zhou et al., (2007); Eroglu et al., (2001); Hongyoun& Kim, (2009); Kim and Park, (2005); Karim et al., (2009); Bakerman, (2014)

Figure 1. Hypothetical model of the factors influencing the adoption of e-commerce in Saudi Arabia



ers' intended approach, as well as their actual exhibited behaviour. Table 2 outlines the defining aspect of this construct, along with its sources.

The direct and indirect, as well as interrelated relationships of the independent and dependent variables provided a whole model that could be tested to answer the research hypotheses. The hypothetical model of the factors influencing the adoption of e-commerce in Saudi Arabia is illustrated in Figure 1.

Collection of Data

Survey Instrument

For hypothesis testing and developing the final model, a survey was conducted for data collection. For survey construction, an operational definition for the independent and dependent constructs in the proposed model was developed. Statements about each concept to be measured were based on those

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refined during earlier investigations. To discover the participants' opinions regarding the study variables, the respondents were asked to indicate how strongly they agreed or disagreed with each statement. A 7-point rating scale was applied to the survey items, ranging from 1 (strongly disagree) to 7 (strongly agree) (Likert, 1932; Likert, 1974).

To validate the prepared survey, ten online shoppers possessing similar characteristics to the population in this study were surveyed face-to-face, including three PhD students, three professionals in e-stores and four regular online shoppers in Saudi Arabia. Additionally, five experts were consulted for the face validity, a professor, two lecturers and two statisticians. Based on their comments and feedback, some of the terminology and phrasing used for the constructs were modified to improve the clarity of the survey items and some modifications were made to the overall survey, optimising both its efficiency and validity.

Preliminary Assessment of the Proposed Conceptual Model: Exploratory Factor Analysis (EFA)

A pilot study was conducted for the preliminary assessment of the proposed conceptual model. The assessment was carried out in order to confirm the reliability of the items and the clarity of the statements in the survey. For the purpose, 100 surveys were distributed to online shoppers selected randomly from online stores whose managers provided customer email addresses. The response rate was 71%. The data collected from the pilot survey was examined for scale reliability, sampling adequacy and factorability utilising *SPSS* version 20.

To assess the scale reliability of the survey, an exploratory factor analysis (EFA) was performed. Despite the fact that all variables in the instruments were obtained from previous research and theories, EFA was essential to check whether these variables would operationalise and provide an appropriate scenario in the context of online shopping in Saudi Arabia. The justification for using factor analysis was based on the assumption that the data matrix had sufficient correlations among the variables (Hair et al., 2010).

In conducting an EFA, the selection of factor extraction and proper rotation methods for extracting the factors are always crucial (Tabachnick & Fidell, 2001). In this study, principal components analysis (PCA) was selected as the factor extraction method and varimax variation with Kaiser normalisation in *SPSS* v.20 was selected as the rotation method. Principal components analysis (PCA) was selected to produce initial solutions for the EFA. Each constituent interpretation looks for a decreasing quantity of total difference in the original variables, and processes what the variables have in common (Churchill & Iacobucci, 1987; Cooper & Schindler, 2001).

The examining orthogonal influence enquiry model with varimax variation was used as the rotation method because conclusions produced from orthogonal variation have a greater replicability and generalisability control when likened with leaning variation. There are three standards used to control the number of influences to be extracted: the dormant root condition (Eigen value); the proportion of difference criterion and the screen test standard. Eigen standards larger than 1 are important in the dormant root standard. It is common to employ a solution that accounts for 60% (or less) of the total variance in social science research, because the information in this field, by its nature, is often less accurate (Hair et al., 2010, Kaiser, 1960). In selecting the items, only items with a loading value over 0.4 were extracted as factor loadings. Below 0.4 are considered too low to be included (Field, 2013; Stevens, 2012).

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Sampling

The eventual target population consisted of online shoppers in the Kingdom of Saudi Arabia. Studying the entire population of Saudi Arabia was not feasible; therefore, a sample of the population was selected to represent the Saudi population as a whole, with very high statistical accuracy and significance (Cooper et al., 2006). A sample size of at least 300 is generally regarded as reliable for factor analysis methods and statistical modelling (Tabachnick & Fidell, 2001). However, a sample size of 200-500 persons is considered sufficient for data analysis (Hair, 2010). For the research reported here, and using Cochran's formula, for a 95% confidence interval, a total of 384 participants was considered to be sufficient (Kotrlik & Higgins, 2001; Tabachnick & Fidell, 2001; Hair, 2010). In light of both factor and data analysis needs, it was therefore determined that responses from a minimum of 500 online shoppers would ensure the accuracy of the results.

Final Survey

After testing the survey and making amendments to the layout and ordering sequence of the items, the final survey was carried out in July 2013 and lasted for three months. In this study, the geographical distribution of samples was very large (covering major parts of Saudi Arabia). Therefore, a face-to-face survey or even a telephone survey was neither a time-efficient nor economical process. Considering this, the survey was conducted electronically, with all surveys delivered via an email link using an online survey tool, SurveyMonkey.

The online survey participants were selected randomly from online shoppers. An explanation of the study, along with a link to the survey on SurveyMonkey were mailed to the top 200 online customers of 15 online stores in Saudi Arabia. Materials were provided in both English and Arabic. From the 3000 emails sent, 1256 responses were received. After screening and processing the completed surveys, 904 surveys were found to have complete responses with no missing values or illogical responses. This sample was greater than the desired sample size of 500 respondents. All of them were used in the data analysis.

Data Analysis

Data Screening and Preparation

To prepare the raw data for final analysis, the raw data was visually checked initially, and then the completeness of the datasets was checked and legitimate responses were noted in order to identify the eligible respondents. In this case, responses without any variation were considered ineligible. After that, the managed data was entered into IBM-*SPSS* software (version 20) for further analysis.

Validity Testing

Reliability Test

In this study, the reliability coefficients were calculated using Cronbach's alpha to identify internal consistency based on the sample estimation. The literature suggests 0.7 as the accepted cut-off for a construct to be considered reliable (Hair et al., 2010; Santos, 1999).

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Convergent and Discriminant Validity

Before entering the independent and dependent constructs into the model, the validity of these constructs needed to be checked. In this case, the validity check was performed only for the independent constructs. For this purpose, convergent and discriminant validity were calculated considering maximum shared variance (MSV), average variance extracted (AVE), and average shared variance (ASV). Convergent legitimacy shows how well the latent constructs are explained by the observed variables. For discriminant validity both MSV and ASV must be less than AVE. The threshold criteria for the validity tests are presented in Table 3.

In addition to these tests, square association amongst any two hypotheses was assessed through a factor correlation matrix with the square root of the AVE on the diagonal for the exogenous latent constructs. If any of the values are less than their particular AVE, then it indicates discriminant legitimacy of all concepts in the study model; that is, each hypothesis was dignified by particular objects that had no result on other hypotheses.

Table 3. Recommended measures for model validity

Analysis Test	Recommended Criteria
Convergent validity	AVE > 0.5
Discriminant validity	MSV < AVE ASV < AVE

Source: Hair et al., 2010

Factor Analysis: Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis (CFA) was undertaken to confirm the feature arrangement of a set of experimental variables, and to guarantee that all the ideas in the model influenced convergent legitimacy, construct cogency, discriminant authority and factorial validity (Byrne, 2013; Hair et al., 2010). In summary, CFA is particularly a SEM function, which is used to validate hypothesised theoretical constructs (or factors). In this study, CFA was used to check the conformity of the factors that were identified in the EFA process. It was run before the SEM to make sure the SEM relationships were related to a specific model. Issues of reliability and validity of the observed and latent variables were also identified using CFA to ensure a better fit of the final SEM.

Structural Equation Modelling (SEM)

Structural equation modelling (SEM) was a major analytical technique used in this study to explore the complex relationships between e-commerce proficiency and the independent variables that determine the level of e-commerce use. Different steps of the modelling process are shown in Figure 2.

SEM was selected for this study because of its illuminating aptitude, its complete figures of model analysis, its general practice as a trial and error model that can be tested several times, and its capacity to progress stronger models by analysing philosophies on the quantified associations (Byrne, 2013; Hair et al., 2010; Rubio & Gillespie, 1995). This implies that with different tests, the strongest model would be accepted, and it would show the relationships with validity and reliability. SEM permits the

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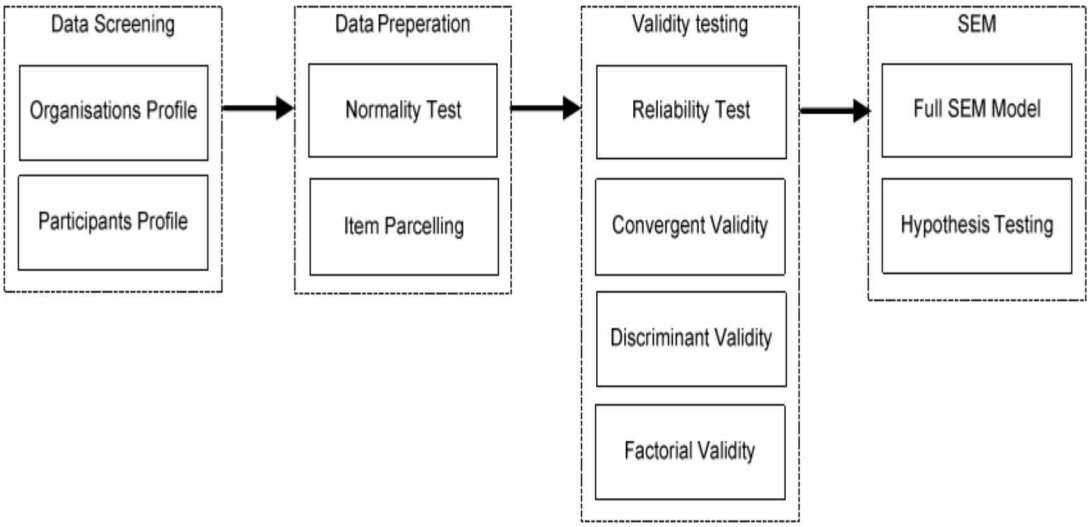
Figure 2. SEM modelling process (Source: Al-Gahtani et al., 2007)



concurrent investigation of up to the 200 variables, permitting the inspection of widespread connections among arbitrator and latent forecaster variable pointers (Al-Gahtani et al., 2007). In the most common form, SEM looks for variation, co-variation, path, and the relationship between measured variables and latent variables (Suhr, 2006).

In this study, the hypothetical model (Figure 1) consisted of both observed and latent variables, alongside complex interrelationships among the variables that required SEM to find the ultimate empirical decisions. To investigate the hypothetical model relationships, SEM was applied among the factors extracted from the CFA analysis with proper validity and reliability. As part of SEM analysis, the path analysis was run and the coefficients and significance of the relationships were estimated using estimated path coefficients, t-values (critical ratio) and standard errors.

The path coefficient and the critical ratio reflect the strength of the relationships between the independent and the dependent constructs, and standard errors represent the number of errors in the path coefficient that are caused by the presence of a sampling error. The critical ratio (t-value) is obtained by dividing the path coefficient by the standard error, and this provides the basis for hypothesis testing. A hypothesised relationship is considered to be significant if the estimated critical ratio (t-value) exceeds a standard critical ratio of ± 1.96 (significant at alpha (α) level 0.05) or ± 2.56 (significant at alpha (α) level 0.01) (Gefen et al., 2000; Lind et al., 2005). Here, *AMOS* (version 19) was used to analyse the SEM model because it was developed by IBM to run as an extension program to *SPSS* allowing high confidence in the compatibility of results between *AMOS* and *SPSS* (Arbuckle, 2013; Blunch, 2013).

Goodness-of-Fit Test

Testing the model fit for both CFA and SEM is mandatory to ensure the model result is admissible and acceptable. The overall fit of the model determines the extent to which the overall hypothesised model is consistent with the collected data. The goodness-of-fit index (GFI) also explains the reality that can be expressed by the model. Following the recommendation of different researchers, some measures from

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Table 4. Goodness-of-fit indices and criteria used in this study

Assessment Index Category	Fit Index	Acceptable Level	References
Absolute fit index	Chi-square $\chi 2$ (p value for the model)	Insignificant p value ($p > 0.05$)	Gefen et al., 2000; Barrett, 2007; Hooper et. al., 2008; Hair et al, 2006
	CMIN/DF (normed Chi-square ($\chi 2$/df))	< 3 good; < 5 sometimes permissible	Hair et al, 2006; Tabachnick & Fidell, 2007
	RMSEA (root mean square error of approximation)	< 0.05 good 0.05 to 0.10 moderate > .10 bad	Hu & Bentler 1995; Hooper et. al., 2008; Fan & Sivo, 2007; Leelayouthayotin, 2004
	GFI (goodness-of-fit index)	> 0.90	Miles & Shevlin, 1998; Hooper et. al., 2008; Hair et al, 2006
	AGFI (adjusted goodness-of-fit index)	≥0.90 good > 0.80acceptable	Hair et al. 1998; Kelloway 1998; Chau 1997; Rai & Patnayakuni, 1996
Incremental fit indices	CFI (comparative fit index)	> 0.90 (acceptable) > 0.95 (more appropriate)	Hu & Bentler, 1999; Suhr, 2006; Mak 2001; Miles & Shevlin, 1998
Parsimonious fit indices	PRATIO (parsimony ratio) used for model adding more parameters	> = 0.5 closer to 1 better	Leelayouthayotin, 2004; Hair et al, 2006
	CAIC	$CAIC_{model} < CAIC_{saturated}$	Akaike 1987; Diamantopoulos & Siguaw, 2000; Hooper et. al., 2008

each type of index were used in model assessment (Joseph F Hair, Anderson, Tatham, & William, 1998). Three types of fit indices were selected for assessing model fit in this research, i.e. absolute fit indices, incremental fit indices, and parsimonious fit indices. Table 4 shows goodness-of-fit indices and criteria used in this study. In this study, *AMOS* (version 19) was used for the goodness-of-fit test.

RESULTS AND DISCUSSION

Preliminary Assessment of Proposed Conceptual Model: Exploratory Factor Analysis (EFA)

The results of the EFA are presented in Table 5. The results illustrate that the item loadings of 26 variables were significant and well above the 0.40 threshold without having any cross loadings among the eight extracted factors. In addition, the factor analysis explained 64.65% (cumulative percentage) of the variance criteria. These results indicate that the factor analysis provided reliable and valid extracted factors from the literature, as all the extracted factors had Eigen values greater than 1 and cumulatively the factors explained 64.65% of the variance, demonstrating consistency. The results confirmed that the developed instruments consisted of reliable and valid items, which sufficiently captured the meaning of the model constructs and their associated factors.

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Table 5. Explanatory factor analysis results

Components		Attributes		
	Items	**Loadings**	**Eigen Value**	**% Variance Explained**
Factor 1: Perceived enjoyment	EN1	0.567	5.02	19.32
	EN2	0.700		
	EN3	0.697		
	EN4	0.683		
	EN5	0.677		
	EN6	0.712		
Factor 2: Prior experience	PE1	0.629	2.57	9.89
	PE2	0.825		
	PE3	0.800		
	PE4	0.587		
Factor 3: Service quality	SQ1	0.647	2.371	9.118
	SQ2	0.811		
	SQ3	0.796		
	SQ4	0.545		
Factor 4: Infrastructure	IF1	0.923	1.666	6.408
	IF2	0.921		
	IF3	0.522		
Factor 5: Delivery system	DS1	0.800	1.511	5.811
	DS2	0.836		
	DS3	0.718		
Factor 6: Product availability	PA1	0.882	1.371	5.274
	PA2	0.849		
Factor 7: Payment	PAY1	0.877	1.244	4.785
	PAY2	0.866		
Factor 8: Trust	TR1	0.799	1.046	4.025
	TR2	0.853		

Extraction method: principal component analysis.
Rotation method: varimax with Kaiser normalisation.

Validity of the Proposed Conceptual Model

Reliability and Convergent-Discriminant Validity

The Cronbach's alpha, MSV, AVE, and ASV are presented in Table 6. In this study, all the constructs showed acceptable reliability, as all have a Cronbach's alpha value over the threshold of 0.7. Thus, it was concluded that any of these constructs could provide acceptable reliability for the next stages of SEM analysis. Additionally, there was discriminant validity for all of the constructs, which indicated that none of the constructs of the model would have any effect on other constructs. However, there were

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Table 6. Reliability and convergent-discriminant validity analysis for independent constructs

Construct	No. of Items	Cronbach's Alpha	AVE	MSV	ASV
Product availability (PA)	2	0.759	0.606	0.071	0.017
Previous experience (PE)	4	0.713	0.452	0.278	0.067
Payment satisfaction (PAY)	2	0.741	0.600	0.071	0.025
Enjoyment factors (EN)	6	0.804	0.421	0.278	0.128
Infrastructure system (INF)	3	0.736	0.620	0.054	0.019
Delivery system (DS)	3	0.738	0.500	0.174	0.052
Trust (TR)	2	0.704	0.596	0.436	0.084
Service quality (SQ)	4	0.720	0.500	0.436	0.121

two constructs (previous experience and enjoyment factor) that had convergent validity issues due to misinterpretation by the respondents. This was not a problem for the structural model, however, even though the convergent validity was not to the highest mark.

Table 7 shows that the square association amongst any two hypotheses was less than their particular AVE, which indicated the discriminant legitimacy of all concepts in the study model. Thus, all the validity and reliability checks confirmed that the constructs could be safely entered into the structural model analysis.

Table 7. Factor correlation matrix with square root of the AVE on the diagonal for the independent latent constructs

	PE	EN	InF	DS	TR	SQ	PAY	PA
PE	**0.672**							
EN	0.527	**0.649**						
InF	0.217	0.114	**0.788**					
DS	-0.146	-0.417	0.076	**0.702**				
TR	0.108	0.315	0.111	-0.141	**0.772**			
SQ	0.241	0.492	0.233	-0.229	0.660	**0.704**		
PAY	0.232	0.267	0.015	-0.145	0.089	0.029	**0.774**	
PA	0.035	-0.146	0.055	0.266	0.033	0.035	-0.150	**0.778**

Confirmatory Factor Analysis (CFA) Model

From EFA, eight latent factors were entered into the CFA model. Figures 3 and 4 show the CFA models including exogenous latent constructs (independent variables), exogenous latent constructs (dependent variable) and the covariates of these constructs.

Based on these models, the estimated model fit values are presented in Table 8. The table shows that the model fit for the independent constructs was good and fell within the acceptable limits, except

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Figure 3. CFA model for independent variables

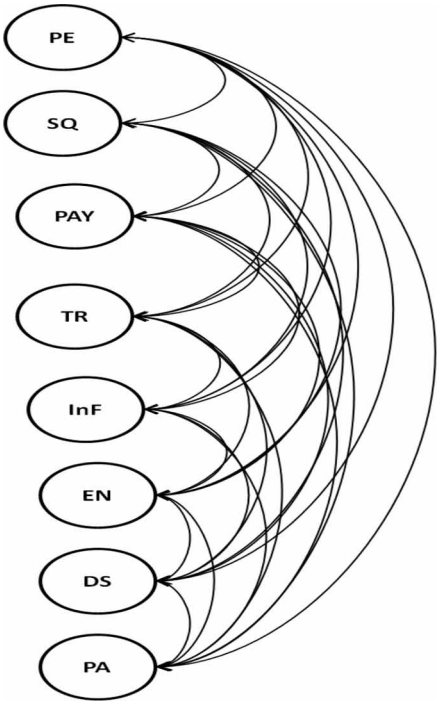

Figure 4. CFA model for depend variable

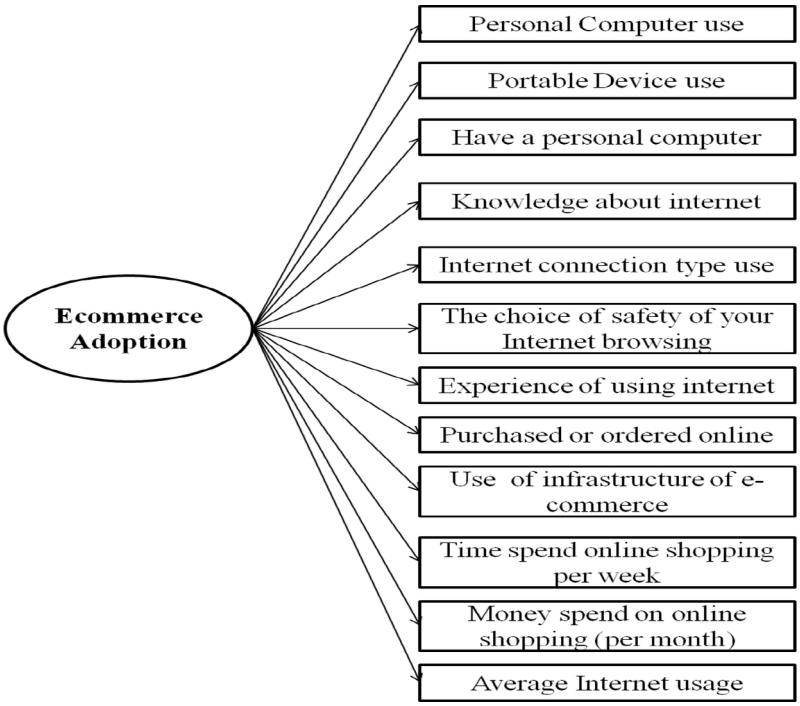

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Table 8. Overall fit indices of CFA models

CFA Model	Chi-sq.	*p* Value	CMIN/ DF	RMSEA	GFI	AGFI	CFI	PRATIO	CAIC
CFA model with independent constructs	1001.473	0.00	3.668	0.054	0.919	0.895	0.901	0.84	1610.40< 2740.19*
CFA model with dependant construct	170.02	0.00	3.149	0.049	0.97	0.957	0.420	0.818	357.38< 608.93*

*extracted from AMOS results as CAIC

for Chi-square. Again, for the CFA model, including the dependent construct and the factors associated with this construct, all the model fit indices were accepted, except for the CFI value. In this particular model, there was only one construct. Thus, the uncorrelated nature of the constructs (as the base of the CFI value calculation) was not confirmed.

Therefore, despite all the fit values being good and acceptable, this index exhibited a lack of fit. Furthermore, CFI is not operative if most of the associations between variables approach zero, as this means there is less co-variance to describe. Therefore, in this CFA model, an invalid fit index was noted. Thus, CFA models, including independent constructs, a dependent construct, and the covariates of these constructs were developed from the proposed conceptual model to ensure a better fit of the final SEM.

Structural Equation Model

Figure 5 presents the SEM outputs and is a graphic representation of the structural model with the results of the hypothesis testing. However, for better understanding, the results are also presented in Table 9. Out of eight independent constructs, five had a statistically significant relationship with the dependent construct. Previous experience, payment, trust, delivery system, and product availability had a significant influence on or relationship with e-commerce acceptability. However, service quality, infrastructure, and enjoyment had no significant relationship with the acceptability of e-commerce. In addition, some internal relationships were found to be significant, such as the relationship between the delivery system and payment system, trust and payment. The model as a whole can explain 37% of the variance for online shopping adoption in Saudi Arabia.

Table 10 shows the overall fit indices of the SEM model. The indices exhibited a good and acceptable fit, except for CFI. CFI was below the acceptable level by a very small margin. As a whole, all the fit indices indicated that the model provided authentic and reliable results. Therefore, the use of this model to test the research hypotheses was authenticated. Thus, the model provided the significant predictors of e-commerce adoption in Saudi Arabia.

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Figure 5. Structure model of the factors influencing the adoption of e-commerce in Saudi Arabia

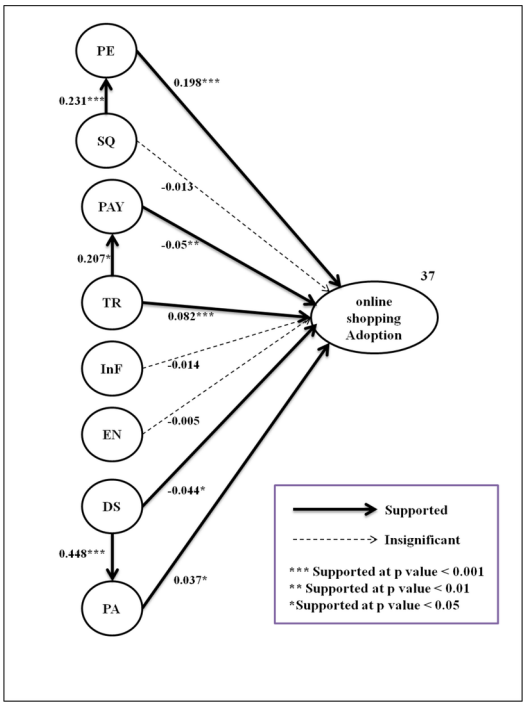

Table 9. Structure model analysis of the factors influencing the adoption of e-commerce in Saudi Arabia

Hypothesis	Path Coefficient	t-Value CR	p	Empirical Support
H4: InF → e-commerce adoption	-0.014	-0.179	0.742	Rejected
H5: PAY → e-commerce adoption	-0.05	-2.820	**	Accepted
H6: DS → e-commerce adoption	– 0.02	-1.996	*	Accepted
H7: PA → e-commerce adoption	0.037	2.022	*	Accepted
H8: TR → e-commerce adoption	0.082	3.452	***	Accepted
H9: EN → e-commerce adoption	-0.005	-0.325	0.861	Rejected
H10: PE → e-commerce adoption	0.198	5.023	***	Accepted
H11: SQ → e-commerce adoption	-0.013	-0.327	0.743	Rejected
H12: DS → PA	0.448	5.728	***	Accepted
H13: TR → PAY	0.207	2.030	*	Accepted
H14: SQ → PE	0.231	5.535	***	Accepted

Table 10. Overall fit indices of SEM model

Chi-sq.	*p* Value	CMIN/DF	RMSEA	GFI	AGFI	CFI	PRATIO	CAIC
1576.08	0.00	2.363	0.039	0.915	0.901	0.889	0.90	2458.2< 6089.3

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DISCUSSION

After collection and analysis of the data, it was concluded that demographic and cultural factors significantly affect e-commerce use in Saudi Arabia. The high and low frequency users were mainly young-adults, while the moderate users were mostly middle aged, indicating that age is an important demographic variable influencing the adoption of e-commerce. A similar conclusion was drawn by Alkhunaizan and Love (2012), and Eid (2011).

Gender also influences the adoption and amount of use of e-commerce in Saudi Arabia. Females appear to be more attracted to shopping online than males in Saudi Arabia. It is highly likely that women are more motivated to shop online because they are somewhat restricted in terms of when and where they can shop by cultural mores. E-commerce provides an easy option for purchasing without going outside the home, which is a major cultural issue in Saudi Arabia. These findings are consistent with those of Al-Ghaith, Sanzogni, and Sandhu (2010), and Al-maghrabi and Dennis (2009).

Data analysis also indicated that the knowledge and capacity to engage in online activities varied among the user groups, and the high frequency users were more technologically skilled and confident than the moderate and low frequency users in Saudi Arabia. The result is consistent with Fuller, Vician, and Brown (2006).

The analysis also indicated that there was no significant interaction between the availability or quality of ICT infrastructure (in particular e-commerce infrastructure) and e-commerce adoption, possibly because the users had no in-depth ideas about what an efficient ICT infrastructure consists of. However, the lack of a trustworthy system of payment as part of the e-commerce business model did have a negative and significant impact on the adoption of e-commerce. Previous studies have also highlighted the fact that for online shopping in Saudi Arabia, the payment system lacks efficiency, as well as security, (e.g. credit card fraud, theft of financial details and hacking) (F. Aleid, Rogerson, & Fairweather, 2009; Rayed AlGhamdi et al., 2012; Rayed AlGhamdi, Nguyen, Nguyen, & Drew, 2011; Almousa, 2011).

In Saudi Arabia, the purchase delivery system has a negative effect on the adoption of e-commerce due to the poor postal service. Previous studies of Saudi Arabia also found that the purchase delivery system is one of the major obstacles to the expansion of e-commerce, as the delivery system is not even close to the standard followed in the developed world, and citizens who want to shop online face huge problems in getting products delivered after an online purchase (Aleid et al., 2009; Rayed AlGhamdi, Drew, & AlFaraj, 2011; Rayed AlGhamdi, Ann Nguyen, et al., 2011).

Product availability also discourages the adoption of e-services in Saudi Arabia because many products are banned from sale or restricted for religious and legal reasons. If these products were to be made available online (and unrestricted by government regulation), this would boost interest in e-commerce and provide online stores with a strong competitive advantage.

Trust is a positive factor that encourages the uptake of e-commerce in Saudi Arabia. International vendors, such as Amazon and eBay and other large e-commerce sites have been used by many users in Saudi Arabia, and have a positive image that has helped users have faith in online purchase and payment. In contrast, local e-stores have a somewhat negative image and faith in them is relatively low. To improve the image of trustworthiness for the local e-stores, Saudi Arabian e-stores have formalised an index site that lists the most reliable and trusted local online stores. These findings are in line with the findings of other researchers Rayed AlGhamdi et al. (2011) and Al-maghrabi and Dennis (2009).

Analysis of the research data showed that enjoyment was an insignificant factor for e-commerce adoption in Saudi Arabia. The explanation of this result might be found in the cultural context of the study.

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In Saudi Arabia, people mostly shop by visiting stores, while online shopping is often considered to be more necessary than fun, due to an absence of pleasant website images, animation, humour and lack of interactive features, as noted by Al-Ghaith et al. (2010). Many women enjoy the opportunity provided by shopping to gather with friends, and may not enjoy online shopping, which is generally a solitary activity. Furthermore, unemployed people with money provided by the head of the family or father like to go shopping in a physical location in order to fill their free time with some activity.

Companionship and the sights and sounds of the marketplace make real shopping more enjoyable than virtual shopping, always recognising, of course, that unemployed women in Saudi Arabia, who are the vast majority of the of women, face restrictions outside the home that moderate their feelings of enjoyment. These circumstances may explain why those engaging in online shopping did not emphasise enjoyment as a factor in their use of e-commerce systems. This result contrasts with previous studies by Lee, Cheung, and Chen (2005), Moon and Kim (2001), Turel, Serenko, and Bontis (2007), and Rouibah (2008), who found that enjoyment was an important predictor of e-commerce adoption. This contradiction may have occurred due the sample size variation and the personal views of the users.

In this research, prior experience was found to have a direct and positive relationship with e-commerce adoption. In Saudi Arabia, e-stores are trying to capture more customers, which has led to efforts to provide a better experience for customers, and engender positive feelings towards the adoption of e-commerce. This finding is consistent with a study by Al-Ghaith et al. (2010). For example, Saudi Arabian e-commerce vendors are trying to provide not just a better experience for their customers online, but are also offering post-purchase service for online customers.

Despite all these positive developments, however, users' attitudes toward local online vendors discouraged them from online shopping. The study respondents stated that products bought online were too often not as promised on the website. In addition, the details of the product were often poorly explained. All these negatives were intensified by a lack of communication with e-store managers, since very few e-stores in Saudi Arabia have call centre facilities. Thus, the respondents did not get the opportunity many times to judge the quality of the e-store vendors, as they simply assumed the worse regarding service quality based on earlier experiences. Thus, though service quality had no direct influence on online shopping adoption, there was a positive and significant interaction between service quality and prior experience. This result is in line with the result of Kassim and Asiah (2010).

There is a positive and significant relationship between the delivery system and product availability because product availability precedes product delivery. When users receive products on time and at low cost, it improves their perception of e-commerce, its convenience and reliability. This finding is in line with Ahn, Ryu, and Han (2005) and Schoenbachler and Gordon (2002). When users have faith in the probity of e-commerce vendors or an online payment or banking system, they are willing to provide their financial information to make online transactions. This result is confirmed by previous studies, such as Özgüven (2011), Meskaran, Ismail, and Shanmugam (2013), and Kim, Tao, Shin, and Kim (2010).

CONCLUSION

This paper described the development of a model of the factors influencing the adoption of e-commerce in Saudi Arabia through a study of online shoppers. Firstly, hypotheses were developed, and a conceptual model proposed for the adoption of e-commerce in Saudi Arabia based on a literature review. The conceptual model was a demand side model, which was developed using a mixed model method. The basic

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concepts of the model were taken from several other models–TPB, DTPB, TAM and UTAUT–which have been developed and validated in Western nations. The statistical model encompassed the ideas of the perceived characteristics of innovation, normative beliefs and motivation to comply, and finally the control beliefs and perceived facilitation of the users in relation to online shopping.

In order to empirically verify the research hypotheses and model, primary research was conducted using a survey and semi-structured interviews with both e-commerce users and providers. In the model, constructs from three major dimensions–perceived characteristics of innovation, normative beliefs and motivation to comply, and control beliefs and perceived facilitation–were included. From these three dimensions, eight independent constructs–payment security and convenience, ICT infrastructure, delivery system, product availability, trust, enjoyment, prior experience, and service quality–were entered in the model. Using SEM techniques, the significant predictors among these eight constructs were identified.

The results of the data analysis confirmed that the constructs of the model explained 37% of the variance in e-commerce adoption (usage) for respondents in Saudi Arabia. Among eight independent constructs, five (previous experience, payment, trust, delivery system, and product availability) were found to have a significant relationship with the dependent construct (e-commerce acceptability). Three constructs (service quality, infrastructure, and enjoyment) were found to have no significant relationship with e-commerce adoption. In addition, some internal relationships were found to be significant, such as the relationship between the delivery system and payment system, trust and payment. On the whole, the model provided the significant predictors of e-commerce adoption in Saudi Arabia.

This model will potentially assist professionals interested in services supported by ICT, the wider business community, and the government to undertake comprehensive, effective, and sustainable solutions for the betterment of e-commerce in Saudi Arabia. Additionally, the methodology used in this study involving a mixed model that took basic concepts from several other models, and its development will guide other developing countries to form new models from already established models to highlight issues faced in their countries in relation to the adoption of national e-commerce.

This study only focused on current online shopping adopters. Data provided by non-adopters could have added greater depth to the understanding of why they are not using e-commerce facilities at all. Moreover, this research included only the variables related to the demand side (user side), limiting variables for the supply side (e-commerce vendors). So, future studies should consider non-adopters for identifying factors influencing the adoption of e-commerce in Saudi Arabia. In addition, interaction models (demand and supply) with more variables should be used. These would provide more dimensions of online shopping and retail e-commerce in Saudi Arabia.

REFERENCES

Abd. Mukti, N. (2000). Barriers to putting businesses on the Internet in Malaysia. *The Electronic Journal on Information Systems in Developing Countries*, *2*(1), 1–6. doi:10.1002/j.1681-4835.2000.tb00013.x

Ahn, T., Ryu, S., & Han, I. (2005). The impact of the online and offline features on the user acceptance of Internet shopping malls. *Electronic Commerce Research and Applications*, *3*(4), 405–420. doi:10.1016/j.elerap.2004.05.001

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Al-Gahtani, S. S., Hubona, G. S., & Wang, J. (2007). Information technology (IT) in Saudi Arabia: Culture and the acceptance and use of IT. *Information & Management*, *44*(8), 681–691. doi:10.1016/j.im.2007.09.002

Al-Ghaith, W. A., Sanzogni, L., & Sandhu, K. (2010). Factors influencing the adoption and usage of online services in Saudi Arabia. *The Electronic Journal on Information Systems in Developing Countries*, *40*(1), 1–32. doi:10.1002/j.1681-4835.2010.tb00283.x

Al-maghrabi, T., & Dennis, C. (2010). Driving online shopping: Spending and behavioral differences among women in Saudi Arabia. *International Journal of Business Science & Applied Management*, *5*(1), 30–47.

Al-Otaibi, M. B., & Al-Zahran, R. M. (2003). E-commerce adoption in Saudi Arabia: An evaluation of commercial organizations' web sites. *Paper presented at the International Conference on Information Technology in Asia (CITA)*. Retrieved from http://hdl.handle.net/123456789/2799

Al-Qirim, N. (2008). The adoption of eCommerce communications and applications technologies in small businesses in New Zealand. *Electronic Commerce Research and Applications*, *6*(4), 462–473. doi:10.1016/j.elerap.2007.02.012

Aladwani, A. M. (2003). Key Internet characteristics and e-commerce issues in Arab countries. *Information Technology & People*, *16*(1), 9–20. doi:10.1108/09593840310462998

Albadr, B. H. (2003). E-commerce. *Science and Technology*, *65*(3), 14–19.

Aleid, F., Rogerson, S., & Fairweather, B. (2009). Factors affecting consumers adoption of ecommerce in Saudi Arabia from a consumers' perspective. *Paper presented at the IADIS International Conference e-Commerce*.

Aleid, F. A., Rogerson, S., & Fairweather, B. (2010). A consumers' perspective on E-commerce: Practical solutions to encourage consumers' adoption of e-commerce in developing countries–A Saudi Arabian empirical study. *Paper presented at the IEEE International Conference on Advanced Management Science (ICAMS)*, Chengdu, China, July 9-11.

Alfuraih, S. (2008, April). E-commerce and e-commerce fraud in Saudi Arabia: A case study. In *Proceedings of the International Conference on Information Security and Assurance 2008* (pp. 176-180). IEEE.

Alfuraih, S. I. (2008). E-commerce and e-commerce fraud in Saudi Arabia: A case study. *Paper presented at the Information Security and Assurance*. 10.1109/ISA.2008.45

AlGhamdi, R., Drew, S., & Al-Ghaith, W. (2011). Factors influencing e-commerce adoption by retailers in Saudi-Arabia: A qualitative analysis. *The Electronic Journal on Information Systems in Developing Countries*, *74*(7), 1–23. doi:10.1002/j.1681-4835.2011.tb00335.x

AlGhamdi, R., Drew, S., & AlFaraj, O. (2011). Issues influencing Saudi customers' decisions to purchase from online retailers in the KSA: A qualitative analysis. *European Journal of Scientific Research*, *55*(4), 580–593.

AlGhamdi, R., Drew, S., & Alkhalaf, S. (2012). Government initiatives: The missing key for e-commerce growth in KSA. arXiv:1211.2398

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

AlGhamdi, R., Nguyen, A., Nguyen, J., & Drew, S. (2011). Factors influencing Saudi customers' decisions to purchase from online retailers in Saudi Arabia: A quantitative analysis. *Paper presented at the IADIS International Conference on E-commerce 2011*.

AlGhamdi, R., Nguyen, A., Nguyen, J., & Drew, S. (2011). Factors influencing Saudi customers' decisions to purchase from online retailers in Saudi Arabia: A quantitative analysis. In *Proceedings of IADIS International Conference E-commerce 2011,* Rome, Italy, July 20-26 (pp. 153-161).

Alkhunaizan, A., & Love, S. (2012). What drives mobile commerce? An empirical evaluation of the revised UTAUT model. *International Journal of Management and Marketing Academy*, *2*(1), 82–99.

Almousa, M. (2011). Perceived risk in apparel online shopping: A multi dimensional perspective. *Canadian Social Science*, *7*(2), 23–31.

Arbuckle, J. L. (2013). *IBM SPSS Amos 22 user's guide*. Crawfordville, FL: Amos Development Corporation.

Blunch, N. J. (2013). *Introduction to structural equation modeling using IBM SPSS statistics and AMOS*. Thousand Oaks, CA: Sage. doi:10.4135/9781526402257

Byrne, B. M. (2013). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Abington, UK: Routledge.

Cloete, E., Courtney, S., & Fintz, J. (2002). Small businesses' acceptance and adoption of e-commerce in the Western-Cape Province of South-Africa. *The Electronic Journal on Information Systems in Developing Countries*, *10*(1), 1–13. doi:10.1002/j.1681-4835.2002.tb00062.x

Davis, C. (1999). The rapid emergence of electronic commerce in a developing region: The case of Spanish-speaking Latin America. *Journal of Global Information Technology Management*, *2*(3), 25–40. doi:10.1080/1097198X.1999.10856257

Eid, M. I. (2011). Determinants of e-commerce customer satisfaction, trust, and loyalty in Saudi Arabia. *Journal of Electronic Commerce Research*, *12*(1), 78.

Enns, H., & Huff, S. (1999). Information technology implementation in developing countries: Advent of the Internet in Mongolia. *Journal of Global IT Management*, *2*(3), 5–24.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. Thousand Oaks, CA: Sage.

Fuller, R. M., Vician, C., & Brown, S. A. (2006). E-learning and individual characteristics: The role of computer anxiety and communication apprehension. *Journal of Computer Information Systems*, *46*(4), 103–115. doi:10.1080/08874417.2006.11645917

Ghobakhloo, M., Arias-Aranda, D., & Benitez-Amado, J. (2011). Adoption of e-commerce applications in SMEs. *Industrial Management & Data Systems*, *111*(8), 1238–1269. doi:10.1108/02635571111170785

Grandon, E. E., & Pearson, J. M. (2004). Electronic Commerce Adoption: An Empirical Study of Small and Medium US Businesses. *Information & Management*, *42*(1), 197–216. doi:10.1016/j.im.2003.12.010

Hair, J. F. Jr, Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate Data Analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hofstede, G. (1980). Culture and organizations. *International Studies of Management & Organization*, *10*(4), 15–41. doi:10.1080/00208825.1980.11656300

Jennex, M. E., & Amoroso, D. L. (2002). e-Business and Technology issues for developing economies: A Ukraine case study. *The Electronic Journal on Information Systems in Developing Countries*, *10*(1), 1–14. doi:10.1002/j.1681-4835.2002.tb00063.x

Kapurubandara, M., & Lawson, R. (2006). Barriers to adopting ICT and e-commerce with SMEs in developing countries: An exploratory study in Sri Lanka. In *Proceedings of the 2006 Collector Conference on Electronic Commerce*, December 9, Adelaide (pp. 1-12).

Kassim, N., & Asiah, A. N. (2010). The effect of perceived service quality dimensions on customer satisfaction, trust, and loyalty in e-commerce settings: A cross cultural analysis. *Asia Pacific Journal of Marketing and Logistics*, *22*(3), 351–371. doi:10.1108/13555851011062269

Kim, C., Tao, W., Shin, N., & Kim, K.-S. (2010). An empirical study of customers' perceptions of security and trust in e-payment systems. *Electronic Commerce Research and Applications*, *9*(1), 84–95. doi:10.1016/j.elerap.2009.04.014

Klopping, I. M., & McKinney, E. (2004). Extending the technology acceptance model and the task-technology fit model to consumer e-commerce. *Information Technology, Learning and Performance Journal*, *22*(1).

Lee, M. K., Cheung, C. M., & Chen, Z. (2005). Acceptance of Internet-based learning medium: The role of extrinsic and intrinsic motivation. *Information & Management*, *42*(8), 1095–1104. doi:10.1016/j.im.2003.10.007

Ma'aruf, L. M., & Abdulkadir, K. (2012). An overview of e-commerce implementation in developed and developing country: A case study of United State and Nigeria. *International Journal of Modern Engineering Research*, *2*(5), 3068–3080.

Matlay, H., & Addis, M. (2003). Adoption of ICT and e-commerce in small businesses: An HEI-based consultancy perspective. *Journal of Small Business and Enterprise Development*, *10*(3), 321–335. doi:10.1108/14626000310489790

Meskaran, F., Ismail, Z., & Shanmugam, B. (2013). Online purchase intention: Effects of trust and security perception. *Australian Journal of Basic and Applied Sciences*, *7*(6), 307–315.

Ministry of Communications and Information Technology. (2014). *ICT Indicators Report (End of Q1 2014)*. Retrieved from http://www.mcit.gov.sa/En/AboutMcit/SectorDevelopment/Pages/SectorIndices.aspx

Moodley, S., & Morris, M. (2004). Does e-commerce fulfil its promise for developing country (South African) garment export producers? *Oxford Development Studies*, *32*(2), 155–178. doi:10.1080/1360081041000169939

Moon, J.-W., & Kim, Y.-G. (2001). Extending the TAM for a World-Wide-Web context. *Information & Management*, *38*(4), 217–230. doi:10.1016/S0378-7206(00)00061-6

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Özgüven, N. (2011). Analysis of the relationship between perceived security and customer trust and loyalty in online shopping. *The China Business Review*, *10*(11), 990–997.

Pantano, E., & Di Pietro, L. (2012). Understanding consumer's acceptance of technology-based innovations in retailing. *Journal of Technology Management & Innovation*, *7*(4), 1–19. doi:10.4067/S0718-27242012000400001

Rouibah, K. (2008). Social usage of instant messaging by individuals outside the workplace in Kuwait: A structural equation model. *Information Technology & People*, *21*(1), 34–68. doi:10.1108/09593840810860324

Rubio, D. M., & Gillespie, D. F. (1995). Problems with error in structural equation models. *Structural Equation Modeling*, *2*(4), 367–378. doi:10.1080/10705519509540020

Sait, S., Al-Tawil, K., & Hussain, S. (2004). E-commerce in Saudi Arabia: Adoption and perspectives. *AJIS. Australasian Journal of Information Systems*, *12*(1), 54–74. doi:10.3127/ajis.v12i1.105

Santos, J. R. A. (1999). Cronbach's alpha: A tool for assessing the reliability of scales. *Journal of Extension*, *37*(2), 1–5.

Schoenbachler, D. D., & Gordon, G. L. (2002). Multi-channel shopping: Understanding what drives channel choice. *Journal of Consumer Marketing*, *19*(1), 42–53. doi:10.1108/07363760210414943

Scupola, A. (2003). The adoption of Internet commerce by SMEs in the south of Italy: An environmental, technological and organizational perspective. *Journal of Global Information Technology Management*, *1*(6), 51–71.

Sparling, L., Toleman, M., & Cater-Steel, A. (2007). SME adoption of e-commerce in the Central Okanagan Region of Canada. In *Proceedings of the 18th Australasian Conference on Information Systems*, Toowoomba, Australia, December 5-7 (pp. 1046-1059).

Stevens, J. P. (2012). *Applied multivariate statistics for the social sciences*. Abington, UK: Routledge.

Susanto, T. D. (2012). *Individual acceptance of SMS-based e-government services* [PhD]. Flinders University of South Australia, Adeliade, South Australia.

Thatchera, S. M. B., Fosterb, W., & Zhua, L. (2006). B2B e-commerce adoption decisions in Taiwan: The interaction of cultural and other institutional factors. *Electronic Commerce Research and Applications*, *5*(2), 2–104. doi:10.1016/j.elerap.2005.10.005

Turel, O., Serenko, A., & Bontis, N. (2007). User acceptance of wireless short messaging services: Deconstructing perceived value. *Information & Management*, *44*(1), 63–73. doi:10.1016/j.im.2006.10.005

Wongpinunwatana, N., & Lertwongsatien, C. (2003). E-commerce adoption in Thailand: An empirical study of small and medium enterprises (SMEs). *Journal of Global Information Technology Management*, *6*(3), 67–83. doi:10.1080/1097198X.2003.10856356

Wymer, S. A., & Regan, E. A. (2005). Factors influencing e-commerce adoption and use by small and medium businesses. *Electronic Markets*, *15*(4), 438–453. doi:10.1080/10196780500303151

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Zhu, K., Kraemer, K., & Xu, S. (2003). Electronic business adoption by European firms: A cross-country assessment of the facilitators and inhibitors. *European Journal of Information Systems*, *12*(4), 251–268. doi:10.1057/palgrave.ejis.3000475

Zhu, K., & Kraemer, K. L. (2005). Post-adoption variations in usage and value of e-business by organizations: Cross-country evidence from the retail industry. *Information Systems Research*, *16*(1), 61–84. doi:10.1287/isre.1050.0045

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Chapter 31
Designing Indulgent Interaction: Luxury Fashion, M-Commerce, and Übermensch

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ABSTRACT

Electronic Commerce (e-commerce) has transformed the retail environment and has become an ever increasingly important channel of the global economy. Within this, fashion retail has been a driving force, with increasing brand growth and profit deriving through Mobile Commerce (m-commerce). While the high-street fashion retailers have been key drivers and innovators in creating engaging and persuasive m-commerce app offerings, the high end and luxury fields have to date been slow to adopt and innovate at a comparable rate. This chapter explores the history and meaning of luxury and branding, in relation to the current state of m-commerce in fashion. Specific reference is given to the current state of m-commerce design in the retail domain between luxury and high-street market levels. Key questions and leading developments in the realm of interaction and User Experience (UX) design are presented along with directions on how to design for luxury m-commerce interactions.

INTRODUCTION

Design may be considered as a holistic field of study and practice on how to directly influence the lives and behaviours society, defined as *"a creative activity whose aim is to establish the multi-faceted qualities of objects, processes, services, and their systems in whole life cycle"* (International Council of Societies of Industrial Design, 2016). It is therefore interesting how the call for better realisation of the power of integrating design practice and mind sets into corporate entities has been on-going for more than 32 years (Kotler & Rath, 1984), yet has only recently began to be accepted and verified within the corporate environment (Borja de Mozota, 2003; Stickdorn & Schneider, 2010). While a full appraisal

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of Design Thinking's impact on the business ecosystem lies outside the scope of this chapter, a central concept of this process is the designer's prior intention on how the product or service may be interacted with. Such complex interactions therefore must be approached with careful consideration of psychology, but also the realisation that a design is not a single creation, but an iterative process of creations building upon each other.

A core concept here then is the design of the interactions with the fashion mobile commerce (m-commerce) apps. One of the most fundamental concepts in interaction design is that of constant change and progress that in time comes to eclipse the past developments that in their day were heralded with greatness. Driven by the exponential increase in processing power (G. E. Moore, 1965) and internet bandwidth electronic commerce (e-commerce) has evolved from the rudimental sites of the early 90's to the highly complex, interactive, and seductive offerings of today's mobile commerce (m-commerce) platforms. To this, it may be tempting to look at the tailored retail focus of apps such as Mallzee's *"super personal"* fashion recommendations (C. Russell in Shaul, 2016), or the charismatic design of the Starbucks (2016) app as the pinnacle of what interactivity and style can provide. However, such a thought would be a close echo of Designer Philippe Starck's (2007) comments that humanity always looks at itself as the 'final man', a pinnacle of excellence in humanity not to be surpassed. However, such a perspective blinds us to development, change, and creating the next evolution. Instead, we should look at what is not great and seductive about current offerings, and reimagine new ways of interacting with our retailers to deliver not only increased functionality, but also exceptional service and emotional connections.

The concept of making certain behaviours within interactions feel emotionally rewarding (or seductive) has existed for many years (S. P. Anderson, 2011), and in a scientific realm, the theory of hedonic and utilitarian motivation for e/m-commerce purchase has been utilised widely (e.g. Parker & Wang, 2016). The question therefore is not *'what is seductive'* in interaction or *'how can interaction be made seductive'*, but instead *'why are fashion retail interactions so unexceptional'*. This of course requires qualification. E-commerce, while once mused on as a passing trend (Gilmartin, 2003) has seen tremendous growth of the last decade, with 12.3% of all UK retail (equalling £42.5 billion) in 2015 being handled through e-commerce platforms (Mintel, 2016). Particularly, fashion business is one of the most prominent sectors within e-commerce, with approximately 55% of UK residents having bought *"clothes or sporting goods"* online (Office for National Statistics, 2015); representative of 25% of all e-commerce revenue (Mintel, 2016). However, the fashion market represents diverse market levels, with each level performing to a different extent within the m-commerce and interactive field. Using a common nomenclature (Jackson & Shaw, 2009), the market can be broken down into four levels of:

1. Economy (e.g. Primark, George ASDA)
2. High Street
    a. Mass Market (e.g. H&M, New Look)
    b. Mid Level (e.g. Top Shop, M&S)
    c. High End (e.g. All Saints, Coast)
3. Diffusion (e.g. Marc by Marc Jacobs, Vivian Westwood Red Label)
4. Luxury (e.g. Dior, Marc Jacobs, Vivian Westwood)

An appraisal of m-commerce platforms by market level (Parker, 2016a) reveals that while many of the luxury designer brands have released an app (e.g. Gucci, Hugo Boss, Louis Vuitton) their apps rarely allow for the purchase of items or offer a limited and often introductory level range. Instead, they

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mainly offer lookbooks, aspirational imagery, and news on the brand as a form brand experience. This is in contrast to the interactive transactional apps offered by the High Street retailers. Consequently, a schism appears within contemporary fashion apps between those primarily of hedonic experience, and those of utilitarian transaction.

The objective of this chapter is to present an in depth analysis to the ways luxury fashion retailers engage with their consumer base through e-commerce platforms. Through this, key questions on the design of fashion e-commerce are raised in line with the current state of interaction design in the m-commerce field. Finally, recommendations for the design of luxury e-commerce platforms for enhanced consumer experience are delivered. It is our intention that this chapter should deliver not only guidelines for exclusive content development, but a theoretical framework that retailers at any level can embrace and utilise in order to foster development and innovation within their marketing and design process.

BACKGROUND: DIGITAL MARKETING STRATEGIES FOR FASHION AND LUXURY BRANDS

Concepts of the Brand

Branding forms the strategic underpinning of most organisations, businesses, and public personalities, having evolved to become something that is to be built, maintained and arguably cherished (P. Doyle, 1990). Critically, brands are viewed as having significant influence with respect to consumers' purchasing decisions (e.g. Chovanová, Korshunov, & Babčanová, 2015) either through differentiation (Jane Roberts & Merrilees, 2007), relationship building, or by personal projection (Cătălin & Andreea, 2014). Importantly, brands provide longevity to the organization through the management of a set of assets and/or values (Aaker & Joachimsthaler, 2012). In this respect, brands are unifiers in that they have a defined characteristics and behaviours that shape and inform the business strategies. Subsequently, the consumer is able to connect or transfer these values to the product or service offered by the brand and make decisions based upon the extent to which brand is most closely aligned with their expectations and needs.

From the view of consumers, products are *what are bought* while brands *are what are bought into*. Brands therefore provide the long-term constant of decision-making while products can, and indeed must, flex in line with trends and fashions. In this respect, the brand is of greater importance than the product (Wong & Merrilees, 2008), although continued product failure or disappointment will inevitably tarnish the brand. The extent to which products will change is dependent upon the industry in which the brand competes. Within a fashion context, change occurs both across seasons and within seasons as a means of encouraging consumers to engage and purchase frequently. Conversely, in the automotive sector, changes are generally slower to emerge reflecting the level of investment required for product development and the frequency of purchase behaviours.

That stated, fashion brands (especially those operating in the luxury sector) must adhere to a set of guidelines that evolve into a handwriting that helps to define the brand and allow the customer to make decisions based upon familiarity. The brand in this respect has a necessary constancy (Nueno & Quelch, 1998) as well as a reputation and awareness (Michel Chevalier & Mazzalovo, 2008) about it that helps to simplify selection and decision-making. Fashion brands such as the Max Mara group have evolved a distinctive handwriting that allows the sub-brands to occupy specific, sometimes complementary positions in the marketplace. In line with Aaker's (2004) proposition, the Max Mara Group of brands reflect

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the parent's attributes and values, especially in areas such as quality, but interpret and construct brands around them in distinctive ways in which to build loyalty, awareness, and positive associations across a range of customers and prospects.

Loyalty and the Brand

Inextricably linked with branding is long-termism (Okonkwo, 2007). In essence, a key purpose of the brand is to develop and sustain customer loyalty (Aaker, 1991); principally a manifestation of preference or attachment, although it may be borne out of different motivations. It results in a predisposition to purchase from one brand at the expense of another (Jacoby & Jacob, 1971; Phau & Prendergast, 2000). Okwonko (2007) suggested that it is a preference towards the company, the brand and the products and thus, loyalty is based upon an interlinked liking of past, present, and expected future satisfaction across those three aspects. Loyalty is therefore important to build future revenue (Jung & Sung, 2008). This is not simply a derivative of purchase continuation, but the associated reduced costs of servicing established customers.

In addition, loyal customers have the potential to become more expansive customers, whereby in a *quid pro quo* relationship, loyal customers need to be given a greater range of opportunities to purchase lest they become saturated and this in turns enables the brand to explore diversification and diffusion strategies (S. A. Doyle, 2002; S. A. Doyle & Reid, 2005; Liu, Li, Mizerski, & Soh, 2012). Hence, while loyal customers are therefore predisposed or biased, they also need to be given reason to engage.

Concepts of Fashion

In its broadest terms, fashion is about a shared, common, and simultaneous way of being, behaving or thinking within a definable and describable group (Tortora & Eubank, 2010). This concept of something shared is pivotal in shaping our understanding of fashion. This means that it has parameters, inclusions and exclusions; a time-based dimension which may be fluid but there needs be a beginning, a middle and an end. Fashion, therefore, has a temporal nature to it. Within the context of clothing, this transitory and transitionary aspect is effectively demonstrated by the product life-cycle curve cycle or the fashion adoption curve derived from Rogers (2003) proposition, whereby something may be described as 'fashionable' at the point when the majority of group members accept it and wear it. This is not to argue that the majority of a population will wear it, but that it has a significant level of adoption within a set.

This ebb and flow of products and more importantly styles, is at the heart of a fashion industry and is what defines it as distinctive from clothing. The fashion cycle recognises that there must be stages of introduction and of exit. For introduction the model argues that there will be innovators and early adopters who spearhead the movement, whether it goes beyond these initial stages will determine whether it becomes fashionable or not. In commercial terms, the majority is critical to achieve return on investment and thus fashion brands are required to select and interpret trends that they believe will be most appropriate to their customers and then to inform the customers of the availability and desirability of the product. In fast fashion the opportunity to so do may be brief (S. A. Doyle, Moore, & Morgan, 2006) and thus the opportunity to inform of and present an offer may have a greater degree of urgency than, for example, the premium and luxury sectors.

Companies and consumers are complicit in the need for change. Without it, clothing would be commoditised and consumption would be to satisfy the lowest level of Mazlow's (1943) hierarchy. While

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there may be an environmental argument for this, the commercial argument has hitherto been weak. Nevertheless, what we see in recent years is an attempt by fashion brands to square the circle with respect to providing change and choice in a more sustainable manner (e.g. H&M Conscious, M&S Plan A). Such actions influence manufacturing decisions, product offers, pricing structures and message content whereby the how of fashion is increasingly relevant in shaping the story of fashion as presented to stakeholders include, consumers.

This in itself reflects a *fashion* in brand thought and behaviour, where a critical mass of companies, brands and consumers are now thinking about clothing in a different way. As suggested by the adoption curve, this way of thinking and behaving emerges with a small number of pioneering brands focusing their attention upon a specific group of motivated consumers (e.g. Slowear). This then becomes more progressively widespread. Digital platforms have undoubtedly helped press forward the shift through a swifter and more easily accessed communications system. It is now a rare fashion brand, at any level, that does not refer to social corporate responsibility.

Concepts of Luxury

Luxury as a concept is far from new. However, what is relatively new is the growth in luxury, both from a creation and consumption perspective (S. A. Doyle & Moore, 2015). Okwonko (2007) highlights that the current structure of the luxury industry was shaped in the 1970s, but suggests that the major changes have arisen from the 1990s onwards. Contributing to this shift, Okwonko (2007) suggest that shift from 'hand made' to the (semi)industrialisation of techniques, most obviously characterised in luxury apparel/fashion by the evolution of *pret-a-porter* from its origins in haute couture to its current meaning of *ready-to-wear*. It is of course important to note that although mass customisation may be offered as a service through interactive websites and apps (Parker, 2016c), the mail order fashion retail industry from early catalogues through to m-commerce can only exist due to the *pret-a-porter* garment production model given its need for a pre-established range of standardised products. This evolution may be attributed to a number of factors, mechanisation being only one of them. In addition, we may consider the limited growth opportunities offered companies reliant solely upon hand-made techniques and the associated volume strictures (S. A. Doyle & Reid, 2005) and a increase in both wealth and aspiration of the middle-classes (S. A. Doyle & Moore, 2015). There is a further dimension that may have contributed; the availability of post-war production facilities, materials and techniques as exemplified by companies such as B&B Italia (Matropietro & Gorla, 1986).

Okwonko (2007) brings to the fore the importance of luxury (fashion) as a means of demarcating and elevating the elite from the wider populace. Access to the most expensive materials and best craftspeople ensured that the position of the wealthy, an in the early history of luxury, ruling elite was enhanced, emphasised and expressed through demonstration; Veblen (1965) defined this as *conspicuous consumption.* Authority and control over labour provided the further means by which such classes could make manifest their wealth and power through personal adornment, but through the large-scale manipulation of their environments. Consider for example, the Pyramids of Giza (representing power in life and luxury in death), or Villa Adriana at Tivoli built as a country retreat for the emperor Hadrian. These structures, as do many more, share in common, access to and control of the means creating excellence and so, based upon these examples, we must also add to the list, access not only to craftspeople and materials but to thinkers, architects, etc. In its early phase, luxury and power go hand in hand.

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When considering luxury, it is important to address what it is, not least as this has clear consequences not only for what is offered but the manner in which it is offered. Kapferer (1997) argues that luxury is linked to the elevation of things beyond the merely functional. This is not to argue that luxury is not or cannot be functional; there is after all the expectation that a Rolls Royce will effectively travel from A to B. Instead, this highlights that luxury extends beyond the functional or that its function may be more complex than addressing base functions. Coco Chanel summed this up by stressing that "*luxury must be comfortable otherwise it is not luxury"* (Kuiper, 2010, p. 254).

Woodside and Ko (2013) placed emphasis upon luxury being linked to non-essentials in terms of product or experiences. This, as a definition, can be problematic, especially in a world often characterised by over-consumption and begs the question, what is essential? Critically, they temper this view by also suggesting that luxury is associated with rarity or expensiveness and thus there is the suggestion of exclusivity borne from non-availability to the majority through high price positioning, through a restricted volumes or a combination of both. Jackson (2004) similarly stresses exclusivity and expensiveness as characteristics associated with luxury goods. To these he adds high quality, distinctiveness and craftsmanship. Craftsmanship and high quality are echoed by Dubois and Duquesne (1993) along with heritage, history and culture. Reflecting upon these, Ricca and Robins (2012) in their analysis of luxury propose four pillars; craftsmanship, focus, history, and rarity.

Craftsmanship

Craftsmanship is key in the creation of luxury. This is often also a key dimension in the communication of luxury brands, and in particular, through digital media. Craftsmanship relates to a distinct and unique set of skills that separate luxury from mass manufacturing and often these skills represent a continuum with the brand's origins and history. Craft implies a level of intimacy, nurturing and care that is not associated with mass-market brands. Craftsmanship represents a benchmark according to Roberts and Armitage (2015). The notion of craftsmanship becomes a central dimension in shaping the perceived value of the luxury brand and its associated products, be that craft of making or craft of designing, and this reflects an expertise that has been honed and transferred over time.

Focus

Focus relates to the likelihood that luxury brands will operate within a relatively narrow portfolio of merchandise categories and products in order to best leverage their expertise (see craftsmanship). Luxury brands are best delivered and experienced when they avoid the over-extension of the brand thereby achieving excellence through constraint. This allows the brand to become recognised and respected in core categories. Focus enables the brand to optimise the limited resources available and to ensure that the brand adopts a long-term approach to decision making by staying 'true to purpose'.

This is not to suggest that luxury brands cannot evolve or diversify, but rather that such decisions are taken in recognition that the consequences of a wrong decision may be long-term. Added to this, investment levels are high, owing to material, skill and marketing costs and such investment can rarely be recouped in the short term. Too much change may suggest faddishness and while luxury may be fashionable, it is rarely associated with fad. With respect to extensive diversification, this is seem not within brands but within the portfolios of parent brands / conglomerates. Thus, organisations such as

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LVMH, Richemont, and Kerring achieve an extended portfolio of offers and products across brands rather than within brands.

The importance of focus is demonstrated by British luxury fashion brand Burberry. In reporting the restructuring, the Financial Times (Oakley, Daneshkhu, & Vandevelde, 2016) highlighted the brand's desire to refocus its efforts on a reduced and simplified number of brands within its fashion portfolio. This would bring with it, reduced costs and reduced product replication. The most visible aspect of the restructuring is the consolidation of the brand under a single Burberry label, and the commensurate cessation of *Prorsum*[1], Brit, and London labels. Japanese-only derivatives *Burberry Black* and *Burberry Blue* were both withdrawn in 2015 as the brand pursued a more unified and singular approach with its fashion and beauty divisions. Interviewed by the Business of Fashion (Amed, 2015), CEO Christopher Bailey stated:

At Burberry we strive to deliver the purest articulation of out brand. This allows our customers to have a consistent and authentic experience…If you apply this strategy across the business as we have, it means operating on an in-house basis, to a large extent, allowing us to maintain focus and quality control across design, product development and ultimately, retail.

History

History implies heritage, durability, and longevity; characteristics widely played upon by luxury brands. History also implies security and given that for many consumers luxury is high involvement/ high investment, history provides a sense of continuity, consistency, and durability. History similarly has associations with success and such associations go hand in hand with luxury brands and luxury consumers. Luxury consumption is after all, most likely to be either the result of success or the communication thereof.

For luxury brands, history may be a source of trans-generational appeal if effectively managed, necessitating an evolutionary approach to development to ensure continuous flow of consumers. Failure to evolve may result in the brand becoming irrelevant and moribund and while it is possible to rejuvenate a 'dead' brand of the name and reputation carry sufficient weight and appeal; it is significantly more effective to sustain the brand. In this sense, it is about custodianship of the brand, managing it in a manner that builds new appeal to new generations.

Importantly, the fuller engagement with digital media provides a means by which to do this through channel relevance. Furthermore, digital provides the means by which luxury brands can communicate their history through storytelling and content in a way that delivers a potentially unbroken timeline without atrophying the brand. Madrid-based luxury brand *Loewe* uses digital to present narratives linking generations of users and within these narratives we can find not only the stories of the customer but the story of the brand (e.g. Loewe TV)

Rarity

The pillar of rarity aligns itself closely with that of exclusivity in that it reflects the limited availability of luxury and in so doing positions it clearly as distinctive from commodities. Rarity relates not only to the limited availability of the products of services, but of the inputs to those products and services. This, in part, 'explains' the price of luxury, but it also shapes its sense of not being everyday or commonplace. Rarity is also connected to focus and may reflect the concentration of materials, skill, and management

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expertise required to deliver a luxury experience; or suggesting a technology being utilised so advanced that it could not be utilised or delivered on 'mass'.

Concepts of Luxury Fashion Brands

Within the broader discourse upon what luxury is and what luxury comprises, Fionda and Moore (2009) explore the specific dynamics of luxury within a fashion context and in so doing provide us with nine components. These, they argue should be evident and mutually supportive. In isolation, however, the building blocks of the luxury fashion brand, Fionda and Moore (2009) provide a template for luxury brand management, with each component extrapolated to reveal its sub-dimensions. As is to be expected, many of the components have their correlates in the more general literature on luxury. The nine components are as follows: *clear brand identity*, *marketing communications*, *product integrity*, *design signature*, *premium price*, *exclusivity*, *heritage*, *environment,* and *service and culture*. Within this model, we may also see what could be termed the '*permeable brand membrane'* through which the internal dimensions of the brand become externalised and thus within the consumer domain, be that by means of communication, physical environment, service experience or product (Tosti & Stotz, 2001).Within the realm of e-commerce design, it is imperative that these nine components are fully embodied within the experience of the app. Each facet of which represents a challenge for a designer to rise to during the design phase, and must form a key part of the app's sign off specification.

LUXURY FASHION IN THE M-COMMERCE DOMAIN

The Digital Landscape

Traditionally, brands relied upon physical retailing formats for the distribution of their products and this remains the priority mode of distribution in luxury (M. Chevalier & Gutsatz, 2012; S. A. Doyle & Moore, 2015; C. M. Moore, Doherty, & Doyle, 2010). Similarly, communication was dependent upon the traditional marketing approaches as delineated by Fionda and Moore (2009). Digital has however opened up a relatively new means of engaging with fashion and luxury consumers and this has created both challenges and opportunities.

While physical channels continue to predominate, there has emerged a set of fashion retailers for which digital is the single channel of commerce. Brand such as Yoox, Net-a-Porter, Mr Porter, and Boohoo.com have all adopted a digital business model. ASOS a pioneer of online, was launched in 2000 and has evolved into a global brand with coverage extending across 241 countries and territories (ASOS, 2016). In recognising the challenges facing any clothing retailer online, ASOS sought to offset these with quick and free delivery/ returns, detailed descriptions (including the models size data), true to colour photography, and highly innovative videos designed to represent the garment in motion and 3D. But while good examples may be found in the app domain, the way in which relevant and seductive interactive design is embodied within an app, website, or service is a concept of much greater depth.

First articulated by Kotler (1973) the concept and influence of retail atmospherics is now well established. While a full analysis of practice and the inter-relationship between environment and behaviour lies outside the scope of this chapter, an appraisal of over 60 empirical studies may be found within Turley and Milliman (2000), as well as Baker, Parasuraman, Grewal and Voss (2002). While taste, style, and

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culture is an evolving concept to which store atmospherics must also change, there is a clear and distinct difference between the luxury retail environments and those of the high street and economy brands. The marketing company APS Group (2014) described the focus of high street retailers as being one of theatre, where when done right the act of shopping is transformed into an enjoyable experience. This can be read as an echo of the hedonic domain of Vivienne Westwood's World's End back in the 80's, with customers feeling *"like Alice walking into the shop - falling into Wonderland, where the clock span backwards and the flooring lay at odds to reality"* (J. Anderson, 2007). Even the foundational building materials of the stores can be considered, as Simon Wolfson (CEO of High Street fashion retailer Next) was quoted as saying that the brand is *"moving away from the traditional 'shed' to architectural buildings that reflect the design aspirations of our product ranges"* (Macdonald, 2014). These words can be seen in their underlying message as comparable to the description of Nottingham's flagship Paul Smith store, located in an 18th century townhouse with interior designed to match and compliment the designs and aspirations of the range (Experience Nottinghamshire, 2016). However, the atmospherics between high street and luxury makes little pretence of genuine overlap. Okonkwo (2007) described how Luxury retail differentiates itself from high street brands in the highly personalised service, focus, and attention delivered to customers, blended with at atmosphere that encapsulates the feelings of style and elites to which their customers emotionally associate with. While diffusion brands such a Zara seek to replicate visual and stylistic aspects of this, the model to which luxury fashion is sold is very different. While luxury fashion is sold at a premium, purposefully excluding non-customers and leveraging a budget to match derived from high profit margins, high street retailers move large volumes of garments fast and regularly, leveraging mass over low profit margins. Under these two retailing models, it would not be feasible for a high street brand to truly emulate that of the luxury retailer. Consequently, a form of atmospherics apartheid must exist not through design or will, but rather through emergence, where excellent service and experience may only be achieved through exclusion, exclusivity, and resulting budgets. However, outside the realm of the physical bricks and mortar stores, such limitations causing segregation of experience break down.

Since the creation of e-commerce in the 90's, one principle has sat comfortably in every text on web design: use a website to make you look bigger than you really are. This is one leveraged by the likes of Google, starting quite literally in their garage and rising to global dominance; helped by the veneer of professionalism that virtual sites offer which their humble beginnings could not. With their high profit margins, it is easy to understand how even a modest luxury brand may be able to produce a truly exceptional e-commerce experience. All that is required is a well-designed service, a manufacturing line to meet demand, a suitably talented web or app designer, and enough marketing spin to satisfy the elements of luxury fashion discussed in Concepts Of Luxury Fashion Brands section. While not all brands may be equal online, all brands may appear equally as professional, elegant, and luxurious with the right design and aesthetic.

Luxury and Fast Fashion Apps

While Forbes reported in 2016 that Dior remained the worlds largest fashion company (McGrath, 2016), Zara held the #3 position ($3.2B), and H&M came 6th with $2.3B. Therefore, despite differences in branding, product quality, and store atmospherics, all key players from luxury to economy retailers have far in excess the resources by which to deliver and maintain an e-commerce platform achieving excellence. Naturally, a minimum threshold for such excellence exists since design and photography are

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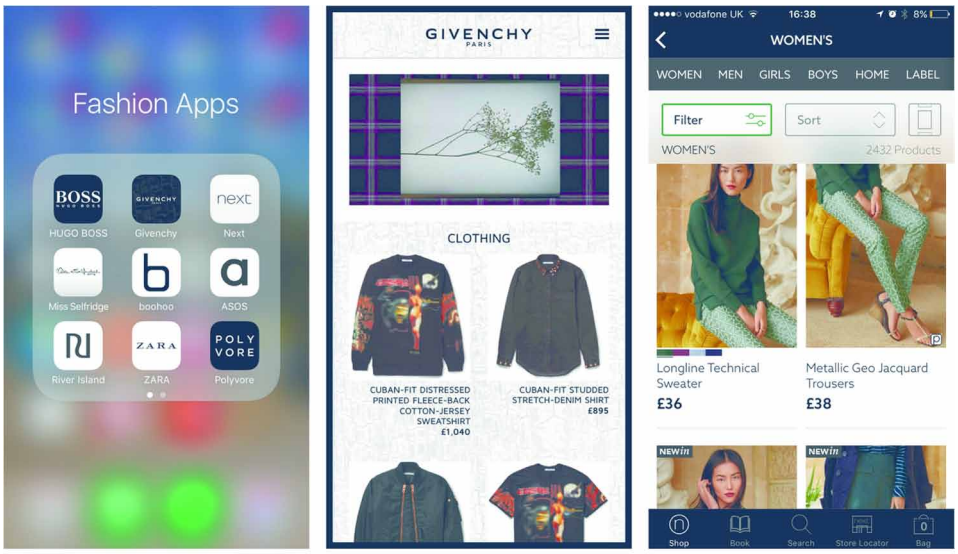
Figure 1. iPhone App icons, Givenchy and Next iPhone Apps (Givency, 2016; Next, 2016)



not free. Yet with the ever increasing power of HTML 5 web applications (e.g. SquareSpace.com) and prosumer cameras and editing suits entering lower price points year upon year, even a startup business can develop a platform to rival the key players. This ability manifests itself in the great limitation in experience variety with e-commerce platforms between fast fashion, high street, and luxury retailers. Here, the retail domain is using the same 'design language' within their apps.

Focusing on two brands: Givenchy (Luxury) and Next (High Street), the differences in aesthetics and interaction are cosmetic and distinctive, yet neither one represents an advantage over; see Figure 1. Here, m-commerce breaks down the experiential differences and barriers that have existed within the physical realm. The reasons for the similarity in design are multiple:

One may think that in creating an e-commerce website the designer is free to develop any interaction they choose; this would be a false assumption. While we may think of modern websites to be simple, logical, and easy to use, overall this is primarily down to the designer recycling symbols, actions, and layouts to meet the learnt behaviours expected by a user. An example of this in our everyday life is how when visiting a bathroom in a restaurant, we will invariably enter the 'correct' room for our gender without given a second though. This is due to our instant and subconscious recognition of the symbology of gender placed on the door. However, when visiting foreign countries (particularly those of a very different culture) a visitor can feel confused due to the different use of gender identification symbols that they have not learnt (Gershenson & Penner, 2009). The same is true for interaction design, for example, the 'swipe down to refresh' interaction commonly seen in apps was not (unlike other features) mandated by Apple in their famous style guidelines (Apple, 2016), but rather a designed interaction (Brichter, 2010) that has been widely copied by developers world over. The interaction itself is not obvious, and no smartphone guide will instruct you, but it is functional, as it has entered the zeitgeist of learnt behaviours. The zeitgeist in such interactions is so strong that if a designer was to implement an alternative interaction (e.g. swipe right to refresh), users would find the experience difficult to discover,

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illogical, and ultimately the designer would be forced to drop their innovation in favour of more standard interactions (Preece, Rogers, & Sharpe, 2011). Through this, it is easy to understand why the fashion retail field produces apps and websites that appear uncannily equal to and on-par with competitors who are in no way within the same market sphere; e.g. Dior to H&M, Givenchy to Next.

This similarity in design goes more than skin deep. Naturally (excluding the influence of wealth and prosperity on a consumers' world outlook), the underlying psychology of shopping behaviour of those who can afford to indulge in luxury retail is the same as those who's only options are the economy brands. Consequently, it should be no surprise that in both physical and electronic commerce environments, consumers place greater emphasis on the utilitarian motivations over hedonic experience, yet still highly value the emotional experience derived from hedonic gratification (Parker & Wang, 2016; Resnick, Foster, & Woodall, 2014). However, differences in cognition do exist and play an important role in our app interactions. In a recent study within the University of Manchester, through 26 qualitative interviews with both high street and luxury fashion consumers, Kuo (2015) found that the higher the price tag of fashion merchandise the less likely they were to purchase through an app. By this, customers were happier purchasing low value items through the m-commerce platforms since the risk of the item not being as desired or expected was acceptable in order to attain the convenience the app provided. However, with more expensive purchases, the high price represented a sacrifice too great to risk, resulting a lower 'valued'; when considering a multidimensional perspective of value (Sweeney & Soutar, 2001). Therefore, the comfort and confidence that consumers feel when shopping for higher priced (i.e. luxury) items through m-commerce platforms is less than through cheaper (i.e. fast faction or high street items). The result is a lower willingness to purchase items that are still in every sense desired. This does not in any way indicate that luxury has no place within the m-commerce sphere, but it does demonstrate the need to design for luxury differently than we would design for high street or fast fashion brands.

Design for Luxury Fashion E-Commerce

Commonly, the most fundamental basis of app design is being user centred in your approach (design for the needs, desires, and actions of your users) (Norman, 2002), and iterating your product through user testing (Krug, 2009); seeking to iron out all issues over time. However, it is essential to remember that with all the user focus, co-design – in itself a highly creative methodology (Mitchell et al., 2015) – the design process is limited to the expectations and imagination of the subjects involved. Steve Jobs (BusinessWeek, 1998, p. 56) was famously quoted as saying that *"It's really hard to design products by focus groups. A lot of times, people don't know what they want until you show it to them"*. Jobs was not alone in observing such qualia in our knowledge of what shall provide us with exquisite experience. Pioneering Psychophysicist Howard Moskowitz once asserted that when simply asking consumers about what food tastes they most desire, that the mind does not know what the tongue desires (Gladwell, 2002). To this, Warnaby and Parker (2017) highlight how even the act of experiencing an environment as a tourist is fraught with an inability to 'know' what we desire. As a result, to meet the customer's expectations luxury brands, fashion e-commerce platforms cannot simply meet the consumer's verbalised expectations, but need to give a sense of wonder. Arthur C. Clarke (1962) famously wrote that any technology suitably advanced would appear as would magic to an uninformed observer. It is of course within the highest part of Maslow's (1943) pyramid where such hedonic experiences are necessitated and created. These are naturally coupling their association with the luxury fashion realm to concepts of wonder, akin to those found within the shops of Paul Smith and Vivienne Westwood, yet lacking through necessity

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from Primark and H&M. This is an important element of the design process, and one that should be respected and followed in order to produce solid, enjoyable, and motivating retail apps. However, to not consider additional and alternative models of design as a luxury fashion app designer is to resign oneself to not achieving a great degree of 'magic', and operating within the same design sphere as the high street and entry level operators.

Doing so is not so much of a straight line as could be expected. Parker and Wang (2016) for example highlighted the importance of utility in fashion retail apps, of which being able to compare items to assess value and access savings is a key element; falling in line with price elements of multidimensional value (Sweeney & Soutar, 2001). However, Evanschitzky, Kenning and Vogel (2004) highlighted how the presence of 'value' and discounts may harm the exclusive price feel of a brand, and should thus be avoided. Therefore, an element of non-visual negative design may be required within luxury retail apps in order to foster the exclusivity and luxury status. While co-design and user centred design methodology has a strong history of producing excellent design for the masses, luxury brands should make design choices that may allow a high perception of value from those wealthy enough to not perceive poor *price value* elements as a sufficiently negative aspect. In effect, the apps 'design' characteristics need to embody negative aspects that subtly exclude the users who are not within their customer profile. This may be done through (for example) the decision not to include discounts, item comparison, or price filters.

The other aspect of increasing seduction within luxury fashion apps needs to be the adherence to trends. While fashion trends apply to every level of fashion retailing (Segre Reinach, 2005), the luxury market operates within a different sphere of trend interpretation. In a presentation on the future of luxury, Mattin (2016) discussed how the high street's increasing quality and ability to communicate trends to consumers has grown to the degree that luxury companies can no longer transfer their indulgent status simply by the consumer owning an expensive or rare item. Instead, such customers desire to be (as the authors of this chapter would term it) *übermensch*. This is not only to be highly on-trend with exquisite items, but also healthier, smarter, more creative, more emotive; the 'perfect' human rather than a human with 'perfect' products. While the luxury app may increase the multidimensional sacrifices required for engagement (fostering perceptions of exclusivity), providing intangible benefits in the form of promises that through engaging with the brand and their items the customer shall (subconsciously) become closer to the luxury übermensch, creating great benefits that increase the value of the app, the brand, and the items. This is supported by the findings of Kuo (2015) as well as O'Cass and Frost (2002) who found that luxury fashion customers utilise luxury items to identity and define their personal characteristics.

All brands from economy to luxury present images representing a 'perfect' lifestyle to which their customer base wishes to aspire to; purchasing items to (in some limited way) embody the imagery presented as an embodiment of the brand being *bought into*. However, the luxury brands position themselves as being a form of perfection above the so-called 'lower perfection' of high-street brands. While this concept may seem converse, luxury retail apps are already closely allied with lifestyle and emotive communication. As mentioned earlier how brands are brought into, we buy into lifestyle. The report by Parker (2016a) highlights how apps from luxury retailers almost universally include brand experiential elements alongside the m-commerce components. While Dior (for example) does not offer any m-commerce app, it does offer a Dior TV app, essentially a series of marketing videos that deliver the brand imagery to be bought imagery. The experiential elements go deeper here, with such offering such as Louise Vuitton's City Guide App, which offers a curated guide to leading 'fashionable' cities; in essence allowing customers to live the promised life of the brand, and in a small way fulfilling the desire of the übermensch. It is important however to note how high street retailers also achieve self improve-

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ment aspects through guest blogs and fashion style guides by celebrities such as David Beckham within H&M's online magazine (Hennes & Mauritz AB, 2016).

This preference for experience focus over retail focus is not uncommon. This action also ties in with the findings of Kuo (2015) in that higher priced items for sale through m-commerce apps are less likely to be trusted. However, as multimillion dollar sales of items through eBay has shown, this trust barrier is not a hard one, and one that the Millennials and Generation Z members may not even recognise. However, high street brands Oasis, Mango, and Warehouse are already presenting experiential content within their m-commerce apps, so while a level of content differentiation exists at present, there is no barrier for high street or economy brands imitating their luxury competitors, and thus eroding the current intricacy high ground in the interactive domain. The question must therefore be asked, when design and content may be the same for luxury and high street retailers[2], how can luxury retail remain an aspiration and exclusive offering?

SOLUTIONS AND RECOMMENDATIONS

Returning to the concept of luxury brands delivering unattainable aspiration, and above all else, magic as part of their brand promise and to Arthur C. Clarke's (1962) concept of advanced technology appearing as magic, an opportunity arises for luxury brands to evolve their experiential elements by delivering highly advanced interactions driven by technology. While the sophistication and aesthetics of m-commerce has evolved since the Apple App Store opened in 2008, the underlying technical demands have barely altered. Focusing on heavy graphics processing alone as in Ray Ban's rather gimmicky Virtual Mirror (Parker, 2016b) is unlikely to produce a high quality and sophisticated interaction. Instead, as Steve Jobs (2010) championed, we should look to leveraging the technologies that are on the rise and lead the field, and not simply mirror existing practices.

Big data has already been harnessed within the tourism industry to allow travel brands to target individuals with specific offers and marketing that directly applies to them rather than general adverts for the masses (Kelly, 2013). A similar, practice is already in place within Facebook, allowing promoters to place their adverts in front of specific demographics on such granular details as their recent purchases, recent life events, excluding existing customers, appearing in front of customers who have 'liked' similar campaigns, and other personal demographics such as age, income, geo-location, etc. However, none of these currently offers any form of transitionary promise towards becoming übermensch. Nevertheless, with the ever-increasing volume of data being collected on our lives, the possibilities are endless. To this, in a near future where our homes are ubiquitously smart and connected, with every action of our work, social life, and even our bio-information and emotions[3] united through the Internet and smart items, data truly is the *Black Gold*.

It is beyond the scope of this chapter to propose the single solution of how to combine multiple sources of information and technology to produce magic. It is also possibly outside the scope of humanity to view such truly great innovations as our imagination is limited by our current understanding of the world. For example, in the first science fiction film A Trip To The Moon (Melies, 1902) the spaceship was completely powered by steam, gunpowder, and steam; reflecting the industrialised world director George Melies lived within. However, a framework of how to utilise such advancements for luxury m-commerce is possible.

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Research by Mitchell et al. (2015) has demonstrated that individuals asked to come up with 'innovative solutions' to problems are significantly less likely to produce an innovative idea than a group of people working together within a design methodology framework. This should not be surprising since design as a discipline has over the last hundred years had a fascination with new ways of innovating and creating a future greater than the present world could conceive (e.g. see Bella & Hanington, 2012 for an excellent example of design methodology). Marketers should not simply rely on mimicking existing practices, but should utilise designers, and through effective design management (see Borja de Mozota, 2003) allow the designers to utilise a design thinking model in conjunction to the provision of emotionally connected services (see Stickdorn & Schneider, 2010). This can be characterised scoping the users' emotional needs (in luxury fashion related to the concept of übermensch embodiment), developing the underlying problem to be solved, ideating numerous innovative solutions, and finally delivering a design. Above all, letting designers be designers and innovating needs that consumers do not even know they have, and cannot clearly verbalise. This shall allow the luxury retailer to live up to the brand quality promise of delivering experiences beyond that of the high street. Coupled with suitably advanced technology, such a proposition of fulfilment shall deliver eloquent magic. Imagine the following scenario:

As you view adverts, lookbooks, and collections through the brands app, your smart watch and phone detects the subtle changes in your attention span and emotional response to the fashion stimuli. Your physical dimensions are captured through 3D body scanning, and triangulated with this, only garments that physically flatter your build and match your subconscious emotions are presented in your personal selection. The 'for you' feature goes further, by reading your calendar in conjunction to your social media activity and predicted weather, imagery, tone of wording, and physical properties of the garments (e.g. bikini or winter coat) are all considered to suggest exactly the right item for your upcoming celebration or holiday. When a friend's birthday is coming, their data are calculated to produce only gift suggestions that are guaranteed to make them feel emotions they would not be able to verbalise. The app may even analyse the quality of your social life, intellectual development, and relationship quality, and offer direct advice how to 'improve them' through selected partners; guaranteed to provide genuine self-improvement and emotional harmony.

While such hyper-personal services may seem far-fetched, they are within the clear reach of today's technology. Through the application of focused design innovation grander, more personal, and more emotional concepts can be developed. While good design and functionality may as highlighted earlier be universal, such developments shall require a great deal of skill, technology, research, and management; to the degree where only the most elite brands may be able to afford, drive, and develop them. This therefore represents an opportunity to re-establish the luxury brand as a truly exclusive and luxury service within a world where the traditional held values are loosing their exclusivity.

FUTURE RESEARCH AND DIRECTIONS

Behaviours, reactions, and even the underlying psychology of how the general population rationalises their model of the universe is a constantly evolving concept (Herrnstein & Murray, 1996). While academia has only recently begun to understand the differences between Generations X and Millennials (e.g. Giovannini, Xu, & Thomas, 2015), the retail scope is already marketing to and evolving for the

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next generation; Generation Z. Just as we cannot assume that the cognition and preference of the Baby Boomers applies directly to the Millennials, we cannot assume that the current research and insights shall apply directly to the next wave of consumers. Future research must therefore keep re-questioning how and why consumers desire what they do in order to create greater and more intriguing offerings and services. While luxury faces a challenge today in how to distinguish itself, the question of how luxury brands can continue to evolve and present themselves with the brand image and interaction that they have held (to some degree) since the middle ages is yet unknown. However, the answer to this question shall not be one of aesthetics or taste, but instead a human factors design one, based on the emotions of excellence communicated through technology and service integration in a way that high street is unable to match.

CONCLUSION

Stability within the worlds of Fashion and Design can only be considered as an elusion of perspective, with each decade bringing new social and technological advances which shape business and consumer attitudes, forcing a change throughout our practices. This is a concept that is true in the earliest origins of artisan luxury brands of Medieval Europe, and it shall certainly be true in the world of future generations whose world shall be as alien to us as our Internet-connected world could be to our great-grandparents. Even if the essence of luxury fashion is kept the same (Chanel's iconic 'little tweed jacket' or the English cut suit for example) the way the brands present themselves and the ways that the consumer interaction needs to be designed shall always evolve. With that, it is imperative that the reader takes the essence of the history of luxury fashion and the principles of how their behaviours may be translated into interactive design, and develop their own interpretations, rules, and a third way to the mainstream. This chapter has presented a framework for which to design luxury fashion apps that far from simply delivering retail interactions, deliver the emotional elements of superiority and one becoming übermensch that luxury has, and always will require in order to exist and thrive.

REFERENCES

Aaker, D. A. (1991). *Managing Brand Equity*. New York: Free Press.

Aaker, D. A. (2004). *Brand Portfolio Strategy*. London, UK: Free Press.

Aaker, D. A., & Joachimsthaler, E. (2012). *Brand leadership*. New York: Simon and Schuster.

Amed, I. (2015, July 27). How Burberry is Rebuilding Its Japan Business. *Business in Fashion*.

Anderson, J. (2007). *Inside the world of Vivienne Westwood*. Retrieved 1 September 2016, from http://www.independent.co.uk/life-style/fashion/features/inside-the-world-of-vivienne-westwood-744340.html#r3z-addoor

Anderson, S. P. (2011). *Seductive Interaction Design*. Berkeley, CA: New Riders.

Apple. (2016). *iOS Human Interface Guidelines*. Retrieved 2 September 2016, from https://developer.apple.com/ios/human-interface-guidelines/

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

APS Group. (2014). *Delivering a better retail experience on the high street - APS Group*. Retrieved 1 September 2016, from https://www.theapsgroup.com/delivering-a-better-experience-on-the-high-street/

ASOS. (2016). *About Us*. Retrieved 1 September 2016, from http://www.asos.com/about/

Baker, J., Parasuraman, A., Grewal, D., & Voss, G. B. (2002). The influence of multiple store environment cues on perceived merchandise value and patronage intentions. *Journal of Marketing*, *66*(2), 120–141. doi:10.1509/jmkg.66.2.120.18470

Bella, M., & Hanington, B. (2012). *Universal Methods of Design*. Beverly, MA: Rockport Publishers.

Borja de Mozota, B. (2003). *Design Management: Using Design to build brand value and corporate innovation*. New York: Allworth Press.

Brichter, L. (2010). *User Interface Mechanics*. US Patent & Trademark Office.

BusinessWeek. (1998, May 25). Apple: A Bigger Piece of the Pie? *BusinessWeek*, 56.

Cătălin, M. C., & Andreea, P. (2014). Brands as a Mean of Consumer Self-expression and Desired Personal Lifestyle. *Procedia: Social and Behavioral Sciences*, *109*(1), 103–107. doi:10.1016/j.sbspro.2013.12.427

Chevalier, M., & Gutsatz, M. (2012). *How the World's Top Brands Provide Quality Product Luxury Retail Management and Service Support*. Singapore: Wiley.

Chevalier, M., & Mazzalovo, G. (2008). *Luxury Brand Management: A World of Privilege*. New York: John Wiley & Sons.

Chovanová, H. H., Korshunov, A. I., & Babčanová, D. (2015). Impact of Brand on Consumer Behavior. *Procedia Economics and Finance*, *34*(1), 615–621. doi:10.1016/S2212-5671(15)01676-7

Clarke, A. C. (1962). *Profiles of the Future*. London, UK: Pan Books.

Cope, R. (2016, July). *H&M's Best Designer Collaborations*. Retrieved 1 September 2016, from http://www.harpersbazaar.co.uk/fashion/fashion-news/news/g23095/hms-best-designer-collaborations/

Doyle, P. (1990). Building Successful Brands: The Strategic Options. *Journal of Consumer Marketing*, *7*(2), 5–20. doi:10.1108/EUM0000000002572

Doyle, S. A. (2002). New Product Design – The Growth and Development of David Linley & Co Ltd. *The Design Journal*, *5*(1), 26–34. doi:10.2752/146069202789378422

Doyle, S. A., & Moore, C. (2015). The evolution of the Luxury Fashion Brand 1970 – 2010. In *The World Economic History Congress: Diversity in Development* (pp. 1–14). Kyoto, Japan: WEHC.

Doyle, S. A., Moore, C. M., & Morgan, L. (2006). Supplier management in fast moving fashion retailing. *Journal of Fashion Marketing and Management*, *10*(3), 272–281. doi:10.1108/13612020610679268

Doyle, S. A., & Reid, J. (2005). A dedicated follower of fashion: The expansion strategy of David Linley & Co. Ltd. *International Journal of Retail & Distribution Management*, *33*(4), 249–255. doi:10.1108/09590550510593185

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Dubois, B., & Duquesne, P. (1993). The Market for Luxury Goods: Income versus Culture. *European Journal of Marketing*, *27*(1), 35–44. doi:10.1108/03090569310024530

Evanschitzky, H., Kenning, P., & Vogel, V. (2004). Consumer price knowledge in the German retail market. *Journal of Product and Brand Management*, *13*(6), 390–405. doi:10.1108/10610420410560299

Experience Nottinghamshire. (2016). *Paul Smith*. Retrieved 1 September 2016, from http://www.experiencenottinghamshire.com/paul-smith

Fionda, A. M., & Moore, C. M. (2009). The anatomy of the luxury fashion brand. *Journal of Brand Management*, *16*(5–6), 347–363. doi:10.1057/bm.2008.45

Gershenson, O., & Penner, B. (2009). *Ladies and Gents* (O. Gershenson & B. Penner, Eds.). Philadelphia: Academic Press.

Gilmartin, M. (2003). *Can technology shares bounce back?* Retrieved 3 April 2014, from http://news.bbc.co.uk/1/hi/business/2941104.stm

Giovannini, S., Xu, Y., & Thomas, J. (2015). Luxury fashion consumption and Generation Y consumers. *Journal of Fashion Marketing and Management*, *19*(1), 22–40. doi:10.1108/JFMM-08-2013-0096

Givency. (2016). *Givenchy Woman*. Paris, France: Net-A-Porter Group Ltd.

Gladwell, M. (2002). *The tipping point (New)*. New York: Abacus.

Hennes & Mauritz AB. (2016, September). *Beckham And Hart's Roadshow*. Retrieved 16 September 2016, from http://www.hm.com/us/magazine/culture/h-m-inside/2016/09/wear-it-like-beckham

Herrnstein, R. J., & Murray, C. (1996). *Bell Curve: Intelligence and Class Structure in American Life*. Academic Press.

International Council of Societies of Industrial Design. (2016). *Definition of Industrial Design*. Retrieved 8 September 2016, from http://www.icsid.org/about/definition/

Jackson, T. (2004). A Contemporary Analysis of Global Luxury Brands. In M. Bruce, C. Moore, & G. Birtwistle (Eds.), *International Retail Marketing* (p. 155). Burlington, MA: Elsevier.

Jackson, T., & Shaw, D. (2009). *Mastering Fashion Marketing*. Basingstoke, UK: Palgrave Macmillan. doi:10.1007/978-1-137-09271-7

Jacoby & Jacob. (1971). Brand loyalty: A conceptual definition. *Proceedings of the Annual Convention of the American Psychological Association*.

Jobs, S. (2010). Steve Jobs Interview. In *All Things Digital D8 Conference*. Rancho Palos Verdes, CA: D8.

Jung, J., & Sung, E. (2008). Consumer-based brand equity. *Journal of Fashion Marketing and Management: An International Journal*, *12*(1), 24–35. doi:10.1108/13612020810857925

Kapferer, J.-N. (1997). Managing luxury brands. *Journal of Brand Management*, *4*(4), 251–259. doi:10.1057/bm.1997.4

Kelly, J. (2013). European Leisure Travel Industry - September 2013. London, UK: Academic Press.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Kotler, P. (1973). Atmospherics as a marketing tool. *Journal of Retailing*, *49*(4), 48–64.

Kotler, P., & Rath, G. A. (1984). Design: A Powerful But Neglected Strategic Tool. *The Journal of Business Strategy*, *5*(2), 16–21. doi:10.1108/eb039054

Krug, S. (2009). *Rocket Surgery Made Easy: The Do-it-yourself Guide to Finding and Fixing Usability Problems*. New Riders.

Kuiper, K. (2010). *100 Most Influential Women of all Time* (K. Kuiper, Ed.). New York: Britannica.

Kuo, H.-Y. (2015). *Enhancing Luxury Fashion Mobile Apps Design through Online Customer Perceptions*. The University of Manchester.

Liu, F., Li, J., Mizerski, D., & Soh, H. (2012). Self-congruity, brand attitude, and brand loyalty: A study on luxury brands. *European Journal of Marketing*, *46*(7/8), 922–937. doi:10.1108/03090561211230098

Macdonald, G. (2014). Next creates new-model store to 'redefine' out-of-town shopping experience. *Retail Week*. Retrieved 1 September 2016, from https://www.retail-week.com/stores/property/next-creates-new-model-store-to-redefine-out-of-town-shopping-experience/5064099.article

Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, *50*(4), 370–396. doi:10.1037/h0054346

Matropietro, M., & Gorla, R. (Eds.). (1986). Un' Industria per il design: La Ricerca, I Disigners, L'Immagine B7B Italia. Milano, Italy: Edizione Lybra Immagine.

Mattin, D. (2016). *The Future of Luxury | September Trend Briefing Webinar*. Retrieved 29 September 2016, from https://www.youtube.com/watch?v=5PFQcZT98uk

McGrath, M. (2016). *The World's Largest Apparel Companies 2016: Christian Dior, Nike And Inditex Top The List*. Retrieved 1 September 2016, from http://www.forbes.com/sites/maggiemcgrath/2016/05/26/the-worlds-largest-apparel-companies-2016-christian-dior-nike-and-inditex-top-the-list/#2dbf3f1c262e

Melies, G. (1902). *Le Voyage dans la Lune*. Star Film Company.

Mintel. (2016). *Online Retailing. Mintel*. London, UK: Author.

Mitchell, V., Ross, T., May, A., Sims, R., & Parker, C. J. (2015). Empirical investigation of the impact of using co-design methods when generating proposals for sustainable travel solutions. *CoDesign: International Journal of CoCreation in Design and the Arts*, 1–16. doi:10.1080/15710882.2015.1091894

Moore, C. M., Doherty, A. M., & Doyle, S. A. (2010). Flagship stores as a market entry method: The perspective of luxury fashion retailing. *European Journal of Marketing*, *44*(1/2), 139–161. doi:10.1108/03090561011008646

Moore, G. E. (1965). Cramming more components onto integrated circuits. *Electronics*, *38*(8), 114.

Next. (2016). *Next*. Leicester, UK: Next Retail Ltd.

Nold, C. (2006). *Greenwich Emotion Map*. Retrieved from http://www.emotionmap.net/:Biomapping.net

Norman, D. A. (2002). *The Design of Everyday Things*. Basic Books.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Nueno, J. L., & Quelch, J. A. (1998). The mass marketing of luxury. *Business Horizons*, *41*(6), 61–68. doi:10.1016/S0007-6813(98)90023-4

Oakley, D., Daneshkhu, S., & Vandevelde, M. (2016, May 18). Burberry outlines cost-cutting plan as profits drop 7%. *Financial Times*.

OCass, A., & Frost, H. (2002). Status brands: Examining the effects of non-product-related brand associations on status and conspicuous consumption. *Journal of Product and Brand Management*, *11*(2), 67–88. doi:10.1108/10610420210423455

Office for National Statistics. (2015). London, UK: Internet Access - Households and Individuals.

Okonkwo, U. (2007). *Luxury fashion branding: trends, tactics, techniques*. London, UK: Palgrave Macmillan. doi:10.1057/9780230590885

Parker, C. J. (2016a). *An Appraisal of Fashion M-Commerce Apps by Market Level*. Manchester, UK: Academic Press.

Parker, C. J. (2016b). *Does Virtual Fit Work? Ray Ban Virtual Mirror*. Retrieved 20 September 2016, from https://www.youtube.com/watch?v=da8wgPnWIH8

Parker, C. J. (2016c). The Human Acceptance of 3D Printing in Fashion Paradox: Is mass customisation a bridge too far? In K. Wang, Y. Wang, J. Strandhagen, & T. Yu (Eds.), *Advanced Manufacturing and Automation V. WIT Transactions on Engineering Sciences* (Vol. 113, pp. 372–379). Shanghai, China: WITPRESS.

Parker, C. J., & Wang, H. (2016). Examining hedonic and utilitarian motivations for m-commerce fashion retail app engagement. *Journal of Fashion Marketing and Management: An International Journal*, *20*(4), 487–506. doi:10.1108/JFMM-02-2016-0015

Phau, I., & Prendergast, G. (2000). Consuming luxury brands: The relevance of the Rarity Principle. *Journal of Brand Management*, *8*(2), 122–138. doi:10.1057/palgrave.bm.2540013

Preece, J., Rogers, Y., & Sharpe, H. (2011). *Interaction Design: beyond human-computer interaction* (3rd ed.). Chichester, UK: John Wiley & Sons.

Resnick, S., Foster, C., & Woodall, T. (2014). Exploring the UK high street retail experience: Is the service encounter still valued? *International Journal of Retail & Distribution Management*, *42*(9), 839–859. doi:10.1108/IJRDM-05-2013-0090

Ricca, M., & Robins, R. (2012). *Meta-luxury*. Basingstoke, UK: Palgrave Macmillan. doi:10.1057/9781137005663

Roberts, J., & Armitage, J. (2015). Luxury and Creativity: Exploration, Exploitation, or Preservation? *Technology Innovation Management Review*, *5*(7), 41–49.

Roberts, J., & Merrilees, B. (2007). Multiple roles of brands in business-to-business services. *Journal of Business and Industrial Marketing*, *22*(6), 410–417. doi:10.1108/08858620710780172

Rogers, E. M. (2003). *Diffusion of Innovations. Diffusion of Innovations* (5th ed.). New York: Free Press.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Segre Reinach, S. (2005). China and Italy: Fast Fashion versus Prêt à Porter. Towards a New Culture of Fashion. *Fashion Theory*, *9*(1), 43–56. doi:10.2752/136270405778051527

Shaul, B. (2016). *Mallzee Personalized Shopping App Launches in U.S*. Academic Press.

Starbucks. (2016). *Starbucks iPhone App*. Seattle, WA: Starbucks Coffee Company.

Starck, P. (2007). Design and destiny. In *TED 2007*. Monterey, CA: TED.

Stickdorn, M., & Schneider, J. (2010). *This is Service Design Thinking* (M. Stickdorn & J. Schneider, Eds.). Amsterdam: BIS Publishing.

Sweeney, J. C., & Soutar, G. N. (2001). Consumer perceived value: The development of a multiple item scale. *Journal of Retailing*, *77*(2), 203–220. doi:10.1016/S0022-4359(01)00041-0

Tortora, P., & Eubank, K. (2010). *Survey Of Historic Costume: A History Of Western Dress (5th ed.)*. New York, USA: Fairchild Publishing.

Tosti, D., & Stotz, R. (2001). Brand: Building your brand from the inside out. *Marketing Management*, *10*(2), 28–33.

Turley, L. W., & Milliman, R. E. (2000). Atmospheric Effects on Shopping Behavior: A Review of the Experimental Evidence. *Journal of Business Research*, *49*(2), 193–211. doi:10.1016/S0148-2963(99)00010-7

Veblen, T. (1965). *The Theory of the Leisure Class*. London, UK: Transaction Publishers.

Warnaby, G., & Parker, C. J. (2017). Walking Cities (or not): How walking impacts the city experience? In *Mobility, Marketing, and the City: The discovery of experience*. Edward Elgar Publishing.

Wong, H. Y., & Merrilees, B. (2008). The performance benefits of being brand-orientated. *Journal of Product and Brand Management*, *17*(6), 372–383. doi:10.1108/10610420810904112

Woodside, A. G., & Ko, E. (2013). Luxury Fashion Theory, Culture, and Brand Marketing Strategy. In Advances in Culture, Tourism and Hospitality Research: Vol. 7. Luxury Fashion and Culture (pp. 1–14). Emerald Group Publishing Ltd.

KEY TERMS AND DEFINITIONS

E-Commerce: Electronic Commerce, retail through electronic communication channels (i.e., computers) delivered through the Internet.

Fashion: The sale and acquisition of garments and associated apparel for aesthetic more than functional purposes.

Haute Couture: Tailored and customised clothing from luxury/high-end fashion houses, distinct from 'standard' tailoring by the focus on perceived fashion status and trends.

M-Commerce: Mobile Commerce, a sub-branch of e-commerce, specifically the retail channels related to mobile devices (e.g. smartphones, tablets, watches).

Motivation: The desire for a person to engage in a specific activity, set of activities, or behaviours.

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Pret-A-Porter: Clothes produced in bulk for a mass market to a set of pre-specified sizing categorise rather than through custom/ individual tailoring of a garment to fit a single individual. Alt name: ready-to-wear.

Übermensch: From the German of Super Man, conceived by Friedrich Nietzsche, relating to a person owning of 'superior' products and garments as well as embodying superior health, creativity, and emotional states. Not to be confused with the fascist concept of a superior race.

User-Centred Design: The design of products or services that is centred on the life and needs of the potential user base in its widest interpretation.

Value: The degree to which a person holds a product, service, interaction, or purchase to be greater, in that the benefits of accessing or acquiring it outweigh the sacrifices required in its acquisition.

ENDNOTES

1 Previously Burberry Prorsum

2 This extends to how high street brands directly copying the aesthetics of luxury brands, and even the practice of luxury designers producing high street or even economy ranges; e.g. Karl Lagerfeld (head designer of Chanel and Fendi) designing for H&M (Cope, 2016).

3. Wearable technology such as smart watches can already detect our movement, pulse rate, and soon blood sugar levels. Triangulated with GPS within smartphones and access to a contacts list, one could easily determine the emotion at a given location (e.g. Nold, 2006), or in relation to given persons or events.

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Section 3
Tools and Technologies

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Chapter 32
Electronic Commerce and Decision Support Systems: Theories and Applications

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ABSTRACT

Electronic Commerce (e-commerce) is an advanced online business tool that allows many companies to launch their websites and helps customers search their specific products shown on the websites. Decision Support Systems (DSSs) are computerized tools designed to facilitate strategic decision making. With the support of data mining and business intelligence methods, DSSs can effectively increase the performance of decision making and can present a sophisticated method of managerial thinking in a timely and effective manner toward gaining competitive advantage. The chapter argues that utilizing e-commerce and DSSs has the potential to enhance business performance and reach strategic goals in modern business.

INTRODUCTION

Electronic commerce (e-commerce) is the online business with the support of computers (Kasemsap, 2015a) and becomes one of the required ways of online shopping (Kasemsap, 2018a). E-commerce creates a paradigm shift in the way modern companies conduct business (Kuah & Wang, 2017), and can help enhance the digital economy (Kamel, 2010). E-commerce has a tangible impact on the way business is conducted (Strzębicki, 2015). E-commerce tools has been made available that are able to help customers by generating purposed recommendations (Palopoli, Rosaci, & Sarné, 2016).

The emergence of e-commerce has provided manufactures and vendors with more business opportunities (Acampora, Alghazzawi, Hagras, & Vitiello, 2016). Electronic retailers may enjoy early mover advantages because of the consumer demand inertia amplified by the nature of the Internet and the system design characteristics of e-commerce platforms (Wang, Cavusoglu, & Deng, 2016). E-commerce websites increasingly incorporate tracking technologies that can monitor consumer behavior on their

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websites (Currim, Mintz, & Siddarth, 2015). Evaluating usability issues allows improving the design of e-commerce websites (Díaz, Rusu, & Collazos, 2017).

Decision support systems (DSSs) are the computer systems designed to provide the assistance in evaluating alternative courses of action (Kasemsap, 2017a) and in enhancing decision-making processes (Kalina & Zvárová, 2013). Decision making is the cognitive process resulting in the selection of a course of action among several alternative scenarios (Kasemsap, 2016a) for solving complicated problems where multi-criteria objectives are involved (Tran, Abraham, & Jain, 2008). There is a growing trend to provide managers with information systems that can assist them in their decision-making processes (Averweg, 2010).

Because of the importance to individual, group, and organizational success (Forgionne, 2005), information systems research continues to examine the effective ways to improve the support for decision making (Forgionne, 2009). DSSs are a subset of information systems that support human decision making through computerized systems that offer contextual information (Bihl, Young II, & Weckman, 2014). The field of DSS development is reaching the end of its expansion stage, which is characterized by the proliferation of processes and methodologies in all areas of decision support (Gachet & Sprague, 2010).

The chapter is based on a literature review of e-commerce and DSSs. The extensive literature review provides a contribution to practitioners and researchers by indicating the theories and applications of e-commerce and DSSs in the digital age.

BACKGROUND

E-commerce represents one of the most promising directions for generating competitive advantage at the micro level of the organization and for increasing productivity at the macro level of the economy (Rahman & Raisinghani, 2000). Many companies have recognized the importance of developing an online platform with the objective of having a higher interaction with the client, and influence them in e-commerce, through the buying process (Ibarra, Partida, & Aguilar, 2015).

E-commerce has substantial potential to promote the growth of small and medium-sized enterprises (SMEs) in developed and developing countries (Kurnia, Choudrie, Mahbubur, & Alzougool, 2015). Due to the growth of e-commerce, more organizational resources are being directed into electronic securities, Internet facilities, business plans, and new technologies (Kasemsap, 2016b). E-commerce transforms the world into an information society (Kartiwi & MacGregor, 2008), and assists organizations in reducing the cost of entry and in expanding the market reach for a wide variety of business activities (Lin, Jalleh, & Huang, 2016).

Decisions are activities that individuals face and deal with every day (Abdou, Radaideh, & Lewis, 2010). The successes over the past 10 years in developing, implementing, and sustaining effective DSSs for decision making for both governments and businesses hold many beneficial lessons for the implementation of sophisticated systems under conditions of extreme difficulty (Kamel, 2006). Decision making is a crucial element of a manager's responsibility (Garrido, 2015) in both day-to-day operations and strategic planning (Abdelsalam, Dawoud, & ElKadi, 2013). Supporting decision taking by management in an integrated way means to support the global decision process of the organization and increase its efficiency and resilience (Garrido, 2015).

In recent years, DSSs have moved from a radical movement that changed the way information system was perceived in business, to a commercial information technology (IT) movement that all organizations

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engage (Wang & Radosevich, 2010). Nowadays, many DSSs are based on spatially distributed sensors (Dunkel, Bruns, & Pawlowski, 2010). Organizations continuously need to increase their business intelligence by monitoring systems that analyze information and develop significant indicators to decision makers toward handling both semi-structured and un-structured problems characterized by varying parameters in order to understand the problem and to help develop alternative solutions (Kamel & Zyada, 2005).

ASPECTS OF ELECTRONIC COMMERCE AND DECISION SUPPORT SYSTEMS

This section provides the overview of e-commerce; trust and privacy issues in e-commerce; e-commerce and logistics; the applications of e-commerce; the overview of DSSs; knowledge-based decision support systems (KBDSSs); DSSs, data mining, and business intelligence; and the importance of DSSs.

Overview of Electronic Commerce

E-commerce describes the process of buying, selling, transferring, or exchanging products, services, or information via computer networks including the Internet (Toland & Klepper, 2009). Through e-commerce, organizations can easily evaluate sales effectiveness, customer effectiveness, marketing campaigns, product mix, and customer engagement in global marketplace (Kasemsap, 2016c), and consumers can purchase the cheaper and better products via price comparison (Yıldız & Kurtuldu, 2014). E-commerce optimizes and enhances the relationship and communications among companies, producers, distributors, and customers (Choshin & Ghaffari, 2017).

An important driving force has been the parallel rise of social media, enabling pervasive interactions among consumers and between consumers and firms (Lee & Phang, 2015). The influence of user-generated content (UGC) on e-commerce websites and social media has been addressed in both practical and theoretical fields (Yan et al., 2016). E-commerce and research and development (R&D) have a positive impact on gross domestic product (GDP) per capita based on the purchasing power parity, with e-commerce having a stronger development-enhancing effect in comparison to R&D (Anvari & Norouzi, 2016).

Given the tremendous success of the Internet and e-commerce in developed countries, emerging economies are quickly embracing IT as well (Agarwal & Wu, 2015). The Internet has provided great convenience for online shoppers, and has presented unprecedented opportunities for online retailers to understand their customers (Wu, Li, & Xu, 2014). In the wake of the rapid emergence of e-commerce, its evaluation is of great theoretical and practical importance (Kang, Jang, & Park, 2016). It is important for policymakers to consider both Internet application and e-commerce as the social and technical perspectives (Papazafeiropoulou & Pouloudi, 2003).

The implications of e-commerce include the facilitation of trade transactions and the acceleration of capital movement through the new rules of the digital economy with the removal of time and distance barriers (Kamel & Ghoneim, 2004). However, the global enterprises face the challenges of e-commerce, such as adjusting to competition in electronic markets, addressing privacy issues, and applying strategic management to corporate alliance systems (Raisinghani, 2000). Buyer concern about website security is a critical issue when it comes to maximizing the potential for e-commerce transactions (Hartono, Holsapple, Kim, Na, & Simpson, 2014).

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Multi-attribute value theory (MAVT)-based recommender systems are recognized for dealing with various issues of recommender systems, such as the cold-start problem and changing preferences (Scholz, Dorner, Schryen, & Benlian, 2017). Recommender systems are utilized by consumers who are not familiar with the available attributes and ranges and who wish to save time and effort. MAVT-based recommender systems can enhance consumers' decision processes in e-commerce shopping tasks.

Trust and Privacy Issues in Electronic Commerce

With the explosive growth of e-commerce worldwide, there are the growing concerns about fraudulent transaction attacks in e-commerce (Zhao et al., 2016). Consumers are concerned about the protection of their personal information and feel that privacy policies are important (Henderson, Snyder, & Byrd, 2003). In e-commerce environments, the reputation of sellers is a crucial issue to potential buyers in making decisions (Zhang, Wang, & Zhang, 2014). The inability to physically interact with an item, fear of risk security and privacy and lack of e-commerce infrastructure are the main barriers that prevent the consumers from online product shopping (Singh, Yadav, & Sahu, 2016).

A comprehensive conceptualization of trust in business-to-business (B2B) e-commerce should include trust in the infrastructure and the control mechanisms (Pavlou & Ratnasingam, 2003). Because mutual trust between buyers and sellers can enhance smoothness in communication and can increase buyers' confidence in online shopping, buyers are more willing to enjoy their transaction experiences with sellers (Huang, Chen, Ou, Davison, & Hua, 2017). Online exchanges often occur between strangers who cannot rely on past behavior or the prospect of future interactions to establish mutual trust (Bahbouhi & Moussa, 2017).

Online shopping as an alternative to in-store shopping can make much of traditional retail less attractive (Zhang, Zhu, & Ye, 2016). Ease of use has significant impact on usefulness, and trust has a significant impact on both ease of use and usefulness concerning online shopping (McCloskey, 2008). Consumer characteristics, company perspectives, website infrastructure, and interactions with consumers can affect the trust in e-commerce (Oliveira, Alhinho, Rita, & Dhillon, 2017). In addition, perception of website quality (PWSQ) and third party recognition (TPR) can influence the trust in e-commerce (Yoon & Occeña, 2015).

The rise of e-commerce forces IT personnel to move beyond infrastructure design and maintenance and consider numerous customer-facing aspects such as consumer data privacy and security. When developing IT systems and applications to accommodate e-commerce activities, data governance related regulatory compliance mandates, personally identifiable information privacy rules, and information protection protocols must be considered. To ensure the security, privacy, and effectiveness of e-commerce, businesses should authenticate business transactions, control access to resources (e.g., web pages for registered or selected users), encrypt communications, and implement security technologies

Electronic Commerce and Logistics

With large number of enterprises executing e-commerce (Masmoudi, Benaissa, & Chabchoub, 2014), logistics has been largely influenced (Yu, Wang, Zhong, & Huang, 2016). The goal of collaborative execution in global supply chain is to establish the smooth flow of information up the supply chain from customers to suppliers and the smooth flow of products and services down the supply chain from suppliers to customers (Kasemsap, 2016d). There are many retail and logistics companies utilizing e-commerce

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as the important business tool, such as Home Depot (U.S.), Amazon (U.S.), IKEA (Sweden), JingDong (China), and GuoMei (China). Carriers and logistics intermediary perform more roles than what people think they do, because network connection and the ambition to remain competitive make them to take up value-added services (Kasemsap, 2017b).

Home Depot is an American retailer company that sells home improvement products and construction products. In the traditional model, each retailer store of Home Depot has a logistics management department, and this department is in charge of the store's replenishment, storage management, in/out products flow control, and other related issues. When suppliers receive the stores' replenishment orders, they have two ways to deliver orders to retailers, of which one is directly sending products to the store, the other is using Home Depot's distribution center to ensure cost-effective transportation.

For the Line-Haul phase, the Home Depot sets the centralized inventory and replenishment (I&R) department in the headquarters, and develops a new network of distribution centers for store replenishment. The new I&R department of Home Depot takes place of the individual stores' replenishment teams, and is responsible for all the stores' inventory management. Regarding e-commerce logistics, the centralized replenishment of Home Depot improves the demand forecast accuracy and gains more power for Home Depot while negotiating with suppliers as the single order is much larger than before (Yu et al., 2016).

Amazon is an e-commerce and cloud computing company (Yu et al., 2016). It is the biggest Internet retailer in the U.S. It began as an online bookstore, but its current business scope covers DVD, blue ray, CD, video game, electronic, furniture, food, toys, and jewelry. Amazon has independent sales website facing different countries across the globe. Amazon saves a lot of storage costs by integrating the inventories in distribution center and the warehouses of partners. Thus, there is no need for Amazon to keep a high level of inventory as physical retail stores. The determinants for locating distribution centers consist of distance from customer-intensive places and level of taxes.

Within the distribution center, Amazon has different processing procedure and equipment while dealing with various product groups. Those products, which are easily classified and transported, are stored in highly automated equipment, whereas those irregularly shaped products are handled by the equipment of low-level automation. While dealing with intercity transportation, Amazon sets many injection points, such as transportation hubs. Transportation hubs are located in the districts where customers are highly concentrated to save cost. Orders are integrated in the distribution centers first. After that, the less than truckload (LTL) shippers or truckload shippers will supply the long-haul shipment service, carrying them from distribution centers to the injection points (Yu et al., 2016).

Applications of Electronic Commerce

E-commerce typically utilizes electronic communications technology of the World Wide Web, at some point in the transaction's life cycle, although e-commerce frequently depends on computer technologies other than the World Wide Web, such as databases, and e-mail, and on other non-computer technologies, such as transportation for physical products sold via e-commerce (Drougas, 2009). It will be very useful for customers if e-commerce is capable of being more automated and secure than is the case, since the time and energy they spend will be reduced (Yi, Siew, & Syed, 2000). For small transaction sizes, invoices are the most cost-efficient payment method, while prepayments dominate for large transaction sizes (Grüschow, Kemper, & Brettel, 2016).

In the business environment, e-commerce has made considerable business development in modern business (Kartiwi & MacGregor, 2008). In societies where commercial competition is accepted as an

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economic system, there is a positive relationship between the good operation of the system and the power of SMEs within the system (Zerenler & Gözlü, 2012). B2B e-commerce adoption enables SMEs to gain and sustain competitive advantage in a dynamic competitive environment (Hamad, Elbeltagi, Jones, & El-Gohary, 2015). Getting the pricing right has emerged as one of the most important keys to the success of e-commerce (Wu et al., 2014).

When problems occur in B2C e-commerce transactions, consumers require and expect an immediate redress procedure from merchants (Ong & Teh, 2016). Redress is concerned with internal complaint-handling procedures through which consumers seek compensation or to rectify the problems that occur during e-commerce transactions. Redress serves as an important determinant of consumer confidence and trust in e-commerce (Ong & Teh, 2016).

Overview of Decision Support Systems

Nowadays, information is a crucial element of an economic development of a society (Sobieska-Karpinska & Hernes, 2010). The important attributes of information are its urgency and actuality because a correct decision may be only made when the system is able to get the up-to-date information, which is needed to effectively make this decision (Sobieska-Karpinska & Hernes, 2010). The process of decision making in any organization is the resource-consuming system (Baruti, 2016). The manual and mechanical methods are associated with heavy cost of processing, low efficiency, inconsistency, lack of integrity, and long period of time in its processing so that institutions incur heavy bills in their decision-making processes (Baruti, 2016). DSSs in the domain of Industrial Engineering and Management can be the powerful tools, but more knowledge about the way users utilize these systems is required (Yuviler-Gavish & Naseraldin, 2016).

Traditional DSSs provide strong data management, modeling, and visualization capabilities for the decision maker but they do not explicitly support scenario management (Ahmed & Sundaram, 2010). The intelligent systems have extended the scope of traditional DSSs to assist users with real-time decision making, multiple information flows, dynamic data, information overload, time-pressured decisions, inaccurate data, difficult-to-access data, distributed decision making, and highly uncertain decision environments (Phillips-Wren, 2010). Regarding business perspectives, consumer decision support systems (CDSSs) help online users make effective purchasing decisions in e-commerce websites (Zhang & Pu, 2010).

Many businesses have made or are making significant investments in data warehouses that promote a myriad of DSSs (Wells & Hess, 2008). DSSs consist of three parts: database, model base, and user interface (Eom & Lee, 1990). Database involves the input data used in decision making. Model base includes many analytic or simulation models that utilize input data in order to produce strategic methods. The decision maker often interacts with data and models through the user interface (Tynjala, 2012). In addition, the factors of compliance, complementarity, and conformity can measure the performance of DSSs (Lebraty & Godé, 2015).

Knowledge-Based Decision Support Systems

Knowledge-based decision support systems (KBDSSs) are the systems designed to ensure more precise decision making by using appropriate data, information, and knowledge management (Chung, Boutaba, & Hariri, 2016). KBDSSs refer to decision making based on relevant knowledge, which is based on artificial intelligence, and on the application of information and communication technology (Chung et

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al., 2016). Artificial intelligence is the area of computer science that emphasizes the creation of intelligent machines that work and react like humans (Kasemsap, 2017c).

Based on the knowledge used for deduction, data is classified into knowledge-based systems using dictionary-defined knowledge, and non-knowledge–based systems using machine learning and multidimensional statistical pattern recognition techniques (Kim & Ryu, 2013). Park and Han (2016) presented efficient decision support for detecting content polluters on social networks with an approach based on automatic knowledge acquisition from behavioral patterns. This study is an efficient method for detecting content polluters on Twitter. Park and Han (2016) proposed a set of KBDSSs-related features that can be easily extracted from the messages and behaviors of Twitter users, and established a new breed of classifiers based on these features.

Decision Support Systems, Data Mining, and Business Intelligence

Data mining and business intelligence techniques can be integrated in order to develop more advanced DSSs (Domingues, Jorge, Soares, & Rezende, 2015). Data mining is the process of applying the computational methods in showing unknown data formats in large data sets (Kasemsap, 2015b). Data mining is profitably utilized to discover patterns and relationships in the data in order to help make better business decisions (Kasemsap, 2016e).

Business intelligence is an emerging technology that helps executives and managers manage information and data in an efficient way (Kasemsap, 2015c). Business intelligence involves creating any type of data visualization that provides the insight into a business for the purpose of making a decision or taking an action (Kasemsap, 2016f). Business intelligence provides the quick notification of business exceptions, advanced reporting, and the ability to compare data to improve the strategic management in global business (Kasemsap, 2017d).

Importance of Decision Support Systems

Effective decision making across organizations is of strategic importance as the global business environment becomes more complex (Setzekorn, Sugumaran, & Patnayakuni, 2004). DSSs can enhance various operations, financial management, and strategic decision making (Wang & Yao, 2010). DSSs include allowing and motivating participation in decision-making conversations of individuals who may contribute to decision-making processes and to the quality of their positive outcomes (Garrido, 2011). DSSs need to be designed and developed with extra functionality to meet the challenges, such as collaborative working (Liu, Duffy, Whitfield, Boyle, & McKenna, 2009).

DSSs can be considered as the integrated entities that provide individuals with both tools and information to assist their decision making (Sharma & Vyas, 2010). DSS research is often blended with many expansions experienced by various information system fields, such as organizational computing, e-commerce, and pervasive computing (Burstein & Holsapple, 2008). DSS development methodologies must be described at a meta-level (El-Gayar, Deokar, & Tao, 2011). Thus, maturity models (MM) can provide the necessary framework and benchmarks needed to evaluate DSS development methodologies (El-Gayar et al., 2011).

Regarding DSSs, many decision makers begin to seek cooperators on the Internet to help them solve complex decision problems (Xie & Wang, 2014). The data must be obtainable, preferably via common protocols shared with the operational infrastructure (Tolk, 2010). The benefits of agent technology are

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highlighted in relation to the desired features of DSS (Vahidov, 2004). Intelligent agents regarding agent technology have a high degree of self-determination capabilities, and they can decide for themselves when, where, and under what condition their decision-making action should be performed (Adla, 2013).

To achieve the effective DSSs, intelligent agents and automated forces must produce adequate behavior. If these requirements for simulation systems and their annotations are fulfilled, decision support simulation can significantly contribute to the situational awareness up to the cognitive levels of the decision makers (Tolk, 2010). Thus, DSSs can enhance human cognitive deficiencies by integrating various sources of information, providing intelligent access to relevant knowledge, and facilitating the process of making suitable decisions (Sodiya, Akinwale, Okeleye, & Emmanuel, 2012). Service efficiency, improved effectiveness, and increased stakeholder value are the expected benefits of DSSs exploitation (Ngwenya, 2013). Awareness of organizational resources-related online presence and availability can affect the decision-making process in pervasive computing environments (Russell & Forgionne, 2009).

FUTURE RESEARCH DIRECTIONS

The classification of the extensive literature in the domains of e-commerce and DSSs will provide the potential opportunities for future research. Social media marketing programs usually center on efforts to create the content that attracts attention and encourages readers to share it across their social networks toward competition in the global marketplace (Kasemsap, 2016g). The Internet of Things (IoT) relates to the utilization of advanced sensors, actuators, and various devices, and allows individuals to effectively control the important tasks (Kasemsap, 2018b). Customer relationship management (CRM) is the significant method that deals with exploring both customer needs and customer behaviors (Kasemsap, 2018c). Exploring the relationships among e-commerce, DSSs, social media marketing, the IoT, and CRM should be further studied.

CONCLUSION

This chapter indicated the overview of e-commerce; trust and privacy issues in e-commerce; e-commerce and logistics; the applications of e-commerce; the overview of DSSs; KBDSSs; DSSs, data mining, and business intelligence; and the importance of DSSs. E-commerce is the advanced online business tool that can allow many companies to launch their websites conformed to their customers' requirements and can help customers search their specific products shown on the websites. DSSs are the computerized tools designed to facilitate the strategic decision making. With the support of data mining and business intelligence methods, DSSs can effectively increase the performance of decision making and can present the sophisticated method of managerial thinking in the timely and effective manner toward gaining competitive advantage. Utilizing e-commerce and DSSs has the potential to enhance business performance and reach strategic goals in modern business.

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REFERENCES

Abdelsalam, H. M., Dawoud, R. H., & ElKadi, H. A. (2013). An examination of the decision making styles of Egyptian managers. In S. Saeed, M. Khan, & R. Ahmad (Eds.), *Business strategies and approaches for effective engineering management* (pp. 219–236). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-3658-3.ch013

Abdou, A., Radaideh, M., & Lewis, J. (2010). Decision support systems and their application in construction. In *Business information systems: Concepts, methodologies, tools and applications* (pp. 1024–1042). Hershey, PA: IGI Global. doi:10.4018/978-1-61520-969-9.ch061

Acampora, G., Alghazzawi, D., Hagras, H., & Vitiello, A. (2016). An interval type-2 fuzzy logic based framework for reputation management in peer-to-peer e-commerce. *Information Sciences*, *333*, 88–107. doi:10.1016/j.ins.2015.11.015

Adla, A. (2013). Modeling cooperative decision support systems with hybrid agents. *International Journal of Decision Support System Technology*, *5*(3), 31–48. doi:10.4018/jdsst.2013070103

Agarwal, J., & Wu, T. (2015). Factors influencing growth potential of e-commerce in emerging economies: An institution-based N-OLI framework and research propositions. *Thunderbird International Business Review*, *57*(3), 197–215. doi:10.1002/tie.21694

Ahmed, M. D., & Sundaram, D. (2010). A framework for a scenario driven decision support systems generator. In M. Hunter (Ed.), *Strategic information systems: Concepts, methodologies, tools, and applications* (pp. 662–679). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-677-8.ch044

Anvari, R. D., & Norouzi, D. (2016). The impact of e-commerce and R&D on economic development in some selected countries. *Procedia: Social and Behavioral Sciences*, *229*, 354–362. doi:10.1016/j.sbspro.2016.07.146

Averweg, U. R. (2010). Decision support systems and decision-making processes. In M. Hunter (Ed.), *Strategic information systems: Concepts, methodologies, tools, and applications* (pp. 122–130). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-677-8.ch010

Bahbouhi, J. E., & Moussa, N. (2017). Prisoner's dilemma game model for e-commerce. *Applied Mathematics and Computation*, *292*, 128–144. doi:10.1016/j.amc.2016.07.018

Baruti, S. S. (2016). Proposed framework for mobile decision support systems for higher learning institutions: Mobile decision support systems. *International Journal of Handheld Computing Research*, *7*(3), 24–37. doi:10.4018/IJHCR.2016070103

Bihl, T. J., Young, W. A. II, & Weckman, G. R. (2014). Decision support systems in business. In J. Wang (Ed.), *Encyclopedia of business analytics and optimization* (pp. 696–707). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-5202-6.ch065

Burstein, F., & Holsapple, C. W. (2008). New horizons at the core of information systems: Decision support system advances. *Information Systems and e-Business Management*, *6*(2), 109–115. doi:10.100710257-007-0076-7

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Choshin, M., & Ghaffari, A. (2017). An investigation of the impact of effective factors on the success of e-commerce in small- and medium-sized companies. *Computers in Human Behavior*, *66*, 67–74. doi:10.1016/j.chb.2016.09.026

Chung, K., Boutaba, R., & Hariri, S. (2016). Knowledge based decision support system. *Information Technology & Management*, *17*(1), 1–3. doi:10.100710799-015-0251-3

Currim, I. S., Mintz, O., & Siddarth, S. (2015). Information accessed or information available? The impact on consumer preferences inferred at a durable product e-commerce website. *Journal of Interactive Marketing*, *29*, 11–25. doi:10.1016/j.intmar.2014.09.003

Díaz, J., Rusu, C., & Collazos, C. A. (2017). Experimental validation of a set of cultural-oriented usability heuristics: E-commerce websites evaluation. *Computer Standards & Interfaces*, *50*, 160–178. doi:10.1016/j.csi.2016.09.013

Domingues, M. A., Jorge, A. M., Soares, C., & Rezende, S. O. (2015). Web mining for the integration of data mining with business intelligence in web-based decision support systems. In A. Azevedo & M. Santos (Eds.), *Integration of data mining in business intelligence systems* (pp. 120–142). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-6477-7.ch007

Drougas, B. A. (2009). Electronic commerce for health products services-problems-quality and future. In A. Lazakidou & K. Siassiakos (Eds.), *Handbook of research on distributed medical informatics and e-health* (pp. 190–197). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-002-8.ch013

Dunkel, J., Bruns, R., & Pawlowski, O. (2010). Complex event processing in sensor-based decision support systems. In B. Nag (Ed.), *Intelligent systems in operations: Methods, models and applications in the supply chain* (pp. 64–79). Hershey, PA: IGI Global. doi:10.4018/978-1-61520-605-6.ch004

El-Gayar, O. F., Deokar, A. V., & Tao, J. (2011). DSS-CMM: A capability maturity model for DSS development processes. *International Journal of Decision Support System Technology*, *3*(4), 14–34. doi:10.4018/jdsst.2011100102

Eom, H. B., & Lee, S. M. (1990). Decision support systems applications research: A bibliography (1971-1988). *European Journal of Operational Research*, *46*(3), 333–342. doi:10.1016/0377-2217(90)90008-Y

Forgionne, G. A. (2005). Functional integration of decision making support. In M. Khosrow-Pour (Ed.), *Encyclopedia of information science and technology* (pp. 1236–1242). Hershey, PA: IGI Global. doi:10.4018/978-1-59140-553-5.ch218

Forgionne, G. A. (2009). Updated architectures for the integration of decision making support functionalities. In M. Khosrow-Pour (Ed.), *Encyclopedia of information science and technology* (2nd ed., pp. 3884–3889). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-026-4.ch619

Gachet, A., & Sprague, R. (2010). Context in decision support systems development. In M. Hunter (Ed.), *Strategic information systems: Concepts, methodologies, tools, and applications* (pp. 604–613). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-677-8.ch040

Garrido, P. (2011). Conversation-oriented decision support systems for organizations. In M. Cruz-Cunha & J. Varajao (Eds.), *Enterprise information systems design, implementation and management: Organizational applications* (pp. 118–131). Hershey, PA: IGI Global. doi:10.4018/978-1-61692-020-3.ch008

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Garrido, P. (2015). Concepts for the design of a manager-centric global decision support system for organizations. In J. Varajão, M. Cruz-Cunha, & R. Martinho (Eds.), *Improving organizational effectiveness with enterprise information systems* (pp. 173–187). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-8368-6.ch011

Grüschow, R. M., Kemper, J., & Brettel, M. (2016). How do different payment methods deliver cost and credit efficiency in electronic commerce? *Electronic Commerce Research and Applications*, *18*, 27–36. doi:10.1016/j.elerap.2016.06.001

Hamad, H., Elbeltagi, I., Jones, P., & El-Gohary, H. (2015). Antecedents of B2B e-commerce adoption and its effect on competitive advantage in manufacturing SMEs. *Strategic Change*, *24*(5), 405–428. doi:10.1002/jsc.2019

Hartono, E., Holsapple, C. W., Kim, K. Y., Na, K. S., & Simpson, J. T. (2014). Measuring perceived security in B2C electronic commerce website usage: A respecification and validation. *Decision Support Systems*, *62*, 11–21. doi:10.1016/j.dss.2014.02.006

Henderson, S. C., Snyder, C. A., & Byrd, T. A. (2003). Electronic commerce and data privacy: The impact of privacy concerns on electronic commerce use and regulatory preferences. In S. Lubbe (Ed.), *The economic and social impacts of e-commerce* (pp. 213–238). Hershey, PA: IGI Global. doi:10.4018/978-1-59140-043-1.ch012

Huang, Q., Chen, X., Ou, C. X., Davison, R. M., & Hua, Z. (2017). Understanding buyers' loyalty to a C2C platform: The roles of social capital, satisfaction and perceived effectiveness of e-commerce institutional mechanisms. *Information Systems Journal*, *27*(1), 91–119. doi:10.1111/isj.12079

Ibarra, L., Partida, A., & Aguilar, D. (2015). Electronic commerce as a business strategy: Impact in consumption habits in Hermosillo, Sonora's inhabitants. *Procedia: Social and Behavioral Sciences*, *175*, 275–282. doi:10.1016/j.sbspro.2015.01.1201

Kalina, J., & Zvárová, J. (2013). Decision support systems in the process of improving patient safety. In A. Moumtzoglou & A. Kastania (Eds.), *E-health technologies and improving patient safety: Exploring organizational factors* (pp. 71–83). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-2657-7.ch005

Kamel, S. (2006). DSS for strategic decision making. In M. Khosrow-Pour (Ed.), *Cases on information technology and organizational politics & culture* (pp. 230–246). Hershey, PA: IGI Global. doi:10.4018/978-1-59904-411-8.ch015

Kamel, S. (2010). Electronic commerce prospects in emerging economies: Lessons from Egypt. In I. Lee (Ed.), *Encyclopedia of e-business development and management in the global economy* (pp. 1086–1097). Hershey, PA: IGI Global. doi:10.4018/978-1-61520-611-7.ch109

Kamel, S., & Ghoneim, S. (2004). The impact of the role of the government of Egypt on electronic commerce development and growth. In M. Khosrow-Pour (Ed.), *The social and cognitive impacts of e-commerce on modern organizations* (pp. 253–276). Hershey, PA: IGI Global. doi:10.4018/978-1-59140-249-7.ch012

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Kamel, S., & Zyada, A. (2005). Using DSS for global competitiveness: An effective information-based decision making process in public administration. In Y. Lan (Ed.), *Global information society: Operating information systems in a dynamic global business environment* (pp. 113–129). Hershey, PA: IGI Global. doi:10.4018/978-1-59140-306-7.ch006

Kang, D., Jang, W., & Park, Y. (2016). Evaluation of e-commerce websites using fuzzy hierarchical TOPSIS based on E-S-QUAL. *Applied Soft Computing*, *42*, 53–65. doi:10.1016/j.asoc.2016.01.017

Kartiwi, M., & MacGregor, R. C. (2008). Electronic commerce adoption barriers in small to medium-sized enterprises (SMEs) in developed and developing countries: A cross-country comparison. In A. Becker (Ed.), *Electronic commerce: Concepts, methodologies, tools, and applications* (pp. 1441–1457). Hershey, PA: IGI Global. doi:10.4018/978-1-59904-943-4.ch115

Kasemsap, K. (2015a). The role of electronic commerce in the global business environments. In F. Cipolla-Ficarra (Ed.), *Handbook of research on interactive information quality in expanding social network communications* (pp. 304–324). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-7377-9.ch019

Kasemsap, K. (2015b). The role of data mining for business intelligence in knowledge management. In A. Azevedo & M. Santos (Eds.), *Integration of data mining in business intelligence systems* (pp. 12–33). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-6477-7.ch002

Kasemsap, K. (2015c). Implementing business intelligence in contemporary organizations. In A. Haider (Ed.), *Business technologies in contemporary organizations: Adoption, assimilation, and institutionalization* (pp. 177–192). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-6623-8.ch008

Kasemsap, K. (2016a). The fundamentals of neuroeconomics. In B. Christiansen & E. Lechman (Eds.), *Neuroeconomics and the decision-making process* (pp. 1–32). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9989-2.ch001

Kasemsap, K. (2016b). Advocating electronic business and electronic commerce in the global marketplace. In S. Dixit & A. Sinha (Eds.), *E-retailing challenges and opportunities in the global marketplace* (pp. 1–24). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9921-2.ch001

Kasemsap, K. (2016c). Implementing electronic commerce in global marketing. In I. Lee (Ed.), *Encyclopedia of e-commerce development, implementation, and management* (pp. 591–602). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9787-4.ch043

Kasemsap, K. (2016d). Encouraging supply chain networks and customer loyalty in global supply chain. In N. Kamath & S. Saurav (Eds.), *Handbook of research on strategic supply chain management in the retail industry* (pp. 87–112). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9894-9.ch006

Kasemsap, K. (2016e). Multifaceted applications of data mining, business intelligence, and knowledge management. *International Journal of Social and Organizational Dynamics in IT*, *5*(1), 57–69. doi:10.4018/IJSODIT.2016010104

Kasemsap, K. (2016f). The fundamentals of business intelligence. *International Journal of Organizational and Collective Intelligence*, *6*(2), 12–25. doi:10.4018/IJOCI.2016040102

Kasemsap, K. (2016g). The roles of social media marketing and brand management in global marketing. In W. Ozuem & G. Bowen (Eds.), *Competitive social media marketing strategies* (pp. 173–200). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9776-8.ch009

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Kasemsap, K. (2017a). Mastering intelligent decision support systems in enterprise information management. In G. Sreedhar (Ed.), *Web data mining and the development of knowledge-based decision support systems* (pp. 35–56). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1877-8.ch004

Kasemsap, K. (2017b). The roles of logistics service providers and supply chain integration in global supply chain. In L. Saglietto & C. Cezanne (Eds.), *Global intermediation and logistics service providers* (pp. 265–285). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2133-4.ch014

Kasemsap, K. (2017c). Text mining: Current trends and applications. In G. Sreedhar (Ed.), *Web data mining and the development of knowledge-based decision support systems* (pp. 338–358). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1877-8.ch017

Kasemsap, K. (2017d). Mastering business process management and business intelligence in global business. In M. Tavana, K. Szabat, & K. Puranam (Eds.), *Organizational productivity and performance measurements using predictive modeling and analytics* (pp. 192–212). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0654-6.ch010

Kasemsap, K. (2018a). The importance of electronic commerce in modern business. In M. Khosrow-Pour (Ed.), *Encyclopedia of information science and technology* (4th ed.; pp. 2791–2801). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2255-3.ch243

Kasemsap, K. (2018b). Multifaceted applications of the Internet of Things. In M. Khosrow-Pour (Ed.), *Encyclopedia of information science and technology* (4th ed.; pp. 7775–7784). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2255-3.ch676

Kasemsap, K. (2018c). Facilitating customer relationship management in modern business. In M. Khosrow-Pour (Ed.), *Encyclopedia of information science and technology* (4th ed.; pp. 1594–1604). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-2255-3.ch138

Kim, J. H., & Ryu, J. K. (2013). Recent trends on high-performance computing and security. *Cluster Computing*, *16*(2), 207–208. doi:10.100710586-013-0271-x

Kuah, A. T. H., & Wang, P. (2017). Fast-expanding "online" markets in South Korea and China: Are they worth pursuing? *Thunderbird International Business Review*, *59*(1), 63–77. doi:10.1002/tie.21779

Kurnia, S., Choudrie, J., Mahbubur, R. M., & Alzougool, B. (2015). E-commerce technology adoption: A Malaysian grocery SME retail sector study. *Journal of Business Research*, *68*(9), 1906–1918. doi:10.1016/j.jbusres.2014.12.010

Lebraty, J., & Godé, C. (2015). Assessing the performance of decision support systems in military environment: The 3C method. In A. Mesquita & C. Tsai (Eds.), *Human behavior, psychology, and social interaction in the digital era* (pp. 45–70). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-8450-8.ch003

Lee, S. Y. T., & Phang, C. W. (2015). Leveraging social media for electronic commerce in Asia: Research areas and opportunities. *Electronic Commerce Research and Applications*, *14*(3), 145–149. doi:10.1016/j.elerap.2015.02.001

Lin, C., Jalleh, G., & Huang, Y. (2016). Evaluating and managing electronic commerce and outsourcing projects in hospitals. In A. Dwivedi (Ed.), *Reshaping medical practice and care with health information systems* (pp. 132–172). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9870-3.ch005

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Liu, S., Duffy, A. H., Whitfield, R. I., Boyle, I. M., & McKenna, I. (2009). Towards the realization of an integrated decision support environment for organizational decision making. *International Journal of Decision Support System Technology*, *1*(4), 38–58. doi:10.4018/jdsst.2009062603

Masmoudi, M., Benaissa, M., & Chabchoub, H. (2014). Optimisation of e-commerce logistics distribution system: Problem modelling and exact resolution. *International Journal of Business Performance and Supply Chain Modelling*, *6*(3/4), 358–375. doi:10.1504/IJBPSCM.2014.065275

McCloskey, D. W. (2008). The importance of ease of use, usefulness, and trust to online consumers: An examination of the technology acceptance model with older consumers. In A. Becker (Ed.), *Electronic commerce: Concepts, methodologies, tools, and applications* (pp. 1400–1417). Hershey, PA: IGI Global. doi:10.4018/978-1-59904-943-4.ch112

Ngwenya, B. (2013). Decision support systems: An e-government strategy to enhance human resources output in public sector organisations. In Z. Mahmood (Ed.), *Developing e-government projects: Frameworks and methodologies* (pp. 44–62). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-4245-4.ch003

Oliveira, T., Alhinho, M., Rita, P., & Dhillon, G. (2017). Modelling and testing consumer trust dimensions in e-commerce. *Computers in Human Behavior*, *71*, 153–164. doi:10.1016/j.chb.2017.01.050

Ong, C. E., & Teh, D. (2016). Redress procedures expected by consumers during a business-to-consumer e-commerce dispute. *Electronic Commerce Research and Applications*, *17*, 150–160. doi:10.1016/j.elerap.2016.04.006

Palopoli, L., Rosaci, D., & Sarné, G. M. L. (2016). A distributed and multi-tiered software architecture for assessing e-commerce recommendations. *Concurrency and Computation*, *28*(18), 4507–4531. doi:10.1002/cpe.3798

Papazafeiropoulou, A., & Pouloudi, A. (2003). Social issues in electronic commerce: Implications for policy makers. In M. Khosrow-Pour (Ed.), *Advanced topics in information resources management* (Vol. 2, pp. 173–191). Hershey, PA: IGI Global. doi:10.4018/978-1-59140-062-2.ch009

Park, B. J., & Han, J. S. (2016). Efficient decision support for detecting content polluters on social networks: An approach based on automatic knowledge acquisition from behavioral patterns. *Information Technology & Management*, *17*(1), 95–105. doi:10.100710799-015-0250-4

Pavlou, P. A., & Ratnasingam, P. (2003). Technology trust in B2B electronic commerce: Conceptual foundations. In K. Kangas (Ed.), *Business strategies for information technology management* (pp. 200–215). Hershey, PA: IGI Global. doi:10.4018/978-1-93177-745-2.ch014

Phillips-Wren, G. E. (2010). Intelligent agents in decision support systems. In M. Hunter (Ed.), *Strategic information systems: Concepts, methodologies, tools, and applications* (pp. 857–866). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-677-8.ch055

Rahman, S. M., & Raisinghani, M. S. (2000). *Electronic commerce: Opportunity and challenges*. Hershey, PA: IGI Global. doi:10.4018/978-1-87828-976-6

Raisinghani, M. S. (2000). Electronic commerce at the dawn of the third millennium. In S. Rahman & M. Raisinghani (Eds.), *Electronic commerce: Opportunity and challenges* (pp. 1–20). Hershey, PA: IGI Global. doi:10.4018/978-1-878289-76-6.ch001

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Russell, S., & Forgionne, G. (2009). Decision support-related resource presence and availability awareness for DSS in pervasive computing environments. *International Journal of Decision Support System Technology*, *1*(1), 15–34. doi:10.4018/jdsst.2009010102

Scholz, M., Dorner, V., Schryen, G., & Benlian, A. (2017). A configuration-based recommender system for supporting e-commerce decisions. *European Journal of Operational Research*, *259*(1), 205–215. doi:10.1016/j.ejor.2016.09.057

Setzekorn, K., Sugumaran, V., & Patnayakuni, N. (2004). A comparison of implementation resistance factors for DMSS versus other information systems. In M. Khosrow-Pour (Ed.), Advanced topics in information resources management (Vol. 3, pp. 315–332). Hershey, PA: IGI Global. doi:10.4018/978-1-59140-253-4.ch015

Sharma, A., & Vyas, P. (2010). Decision support systems in Indian organized retail sector. In *Business information systems: Concepts, methodologies, tools and applications* (pp. 1043–1055). Hershey, PA: IGI Global. doi:10.4018/978-1-61520-969-9.ch062

Singh, N., Yadav, M., & Sahu, O. (2016). Consumer acceptance of apparel e-commerce: Ethiopia. *Intellectual Economics*, *10*(1), 55–62. doi:10.1016/j.intele.2016.06.001

Sobieska-Karpinska, J., & Hernes, M. (2010). Value of information in distributed decision support systems. In M. Pankowska (Ed.), *Infonomics for distributed business and decision-making environments: Creating information system ecology* (pp. 153–176). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-890-1.ch009

Sodiya, A. S., Akinwale, A. T., Okeleye, K. A., & Emmanuel, J. A. (2012). An integrated decision support system for intercropping. In P. Zaraté (Ed.), *Integrated and strategic advancements in decision making support systems* (pp. 199–216). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-1746-9.ch015

Strzębicki, D. (2015). The development of electronic commerce in agribusiness: The Polish example. *Procedia Economics and Finance*, *23*, 1314–1320. doi:10.1016/S2212-5671(15)00573-0

Toland, J., & Klepper, R. (2009). Business-to-consumer electronic commerce in developing countries. In M. Khosrow-Pour (Ed.), *Encyclopedia of information science and technology* (2nd ed.; pp. 489–494). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-026-4.ch081

Tolk, A. (2010). Using simulation systems for decision support. In *Business information systems: Concepts, methodologies, tools and applications* (pp. 2163–2182). Hershey, PA: IGI Global. doi:10.4018/978-1-61520-969-9.ch131

Tran, C., Abraham, A., & Jain, L. (2008). Soft computing paradigms and regression trees in decision support systems. In V. Sugumaran (Ed.), *Intelligent information technologies: Concepts, methodologies, tools, and applications* (pp. 1011–1035). Hershey, PA: IGI Global. doi:10.4018/978-1-59904-941-0.ch058

Tynjala, T. (2012). Validation in supply chain decision support systems. *International Journal of Information Systems and Supply Chain Management*, *5*(2), 39–58. doi:10.4018/jisscm.2012040103

Vahidov, R. (2004). Empowering modern managers: Towards an agent-based decision support system. In H. Nemati & C. Barko (Eds.), *Organizational data mining: Leveraging enterprise data resources for optimal performance* (pp. 170–187). Hershey, PA: IGI Global. doi:10.4018/978-1-59140-134-6.ch012

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Wang, J., & Radosevich, D. (2010). Decision support systems. In M. Hunter (Ed.), *Strategic information systems: Concepts, methodologies, tools, and applications* (pp. 114–121). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-677-8.ch009

Wang, J., & Yao, J. (2010). Group decision support systems. In M. Hunter (Ed.), *Strategic information systems: Concepts, methodologies, tools, and applications* (pp. 1543–1550). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-677-8.ch099

Wang, S., Cavusoglu, H., & Deng, Z. (2016). Early mover advantage in e-commerce platforms with low entry barriers: The role of customer relationship management capabilities. *Information & Management*, *53*(2), 197–206. doi:10.1016/j.im.2015.09.011

Wells, J. D., & Hess, T. J. (2008). Understanding decision-making in data warehousing and related decision support systems: An explanatory study of a customer relationship management application. In J. Wang (Ed.), *Data warehousing and mining: Concepts, methodologies, tools, and applications* (pp. 2185–2200). Hershey, PA: IGI Global. doi:10.4018/978-1-59904-951-9.ch129

Wu, J., Li, L., & Xu, L. D. (2014). A randomized pricing decision support system in electronic commerce. *Decision Support Systems*, *58*, 43–52. doi:10.1016/j.dss.2013.01.015

Xie, Y., & Wang, H. (2014). A group cooperative decision support system based on extended contract net. *Group Decision and Negotiation*, *23*(5), 1191–1217. doi:10.100710726-013-9369-z

Yan, Q., Wu, S., Wang, L., Wu, P., Chen, H., & Wei, G. (2016). E-WOM from e-commerce websites and social media: Which will consumers adopt? *Electronic Commerce Research and Applications*, *17*, 62–73. doi:10.1016/j.elerap.2016.03.004

Yi, X., Siew, C. K., & Syed, M. R. (2000). Electronic commerce based on software agent. In S. Rahman & M. Raisinghani (Eds.), *Electronic commerce: Opportunity and challenges* (pp. 279–302). Hershey, PA: IGI Global. doi:10.4018/978-1-878289-76-6.ch018

Yıldız, S., & Kurtuldu, H. S. (2014). Factors affecting electronic service brand equity. In B. Christiansen, S. Yıldız, & E. Yıldız (Eds.), *Transcultural marketing for incremental and radical innovation* (pp. 434–492). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-4749-7.ch022

Yoon, H. S., & Occeña, L. G. (2015). Influencing factors of trust in consumer-to-consumer electronic commerce with gender and age. *International Journal of Information Management*, *35*(3), 352–363. doi:10.1016/j.ijinfomgt.2015.02.003

Yu, Y., Wang, X., Zhong, R. Y., & Huang, G. Q. (2016). E-commerce logistics in supply chain management: Practice perspective. *Procedia CIRP*, *52*, 179–185. doi:10.1016/j.procir.2016.08.002

Yuviler-Gavish, N., & Naseraldin, H. (2016). The effect of previous experience when introducing a decision aid in a decision support system for supply chain management. *Cognition Technology and Work*, *18*(2), 439–447. doi:10.100710111-016-0369-z

Zerenler, M., & Gözlü, S. (2012). Issues influencing electronic commerce activities of SMEs: A study of the Turkish automotive supplier industry. In *Human resources management: Concepts, methodologies, tools, and applications* (pp. 1035–1055). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-1601-1.ch064

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Zhang, D., Zhu, P., & Ye, Y. (2016). The effects of e-commerce on the demand for commercial real estate. *Cities (London, England)*, *51*, 106–120. doi:10.1016/j.cities.2015.11.012

Zhang, H., Wang, Y., & Zhang, X. (2014). The approaches to contextual transaction trust computation in e-commerce environments. *Security and Communication Networks*, *7*(9), 1331–1351. doi:10.1002ec.839

Zhang, J., & Pu, P. (2010). Performance evaluation of consumer decision support systems. In M. Hunter (Ed.), *Strategic information systems: Concepts, methodologies, tools, and applications* (pp. 1465–1482). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-677-8.ch094

Zhao, J., Lau, R. Y. K., Zhang, W., Zhang, K., Chen, X., & Tang, D. (2016). Extracting and reasoning about implicit behavioral evidences for detecting fraudulent online transactions in e-commerce. *Decision Support Systems*, *86*, 109–121. doi:10.1016/j.dss.2016.04.003

ADDITIONAL READING

Agudo-Peregrina, A. F., Pascual-Miguel, F. J., & Chaparro-Peláez, J. (2014). It's never the same: The role of homogeneity in online services. *Service Business*, *8*(3), 453–464. doi:10.100711628-014-0249-7

Bhattacharya, A., Tiwari, M. K., & Harding, J. A. (2012). A framework for ontology based decision support system for e-learning modules, business modeling and manufacturing systems. *Journal of Intelligent Manufacturing*, *23*(5), 1763–1781. doi:10.100710845-010-0480-6

Blasco-Arcas, L., Hernandez-Ortega, B., & Jimenez-Martinez, J. (2013). Adopting television as a new channel for e-commerce. The influence of interactive technologies on consumer behavior. *Electronic Commerce Research*, *13*(4), 457–475. doi:10.100710660-013-9132-1

Chiu, C. M., Wang, E. T. G., Fang, Y. H., & Huang, H. Y. (2014). Understanding customers' repeat purchase intentions in B2C e-commerce: The roles of utilitarian value, hedonic value and perceived risk. *Information Systems Journal*, *24*(1), 85–114. doi:10.1111/j.1365-2575.2012.00407.x

Dakhlia, S., & Strauss, R. P. (2013). Should sales taxes be imposed on e-commerce? *Journal of Public Economic Theory*, *15*(6), 803–828. doi:10.1111/jpet.12055

Damos, P. (2015). Modular structure of web-based decision support systems for integrated pest management. A review. *Agronomy for Sustainable Development*, *35*(4), 1347–1372. doi:10.100713593-015-0319-9

Dowie, J., Kjer Kaltoft, M., Salkeld, G., & Cunich, M. (2015). Towards generic online multicriteria decision support in patient-centred health care. *Health Expectations*, *18*(5), 689–702. doi:10.1111/hex.12111 PMID:23910715

Fauska, P., Kryvinska, N., & Strauss, C. (2014). Agile management of complex goods & services bundles for B2B e-commerce by global narrow-specialized companies. *Global Journal of Flexible Systems Management*, *15*(1), 5–23. doi:10.100740171-013-0054-5

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hernes, M., & Sobieska-Karpińska, J. (2016). Application of the consensus method in a multiagent financial decision support system. *Information Systems and e-Business Management*, *14*(1), 167–185. doi:10.100710257-015-0280-9

Islam, M. S., Sadiq, R., Rodriguez, M. J., Najjaran, H., & Hoorfar, M. (2016). Integrated decision support system for prognostic and diagnostic analyses of water distribution system failures. *Water Resources Management*, *30*(8), 2831–2850. doi:10.100711269-016-1326-6

Little, R. G., Manzanares, T., & Wallace, W. A. (2015). Factors influencing the selection of decision support systems for emergency management: An empirical analysis of current use and user preferences. *Journal of Contingencies and Crisis Management*, *23*(4), 266–274. doi:10.1111/1468-5973.12097

Nam, W. H., Choi, J. Y., Yoo, S. H., & Jang, M. W. (2012). A decision support system for agricultural drought management using risk assessment. *Paddy and Water Environment*, *10*(3), 197–207. doi:10.100710333-012-0329-z

Peng, L., & Lai, L. (2014). A service innovation evaluation framework for tourism e-commerce in China based on BP neural network. *Electronic Markets*, *24*(1), 37–46. doi:10.100712525-013-0148-0

Piva, F., & Dahab, R. (2013). E-commerce of digital items and the problem of item validation: Introducing the concept of reversible degradation. *Applicable Algebra in Engineering, Communication and Computing*, *24*(3/4), 277–308. doi:10.100700200-013-0197-9

Rezaei, R., Chiew, T. K., & Lee, S. P. (2014). A review on e-business interoperability frameworks. *Journal of Systems and Software*, *93*, 199–216. doi:10.1016/j.jss.2014.02.004

Rousta, B. A., & Araghinejad, S. (2015). Development of a multi criteria decision making tool for a water resources decision support system. *Water Resources Management*, *29*(15), 5713–5727. doi:10.100711269-015-1142-4

Sadeghian, R., & Sadeghian, M. R. (2016). A decision support system based on artificial neural network and fuzzy analytic network process for selection of machine tools in a flexible manufacturing system. *International Journal of Advanced Manufacturing Technology*, *82*(9), 1795–1803. doi:10.100700170-015-7440-4

Shan, S., Wang, L., Li, L., & Chen, Y. (2012). An emergency response decision support system framework for application in e-government. *Information Technology & Management*, *13*(4), 411–427. doi:10.100710799-012-0130-0

Shiau, W. L., & Dwivedi, Y. K. (2013). Citation and co-citation analysis to identify core and emerging knowledge in electronic commerce research. *Scientometrics*, *94*(3), 1317–1337. doi:10.100711192-012-0807-5

Shojaiemehr, B., & Rafsanjani, M. K. (2014). A fuzzy system approach to multilateral automated negotiation in B2C e-commerce. *Neural Computing & Applications*, *25*(2), 367–377. doi:10.100700521-013-1491-y

Sigman, B. P., & Boston, B. J. (2013). Digital discernment: An e-commerce web site evaluation tool. *Decision Sciences Journal of Innovative Education*, *11*(1), 29–46. doi:10.1111/j.1540-4609.2012.00367.x

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Sila, I. (2013). Factors affecting the adoption of B2B e-commerce technologies. *Electronic Commerce Research*, *13*(2), 199–236. doi:10.100710660-013-9110-7

Taha, Z., & Rostam, S. J. (2012). A hybrid fuzzy AHP-PROMETHEE decision support system for machine tool selection in flexible manufacturing cell. *Journal of Intelligent Manufacturing*, *23*(6), 2137–2149. doi:10.100710845-011-0560-2

Tehrani, F. T., & Abbasi, S. (2012). A model-based decision support system for critiquing mechanical ventilation treatments. *Journal of Clinical Monitoring and Computing*, *26*(3), 207–215. doi:10.100710877-012-9362-0 PMID:22532227

Tian, Z., Zhang, Z., & Guan, X. (2013). A new evolution model for B2C e-commerce market. *Information Technology and Management*, *14*(3), 205–215. doi:10.100710799-013-0159-8

Wang, Q., Liu, S., Liu, W., Kapelan, Z., & Savic, D. (2013). Decision support system for emergency scheduling of raw water supply systems with multiple sources. *Frontiers of Environmental Science & Engineering*, *7*(5), 777–786. doi:10.100711783-013-0537-9

Wimmer, H., Forgionne, G., Rada, R., & Yoon, V. (2012). A conceptual model for knowledge marts for decision making support systems. *International Journal of Decision Support System Technology*, *4*(4), 24–38. doi:10.4018/jdsst.2012100102

KEY TERMS AND DEFINITIONS

Business Intelligence: The advanced business method concerning strategic planning procedure.

Data Mining: The extraction of latent information from massive databases.

Decision Support Systems: The computer-related utilization that can help evaluate various business details toward achieving effective decision making.

Electronic Commerce: The online business approach that allows both individuals and companies to effectively conduct businesses.

Logistics: The procedure that relates to the transportation and storage of products and services.

Privacy: The term of concealing any issue from other people.

Trust: The expectation that someone or something is reliable.

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Chapter 33
Resources and Value Co-Creation in Social Commerce:
Evidence From Business Models in a Developing Economy – A Viewpoint for Future Research

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ABSTRACT

Social media (SM) is fundamentally changing the way firms conduct business and, in the process, destroying existing business models (BM). Therefore, businesses need to have a BM adaptable to social commerce (SC), which is commerce utilizing social networking services. This viewpoint for future research has questions on the types of SC BM, the value co-created by these models, and the required resources. The study proposes a framework to explore potential BM associated with social media based on their requirements and evaluate the performance of these BM. On the tenets of the study, this viewpoint argues for the need to develop BM for SC and how value is co-created and the resources underpinning this co-creation.

INTRODUCTION

Recent developments in information and communication technology (ICT) has triggered new business models (Bharadwaj, El Sawy, Pavlou, & Venkatraman, 2013; Wang & Yu, 2017a) such as social commerce (SC). Similarly, the advancement of information and communication technology (ICT) is transforming the structure of social relationships in the space between the customers and firms through social technologies such as social media and social networking sites (Susarla, Oh, & Tan, 2012). Hence, these social technologies are fundamentally reshaping traditional business strategies that enable commerce to be done across boundaries of time, distance and functions (Banker, Bardhan, Chang, & Lin, 2006;

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Ettlie & Pavlou, 2006; Kohli & Grover, 2008; Rai, Pavlou, Im, & Du, 2012; Straub & Watson, 2001) a significant forte of social commerce. Thus, social commerce is the use of social media to engage in commercial activities.

Social commerce enjoys a plurality of definitions. For instance, Wang and Zhang (2012) define social commerce as "a form of commerce that is mediated by social media and is converging both online and offline environments". While Yadav and Mahara (2018) refers to social commerce as "exchange-related activities that occur in, or are influenced by, an individual's social network in computer-mediated social environments, where the activities correspond to need recognition, pre-purchase, purchase, and post-purchase stages of a focal exchange". Similarly, in an earlier definition, Liang and Turban (2011) referred to social commerce as " online commerce applications that exploit social media and web 2.0 technologies. Lai (2010), on the other hand, defined social commerce as a phenomenon that combines three concepts (Social media, Web 2.0 Technologies and e-commerce). The various definitions highlight the presence of two essential components: social media and commerce. As noted by Liang, Ho, Li and Turban (2011) and Marsden (2009), the commerce component refers to exchange-related activities that include transactions. These transactions include pre, during and post transactional activities. The second component as espoused by Yadav, Valck, Hennig-thurau, Hoffman and Spann (2013) is the computer-mediated social environment (CMSEs).

Yahoo was the first to introduce the term social commerce in 2005 (Rubel, 2006), rapidly becoming a medium of value addition by mainstay e-commerce companies such as Amazon and eBay through customer engagement (Wang & Zhang, 2012). The first academic paper to use the term *social commerce* appeared in 2006 when *flowers.com* launched its first Facebook store in 2009 saw regular use of the term in practice (Busalim & Hussin, 2016) — since then, shopping on social media networks had increased exponentially. For example, social commerce adoption among retailers in North America moved from 17 percent in 2017 to 33 percent in 2018 (Clement, 2019). This growth trend provides a promising potential for companies to invest in social media to increase consumer engagement (Wang &Yu, 2017b).

Thus, global e-commerce pioneers like Amazon and eBay are now changing their market positions with the integration of social technologies like Facebook (Du & Wagner, 2007; Fagerstrøm & Ghinea, 2010; Kim & Srivastava, 2007; Ng, 2013).

SNSs are the bedrock of social commerce because they enhance the peculiarity of the relationship between sellers and their customers (Liang & Turban, 2011). Hence, scholars have argued that online shops using social media can result in value creation and co-creation for both customers and firms (Grange & Benbasat, 2013; Kohler, Fueller, Matzler, & Stieger, 2011; Kohler, Fueller, Stieger, & Matzler, 2011). Hence, social commerce has the potential for value co-creation (Hassan & Toland, 2013). As implied by the term, "co-creation involves a symbiotic relationship between a firm and its primary stakeholders" (Kohli & Grover, 2008), and suggest that value is co-created by integrating the available resources owned by collaborators (Vargo, Maglio, & Akaka, 2008). Hence, the objective of exchange in social commerce is to connect resources and value, in this case, the value created relies on the collaborators' particular contexts (Cai, Yuan, & Zhou, 2013).

There is an exponential growth of social commerce sites (Huang & Benyoucef, 2015) and as more of these sites are springing up potentially with different services and leaning towards various models, there is a tendency for traditional firms to enter the space to earn the benefits therein. Such a venture has the potential to change their existing business processes, hence the need to align to specific organizational goals and strategy carefully.

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From those mentioned earlier, social commerce is essential. More importantly, it is creating a situation for firms to think about carefully. With this background as the backbone of this study, it has become necessary to understand the types of social commerce business models, and how value is co-created, and the resources which underpin this value co-creation process.

JUSTIFICATION FOR THIS RESEARCH

Previous research on social commerce has examined themes including social commerce definitions and conceptual models (Busalim & Hussin, 2016; Menon, Sigurdsson, Larsen, Fagerstrøm, & Foxall, 2016; Zhang & Benyoucef, 2016), adoption (Erdoğmuş & Tatar, 2015; Farivar, Yuan, & Turel, 2016; Yahia, Al-Neama, & Kerbache, 2018), risk (Farivar, Turel, & Yuan, 2017), trust and trust performance (Cheng, Gu, & Shen, 2019), biases (Samira Farivar, Yuan, & Turel, 2016) and factors that influence customer engagement (Busalim, Hussin, & Iahad, 2019; Wongkitrungrueng & Assarut, 2018).

These studies though valuable, also highlight several gaps for future research. First, there is an absence of agreement on the definition of social commerce. For example, Menon et al. (2016) and Yahia et al. (2018) defined social commerce as a combination of e-commerce and social interaction while Wang and Zhang (2012) defined social commerce as new or emerging phenomena, which is a subset of e-commerce which converges both online and offline environments. In contrast, social commerce has been defined as selling using social media sites such as Facebook (Ngai, Tao, & Moon, 2015). This plurality of social commerce definitions gives rise to different conceptualizations of the social commerce phenomena.

Comparably, studies on social e-commerce or use of social media in e-commerce tend to be more dominant (Hajli, Sims, Zadeh, & Richard, 2017; Huang & Benyoucef, 2013; Liang & Turban, 2011; Munawar, Hassanein, & Head, 2017) and there is a call for more research on social commerce, especially on the business models and how such firms operate. The dominance exists because e-commerce/e-business (and social e-commerce) predates social commerce (Hajli, 2015; Hajli & Sims, 2015; Kim & Park, 2013). In precis, authors need to focus more on social commerce, explore the business models which underpin social commerce activities – especially examining whether e-commerce models can also apply to social commerce or whether there are new business models which underpin these firms. However, even though studies indicate that firms are leveraging emerging social commerce platforms to build relationships and engage with customers, little empirical studies exist on the value generated by these firms or the business models of social commerce firms generate value. This research attempts to address these gaps.

Concerning social commerce business models and value generation, a review published by Communications of the Association for Information Systems (CAIS) (Parameswaran & Whinston, 2007) offers some directions. The review highlighted the need to explore current and potential business models associated with social networks concerning their requirements, identify feasible models and evaluate the performance of the business models. The review further, reiterates that research into these business models need to touch on themes such as how businesses can generate value through social networks. It is instructive to note that since the publication of the review in 2007, there seem to be no studies addressing the gaps highlighted in the study. A more recent review by (Wang & Zhang, 2012) calls for future research on social commerce to identify and develop business models. Also, the authors (Wang & Zhang, 2012) emphasize the need to explore how firms manage co-creating strategies as a result of an enormous amount of content from diverse channels and platforms. On the contrary, issues such as adoption (Friedrich, 2015; Hajli & Sims, 2015), designing social commerce platforms (Mikalef, Giannakos,

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& Pappas, 2017), sharing behaviour (Hsieh, Ya-Ting, & Leng-Heng, 2017), conflict and uncertainty (J. Cheng, Liu, & Du, 2017) consumer purchasing decision (Huang & Benyoucef, 2017), consumer purchase behaviour (Grange, Benbasat, & Burton-Jones, 2018), Value co-creation (Mikalef, Pappas, & Giannakos, 2017; Tajvidi, Wang, Hajli, & Love, 2017; Yu, Tsai, Wang, Lai, & Tajvidi, 2018) and Users' risk (Samira Farivar, Turel, & Yuan, 2018; Sharma & Crossler, 2014) have been studied.

Concerning theorization, another review of social commerce by Busalim and Hussin (2016) published by the International Journal of Information Management opines that the theoretical foundation of social commerce research is few and dispersed. The author of this research also, reiterate the arguments by Hajli (2014) and Wang and Zhang (2012) years earlier that development of grounded theories in this new area will be a challenge for both Information systems and strategic management researchers. A second review by Zhang and Benyoucef (2016) shows that several theories have been used to explain consumer behaviour on social networking sites. These theories used in the various studies were to test and develop explanatory models. There is the need, therefore, to consider theories that generate exploratory insights. The above assertions seem to agree with Boateng (2016), who used a strategic model to explain the complex interaction of resources as a firm seeks to integrate e-commerce capabilities with their strategic orientation.

This viewpoint further recommends the use of strategic theories to study firms in other industries and with the development of transactive and transformational capabilities. This study responds to these by adopting the Resource-Based View to explore how businesses can use resources to co-create value through social commerce.

Studies on social commerce have predominantly been from the developed, the Middle East and Asian economies perspectives (Leeraphong & Papasratorn, 2018; Qin, 2017; Vongsraluang & Bhatiasevi, 2017; Williams, 2018). Researchers in these contexts have studied issues such as articulating the drivers of social commerce (Sukrat, Mahatanankoon, & Papasratorn, 2018), factors that motivate users beyond their initial adoption to engage in post-adoption behaviors such as continuance use (Osatuyi & Qin, 2018) and social commerce acceptance among users and the factors affecting attitudes towards the phenomena (Gatautis & Medziausiene, 2014) in countries like China, Thailand, USA and Lithuania. There is also some research on social media in African countries (Jaunky, Roopchund, Ramesh, & Jaunky, 2018; Lekhanya, 2013). Despite these studies, research specifically focusing on social commerce in Africa are few (e.g. Lubua & Pretorius, 2018, 2019). These studies even though few have contributed to the use of social networks as income generation and the perceived relevance of social commerce in the African Context. However, these studies focus more on adoption and impact with little focus on strategy. Future research can draw on strategic issues to help understand further implications if we do not know successful social commerce, business models. Past e-commerce studies show evidence that firms in developing countries are always looking for technologies to become better and navigate around their constraints (Boateng, 2016). Therefore, it becomes essential that success stories of social commerce business models in Africa be studied, documented and analyzed to guide other firms.

OBJECTIVES TO BE ADDRESSED

Concerning the above research gaps, this chapter contends that future research should seek to develop a model that explains how firms create social commerce capabilities to achieve benefits. The model will offer a theoretical understanding of how social commerce firms develop, deploy and manage social

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media as a resource to create commercial benefits. This future research will be inspired by the theory of how firms develop, deploy and manage social media as a resource to create commercial benefits. This future research must also seek to understand how social commerce firms use social media technologies to overcome their constraints. This research will not merely incorporate relevant entrepreneurship and strategic management theories in order to enrich and extend IS research; it will also contribute to Dynamic Capabilities Model by conceptualizing the development, deployment and management of social media resources to achieve benefit in the context of a social commerce firm. This future research must particularly achieve the following objectives

1. To explore the dominant business models of social commerce Firms Developing Economies.
2. To understand the value co-created by social commerce-based firms
3. To explore the resources and capabilities that underpin the value generated by social commerce business models and how the resources are deployed.

The subsequent research questions are

1. What are the dominant business models of social commerce enterprises in Developing Countries?
2. How is value co-created by social commerce-based firms?
3. What resources and capabilities underpin the value generated by the business models and how they are deployed?

THEORETICAL JUSTIFICATION

The prevailing paradigm for how firms create value using available resources is the Resource-based View. For instance, Barua, Konana, Whinston and Yin (2004) use the RBV to address the processes through which value is created through internet-enabled value chain activities. The authors further argue that a firm's abilities to coordinate and exploit its resources create higher-order resource, which leads to improved operational and financial performance. However, another study (Ray, Muhanna, & Barney, 2005) investigates the differential effects of various Information Technology (IT) resources and capabilities on the performance of the customer service process. The findings of this study suggest that tacit, socially involved, firm-specific resources explain variation in process performance and that IT resources and capabilities without these attributes do not. A third study by Sarker, Sarker, Sahaym and Bjørn-Andersen (2012) explores the value co-creation in relationships between an ERP vendor and its partners. This study found that there are different mechanisms underlying value cocreation within B2B alliance. From the studies, we learn that first, the ability of the firm to effectively combine the set of specific resources to exploit market opportunities and be competitive is the focus of the RBV (Penrose, 1959). Second, resources are " stocks of available factors that are owned or controlled by the firm"(Amit & Schoemaker, 1993).

The Resource-Based View (Barney, 1991), a dominant theory in Strategic Management literature, therefore, is used as the underlying theoretical foundation for the following reasons. First, to study social commerce-based firms' abilities to manage and deploy technological resources (for example, social media) to co-create value. The RBV theory suggests that conventional technologies can be transformed into valuable resources when used in specific business processes (Dong, Xu, & Zhu, 2009). In addition,

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in previous IS studies the RBV has been used to study IT as a source of sustained competitive advantage (Mata, Fuerst, & Barney, 1995) and also to explain how IT value stems from the organizational use of IT than the technology itself (Clemons & Row, 1991; Markus & Soh, 1995). Second, the nature of resources required (for example, business processes) to co-create value. The RBV of the firm also stipulates that specific resources of the firm have the potential to generate sustained competitive, which will ultimately lead to superior organizational performance (Priem & Butler, 2001; Wernerfelt, 1995, 1984). These resources of the firm are categorized as tangible resources (human, physical, organizational and financial), and intangible resources (reputational, brand, trust, social and cultural) (Eisenhardt & Martin, 2000; Harrison, Hitt, Hoskisson, & Ireland, 2001). Third, how value co-creation is developed through external relationship management as cited by (Wade & Hulland, 2004), this is important because the main focus of social commerce-based firms is to exploit the use of the social technologies for value co-creation in interactions with their customers and other external partners.

The central theme of the RBV addresses the fundamental question of why firms are different and how they achieve and sustain competitive advantage by deploying their resources (Kostopoulos, Spanos, & Prastacos, 2002). Similarly, RBV has been used as a paradigm that combines different philosophies and frameworks from various disciplines (Mahoney & Pandian, 1992; Wade & Hulland, 2004). The RBV also posits that firms possess resources; a part of these resources enables the firms to achieve competitive advantage; another part of it leads to superior sustained performance (Barney,1991).

The author further reiterates that these resources, which are composed as heterogeneous resources, can create a competitive advantage if they have the following qualities:

Valuable: the resource can enable a firm to conceive or implement strategies that improve its efficiency or effectiveness;
Rare: a large number of competing firms should not possess the resources
Imperfectly Imitable: the resources should not be easily imitated due to unique historical conditions, causally ambiguous, or social complex;
Non-Substitutable: Other substitutes should not easily replace the resource.

However, advocates of RBV are unable to have a precise definition of what a resource is (Butler & Priem, 2001). This proliferation of definitions and classifications has raised complex issues in studies using RBV as it is unclear what these researchers mean the term “resources” (Butler & Priem, 2001).

CONCLUSION

The chapter has argued the need to identify and develop a model that explains how social commerce-based firms co-create value using available resources to achieve benefits. The significance of this research can be viewed from academic, practitioner and policy perspectives. In scholarship discourse, the development of social commerce research, like other fields of study, requires theorization and development of a conceptual framework.

From the research perspective, this research will reveal based on a theory the value that social commerce enterprises benefit from leveraging social media and web 2.0 technologies. This research cannot be overlooked because the research seeks to add to the existing body of knowledge regarding social

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commerce studies as well as to research gaps considering the paucity of studies on social commerce business models.

Regarding policy and practice, this research will inform practitioners about the resources needed to develop social commerce capabilities. This research will also provide adequate findings for Governments as well as other regulatory bodies to formulate policies and laws to govern the use of the internet and also use that as a means of job creation.

REFERENCES

Amit, R., & Schoemaker, P. J. H. (1993). Strategic Assets and Organizational Rent. *Strategic Management Journal*, *14*(1), 33–46. doi:10.1002/smj.4250140105

Banker, R. D., Bardhan, I. R., Chang, H., & Lin, S. (2006). Plant information systems, manufacturing capabilities, and plant performance. *Management Information Systems Quarterly*, *30*(2), 315–337. doi:10.2307/25148733

Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, *17*(1), 99–120. doi:10.1177/014920639101700108

Barua, A., Konana, P., Whinston, A. B., & Yin, F. (2004). An Empirical Investigation of Net-Enabled Business Value. MIS Quartely Quarterly, 28(4), 585–620. Retrieved from https://www.jstor.org/stable/25148656

Bharadwaj, A., El Sawy, O. A., Pavlou, P. A., & Venkatraman, N. (2013). Digital business strategy: Toward a next generation of insights. *Management Information Systems Quarterly*, *37*(2), 471–482.

Boateng, R. (2016). Resources, Electronic-Commerce Capabilities and Electronic-Commerce Benefits: Conceptualizing the Links. *Information Technology for Development*, *22*(2), 242–264. doi:10.1080/02681102.2014.939606

Busalim, A. H., Che Hussin, A. R., & Iahad, N. A. (2019). Factors Influencing Customer Engagement in Social Commerce Websites: A Systematic Literature Review. *Journal of Theoretical and Applied Electronic Commerce Research*, *14*(2). doi:10.4067/S0718-18762019000200102

Busalim, A. H., & Hussin, A. R. C. (2016). Understanding social commerce: A systematic literature review and directions for further research. *International Journal of Information Management*, *36*(6), 1075–1088. doi:10.1016/j.ijinfomgt.2016.06.005

Butler, J. E., & Priem, R. L. (2001). Is the Resource-Based "View" a Useful Perspective for Strategic Management Research? doi:10.5465/AMR.2001.4011928

Cai, S., Yuan, Q., & Zhou, P. (2013). A resource mapping framework for value co-creation in social media. In *WHICEB 2013* (Vol. 14, p. 25). Proceedings; doi:10.1504/IJNVO.2014.065082

Cheng, J., Liu, R.-G., & Du, C. T. (2017). Exploring How Conflict and Uncertainty Affect Repurchase Intention in Social Commerce---The Mediating Effect of Perceived Deceptiveness. *International Conference on Electronic Business*.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Cheng, X., Gu, Y., & Shen, J. (2019). An integrated view of particularized trust in social commerce: An empirical investigation. *International Journal of Information Management*, *45*, 1–12. doi:10.1016/j.ijinfomgt.2018.10.014

Clement, J. (2019). Social commerce adoption among retailers in North America from 2017 to 2018. Retrieved November 4, 2019, from https://www.statista.com/statistics/1017523/north-america-social-commerce-adoption-in-retail/

Clemons, E. K., & Row, M. C. (1991). Sustaining IT advantage: The role of structural differences. *Management Information Systems Quarterly*, *15*(3), 275–292. doi:10.2307/249639

Dong, S., Xu, S. X., & Zhu, K. X. (2009). Research Note: Information technology in supply chains: The value of IT-enabled resources under competition. *Information Systems Research*, *20*(1), 18–32. doi:10.1287/isre.1080.0195

Du, H. S., & Wagner, C. (2007). *The Role of Technology*. Content, and Context for the Success of Social Media.

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic Capabilities : What Are They? *Strategic Management Journal*, *21*(10-11), 1105–1121. doi:10.1002/1097-0266(200010/11)21:10/11<1105::AID-SMJ133>3.0.CO;2-E

Erdoğmuş, İ. E., & Tatar, Ş. B. (2015). Drivers of Social Commerce through Brand Engagement. *Procedia: Social and Behavioral Sciences*, *207*(212), 189–195. doi:10.1016/j.sbspro.2015.10.087

Ettlie, J. E., & Pavlou, P. A. (2006). Technology-based new product development partnerships. *Decision Sciences*, *37*(2), 117–147. doi:10.1111/j.1540-5915.2006.00119.x

Fagerstrøm, A., & Ghinea, G. (2010). Web 2.0's Marketing Impact on Low-Involvement Consumers. *Journal of Interactive Advertising*, *10*(2), 67–71. doi:10.1080/15252019.2010.10722171

Farivar, S. (2020). *Biases in Social Commerce Users ' Rational Risk Considerations*. ICIS.

Farivar, S., Turel, O., & Yuan, Y. (2017). A trust-risk perspective on social commerce use: An examination of the biasing role of habit. *Internet Research*, *27*(3), 586–607. doi:10.1108/IntR-06-2016-0175

Farivar, S., Turel, O., & Yuan, Y. (2018). Skewing users' rational risk considerations in social commerce: An empirical examination of the role of social identification. *Information & Management*, *55*(8), 1038–1048. doi:10.1016/j.im.2018.05.008

Farivar, S., Yuan, Y., & Turel, O. (2016). Understanding Social Commerce Acceptance: The Role of Trust, Perceived Risk, and Benefit. In Twenty-second Americas Conference on Information Systems (pp. 1–10). Retrieved from https://scholar.google.com/citations?view_op=view_citation&continue=/scholar%253Fhl%253Den%2526as_sdt%253D0,11%2526scilib%253D1&citilm=1&citation_for_view=iFHnt7IAAAAJ:8AbLer7MMksC&hl=en&oi=p

Friedrich, T. (2015). Analyzing the Factors that Influence Consumers ' Adoption of Social Commerce – A Literature Review Full Papers. *Twenty-First Americas Conference on Information Systems*, 1–16.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Gatautis, R., & Medziausiene, A. (2014). Factors Affecting Social Commerce Acceptance in Lithuania. Procedia - Social and Behavioral Sciences, 110(2013), 1235–1242. doi:10.1016/j.sbspro.2013.12.970

Grange, C., & Benbasat, I. (2013). The value of social shopping networks for product search and the moderating role of network scope. International Conference on Information Systems (ICIS 2013): Reshaping Society Through Information Systems Design, 5, 4230–4241.

Grange, C., Benbasat, I., & Burton-Jones, A. (2018, March). A Network-Based Conceptualization of Social Commerce and Social Commerce Value. *Computers in Human Behavior*, 1–14. doi:10.1016/j.chb.2018.12.033

Hajli, N. (2015). Social commerce constructs and consumer's intention to buy. *International Journal of Information Management*, *35*(2), 183–191. doi:10.1016/j.ijinfomgt.2014.12.005

Hajli, N., & Sims, J. (2015). Social commerce: The transfer of power from sellers to buyers. *Technological Forecasting and Social Change*, *94*, 350–358. doi:10.1016/j.techfore.2015.01.012

Hajli, N., Sims, J., Zadeh, A. H., & Richard, M.-O. (2017). A social commerce investigation of the role of trust in a social networking site on purchase intentions. *Journal of Business Research*, *71*, 133–141. doi:10.1016/j.jbusres.2016.10.004

Hajli, N. M. (2014). The role of social support on relationship quality and social commerce. *Technological Forecasting and Social Change*, *87*, 17–27. doi:10.1016/j.techfore.2014.05.012

Harrison, J. S., Hitt, M. A., Hoskisson, R. E., & Ireland, R. D. (2001). Resource complementarity in business combinations: Extending the logic to organizational alliances. *Journal of Management*, *27*(6), 679–690. doi:10.1177/014920630102700605

Hassan, S., & Toland, J. (2013). A conceptual framework for value co-creation practices in C2C social commerce environment. *Proceedings of the 24th Australasian Conference on Information Systems*.

Hsieh, Y.-H., Ya-Ting, L., & Leng-Heng, C. (2017). The Influence of Customer's Sharing Behavior in Social Commerce. In *Twenty-third Americas Conference on Information Systems* (pp. 259–264). Academic Press.

Huang, Z., & Benyoucef, M. (2013). From e-commerce to social commerce: A close look at design features. *Electronic Commerce Research and Applications*, *12*(4), 246–259. doi:10.1016/j.elerap.2012.12.003

Huang, Z., & Benyoucef, M. (2015). User preferences of social features on social commerce websites: An empirical study. *Technological Forecasting and Social Change*, *95*, 57–72. doi:10.1016/j.techfore.2014.03.005

Huang, Z., & Benyoucef, M. (2017). The effects of social commerce design on consumer purchase decision-making: An empirical study. *Electronic Commerce Research and Applications*, *25*, 40–58. doi:10.1016/j.elerap.2017.08.003

Jaunky, V. C., Roopchund, R., Ramesh, V., & Jaunky, V. (2018). Use of Social Media for Improving Student Engagement at Université des Mascareignes (UDM). *Proceedings of Fifth International Conference INDIA 2018*. 10.1007/978-981-13-3338-5_2

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Kim, S., & Park, H. (2013). Effects of various characteristics of social commerce (s-commerce) on consumers' trust and trust performance. *International Journal of Information Management*, *33*(2), 318–332. doi:10.1016/j.ijinfomgt.2012.11.006

Kim, Y. A., & Srivastava, J. (2007). Impact of social influence in e-commerce decision making. Proceedings of the Ninth International Conference on Electronic Commerce - ICEC '07, 293. doi:10.1145/1282100.1282157

Kohler, T., Fueller, J., Matzler, K., Stieger, D., & Füller. (2011). CO-creation in virtual worlds: The design of the user experience. MIS Quarterly: Management Information Systems, 35(3), 773–788. doi:10.2307/23042808

Kohler, T., Fueller, J., Stieger, D., & Matzler, K. (2011). Avatar-based innovation: Consequences of the virtual co-creation experience. *Computers in Human Behavior*, *27*(1), 160–168. doi:10.1016/j.chb.2010.07.019

Kohli, R., & Grover, V. (2008). Business Value of IT: An Essay on Expanding Research Directions to Keep up with the Times. *Journal of the Association for Information Systems*, *9*(1), 23–39. doi:10.17705/1jais.00147

Kostopoulos, C. K., Spanos, Y. E., & Prastacos, G. P. (2002). The Rseource-Based View of the Firm and Innovation:Identification of Critical Linkages. In *The 2nd* (pp. 1–19). European Academy of Managemnt Conference; Retrieved from http://ecsocman.hse.ru/data/165/663/1219/rb_view.pdf

Leeraphong, A., & Papasratorn, B. (2018). S-Commerce Transactions and Business Models in Southeast Asia: A Case Study in Thailand. KnE Social Sciences, 3(1), 65. doi:10.18502/kss.v3i1.1397

Lekhanya, L. M. (2013). Cultural Influence On The Diffusion And Adoption Of Social Media Technologies By Entrepreneurs In Rural South Africa. International Business & Economics Research Journal, 12. Retrieved from https://openscholar.dut.ac.za/bitstream/10321/1123/1/lekhanya_ib_erj_2013.pdf

Liang, T., & Turban, E. (2011). Introduction to the Special Issue : Social Commerce : A Research Framework for Social Commerce. *International Journal of Electronic Commerce*, *16*(2), 2012. doi:10.2753/JEC1086-4415160201

Liang, T.-P., Ho, Y.-T., Li, Y.-W., & Turban, E. (2011). What Drives Social Commerce: The Role of Social Support and Relationship Quality. *International Journal of Electronic Commerce*, *16*(2), 69–90. doi:10.2753/JEC1086-4415160204

Lubua, E. W., & Pretorius, P. (2018). *The Impact of Demographic Factors to the Adoption of Social Commerce in Tanzania. In 2018 IST-Africa Week Conference (IST-Africa)* (pp. 1–12). IST-Africa Institute; Retrieved from www.IST-Africa.org/Conference2018

Lubua, E. W., & Pretorius, P. D. (2019). Factors determining the perceived relevance of social commerce in the African context. *South African Journal of Information Management*, *21*(1), 1–8. doi:10.4102/sajim.v21i1.959

Mahoney, J. T., & Pandian, J. R. (1992). The Resource-Based View Within the Conversation of Strategic Management. *Strategic Management Journal*, *13*(5), 363–380. doi:10.1002/smj.4250130505

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Markus, M. L., & Soh, C. (1995). How IT creates business value: a process theory synthesis. ICIS 1995 Proceedings, 4.

Marsden, P. (2009). *The 6 dimensions of social commerce: rated and reviewed*. Social Commerce Today.

Mata, F. J., Fuerst, W. L., & Barney, J. B. (1995). Information technology and sustained competitive advantage: A Resourced-Based Analysis. *Management Information Systems Quarterly*, *19*(4), 487–505. doi:10.2307/249630

Mikalef, P., Giannakos, M., & Pappas, I. O. (2017). Designing social commerce platforms based on consumers ' intentions. *Behaviour & Information Technology*, *36*(12), 1308–1327. doi:10.1080/01449 29X.2017.1386713

Mikalef, P., Pappas, I. O., & Giannakos, M. N. (2017). Value co-creation and purchase intention in social commerce:The enabling role of word- of-mouth and trust. In *Twenty-third Americas Conference on Information Systems* (pp. 1–10). Academic Press.

Munawar, M., Hassanein, K., & Head, M. (2017). Understanding the Role of Herd Behaviour and Homophily in Social Commerce. Special Interest Group on Human Computer Interaction, (SIGHCI 2017 Proceedings).

Ng, C. S. P. (2013). Intention to purchase on social commerce websites across cultures: A cross-regional study. *Information & Management*, *50*(8), 609–620. doi:10.1016/j.im.2013.08.002

Ngai, E. W. T., Tao, S. S. C., & Moon, K. K. L. (2015). Social media research: Theories, constructs, and conceptual frameworks. *International Journal of Information Management*, *35*(1), 33–44. doi:10.1016/j.ijinfomgt.2014.09.004

Osatuyi, B., & Qin, H. (2018). How vital is the role of affect on post-adoption behaviors? An examination of social commerce users. *International Journal of Information Management*, *40*(February), 175–185. doi:10.1016/j.ijinfomgt.2018.02.005

Parameswaran, M., & Whinston, A. (2007). Research Issues in Social computing. *Journal of the Association for Information Systems*, *8*(6), 336–350. doi:10.17705/1jais.00132

Penrose, E. (1959). *The theory of the firm*. John Wiley & Sons.

Priem, R. L., & Butler, J. E. (2001). Tautology in the resource-based view and the implications of externally determined resource value: Further comments. *Academy of Management Review*, *26*(1), 57–66. doi:10.5465/amr.2001.4011946

Qin, L. (2017). A Cross-Cultural Study of Interpersonal Trust in Social Commerce. *Journal of Computer Information Systems*, 1–8. doi:10.1080/08874417.2017.1383865

Rai, A., Pavlou, P. A., Im, G., & Du, S. (2012). Interfirm IT Capability Profiles and Communications for Cocreating Relational Value: Evidence from the Logistics Industry. *Management Information Systems Quarterly*, *36*(1), 233–262. doi:10.2307/41410416

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Ray, G., Muhanna, W. A., & Barney, J. B. (2005). Information Technology and the Performance of the Customer Service Process: A Resource Based Analysis. MIS Quarter, 29(4), 695–704. Retrieved from https://www.jstor.org/stable/25148703

Rubel, S. (2006). *Trends to watch. Part II: social commerce--micro persuasion*. Academic Press.

Sarker, S., Sarker, S., Sahaym, A., & Bjørn-Andersen, N. (2012). Exploring value cocreation in relationships betweenan ERP vendor and its partners : A revelatory case study. MIS Quarterly: Management. *Information Systems*, *36*(1), 317–338. doi:10.2307/41410419

Sharma, S., & Crossler, R. E. (2014). Disclosing too much? Situational factors affecting information disclosure in social commerce environment. *Electronic Commerce Research and Applications*, *13*(5), 305–319. doi:10.1016/j.elerap.2014.06.007

Straub, D. W., & Watson, R. T. (2001). Transformational Issues in Researching IS and Net-Enabled Organizations. *Information Systems Research*, *12*(4), 337–345. doi:10.1287/isre.12.4.337.9706

Sukrat, S., Mahatanankoon, P., & Papasratorn, B. (2018). The Driving Forces of C2C Social Commerce in Thailand: A Developing Framework. KnE Social Sciences, 3(1), 108. doi:10.18502/kss.v3i1.1400

Susarla, A., Oh, J. H., & Tan, Y. (2012). Social networks and the diffusion of user-generated content: Evidence from youtube. *Information Systems Research*, *23*(1), 23–41. doi:10.1287/isre.1100.0339

Tajvidi, M., Wang, Y., Hajli, N., & Love, P. E. D. (2017). Brand value Co-creation in social commerce: The role of interactivity, social support, and relationship quality. *Computers in Human Behavior*, 1–8. doi:10.1016/j.chb.2017.11.006

Vargo, S. L., Maglio, P. P., & Akaka, M. A. (2008). On value and value co-creation: A service systems and service logic perspective. *European Management Journal*, *26*(3), 145–152. doi:10.1016/j.emj.2008.04.003

Vishnu Menon, R. G., Sigurdsson, V., Larsen, N. M., Fagerstrøm, A., & Foxall, G. R. (2016). Consumer attention to price in social commerce: Eye tracking patterns in retail clothing ☆. *Journal of Business Research*, *69*(11), 5008–5013. doi:10.1016/j.jbusres.2016.04.072

Vongsraluang, N., & Bhatiasevi, V. (2017). The determinants of social commerce system success for SMEs in Thailand. *Information Development*, *33*(1), 80–96. doi:10.1177/0266666916639632

Wade, M., & Hulland, J. (2004). Review: The resource-based view and information systems research: Review, extension, and suggestions for future research. *Management Information Systems Quarterly*, *28*(1), 107–142. doi:10.2307/25148626

Wang, C., & Zhang, P. (2012, November). The Evolution of Social Commerce : The People, Management, Technology, and Information Dimensions and Information Dimensions. *Communications of the Association for Information Systems*, *31*, 105–127. doi:10.17705/1CAIS.03105

Wang, Y., & Yu, C. (2017a). Social interaction-based consumer decision-making model in social commerce: The role of word of mouth and observational learning. *International Journal of Information Management*, *37*(3), 179–189. doi:10.1016/j.ijinfomgt.2015.11.005

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Wang, Y., & Yu, C. (2017b). Social interaction-based consumer decision-making model in social commerce: The role of word of mouth and observational learning. *International Journal of Information Management*, *37*(3), 179–189. doi:10.1016/j.ijinfomgt.2015.11.005

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, *5*(2), 171–180. doi:10.1002/smj.4250050207

Wernerfelt. (1995). A Resource-based view of the firm: tem years after. Strategic Management Journal, 16(2), 171–174.

Williams, M. D. (2018). Social commerce and the mobile platform: Payment and security perceptions of potential users. Computers in Human Behavior. doi:10.1016/j.chb.2018.06.005

Wongkitrungrueng, A., & Assarut, N. (2018, November). The role of live streaming in building consumer trust and engagement with social commerce sellers. *Journal of Business Research*. doi:10.1016/j.jbusres.2018.08.032

Yadav, M. S., De Valck, K., Hennig-thurau, T., Hoffman, D. L., & Spann, M. (2013). ScienceDirect Social Commerce : A Contingency Framework for Assessing Marketing Potential. *Journal of Interactive Marketing*, *27*(4), 311–323. doi:10.1016/j.intmar.2013.09.001

Ben Yahia, I., Al-Neama, N., & Kerbache, L. (2018). Investigating the drivers for social commerce in social media platforms: Importance of trust, social support and the platform perceived usage. *Journal of Retailing and Consumer Services*, *41*, 11–19. doi:10.1016/j.jretconser.2017.10.021

Yu, C.-H., Tsai, C.-C., Wang, Y., Lai, K.-K., & Tajvidi, M. (2018). Towards building a value co-creation circle in social commerce. Computers in Human Behavior, 105476. doi:10.1016/j.chb.2018.04.021

Zhang, K. Z., & Benyoucef, M. (2016). Consumer behavior in social commerce: A literature review. *Decision Support Systems*, *86*, 95–108. doi:10.1016/j.dss.2016.04.001

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Chapter 34
A Novel Fuzzy Integrated Customer Needs Prioritization Software Tool for Effective Design of Online Shopping Websites

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ABSTRACT

Albeit, online shopping has grown much recently, users' rate of satisfaction has declined due to the ineffective design of online shopping websites. Thus, the companies involved are craving for well-designed websites. Effective website design involves decision making and thus this paper considers Quality Function Deployment (QFD) as it is a strong decision-making tool. However, QFD uses crisp scoring approach that generates uncertainty and vagueness resulting in impreciseness and inconsistency in results. The issue can be addressed using fuzzy integration. QFD involves prioritization of Customer Needs (CNs) and Technical Requirements (TRs). However, the paper focuses on only CNs prioritization. Also, the existing software's lack the indispensable fuzzy support feature to handle the uncertainty and vagueness. Thus, the paper presents a novel fuzzy integrated customer needs prioritization software tool. The tool is built using Visual Basic Dot Net (VB.Net) and MS-Access. A real-life example is presented to demonstrate the viability of the software tool.

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INTRODUCTION

The popularization and rapid development of the Internet has made online shopping emerged as hot area amongst customers with more number of customers now opting for online shopping (Kuo & Chen, 2011). As a result, there has been explosive growth in the use of online shopping. Although online shopping has become a growing new trend, the satisfaction rate of users has descended due to poor design of websites (Kuo, 2006). The website design has come out as major driving force behind the success of online shopping websites (Sharma & Khandait, 2015). A well-designed website helps strengthen the firm's brand equity, while a badly designed website can diminish the established brand equity. Moreover, an effective web design increases perceived trust of customers (Johnson & Griffith, 2002). Thus, businesses engrossed in online shopping are paying serious attention to effective design of shopping websites. Effective website design involves decision making at several stages of the process. This paper considers Quality Function Deployment (QFD) approach as it greatly assists designers and engineers in efficiently carrying out design decisions. QFD provides a way to translate conceptual requirements into items that are workable, measurable and capable of design enhancement resulting in better design, shorter product development cycles, better product quality and lower costs (Lin, Tsai, Cheng & Chang, 2004). In QFD, an effective prioritization leads to better results and hence to successful design and development. Two of the main areas, which call for prioritization in QFD, are Customer Needs (CNs) and Technical Requirements (TRs). However, this paper only considers CNs prioritization.

In QFD, the design team has to create, improvise, innovate or improve a product by integrating the CNs into a product. As it is not possible to go by all CNs because of the time, money and efforts constraints, the design team needs to make trade-offs while picking the CNs on the basis of order of their raw weights and ranking to achieve more customer satisfaction (Sharma & Rawani, 2007). Also, the conventional QFD uses linguistic expressions e.g. 'weak', 'average' and 'strong' generating ambiguity. Computing these ambiguities is a key issue. These linguistic terms are then scaled into crisp values (e.g. 1-3) for the ranking of each alternative. This crisp assessment poses difficulty in coping with uncertainty among design team members (Masud & Dean, 1993). Although the quality can be greatly improved through a QFD, the conventional crisp scoring approach has a major drawback. A wrong conclusion can be easily produced since the fuzzy nature of linguistic relationship terms from evaluation members is ignored (Lin, Tsai, Cheng & Chang, 2004). The issue can be resolved by handling the uncertainty and vagueness involved in the process. This can be accomplished using fuzzy integration with QFD. The fuzzy concepts have been successfully applied in decision making problems. (Pattnaik, 2015) has applied decision making approach to fuzzy linear programming problems with post optimal analysis. (Singh, Chauhan & Singh, 2015) presented an application in tourism industry using multi criteria futuristic fuzzy decision hierarchy in swot analysis. (Rabbani, Mamaghani, Farshbaf-Geranmayeh & Mirzayi, 2016) presented a novel mixed integer programming formulation for selecting the best renewable energies to invest, using a fuzzy goal programming approach. The fuzzy set theory is a useful tool for solving problems where the descriptions of objects are subjective, vague and imprecise.

The available softwares' may overcome the issue of prioritization of CNs but they strongly lack the much-needed fuzzy support to handle the uncertainty and vagueness and affinity support to generate CNs from the collected Customer Voices (CVs) (Sharma & Khandait, 2016). This generates a pressing need for a customized software tool to serve the purpose. To this end, the paper aims to develop a novel fuzzy integrated customer needs prioritization software tool for effective design of online shopping websites. The most integral part of QFD is House of Quality (HOQ). Over the years several HOQs have

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been proposed and reported by researchers. The proposed software tool is founded on the HOQ model proposed by (Chan & Wu, 2005). The tool is developed using Visual Basic Dot Net (VB.Net) and MS-Access. The tool employs Symmetrical Triangular Fuzzy Numbers (STFNs) to deal with the involved uncertainty. A real-life example is presented to demonstrate the viability of the developed software tool.

LITERATURE REVIEW

QFD is customer driven product development process that strives for high quality in the product and improved customer satisfaction (Sharma, Mehta, & Sharma, 2010). QFD is an innovative approach bringing quality – as demanded by the customers – upstream into the product development process (Akao, 1990). The principle of QFD is similar - the idea is to take the customer into the development process to ensure that the core quality will be in the product or service - the customer satisfaction (Kivinen, 2006). The integral part of QFD is House of Quality (HOQ). QFD is said to have been first proposed in Japan by Yoji Akao in 1966. Ever since QFD came into existence it has been extensively used in various areas like Product Development (Anthony & Dirik, 1995), Web Design (Barutchu, 2006), Decision Making (Chuang, 2001) (Liao & Kao, 2014), Software (Zahedi, Yousefi & Cheshmberah, 2011) (Sharma, Sharma & Mehta, 2012), Operation Research (Karsak et al., 2003), Education (Agrawal & Sharma, 2014) etc. to name a few.

A few approaches have been introduced for the determination of CNs importance rating in the QFD process. (Nahm, Ishikawa & Inoue, 2013) have proposed new rating methods to prioritize customer requirements in QFD with incomplete customer preferences. (Franceschini, Maisano & Mastrogiacomo, 2015) has discussed a new proposal based on the generalized Yager's algorithm for customer requirement prioritization in QFD. (Kamvysi, Gotzamani, Andronikidis & Georgiou, 2014) have used embedded Fuzzy-AHP and linear programming in QFD to capture and prioritize students' requirements for course design. (Yi-zeng & Qi, 2014) used a fuzzy game method to prioritize customer needs in QFD. (Wang & Chin, 2011) proposed a linear goal programming approach to determine the relative importance weights of CNs. (Perini, Susi & Avesani, 2013) presented a machine learning approach to software needs prioritization.

There are a few software tools, which facilitates using QFD. Some of the QFD software tools that are offered at the German and the international market are 'QFD Capture 3.1, 'HyperQFD' by Qualica Software GmbH, Germany. Qualisoft from USA provides 'QFD Designer 3.15'; 'QFD work' by Total Quality Software, Great Britain. 'QFD DesignerQS' by QS Software. 'QFD Builder' is browser-based software that facilitates users to build, store, and share their HOQ online (qfdonline.com). 'PathMaker' is software by NOWECO that aids in defining all the steps required to run QFD. IDEACore provides 'QFD Designer v 4.0' which is windows based software (ideacore.com). Even though these software's provide many features that could help the designers and engineers of QFD team, but neither of these facilitates the much-needed fuzzy support option to handle the vagueness and uncertainty involved.

QUALITY FUNCTION DEPLOYMENT

Quality Function Deployment (QFD) is customer driven cross working planning tool used to boost business potentials, while exploiting company objectives. At first, QFD was deliberated and implemented

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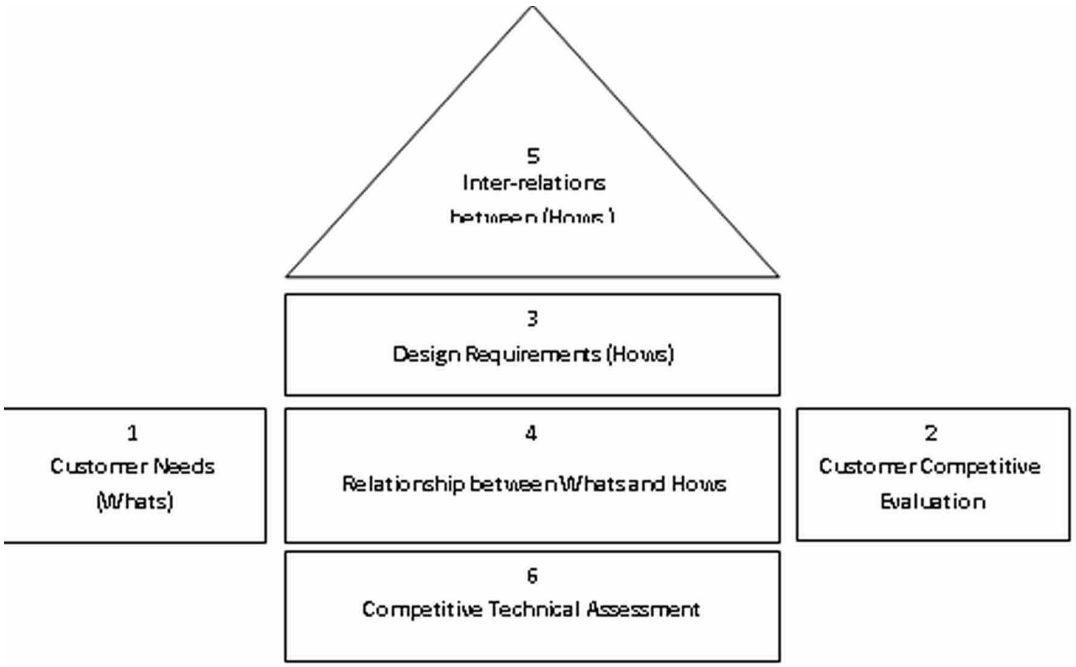
by Yoji Akao in the late 1960. QFD is prominent tool used for developing a design quality aimed at satisfying the consumer and then translating the consumer's needs into design requirements (Akao, 1990). QFD is one of the most important methods to satisfy the customers and to transform customers' needs into design aims (Barutchu, 2006). QFD methodology provides a way to translate conceptual needs into items that are workable, measurable and capable of design enhancement. The result is a better design, shorter product development cycles, better product quality, and lesser costs (Lin, Tsai, Cheng & Chang, 2004). QFD is strongly based on the Four Phase Model which represents product planning, component planning, process planning and production planning (Cohen, 1995). The most significant tool of the QFD is the matrix chart called House of Quality (HOQ) as shown in Figure 1. This tool generates specific, prioritized, and measurable design requirements from often-ambiguous customer needs. The HOQ matrix is the most accepted form of QFD. HOQ is the matrix, which evaluates customer needs in detail and translates them into the developer's language (Griffin, 1992).

House of Quality

HOQ can be modeled via various steps as stated by (Zaim & Sevkli, 2002):

1. Identify Customer Needs
2. Customer Competitive Evaluation
3. Develop Technical Requirements
4. Relationship between What's and How's
5. Correlating Technical Requirements
6. Competitive Technical Assessment

Figure 1. House of quality – QFD (Zaim & Sevkli, 2002)



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FUZZY CONCEPTS

Decision making encompasses dealing with doubts, vagueness and uncertainties. Probability theory can represent the stochastic nature, but fails to measure the inaccuracies or uncertainty that stem from human behavior. Sometimes when the values cannot be defined precisely, the evaluations or opinions are expressed in linguistic terms and so on (Bevilacqua, Ciarapica & Giacchetta, 2006) (Zahedi, Yousefi & Cheshmberah, 2011). Fuzzy logic can be used in such situations. Fuzzy logic and fuzzy sets were introduced in 1965 by Professor L.A. Zadeh. Fuzzy logic approach is based on "degrees of truth" rather than the usual "true or false" (1 or 0) Boolean logic on which the modern computer is based. Fuzzy logic uses human linguistics understanding to express the knowledge of a system consisting of facts, concepts, theories, procedures, and relationships and is usually expressed in the form of IF-THEN rules. In fuzzy logic theory, a linguistic variable can belong to more than one group. For example, someone who is 27 years old belongs to both the "young" and "not so young" group at a different degree (Zaim and Şevkli, 2002). Fuzzy analysis is capable of dealing with qualitative or imprecise inputs from designers by describing the performance of each criterion with some linguistic terms, such as "good", "poor", "medium", etc. These linguistic terms can be represented and manipulated based on fuzzy set theory. A broader view on the fuzzy set theory and STFNs has been provided by (Chan & Wu, 2005).

The fuzzy set theory is most suited for solving problems where objects descriptions are subjective, vague and imprecise. Let $X = \{x\}$ be a traditional set of objects, called the universe. A fuzzy set F in X is characterized by a membership function $\mu_F(x)$ that associates each object in X with a membership value in the interval (0,1), indicating the degree of the object belonging to F. A fuzzy number is a special fuzzy set when the universe X is the real line R^1: $-\infty < x < +\infty$. A STFN denoted as $F = (p, q)$ is a special fuzzy number with the following symmetrical triangular type of the membership function:

$$\mu_F(x) = 1 - | x - (q + p) / 2 | / ((q - p) / 2) \text{ where } p \leq x \leq q$$

STFN is widely used in practice to represent a fuzzy set or concept F = "approximately r" where $r = (p + q) / 2$. Thus, to capture the vagueness of customer subjective assessment on a particular CN having a crisp value 7 can be represented using STFN (6,8) and the membership function for this is:

$$\mu_{(6, 8)}(x) = 1 - | x - 5 | \text{ where } 6 \leq x \leq 8$$

The basic arithmetic rules for STFNs are as follows:

- **Addition:** $(p1, q1) + (p2, q2) = (p1+p2, q1+q2)$
- **Subtraction:** $(p1, q1) - (p2, q2) = (p1-q2, q1-p2)$
- **Multiplication:** $(p1, q1) * (p2, q2) = (p1p2, q1q2), p1 \geq 0, p2 \geq 0$
- **Division:** $(p1, q1) / (p2, q2) = (p1/q2, q1/p2), p1 \geq 0, p2 \geq 0$

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PRIORITIZATION OF CUSTOMER NEEDS

The suitable assessment of CNs is greatly required in QFD as it drives the decision making. This is done through prioritization of CNs. The various steps involved in prioritization process as stated by (Chan and Wu, 2005) are:

Step 1: Identify the Product and the Key Competitors

The first step is to identify the product to which the QFD is being applied and the key competitors who offer relatively the same product, for evaluation and comparison:

Brand Model on which QFD is done (Own Firm): 'OF'. Competitors: 'F1' and 'F2'.

Step 2: Identify the Customers

The QFD is a customer driven process and hence the identification of customers is very important. Customers can be identified through previous information and marketing research:

Customers (C) - C_1, C_2, C_3, …, C_c, …, C_z ; C_c - c^{th} Customer; c = 1 to z; z - Number of Customers

Step 3: Determine Customer Voices

Customer Voices (CVs) or opinions are one of the biggest sources for product or service improvement as QFD is driven by the voice of customer. Customer voices are the statements or opinions expressed by customers in their own words. Once the customers are selected then the next step is to determine directly from the customers what they expect from a particular product. The customer voices are very significant and are usually gathered through several marketing research techniques like surveys, interviews, focus group, brainstorming, using existing information etc.

Step 4: Generate Customer Needs

This is very crucial step as it involves processing customer voices so as to generate customer needs. This requires processing, limiting and organizing the data through brainstorming. This is done by using the affinity process. The data gathered from the customers' results in massive unsorted and disorganized data, which represent customer voices. This data is required to be altered into a handful of statements that conveys the actual key customer needs. These customer needs are then to be grouped into a category with affinity for better analysis. Limiting and organizing the customer needs is important as the task becomes increasingly onerous as the number of input grows. A requirement list of more than 50 is not recommended. Albeit the optimum number of CNs depends strongly on the particular project, 20 to 25 can be considered a good compromise between grade of detail and complexity. As the matrix grows, it will lead to signs of fatigue and loss of interest leading to diminished output. Thus, it is important to limit the number of CNs. This is done through the affinity process, an efficient method of organizing large amounts of unstructured verbal data. It enforces a high degree of organization and screen-hidden relationships between the items and item groups. The final outcome of the affinity process is a tree

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structure with elements at primary, secondary and tertiary level where elements at tertiary level represent the actual generated customer needs:

Customers Needs (CN) - CN_1, CN_2, CN_3…, CN_j, …, CN_m

CN_i - i^{th} Customer Need; i = 1 to m; m - Number of Customer Needs

Step 5: Prioritize Customer Needs

Customer Importance Ratings

Most important CNs as per customers' perception is to be elicited out. Although all CNs are probably important, it is necessary to know their relative importance. The relative importance is expressed as a set of ratings that can be determined by letting the customers disclose their perceptions on the relative importance of CNs and then averaging their perceptions. These ratings are called as Customers Importance Ratings (CIR) and are given by the Scales (1) and (2) for crisp and fuzzy mode:

- Customers Importance Ratings (CIR) - CIR_{11}, CIR_{12}, CIR_{13}, …, CIR_{ci}, …, CIR_{zm}
- CIR_{ci} - Customers Importance Ratings of c^{th} Customer for i^{th} Customer Needs
- $CIR_i = (\Sigma CIR_{ci}) / z$
- CIR_i - Mean Value of Customers Importance Ratings for i^{th} Customer Need

Crisp Scale: 1: Very Low; 3: Low; 5: Moderate Important; 7: High; 9: Very High (1)

Equivalent Fuzzy Scale: (0, 2); (2, 4); (4, 6); (6, 8); (8, 10) (2)

Customer Satisfaction Ratings

Customer Satisfaction Ratings (CSRs) is the customer perception regarding the product performance used as a basis for the comparison between the company and its competitors. This involves doing Customer Competitive Analysis (CCA) by identifying competitors who produce similar products and then determining how the customer perceives the competitors' ability to meet each of the requirements. This is done by asking the customers to rate the relative performance of the company and its competitors on each CN and then to aggregate the customers' ratings. The Scales (3) and (4) are used for these ratings:

- Customers Satisfaction Ratings (CSR) - CSR_{111}, CSR_{112}, CSR_{113}, …, CSRcik, …, CSRzmf
- CSR_{cik} - Satisfaction Ratings of c^{th} Customer for i^{th} Customer Need using k^{th} Firm's product
- k = 1 to f; f - Number of Firms / Competitors
- $CSR_{ik} = (\Sigma\ CSR_{cik}) / z_k$; z_k – Number of Customers for k^{th} Firm's product
- CSR_{ik} – Mean Value of Satisfaction Ratings of for i^{th} Customer Need using k^{th} Firm's product

Crisp Scale: 1: Very Poor; 3: Poor; 5: Neutral; 7: Good; 9: Very Good (3)

Equivalent Fuzzy Scale: (0, 2); (2, 4); (4, 6); (6, 8); (8, 10) (4)

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Customer Competitive Priority Rating

The next step is to compute the Customer Competitive Priority Ratings (CCPR) on CNs for the producing company 'own firm'. This set of priority rating is derived by using more objective Entropy method and are given by CCPR = ($CCPR_1$,$CCPR_2$,$CCPR_3$,…, $CCPR_m$) where $CCPR_m$ is company 'Own Firm' priority rating on customer need CN_m. Entropy is a measure for the amount of information or uncertainty, variations represented by a discrete probability distribution p_1,p_2,…, p_L:

$CCPR\ (p_1, p2, \ldots, p_L) = -\varnothing_L$

where $\varnothing_L = 1 / \ln(L)$ is a normalization constant to guarantee $0 \leq CCPR(p_1, p_2, \ldots, p_L) \leq 1$. Larger entropy or CCPR (p_1, p2, …, p_L) value implies smaller variations among the p_l's and hence less information contained in the distribution. Larger the CCPR (CN_m) value, the less information contained in CN_m. If all companies' performance ratings on CN_m are same, CN_m has zero variations and CCPR (CN_m) achieves its maximum of 1. So CCPR (CN_m) can be used to reflect the relative competitive advantage in terms of the customer need CN_m with a larger $CCPR_m$ indicating higher competitive priority for the corresponding CN_m.

Goal

Goal denotes our future products. It indicates as to what level the organization is trying to achieve with regard to each and every need of the customers. The performance goals are set on CNs according to 'own firm' current performance in relation to its competitors. The set of goal values generated is given by G = (G1, G2, G3, …, GM).

Usually the goal set is more than the current performance goal value which implies the need or desire for further improvement:

Gi - Goal of ith customer need; i = 1 to m

Improvement Ratio

Improvement Ratio (IR) is the attempt level needed to attain targeted goals and is calculated as the ratio of Goal to the customer satisfaction rating:

- Improvement Ratio (IR) are denoted as - IR_{11}, IR_{22}, IR_{33}, …, IR_{mf}, …, IR_{MF}
- IR_{mf} - Improvement Ratio of m^{th} Customer Need for f^{th} Firm
- f = 1 to F
- F – Number of Firms
- Improvement Ratio = Goal / CSR i.e. $IR_{mf} = G_m / CSR_{mf}$

Raw Weights

Raw Weight (RW) indicates the overall importance of the CNs and is calculated by the product of CIR_m, $CCPR_m$ and the IR_m as shown in Table 1. The more value of RW, the higher the priority. This value

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indicates where the design team should focus its attention in order to address what is important to the customers. RWs are shown in Table 1:

- Raw Weight (RW) - RW_1, RW_2, RW_3, …, RW_m, …, RW_M
- Raw Weight = Importance Rating * Competitive Priority Rating * Improvement Ratio
- RWm = CIRm * CCPRm * IRm

Table 1. Customer needs and their raw weights

SN	*CNs*	*CIR*	*FIRM OF*	*FIRM F1*	*FIRM F2*	*CCPR*	*Goal*	*IRatio*	*RW*
1	CN1	CIR1	CSR1o	CSR11	CSR12	CCPR1	G1	IR11	RW1
2	CN2	CIR2	CSR2o	CSR21	CSR22	CCPR2	G2	IR22	RW2
…	…	…	…	…	…	…	…	…	…
m	CNm	CIRm	CSRmo	CSRm1	CSRm2	CCPRm	Gm	IRmf	RWm
…	…	…	…	…	…	…	…	…	…
M	CNM	CIRM	CSRMo	CSRM1	CSRM2	CCPRM	GM	IRMF	RWM

SOFTWARE TOOL DESCRIPTION

The proposed software tool is designed and built using VB.Net and MS-Access and the software interface is shown in Figure 2. The interface acts as a junction to interact with human being and allows for effective operations and control of the machine from the human end. An interface comprises of commands or menus through which a user communicates. The interface of proposed software tool includes a main menu that facilitates various needed options like creating customers, competitors, building customer table etc. The menu is composed of five buttons namely – 'Create', 'C-Table', 'T-Table', 'Reports' and 'Exit':

- **'Create':** It provides creation of product, customers and competitors or firms;
- **'C-Table':** It assist in building of customer table;
- **'T-Table':** It facilitates the building of technical table;
- **'Reports':** It aids in creation of various reports which can be printed;
- **'Exit':** It is used to end the application.

The 'C-Table' is generated when all the steps of prioritization of CNs are accomplished. The interface shown is for a complete QFD application. Since this paper only considers the prioritization of CNs, only the related menus –'C-Table' and 'Reports' forms the topic of discussion here. The complete process is depicted through flowchart in Figure 3. The tool focuses on the suitable data input and processing of various parameters like CVs, generation of CNs from CVs, ratings and other related parameters so as to generate the final outcome as ranking of CNs using crisp and fuzzy mode and providing necessary database support which in turn is required to provide several reports. When the application is run, user is presented with the screen as shown in Figure 2.

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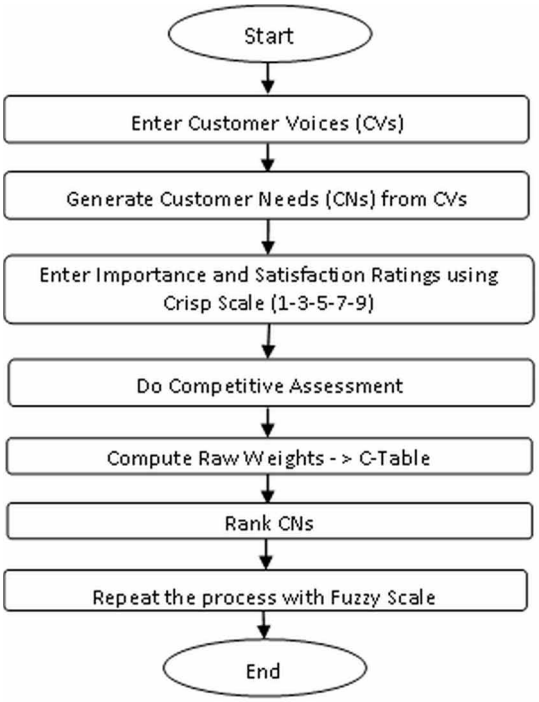
Figure 2. Software interface

Figure 3. CNs prioritization process



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The customers and competitors are created at first. This is done by clicking 'Create' button which pops up the 'Create' form as shown in Figure 4. The same form allows for creation of Customers or Competitors. The 'CreateNew' dropdown can be used to select Customer or Competitor depending on what the user needs to create. The information is then entered and saved by clicking the 'Save' button. The data can be updated and deleted through 'Edit' and 'Delete' buttons. 'Next' option is then activated to jump to the form as shown in Figure 5 for entering customer voices. The form can be used to create, update, delete and save CVs. The 'Next' button is then invoked to jump to next window in order to generate CNs. This is done by processing CVs through brainstorming using affinity process and thus the first step involves filtering the CVs. Filtering CVs involve removing repetitive data, identifying similar set of elements, translating negative statements into positive statements and then replacing them by some meaningful information. This is done using Figure 6. Multiple CVs can be selected through checkboxes and then replaced by entering 'Replacement Value' followed by clicking 'Replace' button. This removes the checked items from the list and the replacement value is inserted in their place. The data can be modified, deleted or saved to the database. The outcome of the filtration process yields processed CVs which are then transformed into tree structure comprising of primary, secondary and tertiary level elements so as to generate CNs from it. The extraction of tertiary level elements gives actual generated CNs. This is achieved using the form as shown in Figure 7 and which can be accessed by clicking 'Next' button. The interface employs a set of buttons to facilitate the organization of elements. The buttons carry out the following functions – 'Create', 'Delete' and 'Rename' groups. The elements can be dragged and dropped from 'Listview' to 'Treeview' to generate tree structure. When the tree is completed the elements at tertiary level represents the generated CNs. The tree structure can be saved to the database using the 'Save' button. The interface provides 'Load' button to fetch and load the saved tree structure from database and show in tree view. Once the CNs is generated the next step involves input of importance and satisfaction ratings for CNs which are done through the forms shown in Figure 8 and 9 respectively. The ratings are entered using scale 1-5 as shown in Figure 8 and Figure 9 respectively.

The entered ratings can be viewed by selecting 'ShowCIR' and 'ShowCSR' checkboxes. After the ratings are entered, competitive analysis is done for all CNs which involves building Customer Competitive Matrix (CCM) and which is obtained by averaging the customers' assessments. The Customer Competitive Priority Rating (CCPR) is then computed on the basis of CCM followed by setting Goal values, computing Improvement Ratios (IRs) and generating Raw weights (RWs). This is done through the form as shown in Figure 10. As seen, the interface provides a set of checkboxes 'CIR', 'CSR', 'CCPR', 'Goal', 'I-Ratio' and 'RW' to serve the purpose. The checkboxes are activated in sequence from left to right to generate data in grid.

RWs are the main outcome of the CNs prioritization process. When 'RW' option is selected, the RWs are generated as Crisp Raw Weight (CRW), Fuzzy Raw Weight (FRW), Scaled Crisp Raw Weight (SCRW) and Scaled Fuzzy Raw Weight (SFRW). The crisp values are converted into its equivalent fuzzy numbers using the algorithm given in Listing 1 below. The conversion yields Symmetrical Triangular Fuzzy Numbers (STFNs). The generated RWs both crisp and fuzzy are then scaled to have maximum ratings of unity for better comparison.

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Figure 4. Create customers and competitors

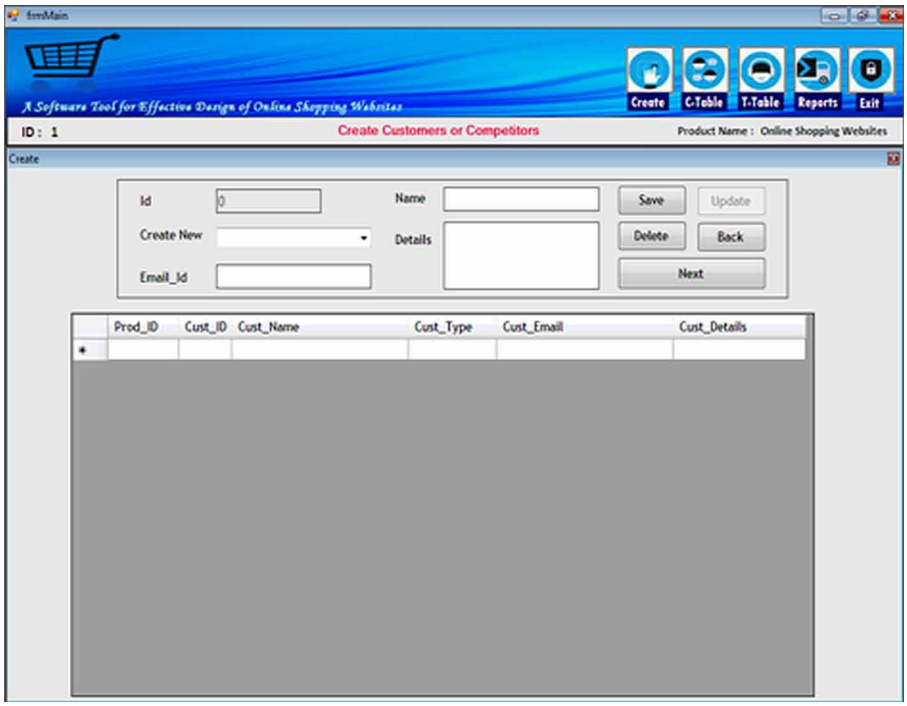

Figure 5. Input customer voices

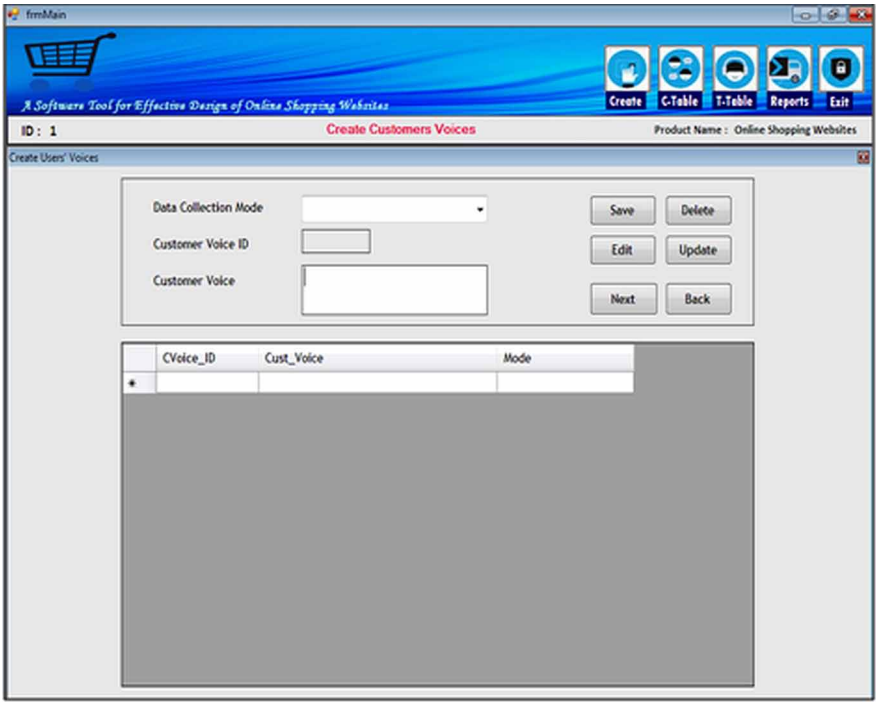

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Figure 6. Filter customer voices

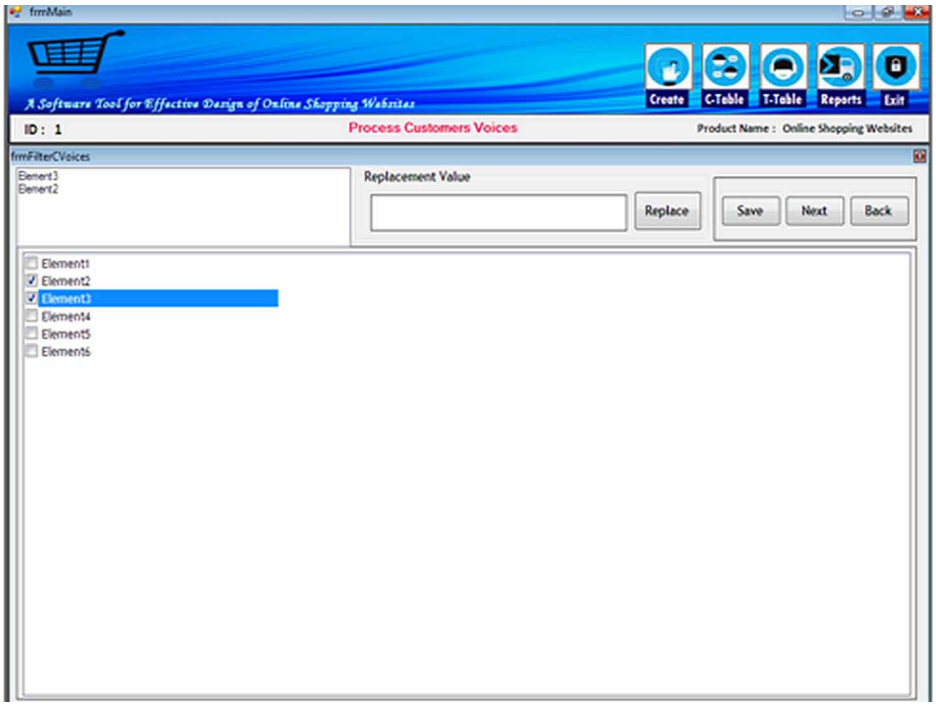

Figure 7. Generate Customer Needs (CNs)

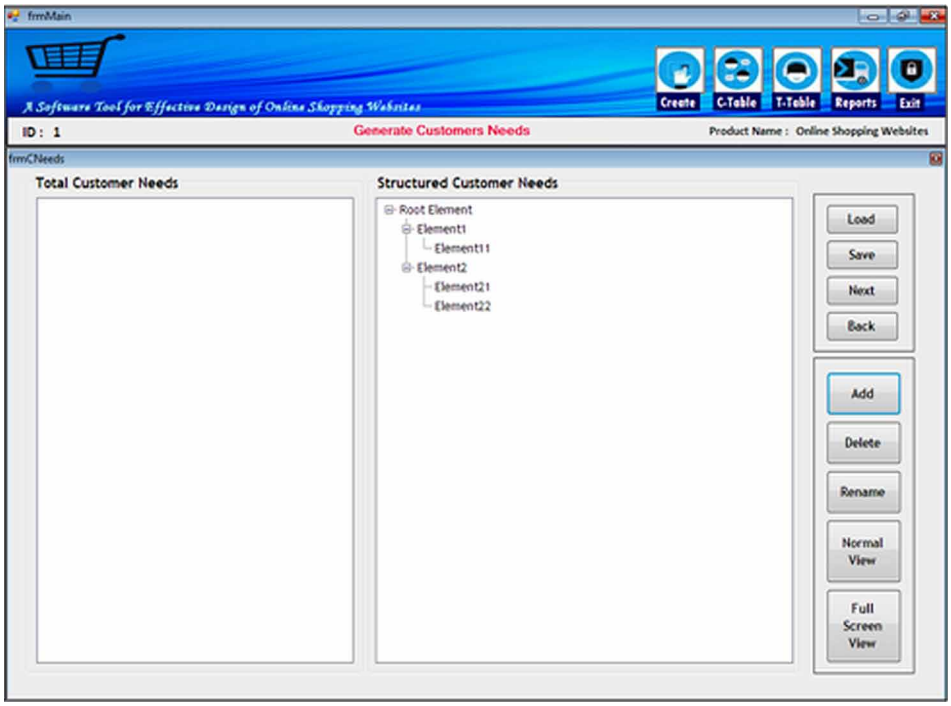

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Figure 8. Input Importance Ratings (CIR)

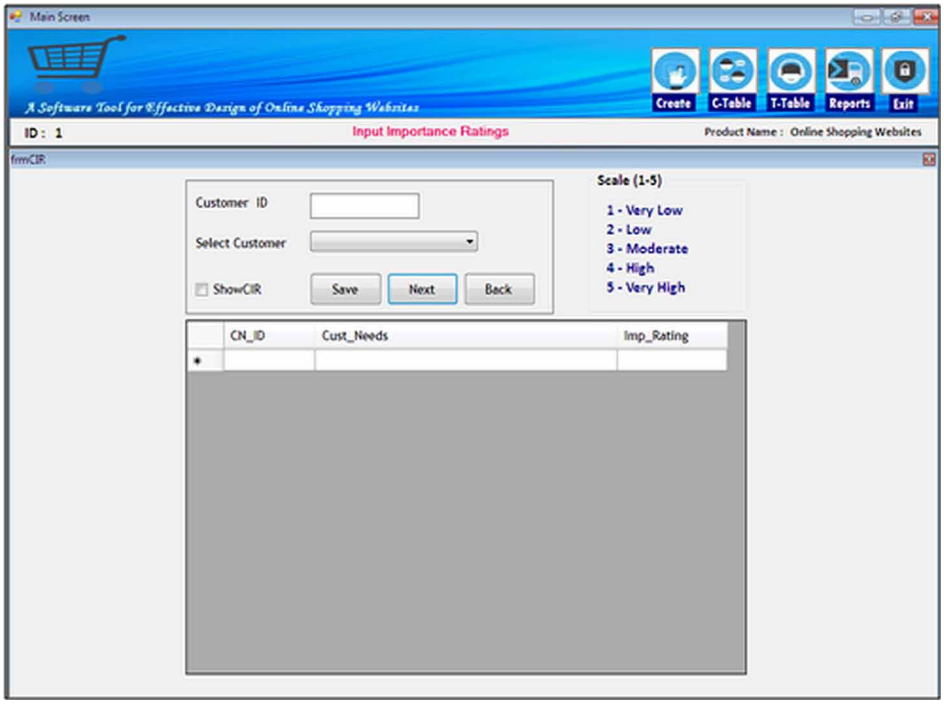
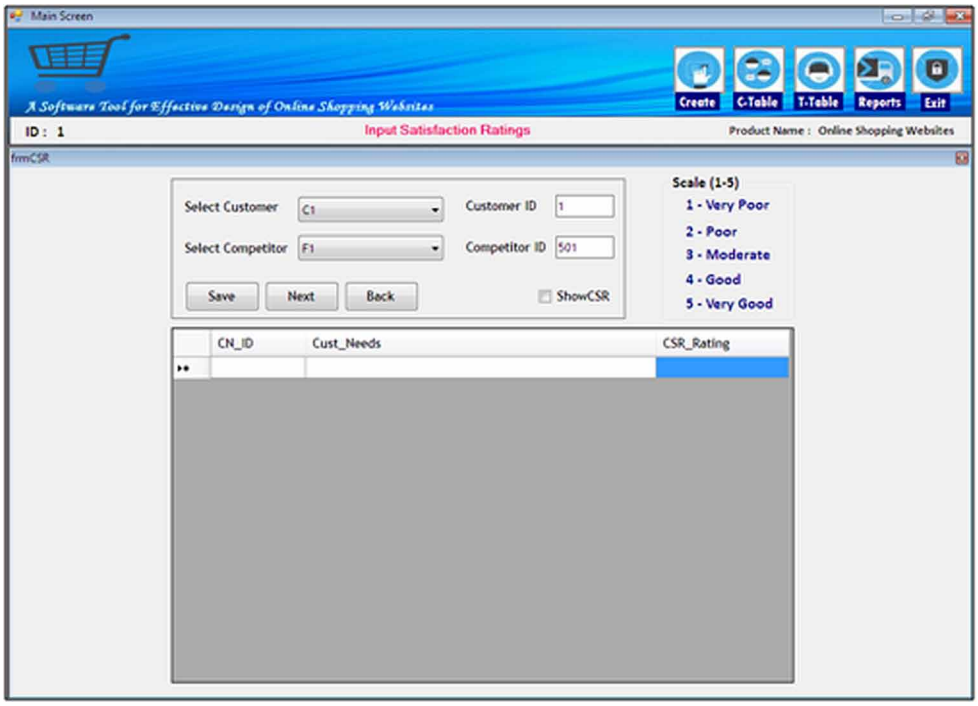


Figure 9. Input Satisfaction Ratings (CSR)



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Listing 1: Algorithm to Generate Fuzzy Number from Crisp

1. Read the crisp value from the cell of grid
   a. C= crisp value
2. Generate left or lower limit of fuzzy number
   a. Left_value = C-1
3. Generate right or upper limit of fuzzy number
   a. Right_value = C+1
4. Create string using left and right value separated by comma.
5. Left_value & "," & Right_value
6. Assign this to string variable to represent
7. Fuzzy Value
8. Fuzzy_value = Left_value & "," & Right_value
9. Replace the crisp value with this Fuzzy_
10. value in cell
11. Repeat for all the cells in the grid

For crisp RWs, the scaled values are obtained by dividing all RWs of CNs by their maximum and for fuzzy RWs, the scaled values are obtained by dividing all fuzzy RWs of CNs by maximum of their upper limits. The 'Show Ranked CNs Crisp and Fuzzy' option can be used to generate the final ranked CNs based on scaled values, using crisp and fuzzy approach. When selected, both the ranked CNs crisp and fuzzy is shown in grid under the columns 'CRank' and 'FRank'. These ranked CNs can then be saved to database using 'Save' button. The ranking is done as per the values of RWs of CNs. CNs with highest RW is ranked 1, second highest ranked 2 and so on. Ranked CNs can be viewed graphically by selecting 'Graphical View Ranked CNs'. When selected, the ranked CNs - both crisp and fuzzy are presented in graphical form.

A REAL-LIFE EXAMPLE

In order to exhibit the viability of the proposed system, the paper considers an example of an Online Shopping Website with the following sample set of data. The example makes use of 14 CNs, 2 Competitors 'F1' and 'F2'. 'OF' represents own firm for which QFD is applied. The Competitors and their Ids are listed below. The CNs used is depicted in Table 2. The software tool is run with the sample set of data and the step by step generated screenshots are depicted in Figure 11, Figure 12, Figure 13, and Figure 14:

- **Product:** *Online Shopping Website*
- **Customer Needs (CNs):** *CN1 to CN14*
- **OwnFirm:** *OF (Id:500)*
- **Competitors***: F1 (Id:501) and F2 (Id:502)*

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Figure 10. Ranked CNs (crisp and fuzzy)

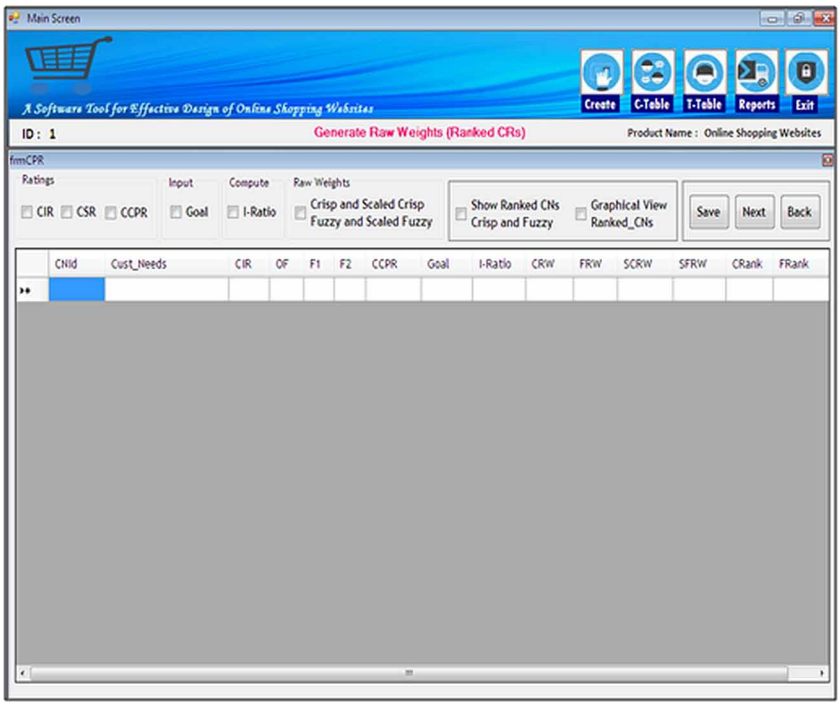

Table 2. Customer Needs (CNs)

CN_Id	Customer Needs	CN_Id	Customer Needs
CN1	Attractive Appearance	CN8	Multi-Format-Buy Support
CN2	User Friendly Interface	CN9	Ideal/Efficient Checkout Utility
CN3	Less Screen Complexity	CN10	Efficient Customer Support
CN4	Acceptable Download Times	CN11	Free Shipping
CN5	Powerful Search	CN12	Timely /Faster Delivery
CN6	Easy Product and Price Comparison	CN13	Customers Data Security
CN7	Visualization Of Products	CN14	Payment Security

RESULTS AND DISCUSSIONS

The computation of RWs yields the final outcome as prioritized CNs. The CNs are ranked or prioritized as per the values of generated RWs. The CN with highest value of RWs is ranked 1, second highest as ranked 2 and so on. The generated RWs and the rank for all CNs using both crisp and fuzzy approach are shown in Figure 15 for comparison. It can be deduced from the results that 'Customers Data Security' turned out to be most significant CN with rank 1 followed by 'Payment Security', 'Easy Product and Price Comparison' and 'Powerful Search' having ranked 2nd, 3rd, and 4th respectively using both crisp and fuzzy approach. According to crisp approach, the CNs - 'Efficient Customer Support' and 'Timely/ Faster Delivery' stood as 5th and 6th important CN. However, going by fuzzy approach, it is realized that

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both these CNs share almost identical range (0.5847, 0.7789) and (0.5836, 0.7724). This indicates that considering fuzzy approach, the 5th and 6th CNs carry equal importance and hence share same rank. The CN - 'User Friendly Interface' is ranked 7th using the crisp and fuzzy approach.

Figure 11. Created and filtered customers voices

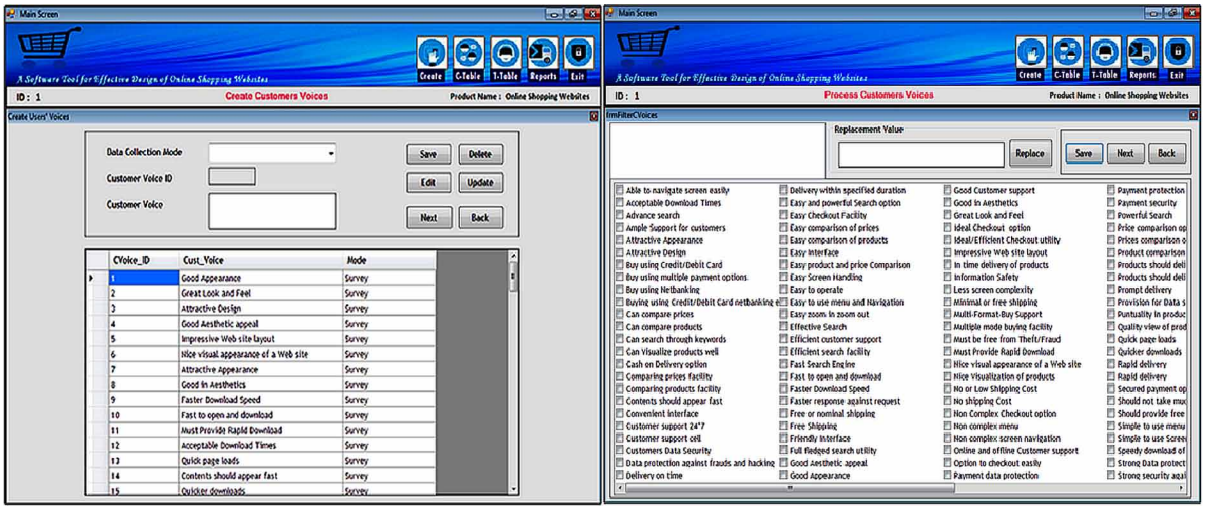

Figure 12. Generated Customer Needs (CNs)

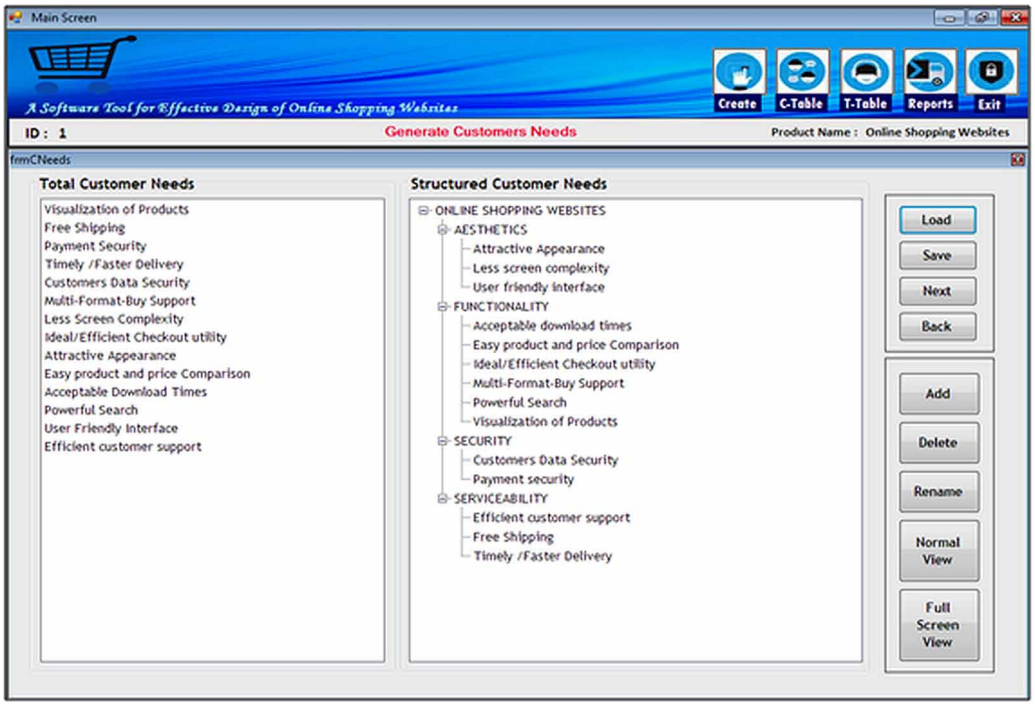

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Figure 13. Entered ratings - CIRs and CSRs

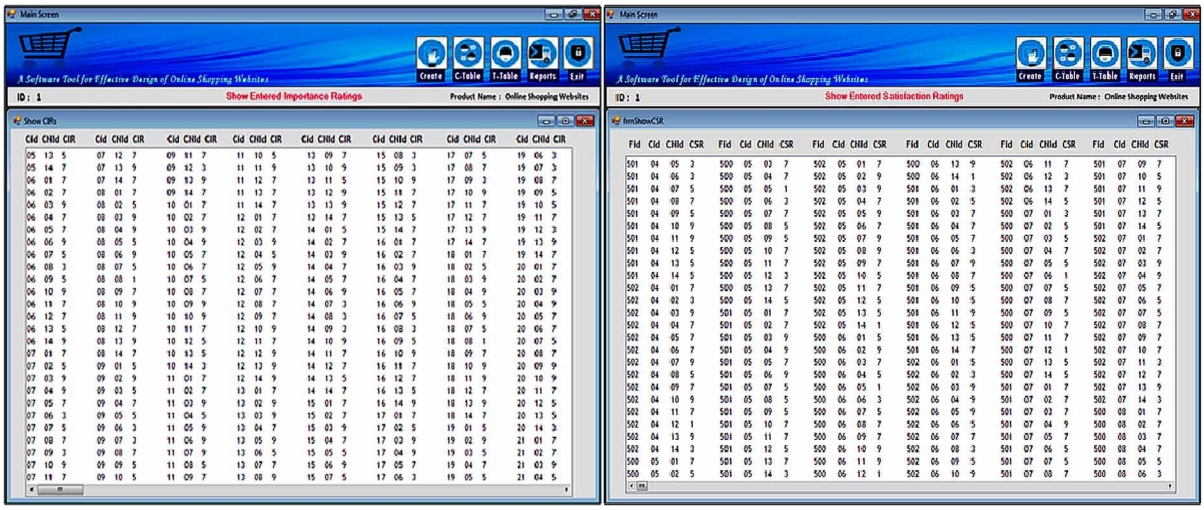
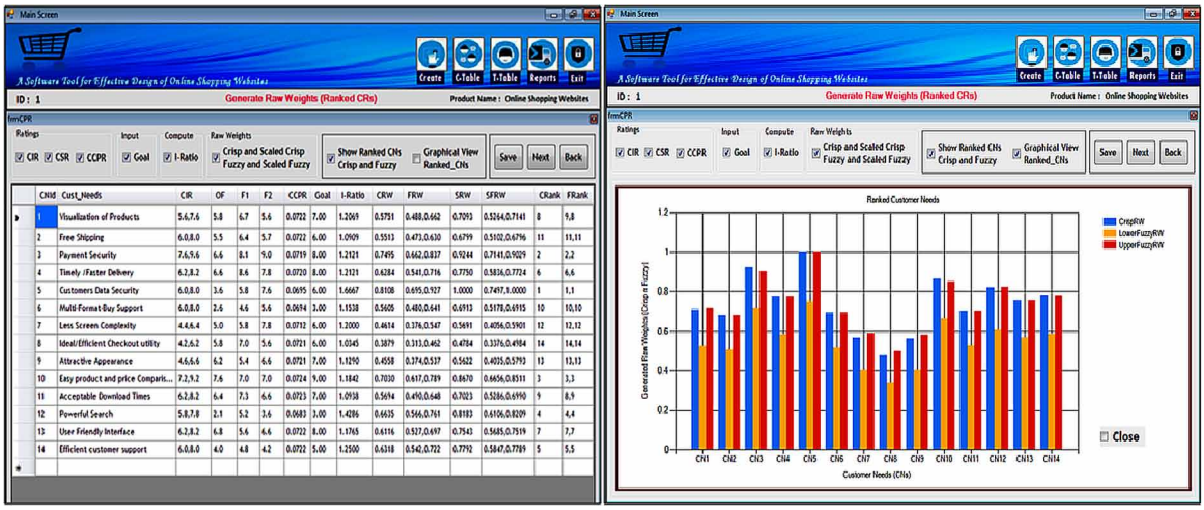


Figure 14. Generated raw weights and ranked CNs (graphical view) using crisp and fuzzy



The CNs - 'Visualization of Products' and 'Acceptable Download Times' are ranked as 8th and 9th. However, there is difference in the ranking order considering crisp value and lower limits of fuzzy number. 'Multi-Format-Buy Support' and 'Free Shipping' hold the position as 10 and 11 respectively as per the rank using the crisp and fuzzy approach. The CNs - 'Less Screen Complexity', 'Attractive Appearance', and 'Ideal/Efficient Checkout Utility' are determined as least or minimal important CNs. It could be inferred through analysis of crisp and fuzzy values of raw weights of CNs that the crisp values are much closer to the upper limits of the corresponding fuzzy values while they differ greatly from the lower limits of fuzzy values (Refer Fig. 15). For example, for the CN – 'Efficient Customer Support' the crisp and fuzzy raw weights values are 0.7792 and (0.5847, 0.7789) respectively. The fuzzy approach results in the ratings expressed in ranges of values. This would provide clearer picture about the CN and gives

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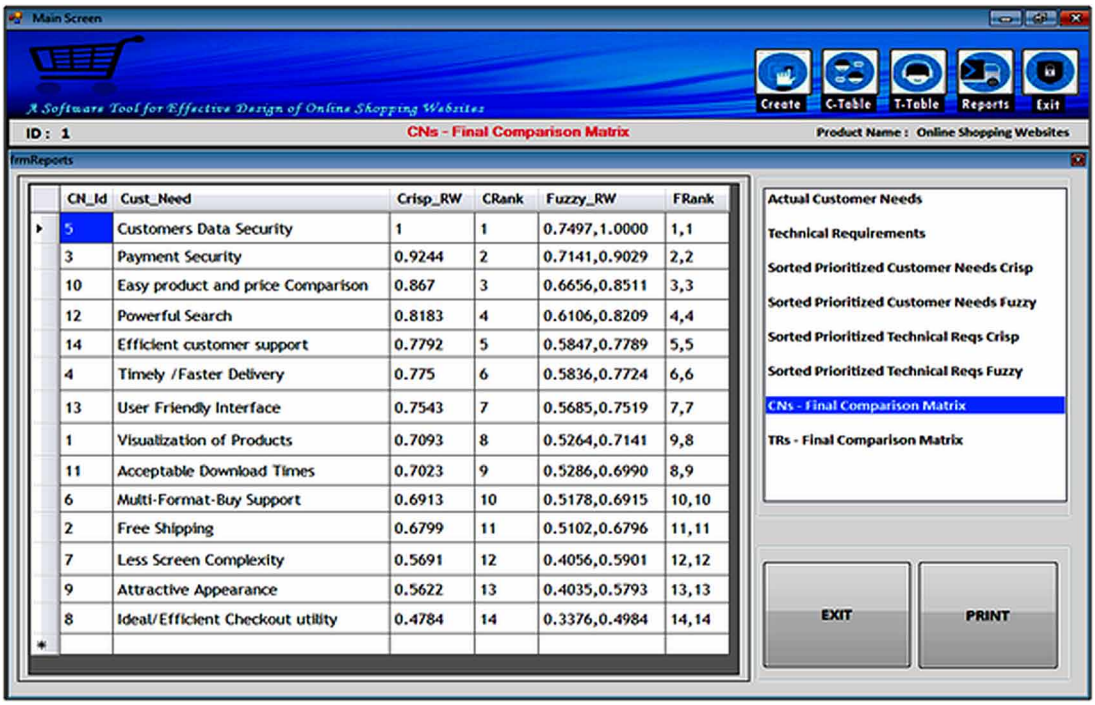
better illustration of the variations of CNs as compared to crisp. This implies fuzzy approach is more useful and of great assistance as compared to crisp. The fuzzy approach provides a broader view of the variations of CNs and thus improves the reliability of the decisions. This helps is suitable evaluation of CNs which in turn will lead to better and effective design.

Figure 15. Ranked CNs using crisp and fuzzy approach



CN_Id	Cust_Need	Crisp_RW	CRank	Fuzzy_RW	FRank
5	Customers Data Security	1	1	0.7497,1.0000	1,1
3	Payment Security	0.9244	2	0.7141,0.9029	2,2
10	Easy product and price Comparison	0.867	3	0.6656,0.8511	3,3
12	Powerful Search	0.8183	4	0.6106,0.8209	4,4
14	Efficient customer support	0.7792	5	0.5847,0.7789	5,5
4	Timely /Faster Delivery	0.775	6	0.5836,0.7724	6,6
13	User Friendly Interface	0.7543	7	0.5685,0.7519	7,7
1	Visualization of Products	0.7093	8	0.5264,0.7141	9,8
11	Acceptable Download Times	0.7023	9	0.5286,0.6990	8,9
6	Multi-Format-Buy Support	0.6913	10	0.5178,0.6915	10,10
2	Free Shipping	0.6799	11	0.5102,0.6796	11,11
7	Less Screen Complexity	0.5691	12	0.4056,0.5901	12,12
9	Attractive Appearance	0.5622	13	0.4035,0.5793	13,13
8	Ideal/Efficient Checkout utility	0.4784	14	0.3376,0.4984	14,14

CONCLUSION

This paper considers QFD approach as QFD is strong decision making tool and decision making forms the basis in effective web design. In QFD, the prioritization of CNs and TRs is done. However, the paper only focuses on the CNs prioritization. Generation of CNs is of utmost importance in QFD. But, the researches carried out so far have mostly focused on QFD application; post the generation of CNs. Moreover, QFD involves uncertainty and vagueness and thus an option like fuzzy integration is highly asked for. Even the existing software's fails to provide this much-needed support. In this regard, the paper presents the development of one such novel software tool. The proposed tool fills these gaps by providing affinity support feature to generate CNs and facilitates the fuzzy support through Symmetrical Triangular Fuzzy Numbers (STFNs) to deal with uncertainty and vagueness. The tool is designed and built using VB.Net and MS-Access and the implementations are presented and discussed. The tool facilitates viewing output in graphical form and printing reports. The tool provides all the needed database operations.

An example is presented through the developed tool using a sample set of data to specify its effectiveness. Data was gathered using questionnaire and then are fed into the software tool. Through the filtering and affinity module, the collected data was processed to transform CVs into CNs. A total of 14 CNs

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were finalized and were then grouped under four labels as 'Aesthetics,' 'Functionality,' 'Serviceability' and 'Security.' Two competitors 'F1' and 'F2' were considered for evaluation of Own Firm - 'OF'. The generated outcome was assessed by means of both crisp and fuzzy approach and the comparisons were discussed. The results indicate that using both the approaches 'Security' has appeared as most important factor followed by 'Functionality' and 'Serviceability'. It is also realized that the results produced by fuzzy approach proves handy as they are more precise and accurate as compared to crisp approach. Fuzzy approach presents values in range and thus provides broader view to the decision makers. This strongly assists in effective decision making leading to better website design and development. The existing approach doesn't include the correlations of customer needs and design requirements into computation of final results. The future efforts will involve implementing these correlations with the existing approach and evaluating their effect on overall computations especially on the fuzzy generated outcomes.

REFERENCES

Agrawal, T., & Sharma, J. R. (2014). Quality function deployment in higher education: A literature review. *International Journal of Service Science, Management, Engineering, and Technology*, *5*(1), 1–13. doi:10.4018/ijssmet.2014010101

Akao, Y. (1990). *Quality function deployment: integrating customer's requirements into product design*. Cambridge, MA: Productivity Press.

Anthony, M., &Dirik, A. (1995). Simplified quality function deployment for high-technology product development. *Visions,* 9-12.

Barutchu, S. (2006). Quality function deployment in effective website designs: an application *e-store Design*, *7*(1), 41-63.

Bevilacqua, M., Ciarapica, F. E., & Giacchetta, G. (2006). A fuzzy-QFD approach to supplier selection. *Journal of Purchasing and Supply Management*, *12*(1), 14–27. doi:10.1016/j.pursup.2006.02.001

Chan, L., & Wu, M. (2005). A systematic approach to quality function deployment with a full illustrative example. *Omega*, *33*(2), 119–139. doi:10.1016/j.omega.2004.03.010

Chuang, P. T. (2001). Combining the AHP and QFD for a location decision from a requirement perspective. *International Journal of Advanced Manufacturing Technology*, *18*(11), 842–849. doi:10.1007001700170010

Cohen, L. (1995). Quality function deployment: how to make QFD work for you (J.W. Wesner Ed.). Reading, MA: Addison-Wesley Publishing Company.

Franceschini, D. M., Maisano, D., & Mastrogiacomo, L. (2015). Customer requirement prioritization on QFD: A new proposal based on the generalized Yagers algorithm. *Research in Engineering Design*, *26*(2), 171–187. doi:10.100700163-015-0191-2

Hauser, J. R., & Clausing, D. P. (1988). The house of quality. *Harvard Business Review*, *66*(5-6), 63–73.

Ideacore.com. (n. d.). QFD Designer. Retrieved from http://www.ideacore.com/v1/Products/QFDDesigner

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Johnson, T. M., & Griffith, D. A. (2002). 5 steps to online success. *Marketing Management*, *11*(5), 34–39.

Kamvysi, K., Gotzamani, K., Andronikidis, A., & Georgiou, A. C. (2014). Capturing and prioritizing students requirements for course design by embedding Fuzzy-AHP and linear programming in QFD. *European Journal of Operational Research*, *237*(3), 1083–1094. doi:10.1016/j.ejor.2014.02.042

Karsak, E., Sozer, S., & Alptekin, S. (2003). Product planning in quality function deployment using a combined analytic network process and goal programming approach. *Computers & Industrial Engineering*, *44*(1), 171–190. doi:10.1016/S0360-8352(02)00191-2

Kivinen, T. (2006). Applying QFD to improve the requirements and project management in small-scale project. University of Tampere.

Kuo, H. M. (2006). Discussion of the interfering factors for internet shopping. *Proceedings of the Conference on Theories and Practices in International Business*, Chang Jung Christian University.

Kuo, H. M., & Chen, C. (2011). Application of quality function deployment to improve the quality of internet shopping website interface design, *International Journal of Innovative Computing*. *Information and Control ICIC International*, *7*(1), 253–268.

Liao, C. N., & Kao, H. P. (2014). A QFD Approach for Cloud Computing Evaluation and Selection in KMS: A Case Study. *International Journal of Computational Intelligence Systems*, *7*(5), 896–908. doi :10.1080/18756891.2014.960233

Lin, M. C., Tsai, C. Y., Cheng, C. C., & Chang, C. A. (2004). Using fuzzy QFD for design of low-end digital camera. *International Journal of Applied Science and Engineering*, *2*(3), 222–233.

Masud, A. S. M., & Dean, E. B. (1993). Using fuzzy sets in quality function deployment. *Proceedings of the 2nd Industrial Engineering Research Conference* (pp. 270- 274).

Nahm, Y. E., Ishikawa, H., & Inoue, M. (2013). New rating methods to prioritize customer requirements in QFD with incomplete customer preferences. *International Journal of Advanced Manufacturing Technology*, *65*(9-12), 1587–1604. doi:10.100700170-012-4282-1

Pattnaik, M. (2015). Decision making approach to fuzzy linear programming problems with post optimal analysis. *International Journal of Operations Research and Information Systems*, *6*(4), 75–90. doi:10.4018/IJORIS.2015100105

Perini, A., Susi, A., & Avesani, P. (2013). A machine learning approach to software requirements prioritization. *IEEE Transactions on Software Engineering*, *39*(4), 445–461. doi:10.1109/TSE.2012.52

QFDOnline.com. (n. d.). Retrieved from http://www.qfdonline.com/qfd-builder-online-software

Rabbani, M., Mamaghani, M. G., Farshbaf-Geranmayeh, A., & Mirzayi, M. (2016). A novel mixed integer programming formulation for selecting the best renewable energies to invest: A fuzzy goal programming approach. *International Journal of Operations Research and Information Systems*, *7*(3), 1–22. doi:10.4018/IJORIS.2016070101

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Sharma, A. K., & Khandait, S. P. (2015). Evaluation of programming tools for the development of fuzzy-QFD driven software tool for effective design of online shopping websites. *International Journal of Innovative Research in Computer Science & Technology*, *3*(5).

Sharma, A. K., & Khandait, S. P. (2016). A novel software tool to generate customer needs for effective design of online shopping websites, *International Journal of Information Technology and Computer Science*, *8*(3), 85–92.

Sharma, A. K., Sharma, J. R., & Mehta, I. C. (2010). Analyzing programming tools for the development of quality function deployment software, *International Journal of Information and Decision Sciences*, *2*(2), 132–146.

Sharma, A. K., Sharma, J. R., & Mehta, I. C. (2012). A Novel Fuzzy Integrated Technical Requirements Prioritization Software System for Quality Function Deployment, *International Journal of Computers and Applications*. *Actapress*, *34*(4), 241.

Sharma, J. R., & Rawani, A. M. (2007). Ranking customer requirements in QFD by factoring in their interrelationship values. *The Quality Management Journal*, *14*(4), 53.

Singh, S. P., Chauhan, M. K., & Singh, P. (2015). Using multicriteria futuristic fuzzy decision hierarchy in swot analysis: An application in tourism industry. *International Journal of Operations Research and Information Systems*, *6*(4), 38–56. doi:10.4018/IJORIS.2015100103

Wang, Y. M., & Chin, K. S. (2011). A linear goal programming approach to determining the relative importance weights of customer requirements in quality function deployment. *Information Sciences*, *181*(24), 5523–5533. doi:10.1016/j.ins.2011.08.016

Yi-zeng, C., & Qi, Y. (2014). A fuzzy game approach to prioritize customer requirements in Quality Function Deployment. *Proceedings of the International Conference on Management Science & Engineering (ICMSE)* (pp. 207-212). IEEE.

Zahedi, M. R., Yousefi, S., & Cheshmberah, M. (2011). A fuzzy quality function deployment approach to enterprise resource planning software selection. *Asian Journal of Scientific Research*, *4*(2), 114–128. doi:10.3923/ajsr.2011.114.128

Zaim, S., & Sevkli, M. (2002). The methodology of quality function deployment with crisp and fuzzy approaches and an application in the Turkish shampoo industry. *Journal of Economic and Social Research*, *4*(1), 27–53.

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Chapter 35
The Use of Written Descriptions and 2D Images as Cues for Tactile Information in Online Shopping

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ABSTRACT

Despite the steady growth in the use of online platforms for purchasing products in the past few years, e-commerce faces important challenges such as the inability of physically experiencing a product, specifically the inability to obtain tactile information. In this chapter, through a qualitative exploratory study approach, the author explores the possibility of conveying tactile characteristics of a product to consumers in an online shopping environment through product presentation formats such as written descriptions and 2D images. The author highlights the potential for sensory marketing through first reviewing literature on the subject with a special focus on touch and the inability to touch in online commercial channels. The methodology is presented along with the findings of the exploratory study. A concluding discussion of findings is presented and the potential for future research in the area of image processing to enhance 2D images ability to provide tactile information is discussed to conclude the chapter.

INTRODUCTION

According to a study of the Pew Research Center (2016) roughly 79% of Americans say they purchase online, in 2015 they were spending around 350 billion dollars annually online. In Mexico, although at a lower rate, the use of e-commerce is constantly growing. For instance, from 2013 to 2015 the estimated number of sales through e-commerce raised from 9.2 billions of dollars to 16.2 billion dollars, respectively (AMIPCI, 2016). The principal product categories purchased online are fashion products, such as clothing and accessories, sought primarily by females under 35 years old, (Treviño & Morton, 2016).

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Despite steady growth, e-commerce faces some challenges related to the forms available to consumers for evaluating products. For instance, marketing literature has found that touch is a direct form in examining products (Peck & Childers, 2003b). However, in today's online environment consumers are unable to physically experience the products and, for example, use their sense of touch for product evaluations and they must rely mainly on written descriptions and visual cues obtained through 2D images such as pictures and videos to obtain information of the products.

Despite the importance of the tactile information for consumers' evaluations and the effects of the information obtained through the haptic system on other consumer's variables such as perceptions and behaviors (Grohmann, Spangenberg, & Sprott, 2007; Guéguen & Jacob, 2006; Krishna & Morrin, 2008, Peck & Shu, 2009), almost no research on whether it is possible for consumers to obtain tactile information in an online shopping context through images, videos, or other types of stimuli has been conducted. Hence, the purpose of this work is to explore how consumers try to compensate for the missing sensory -specifically tactile- experience in an online shopping environment. That is, the characteristics of products can be discovered through the available sources of information that can provide effective somewhat equivalent information.

This book chapter contributes to the marketing literature which recognizes the importance of touch for consumers, but presents a research opportunity of exploring how to compensate touch in an online environment. Additionally, this chapter contributes to the image processing literature by exposing a relatively unexplored business application of the use of 2D images. Particularly, the chapter will explore the possibility of conveying tactile characteristics of a product to consumers in an online shopping environment through 2D images. Furthermore, practical implications of this research are also discussed.

This chapter is structured as follows: First, the chapter presents a literature review on sensory marketing with a special focus on touch and the inability to touch in online commercial channels. The research questions guiding the study are also presented. Second, the methodology of the exploratory study is described. Third, findings of the exploratory study are presented. Finally, conclusions and future research are discussed with a particular call for future research in the area of image processing and establishing the importance to develop techniques that enhance 2D images ability to provide tactile information.

BACKGROUND

Sensory Influences on Consumption

An increasing area of interest in the field of consumer behavior is the role that human senses play in the consumption context. Some of the research in this field of study has focused on the influences of vision on consumers' behavior and perceptions. For example, it has been found that the shape of the package or container can influence serving size and consumption (Wansink & Van Ittersum, 2003). Also, previous findings suggest that more attractive packages are perceived as larger in volume than less attractive packages with the same volume (Folkes & Matta, 2004). There is also evidence suggesting vision can bias product taste perceptions (Hoegg & Alba, 2007). Research focused on smell found this sense can influence information processing, store evaluations, memory of product information, consumption, and satisfaction. For example, researchers quantify that ambient scent influences consumer processing and decision making; specifically, consumers spend more time processing information and are more holistic in their processing (Mitchell, Kahn & Knasko, 1995). Likewise, other findings reveal evaluations of a store

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and its products as well as purchase intentions are positively influenced by pleasant or neutral ambient scents (Spanenberg, Crowley & Henderson, 1996). Other results suggest that evaluations of the store environment, impulse buying, and satisfaction are increased when scent and music are complimentary in their arousal characteristics (Mattila & Wirtz, 2001). Product scent is more effective than ambient scent in increasing long-term memory of product information according to another study (Krishna, Lwin & Morrin, 2009). Even more relevant to our study, researchers have looked at the congruence between scent and touch properties of a product, findings suggest that congruency between these two properties improves haptic perceptions and product evaluations (Krishna, Elder & Caldara, 2010).

Research focusing on the influence of the sense of touch on consumers has been gaining relevance among consumer researchers because of the importance that this sense has on the consumption process. As previously mentioned, this book chapter focuses on this particular human sense and how alternative channels for consumption such as e-commerce face a challenge of providing the tactile product information and characteristics that influence consumer's perceptions and behavior.

Marketing Literature on Touch

In this section, some of the studies that marketing scholars have made about touch are presented in order to provide an overview of what has already been studied on this topic. From this literature review three general studied variables in the touch and marketing research were found, including: individual differences, perception, and consumer's response/behavior.

Touch and Individual Differences

Previous researchers concentrated on the individual differences in haptic information processing. For example, Peck and Childers (2003b) identified differences among people in their level of preference to use the sense of touch, since these differences could explain why some people are more haptic oriented than others, and reveal the effects of this predisposition on consumer's behavior. The authors developed the concept of need for touch (NFT) and a scale to measure it. Specifically, NFT refers to "a preference for the extraction and utilization of information obtained through the haptic system" (p. 431). According to these authors, NFT has two dimensions: (1) autotelic, in which touch is hedonic oriented and an end of itself; and (2) instrumental, which refers to outcome-directed touch. Moreover, motivation to obtain haptic product information can be influenced by factors such as: product characteristics, individual differences, and situational characteristics (Peck & Childers, 2003a). For example, it has been found that tactile input has a positive influence on product evaluations; in particular, for products with characteristics best explored by touch, such as clothes (Grohman, Spangenberg, & Sprott, 2007).

Additionally, previous research indicates variables such as gender and fashion innovativeness can have an influence on NFT (Cho & Workman, 2011). Consistent with these findings, Citrin, Stem, Spanenberg and Clark (2003) found gender has a significant effect on the need for touch in product evaluation. Specifically, women were shown to have a higher need for touch than men.

Other studies confirm there are differences between consumers high in NFT compared to those with lower levels. For example, consumers with high levels of NFT prefer sales channels where product touch is available, such as physical stores (Cho & Workman, 2011). In particular, there has been found a negative relationship between need for touch and the use of Internet for product purchasing (Citrin, Stem,

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Spangenberg & Clark, 2003). Suggesting that high need for touch individuals may not easily adapt to non-touch shopping scenarios, such as the Internet (Peck & Childers, 2003a).

Touch and Perception

The influence of touch on consumers' perceptions as also been addressed in marketing field literature. Interestingly, Peck and Shu (2009) observed when consumers touch a product, even if only in their imagination, perceived ownership of that product increases. As a result, product valuation also increases, especially if the product provides neutral or positive (pleasurable) sensory feedback. These findings provide important considerations with respect to touch and imagination, suggesting that touch can be imagined in a context where tactile input is not available such as the Internet.

Need for touch has also been studied in the area of fashion and clothes; studies in this area have surveyed the impact of visual and tactile attributes. Specifically, visual product aesthetics are considered to serve to make inferences about other sensory characteristics such as tactile attributes; a positive relationship between a person's NFT and the importance or centrality of visual aesthetics has been found (Workman & Caldwell, 2007). Interestingly, attitudes, product evaluations, and purchase intentions have been found to be significantly more impacted or influenced by tactile than by visual information, particularly for products salient on haptic properties (Balaji, Raghavan, & Jha, 2011). Therefore, it is not surprising the negative relationship between need for touch and the use of Internet for product purchasing (Citrin, Stem, Spangenberg & Clark, 2003). Nevertheless, it would be interesting to find ways to provide tactile cues on Internet stores that could diminish this negative association.

A promising and fairly recent concept of virtual touch has been developed by Demirci (2007). Virtual touch refers to the online sense of touch that consumers perceive in a virtual product experience when they are exposed to a 3-D format of a product through a computer screen. Findings from the same author suggest that there is a positive causal relationship between the interactivity of an object and virtual touch, and in creating such increases purchase intentions and product knowledge.

In spite of the multiple studies that find a positive effect of touch on consumer's perceptions, there are other researchers who have found that even though consumers like to touch products, they do not like the idea that a product has been touched by other consumers, and they may even respond in a negative way to such products (Argo, Dahl & Morales, 2006). Nevertheless, there is also evidence that positive contagion exists in certain situations, for example when the person who touches the product is attractive and from the opposite sex (Argo, Dahl, & Morales, 2008).

Touch and Consumer's Response/Behavior

Early studies of touch in the marketing area were interested in the effects of interpersonal touch on consumer's behavior. Previous findings from these studies suggest that interpersonal touch can ensure sampling, purchase of a product and increase the amount of shopping (Smith, Gier & Willis, 1982; Guéguen & Jacob, 2006). Also, interpersonal touch has been found to positively influence evaluations of the store, compliance with a request, shopping time, satisfaction, and tipping (Hornik, 1992a; Hornik, 1992b; Lynn, Le, and Sherwyn, 1998).

The influence of touch on affective response and persuasion has also been studied. Interestingly, the incorporation of touch into marketing messages has been found to create an affective response, which leads to a positive effect on persuasion, in particular for people who have high autotelic need for touch

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(Peck & Wiggins, 2006). Concordantly, Peck and Wiggins (2011) found that individuals with high autotelic need for touch are more persuaded when a haptic element is present, regardless of their involvement with the message. However, a haptic element increases persuasion for low autotelics under conditions of low versus high involvement with the message. Also, Peck and Childers (2006) found that people with a higher autotelic need for touch were more likely to purchase impulsively than lower autotelic individuals. Furthermore, consumers high in instrumental need for touch evaluate products in a more positive way and show stronger brand-self connection when a force feedback (haptic) stimulus is present than when no stimulus is present (Jin, 2011).

Consumers inability to touch products has been an ongoing challenge for those who use the Internet to commercialize products. Consumers often express unfavorable or frustrating feelings related to such inability to product touch (Peck & Childers, 2003a; Balaji, Raghavan, & Jha, 2011), in particular are those with high levels of NFT, which makes them reluctant to adapt or use online shopping channels (Citrin, Stem, Spangenberg & Clark, 2003). Although there is evidence that suggests touch can be perceived even if consumers cannot actually touch the product (Balaji, Raghavan, & Jha, 2011; Demirci, 2007), there is a lack of studies addressing this issue. Hence, the primary contribution of this research is establishing that touch could be compensated in a certain manner by non-touch commercial channels allowing for certain verbal and non-verbal stimuli.

E-Commerce

Inability to Touch Products as a Barrier for Online Shopping

Electronic commerce (e-commerce) can be defined as the purchase of products, services, or information through Internet platforms. Similar to traditional commerce, e-commerce consists of selling and buying from business-to-business, business-to-consumer, and consumer-to-consumer. One of the main differences between making a purchase through traditional commerce or through e-commerce is the opportunity that the buyer has to physically experience the product (Ashwini & Vincent, 2017). As previously mentioned, consumers evaluate products through touch and the lack of touch in e-commerce is a barrier for those consumers who are not confident to buy products when they cannot touch them making some consumers to avoid online shopping channels (Citrin, Stem, Spangenberg & Clark, 2003). However, despite consumer's inability to touch products in an online context, the use of e-commerce channels has increased steadily in the past years.

Use of Written Descriptions and 2D Images to Convey Information Online

Although consumers are not able to experience the product physically, online stores can provide visual information about products through written descriptions, and more importantly, through 2D images such as pictures and videos. In fact, until now most online stores employed these presentation formats to present and provide product information; specifically, written descriptions provide information such as product size, weight, warranty policies and 2D images are used to depict visual appeal of the product (Jiang & Benbasat, 2007). However, these product presentation formats lack of richness to provide information such as feel, try and touch of a product (Rose, Khoo, & Straub, 1999). But while research has recognized touch as an important aspect, there has been relatively few efforts to understand whether and how to compensate touch in an online context.

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Integration of Intelligent Techniques for E-Commerce

The purpose of the artificial intelligence discipline is to understand human intelligence and construct computer programs that can imitate intelligent behavior. Intelligence techniques have been applied in several areas of science such as engineering, education, and business, among other areas. Particularly of interest for the present research, intelligent techniques have been applied for e-commerce platforms to correlate products and forecasting of sales, for user profiling in order to provide users appropriate recommendations, website ranking, etc. (Das, 2016; Prasad, 2003; Singh & Mehrota, 2016; Verma & Singh, 2017). There has been research on the use of artificial intelligence and machine learning techniques to predict consumer repurchase intentions, to analyze reviews in online retailing, and to model the relationships between sensory attributes and fabric properties (Chen et. al, 2014; Jeguirim et.al, 2012; Kumar, Kabra, Mussada, Dash, & Rana, 2017; Lin, Liaw, Chen, Pai & Chen, 2017). However, the present research identifies an opportunity to contribute to previous works on the area of intelligent techniques by adopting a consumer's perspective of the tactile attributes that consumers consider relevant for different types of products and how they cope to obtain this type of information online. Therefore, the following research questions are established.

Research Questions

This research focuses on the following question as its main guide through this study: How do consumers obtain tactile information in an online shopping context? Additionally, this research also addresses the following questions: Which product characteristics are evaluated through touch? Which products are considered important to touch before purchase? Which of the online product presentation formats are more effective in providing tactile information?

METHODOLOGY

As suggested by previous literature, qualitative methodology helps to understand a phenomenon in a specific context; generally, this type of research uses interviews, focus groups, case studies, and observation among other research methods (Bryman, 1984; Creswell, 2007; Eisenhardt, 1989; Smith, 1983; Spiggle, 1994). For the present research a qualitative approach was used to explore whether tactile information can be obtained from online stores. Specifically, data for this research consisted of eleven in-depth interviews. In the first part of the interview, participants were asked questions regarding the experience of buying in a traditional store. The second part of the interview was focused on online shopping. Finally, the third part consisted on questions about product presentation formats (written descriptions, photos, videos) used by online stores that could better provide tactile information about the products. Interviews were conducted at the participant's homes during a period of two weeks. Each interview was audiotaped and lasted between 30 and 45 minutes. After that, the categorization and analysis stage began, and then comparisons between the informant's responses were made to identify differences and commonalities.

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Sample Profile

This research was conducted in Monterrey, Mexico, one of the three largest cities in the country with an estimated population of over five million in 2015 (Instituto Nacional de Estadística y Geografía- The National Institute of Statistics and Geography). The sample consisted of women from 18 to 27 years old, of the economic strata of A/B and C+. All of the participants were single and either college students or graduated professionals. See the Appendix for a complete list of names and descriptions of the participants. During the interviews it was noticed that six of the women participating in the study had never bought in an online store and the other five had purchased online at least one time.

FINDINGS

Consumers' Perceptions of Online Shopping

Participants in this study were asked for their perceptions on e-commerce. Perceived advantages of buying online were recognized and classified in this paper as: convenience, savings, variety and stock availability (see Table 1). Convenience refers to the type of access the store offers, i.e. every day and at any time (24/7), to its ease of use, and to the ability consumers have to find things they cannot find in their own city without the need to travel. Shopping online also comes with the advantage of saving time by not having to wait in a line or to wait to be attended by an employee; and, saving money because they can find products at lower prices. Additionally, variety refers to the advantage of being able to access different stores at the same time by simply opening a new window in the internet search engine which permits consumers to evaluate a greater amount of products. Finally, as mentioned by several participants, an additional advantage of e-commerce over going to a physical store is the stock availability, because the products shown in the online store are almost always available to buy.

It is more probable that you can find the size and there is more variety than in a store (physical). (Fabiola, age 18)

There are brands that you can buy at a lower price...there are products that you do not find here (in the city or country). (Tania, age 24)

I can do it (buy) whenever I want because the store (online) is also open at night... (Ana Rosa, age 25)

Despite the advantages previously mentioned, participants in this study also consider several disadvantages of purchasing online such as: uncertainty, delivery time, financial risks, and lack of physical experience with the product (see Table 1). As mentioned in the data collection, uncertainty comes from not knowing exactly what can be expected of the product quality and if the product will actually look as it is displayed on the store's web page. Delivery time is also perceived as a negative aspect of e-commerce when the waiting time is long (more than a week), but usually this disadvantage is compensated with the lower prices offered online and with the time saving in not having to wait in a line. Additionally, there are perceived financial risks to buying online, some of the participants actually mentioned that they do not buy online because they do not want to provide their credit card information. Finally, not

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being able to physically experience the product by touching or trying the product was also mentioned as a disadvantage of online shopping.

Precisely everything that you can not do, you can not touch it or try it on, you can not ask people (employees) which material is... (Isabel, age 27)

You do not know if the product is what you expected...also there is the risk that the package may not arrive. (Gaby, age 21)

The fact that you have to give a credit card...the time of delivery, that I do not have the product at that moment. (Sarai, age 22)

Table 1. Advantages and disadvantages of shopping online

Advantages	Disadvantages
• Convenience • Savings • Variety • Stock Availability	• Uncertainty • Delivery times • Financial risks • Lack of physical experience

Shopping and Touch

Participants were asked about the experience of shopping in a physical store. All of the participants commented that when they were at a store they usually touched a great variety of products either for evaluation or just for hedonic purposes (pleasure), because they like the haptic feeling of certain products. Specifically, the majority of the participants who bought online said they touch products to obtain information. In contrast, the majority of the participants who had never purchased online answered that they touch products for pleasure.

To evaluate if is of good quality, to obtain information. (Isabel, age 27)

For both, for pleasure to know if it feels good or not and to obtain information. (Naila, age 24)

Additionally, participants were asked whether they imagine a sensation of a product prior to touching it and whether this perception is generally confirmed or disconfirmed after they actually touch it. The majority of participants mentioned that they do imagine how a product will feel when they look at it at a store. Most of those who had bought online commented that, generally, their perceptions about how the product feels does not change after touching it. In contrast, most of those who had never purchased online commented that generally their first perception of the product's sensation does change after touching it.

It (perception) can be confirmed or disconfirmed... because there are some fabrics that look very nice but when you touch them they do not feel nice. (Naila, age 24)

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It changes only when they are materials that simulate to be another material...but generally it does not change. (Ana Rosa, age 25)

No, generally they feel how I imagined... (Tania, age 24)

One time I was looking at some dresses, they looked really nice, but then I went to touch them and it was not the fabric I imagined...it does change my perception when I touch the garments. (Pamela, age 25)

Participants in this study mentioned that touching products is important because they considered that by touching the product they could obtain information of certain characteristics that help them evaluate particular aspects of the product. Therefore, they were asked to mention products that they usually prefer to touch before purchasing them and the specific characteristics that they evaluate when touching that type of product. In particular, participants of this study mentioned nine product categories (see Table 2) that they like to touch before purchase and the tactile characteristics that they evaluate for these products. In general, these characteristics help them to determine product's durability, quality, and comfort.

Very, very important because then you can know if it really is of good quality. (Jessica, age 18)

Interestingly, all participants mentioned that they touch clothes and indicated they evaluated this product category by a greater list of characteristics than for the other product categories mentioned. Specifically, they mentioned that through touch they evaluate the texture of the garment to know if it is soft, smooth or itchy, in fact itchiness is an important characteristic that most of participants mentioned. If the product is evaluated as too itchy they avoid buying it. Through touch they also evaluate the weight of the garment, in general, the less weight the more comfortable they consider the product to be. Product thickness helps them to evaluate temperature insulation, for example if the garment is very thin they consider that it will be fresh, and if the fabric is thick, then they consider it to be warm. Thickness also helps them to evaluate the transparency of the product; in fact they mentioned that it is important for them to be able to actually put their hands under the garment to assess transparency. Finally, through touch they also evaluate a fabric's stretchiness to obtain an idea of whether the product will fit them or not.

I like to feel the texture...I like a lot to feel the material, is one of the most important factors that I evaluate. (Elean, age 23)

That they are soft, that they do not itch, that they do not get damaged in the first wash...smoothness, fabric thickness. (Tania, age 24)

How hot it (fabric) can be, how heavy, or if it is of good quality or not. (Naila, age 24)

Fabric thickness, smoothness, if it is transparent. (Elean, age 23)

Participants who talked about shoes expressed that they need to touch them to evaluate the material. For instance, by touching the shoe they are able to know if the product is made out of leather or other material and whether they will feel comfortable or not wearing them. Participants who discussed food, specifically fruits and vegetables, mentioned that they evaluate freshness through touch, in general they

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noted that the firmer the fruit or vegetable is the more fresh they consider it to be. Cosmetics are also products that are considered by some participants as important to touch, because they want to evaluate characteristics such as greasiness and moistness, in general they dislike greasiness and look for moistness. Additionally, for accessories such as earrings, rings, and bracelets participants indicated they need to touch them to evaluate weight, some of them mentioned that the heavier the accessory the greater the perceived quality, but the less comfortable they consider it to be. Quilts are evaluated through touch for smoothness and weight to evaluate comfort, as participants pointed out, they prefer quilts that are warm but smooth and light weight. Moreover, as with shoes, texture and thickness are characteristics evaluated for other leather products; participants look for leather products that are thick and smooth to assess their quality. Finally, participants like to touch mobile phones and mobile accessories prior to purchase to evaluate the material's weight and firmness, their answers were mixed regarding the product's weight, but all of the participants who mentioned this product category agreed that they seek for firmness or hardness in this product to consider if they are of good quality.

Table 2. Characteristics of products evaluated through touch

Product	Characteristics
Clothes	Texture (softness, smoothness, itchiness), Weight, Thickness (Temperature Insulation, Transparency), Stretchiness
Shoes	Material
Food	Firmness
Cosmetics	Greasiness, Moistness
Accessories	Weight
Quilts	Texture, Weight
Leather products	Texture, Thickness
Mobiles and accessories	Weight, Firmness

Online Shopping and Touch

During the interviews, participants were explicitly asked to expound on their feelings to the inability to touch in an online shopping context. Participants in this study expressed that when they are not able to touch products – in particular clothes - before buying them they experience feelings of insecurity, uncertainty, doubt, frustration, fear, and risk. These feelings arise from: (1) uncertainty of whether or not the product will be what they expect to be because touch is principally their way to evaluate the quality of the garment; (2) if the product will not fit well because there is no uniformity in the sizes, even if they are buying from a brand they frequently purchase; (3) if it will be comfortable because, as they mentioned, through touch they evaluate if a garment is itchy or not and that is one basic characteristic to evaluate comfort.

Uncertainty...I do not like the idea of not touching or seeing physically what I am buying. (Elean, age 23)

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Insecurity...sometimes they tell you the material but as I really do not know a lot about the types of materials or fabrics and I do not know what they are talking about. (Cynthia, age 25)

Despair...fear, distrust... (Sarai, age 22)

Furthermore, participants were asked whether or not touch could be simulated or compensated in an online environment. Although they recognize it is not the same experience, all of the participants answered affirmatively and the stimuli mentioned to provide them information of touch are classified in this paper as: written descriptions and two dimensional images (2D images). On one hand, written descriptions that provide tactile information to consumers include information about fabrics and texture of the product. This information can be provided either by the company or by online reviews of people who have already bought the product and provide written information about the product's tactile characteristics or sensation when touching it. In general, participants mentioned that written descriptions that include this type of information help them to get an idea of the texture and, consequently, to evaluate the possible comfort of the product. However, this was not true for all participants as it was noticed that those who buy online showed more knowledge about fabrics and most of them said that descriptions about fabrics do help them to imagine how the garment feels; yet, those who do not buy online expressed less knowledge about fabrics and how that type of fabric might feel.

On the other hand, it was observed that participants mentioned that 2D images such as photos, including pictures from different angles and zooms, along with videos can provide them with more information about tactile characteristics of the product than written descriptions. For example, 2D images can provide information such as weight, temperature insulation, type of material, itchiness, and softness/smoothness (see Table 3).

If they (written descriptions) describe the type of fabric and you have the experience of touching that type of fabric, then you can imagine how does it feels. (Naila, age 24)

I would like that for us that do not know much about fabrics...to have a description of how does it feels. (Cynthia, age 25)

Through sight… but it is not as effective as touch. (Gaby, age 21)

Through descriptions, pictures from different angles...and the video of how does it (garment) moves, but it is different the experience. (Naila, age 24)

Through images...I think that from all those years seeing types of fabric you can more or less recognize the type of material, it is more difficult but you can have an idea of the material's texture...now technology provides the capacity to see texture. (Elean, age 23)

According to participants, pictures from different angles with a model wearing the garment help them imagine how it could look on them and also to obtain an idea of the dimensions of the product and if it will fit them well, which helps to compensate for the fact that they are not able to try on the product. Additionally, participants mentioned that it is important for the 2D image to convey information about movement of the product, because that helps them to evaluate product's weight; interestingly, this

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information is not only obtained through videos, but also through pictures. For example, if the product looks somewhat folded simulating movement they perceive it to be lightweight.

Although, not all participants agreed, it was interesting that some of them suggest that a zoom in photo, showing a close up of the product's fabric, could provide information that otherwise would only be obtained by touching the product because of the way the seams looked in the photo. For example, open seams make some participants think that the product will make them feel fresh. Also, through 2D images participants can obtain information about the product's thickness, which also helps them to assess the product's temperature insulation and transparency. Other participants note that products with closed seams are soft and smooth and those with open seams -such as lace- might feel itchy.

I really like zooms…I can see better the material and it is like if I am actually feeling it. (Cynthia, age 25)

You can have an idea if the garment will be fresh or not depending on how close or open is the fabric. (Pamela, age 25)

Table 3. Tactile information provided by characteristics of written descriptions and 2D images

Stimulus	Characteristics	Tactile Information
Written Descriptions	• Type of material • Description of sensation	• Texture
2D images	• Different angles • Movement • Zoom	• Weight • Thickness (Temperature insulation, Transparency) • Material • Texture (smoothness, softness, itchiness)

Finally, there were comments that sometimes pictures can provide misleading information because of the manipulations they go through to make the product look better, these manipulations –according to some of the participants- make it difficult to obtain tactile information. On the other hand, almost all participants found videos more trustful than other techniques in providing tactile information because they perceive them as more realistic and difficult to modify than, for example, pictures.

It is more difficult for it (video) to be misleading, it is more realistic… (Ana Rosa, age 25)

DISCUSSION

There is a considerable amount of research concerning the influence of touch on consumers. As discussed earlier, the use of the Internet platforms for commercial purposes (e-commerce) has brought some challenges for companies that want to sell their products online. Specifically, the lack of opportunity for consumers to physically experience products through haptic explorations can make them become insecure and frustrated and forgo non-touch shopping environments (Peck & Childers, 2003b). This is supported in the findings from this research, which is also in line with the findings of previous studies, consumers experience feelings of insecurity and frustration when they are not able to touch products (Peck & Childers,

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2003a). In particular, women in this study mentioned the lack of touch is an important disadvantage of e-commerce, and they also expressed feelings of frustration and uncertainty that makes them –in some cases- avoid purchasing online. However, the current research also revealed women will seek to obtain information about tactile characteristics of products in other ways when touch is not available.

Based on the results of this research, a new concept is introduced: tactile sensation confirmation. Tactile sensation confirmation is defined as when a person imagines an object's sensation (e.g. when the product is in the apparel or in a picture) and after touching that object the person corroborates that the object feels as he/she had previously imagined. As findings from this study suggest, some women tended not to have confidence in their perceptions of how a product feels when they cannot touch the product (e.g. online context). However, consumer's prior experiences of sensation confirmation could play an important role in the confidence of the evaluations of a product's tactile characteristics when touch is unavailable. For instance, due to the skills obtained from previous experiences of sensation confirmation, (i.e. if a person finds that his/her perceptions of how an object might feel are confirmed in most cases), a person could have a greater degree of confidence in the evaluations about tactile characteristics even when not touching the product. This could explain the fact that those who buy products online showed more confidence in their judgments than those who do not buy online. More specifically, those who purchased a garment online expressed that their prior-to-touch perceptions of the sensation of this product category generally remain the same after touching it. In contrast, perceptions of a garment's sensation were generally not confirmed after touching the product for those who had never purchased online. Therefore, previous experiences of sensation confirmation could influence the decision to use Internet platforms to make purchases.

Also, the majority of participants who had never bought online expressed that they touch products for pleasure, whereas the majority of those who buy online use touch just to obtain information. Knowledge of fabric sensation could explain why, as found in this research, people who buy online seem to have more knowledge about the fabrics than those who do not buy online. When touch is not available, those who bought online showed more confidence in tactile information obtained through sight than those who have never bought online.

Consistent with previous literature that suggests touch is a direct form of evaluation of a product and can influence purchase intentions (Peck & Childers, 2003a; Peck & Wiggins, 2006; Peck & Childers, 2006), findings from this research provide evidence of the importance of touch to evaluate products. In particular, this research found that the characteristics of products that are evaluated through touch are texture, thickness, weight, stretchiness, material, firmness, greasiness, and moistness. These characteristics help consumers to assess product's quality, comfort, and durability and influencing the purchase decision.

More importantly, consistent with the "visual preview model" (which states that vision can provide a quick glance of an object that may result in broad but coarse information about the haptic properties of that object) and with the attribution theory (which states that consumers make causal inferences about the quality and performance of a product based on intrinsic and extrinsic cues and that certain cues may influence the evaluation of others) (Klatzy, Lederman, & Matula, 1993; Folkes, 1988); findings from this research suggest that consumers base their evaluations on intrinsic cues such as appearance when evaluating another intrinsic cue such as texture. The women interviewed responded affirmatively to the question of whether or not it is possible to obtain information about the tactile characteristics of a product in an online shopping environment. Specifically, they get this information from written descriptions –either provided by the company or from reviews of other people who have already bought the garment- but also through 2D images.

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On one hand, consumers obtain information about the haptic properties of products through written descriptions, especially those that include information about the type of material and description of sensation; this information helps people to imagine a product's texture. On the other hand, tactile information of products can be obtained through 2D images such as photos, including those that present the product from different angles or zoom in for a close up of product details, as well as videos. As found in this research, 2D images help to perceive product's weight, thickness, type of material, and texture, especially in clothing, through the appearance of movement and zooms to the product. Although, there is a concern regarding the manipulations that can be done to pictures and that could influence consumers to make wrong perceptions about the tactile characteristics of the products. In general, findings from this research suggest that the more realistic the 2D image looks like, the more trust they have in what they see and the tactile information the photos are able to convey. Finally, findings suggest that 2D images where considered as most effective to obtain tactile information than written descriptions.

CONCLUSIONS AND FUTURE RESEARCH DIRECTIONS

As found in this research, it is possible for consumers to obtain tactile information from 2D images and written descriptions. And while 2D images were found to be more helpful for this task, most online stores provide written descriptions with information regarding the type of material of the product, yet almost none include text describing the sensation of the product. Companies using e-commerce as a sales channel should consider describing in a deeper way the sensorial characteristics of a product to help consumers get a better idea of a product.

The concept introduced in this chapter -sensation confirmation- could be influenced by previous experience with similar products. It could be interesting to explore how some people become more skilled in perceiving and imagining the correct tactile sensation of an object than others, as previous sensation confirmation can affect confidence in evaluations. Also, future research could address the role of sensation confirmation in a person's decision to purchase online.

Researchers in the area of image processing and companies using e-commerce should consider finding ways to enhance the richness of 2D images in order to convey tactile information. Additionally, research regarding the use of 3D images and consumer's perceptions of tactile information through these images could contribute both to the literature and to practice. Perhaps more online stores could benefit from the integration of 3D images, as product presentation formats could somehow compensate for consumers' inability to touch in this environment.

Furthermore, the present research provides insights about the tactile characteristics evaluated by consumers for different product categories. Findings from this work could be used as a basis for future research in the area of intelligent techniques. Particularly, researchers could focus on the development of techniques (e.g. recommender) that can assist consumers on the evaluation of tactile characteristics of products when shopping online. For instance, a consumer shopping online could evaluate a product's tactile characteristics prior purchase based on the 2D images and written descriptions available for that product, later when the product is received they could evaluate it again based on real touch to determine whether their perceptions of tactile sensation where confirmed. An algorithm could learn from previous purchase experiences and develop accurate recommendations for new products being considered for purchase might feel.

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Finally, because of the nature of this exploratory study, generalizations cannot be made. Future research could study this issue considering other types of product categories, using other methodologies, and including participants from different segments (e.g. men, older people). However, the findings of the present research contribute both theoretically and managerially, as previously discussed.

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REFERENCES

AMIPCI. (2016). *Estudio Comercio Electrónico en México 2016*. Retrieved from: https://amipci.org.mx/images/Estudio_Ecommerce_AMIPCI_2016_by_comScore_Publica2.pdf

Argo, J. J., Dahl, D. W., & Morales, A. C. (2006). Consumer contamination: How consumers react to products touched by others. *Journal of Marketing*, *70*(2), 81–94. doi:10.1509/jmkg.70.2.81

Argo, J. J., Dahl, D. W., & Morales, A. C. (2008). Positive consumer contagion: Responses to attractive others in retail context. *JMR, Journal of Marketing Research*, *45*(6), 690–701. doi:10.1509/jmkr.45.6.690

Ashwini, K., & Vincent, D. R. (2017). Trust in e-commerce. *Imperial Journal of Interdisciplinary Research*, *3*(5), 1637–1639.

Balaji, M. S., Raghavan, S., & Jha, S. (2011). Role of tactile and visual inputs in product evaluation: A multisensory perspective. *Asia Pacific Journal of Marketing and Logistics*, *23*(4), 513–530. doi:10.1108/13555851111165066

Bryman, A. (1984). The debate about quantitative and qualitative research: A question of method or epistemology? *The British Journal of Sociology*, *35*(1), 75–92. doi:10.2307/590553

Chen, X., Zeng, X., Koehl, L., Tao, X., & Boulenguez-Phippen, J. (2014). Optimization of human perception on virtual garments by modeling the relation between fabric properties and sensory descriptors using intelligent techniques. In *International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems* (pp. 606-615). Springer. 10.1007/978-3-319-08855-6_61

Cho, S. S., & Workman, J. J. (2011). Gender, fashion innovativeness and opinion leadership, and need for touch: Effects on multi-channel choice and touch/non-touch preference in clothing shopping. *Journal of Fashion Marketing and Management*, *15*(3), 363–382. doi:10.1108/13612021111151941

Citrin, A., Stem, D. E. Jr, Spangenberg, E. R., & Clark, M. J. (2003). Consumer need for tactile input: An internet retailing challenge. *Journal of Business Research*, *56*(11), 915–922. doi:10.1016/S0148-2963(01)00278-8

Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches*. Thousand Oaks, CA: Sage.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Das, T. K. (2016). Intelligent techniques in decision making: A survey. *Indian Journal of Science and Technology*, *9*(12). doi:10.17485/ijst/2016/v9i12/86063

Demirci, S. (2007). *Virtual touch: An experimental study on the effects of online sense of touch on consumer behavior*. Maastricht University.

Eisenhardt, K. M. (1989). Building theories from case studies research. *Academy of Management Review*, *14*(4), 532–550.

Folkes, V., & Matta, S. (2004). The effect of package shape on consumers' judgments of product volume: Attention as a mental contaminant. *The Journal of Consumer Research*, *31*(2), 390–401. doi:10.1086/422117

Folkes, V. S. (1988). Recent attribution research in consumer behavior: A review and new directions. *The Journal of Consumer Research*, *14*(4), 548–565. doi:10.1086/209135

Grohmann, B., Spangenberg, E. R., & Sprott, D. E. (2007). The influence of tactile input on the evaluation of retail product offerings. *Journal of Retailing*, *83*(2), 237–245. doi:10.1016/j.jretai.2006.09.001

Guéguen, N., & Jacob, C. (2006). The effect of tactile stimulation on the purchasing behavior of consumers: An experimental study in a natural setting. *International Journal of Management*, *23*(1), 24–33.

Hoegg, J., & Alba, J. W. (2007). Taste perception: More than meets the tongue. *The Journal of Consumer Research*, *33*(4), 490–498. doi:10.1086/510222

Hornik, J. (1992a). Effects of physical contact on customers' shopping time and behavior. *Marketing Letters*, *3*(1), 49–55. doi:10.1007/BF00994080

Hornik, J. (1992b). Tactile stimulation and consumer response. *The Journal of Consumer Research*, *19*(3), 449–458. doi:10.1086/209314

Instituto Nacional de Estadística y Geografía (INEGI). (n.d.). Retrieved from: http://cuentame.inegi.org.mx/monografias/informacion/nl/poblacion/

Jeguirim, S. E. G., Adolphe, D. C., Sahnoun, M., Douib, A. B., Schacher, L. M., & Cheikhrouhou, M. (2012). Intelligent techniques for modeling the relationships between sensory attributes and instrumental measurements of knitted fabrics. *Journal of Engineered Fabrics & Fibers*, *7*(3), 88–97.

Jiang, Z., & Benbasat, I. (2007). The effects of presentation formats and task complexity on online consumers' product understanding. *Management Information Systems Quarterly*, *31*(3), 475–500. doi:10.2307/25148804

Jin, S. (2011). The impact of 3D virtual haptics in marketing. *Psychology and Marketing*, *28*(3), 240–255. doi:10.1002/mar.20390

Klatzky, R. L., Lederman, S. J., & Matula, D. E. (1993). Haptic exploration in the presence of vision. *Journal of Experimental Psychology. Human Perception and Performance*, *19*(4), 726–743. doi:10.1037/0096-1523.19.4.726 PMID:8409856

Krishna, A., Elder, R. S., & Caldara, C. (2010). Feminine to smell but masculine to touch? Multisensory congruence and its effect on the aesthetic experience. *Journal of Consumer Psychology*, *20*(4), 410–418. doi:10.1016/j.jcps.2010.06.010

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Krishna, A., Lwin, M. O., & Morrin, M. (2009). Product scent and memory. *The Journal of Consumer Research*, *37*(1), 57–67. doi:10.1086/649909

Krishna, A., & Morrin, M. (2008). Does touch affect taste? The perceptual transfer of product container haptic cues. *The Journal of Consumer Research*, *34*(6), 807–818. doi:10.1086/523286

Kumar, A., Kabra, G., Mussada, E. K., Dash, M. K., & Rana, P. S. (2017). Combined artificial bee colony algorithm and machine learning techniques for prediction of online consumer repurchase intention. *Neural Computing & Applications*, 1–14.

Lin, C. Y., Liaw, S. Y., Chen, C. C., Pai, M. Y., & Chen, Y. M. (2017). A computer-based approach for analyzing consumer demands in electronic word-of-mouth. *Electronic Markets*, *27*(3), 225–242. doi:10.100712525-017-0262-5

Lynn, M., Le, J., & Sherwyn, D. S. (1998). Reach out and touch your customers. *Cornell Hospitality Quarterly*, *39*(3), 60–65. doi:10.1177/001088049803900312

Mattila, A. S., & Wirtz, J. (2001). Congruency of scent and music as a driver of in-store evaluations and behavior. *Journal of Retailing*, *77*(2), 273–289. doi:10.1016/S0022-4359(01)00042-2

Mitchell, D. J., Kahn, B. E., & Knasko, S. C. (1995). There's something in the air: Effects of congruent or incongruent ambient odor on consumer decision making. *The Journal of Consumer Research*, *22*(2), 229–238. doi:10.1086/209447

Peck, J., & Childers, T. L. (2003a). To have and to hold: The influence of haptic information on product judgments. *Journal of Marketing*, *67*(2), 35–48. doi:10.1509/jmkg.67.2.35.18612

Peck, J., & Childers, T. L. (2003b). Individual differences in haptic information processing: The 'need for touch' scale. *The Journal of Consumer Research*, *30*(3), 430–442. doi:10.1086/378619

Peck, J., & Johnson, J. (2011). Autotelic need for touch, haptics, and persuasion: The role of involvement. *Psychology and Marketing*, *28*(3), 222–239. doi:10.1002/mar.20389

Peck, J., & Shu, S. B. (2009). The effect of mere touch on perceived ownership. *The Journal of Consumer Research*, *36*(3), 434–447. doi:10.1086/598614

Peck, J., & Wiggins, J. (2006). It just feels good: Customers' affective response to touch and its influence on persuasion. *Journal of Marketing*, *70*(4), 56–69. doi:10.1509/jmkg.70.4.56

Prasad, B. (2003). Intelligent techniques for e-commerce. *Journal of Electronic Commerce Research*, *4*(2), 65–71.

Rose, G., Khoo, H., & Straub, D. W. (1999). Current technological impediments to business-to-consumer electronic commerce. *Communications of the AIS*, *1*(16), 1–74.

Singh, M., & Mehrotra, M. (2016). Bridging the Gap Between Users and Recommender Systems: A Change in Perspective to User Profiling. *International Journal of Intelligent Systems Technologies and Applications*, 379.

Smith, A., & Anderson, M. (2016). *Online shopping and e-commerce*. Pew Research Center. Retrieved from http://www.pewinternet.org/2016/12/19/online-shopping-and-purchasing-preferences/

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Smith, D. E., Gier, J. A., & Willis, F. N. (1982). Interpersonal touch and compliance with a marketing request. *Basic and Applied Social Psychology*, *3*(1), 35–38. doi:10.120715324834basp0301_3

Smith, J. K. (1983). Quantitative versus qualitative research: An attempt to clarify the issue. *Educational Researcher*, *12*(6), 6–13. doi:10.3102/0013189X012003006

Spangenberg, E. R., Crowley, A. E., & Henderson, P. W. (1996). Improving the store environment: Do olfactory cues affect evaluations and behaviors? *Journal of Marketing*, *60*(2), 67–80. doi:10.2307/1251931

Spiggle, S. (1994). Analysis and interpretation of qualitative data in consumer research. *The Journal of Consumer Research*, *21*(3), 491–503. doi:10.1086/209413

Treviño, T., & Morton, F. (2016). Online shopping in Mexico: Exploring the promising and challenging panorama. In C. M. Coria-Sánchez & J. T. Hyatt (Eds.), *Essays on Mexican Business Culture* (pp. 166–182). McFarland.

Verma, N., & Singh, J. (2017). An Innovative Approach for E-Commerce Website Ranking. *International Journal of Advanced Research in Computer Science*, *8*(4).

Wansink, B., & Van Ittersum, K. (2003). Bottoms up! The influence of elongation on pouring and consumption volume. *The Journal of Consumer Research*, *30*(3), 455–463. doi:10.1086/378621

Workman, J. E., & Caldwell, L. F. (2007). Centrality of visual product aesthetics, tactile and uniqueness needs of fashion consumers. *International Journal of Consumer Studies*, *31*(6), 589–596. doi:10.1111/j.1470-6431.2007.00613.x

KEY TERMS AND DEFINITIONS

E-Commerce: The exchange of information, products, and services through online platforms.

Haptics: Interaction through touch.

Need for Touch: A person's preference for information that is obtained through touching objects.

Product Evaluations: A person's perceptions of the characteristics of a product.

Product Presentation Format: Tool that can be either written descriptions or 2D images with the purpose of providing information of a product to consumers.

Tactile Sensation Confirmation: When a person imagines an object's sensation and this sensation is confirmed after touch.

Two Dimensional Images: Graphics, pictures, or videos that present objects in a flat manner (length and width).

Virtual Touch: Touch sensation that consumers perceive when exposed to a 3D format of a product through a computer.

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APPENDIX

Table 4. Names and descriptions of participants in the study

Name	Age	Occupation
Elean	23	Graduated professional
Gabriela	21	College student
Sarai	22	Graduated professional
Pamela	25	College student
Cynthia	25	Graduated professional
Fabiola	18	College student
Naila	24	Ph.D. student
Isabel	27	Ph.D. student
Tania	24	Graduated professional
Jessica	18	College student
Ana Rosa	25	Ph.D. student

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Chapter 36
Exploring the Role of E-Servicescape Dimensions on Customer Online Shopping: A Stimulus-Organism-Response Paradigm

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ABSTRACT

With limited empirical evidence and an incomplete understanding of e-servicescape environment, its effects on e-commerce websites still needs to be explored. Hence, the study understands and assesses the effects of e-servicescape environment on customer purchase behavior, considering the moderating role of gender. The stimulus-organism-response framework was adapted to formulate a conceptual model, in which the e-servicescape (stimulus) features were modelled as an antecedent of customer trust (organism) on website that directs customer behaviour of purchase intention (response). To conduct an analysis, a data sample of 304 responses was collected from those who have earlier used e-commerce websites using a structural equation modelling technique. Results of the study shows that e-servicescape dimensions are a strong predictor of trust that strongly impacts customer purchase intention. Results further reveal that in an online environment, the gender gap is depleting as it impacts all three dimensions of the e-servicescape on customer behavior which remains consistent for both groups.

1. INTRODUCTION

As e-commerce rises, the retail landscape has been revamped for customer and retailer. Customer is presented with superior shopping experience and tailored offers, whereas a retailer is given better opportunities to reach and interact with customers. Additionally, growth of e-commerce is found more

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rampant in budding markets as compared to developed countries due to increasing diffusion of information technology, varying customer lifestyle, and increasing customer internet experience (Narang & Trivedi, 2016). Studies demonstrate that e-commerce is growing at a fast pace because of unparalleled growth in number of online retailers and sales. As per statistics of 2018, total internet users in India accounted to 483 million (Statista, 2019). By 2019, this figure of internet users is anticipated to rise by 627 million (Kantar IMRB, 2019). Despite its untapped potential, India already stands as second largest online market worldwide, while China grasps at first position. Bearing this in mind, e-retailers attention has moved towards customers' adoption of online sales channel like e-commerce and further motivating their purchases online. In an experts discussion taken place in Third Annual E-commerce Money Africa Confex in 2017- retailers, academicians and other e-commerce stakeholders discussed on how designs of websites must be centered towards developing economies to offer gripping online experience to surge online purchase (Fastmoving, 2017).

To increase knowledge of possible explanations towards role of e-servicescape dimensions and their holistic effect on purchase intention, a study by (Wu, Quyen, & Rivas, 2017) stated that gender plays a crucial role of moderator in online purchase experience. Furthermore, prior research suggests the assessment of gender differences in online service environments towards their purchase behavior (Cambra-Fierro, Melero-Polo, & Javier Sese, 2016; Hammedi, Kandampully, Zhang, & Bouquiaux, 2015; Ruane & Wallace, 2013). Role of gender has been examined and nested with numerous viewpoints like website design and its usefulness (Cyr & Bonanni, 2005), risk in online shopping (Garbarino & Strahilevitz, 2004; Hong, 2015) and online shopping behavior (Pascual-Miguel, Agudo-Peregrina, & Chaparro-Peláez, 2015). In e-commerce studies context, effect of e-servicescape dimensions on gender difference are at an early stage (Verbraken, Goethals, Verbeke, & Baesens, 2014; Zhang, Lu, Gupta, & Zhao, 2014). Therefore, considering the lack of understanding with respect to moderating role of gender for servicescape environment, this study analyses the influence of different gender (male and female) on the relationship between key e-servicescape dimensions and website trust towards purchase intentions.

In spite of many calls for empirical studies in the field of e-commerce development for developing economies, exploration and investigation in this region remains scarce (Ahmed & Akhlaq, 2015; Kshetri, 2007). The existing models to assess technology adoption like Technology Acceptance Model (TAM) (Venkatesh & Davis, 2000), UTAUT (Venkatesh, Morris, Davis, & Davis, 2003) etc. provides insights towards e-commerce acceptance in developing economies, but they offer restricted knowledge about formation of trust among customers by efficient website design and its final resultant i.e. purchase intentions (Yadav & Mahara, 2017). Therefore, current study puts forward a notion that the above discussed method (e-servicescape dimensions, trust, and purchase intentions) is all sequential in process and stimulus-organism-response (SOR) framework will help in better understanding of the relations. SOR framework is regarded as more inclusive in elucidation of cognitive and affective situations extracted from customers and their following behavior from interaction with online shopping environment or e-servicescape (Tran & Strutton, 2019; Buxbaum, 2016; Vieira, 2013). Yet, empirical evidence lacks on usage of SOR framework towards conception of trust through e-servicescape dimensions and following purchase intentions on e-commerce websites in developing economies. Subsequently, developing economies differ drastically from developed economies; this warrants review of concepts and customs applied on developing economies that conceptualized in developed economies (Sheth, 2011).

On the basis of aforementioned issues, the current study proposes various objectives and a model to advance purchase intentions from e-commerce websites in developing economies by exercising SOR framework. This study forwards various offerings to academicians, practitioners, government policy

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makers, and non-governmental organizations. First amongst them is application of SOR framework towards creation of purchase intentions from e-commerce websites in developing economies. To achieve this objective, the insertion of various constructs into SOR framework components is proposed to create a reliable and effective conceptual model. The constructs of e-servicescape or online atmospherics includes aesthetic appeal, layout and functionality and financial security (stimulus) with website trust or simply trust (organism) and purchase intention (response). Secondly, aesthetic appeal, financial security and layout and functionality can be controlled through effective website design (Flavián & Gurrea, 2007) and its effect on website trust is examined as it subsequently leads to effect on online purchase intentions (Flavián & Gurrea, 2007; Lim, Heng, Ng, & Cheah, 2016). Thirdly, next objective of the study is to assess the sequential nature of proposed model rooted within SOR framework. Different indirect relations/effects are tested through conducting mediation analyses. According to SOR framework organism mediates the effect of stimulus variable/s on response/s (Mehrabian and Russell, 1974). The core proposal to the theory is that the development of trust begins with the entry of e-servicescape stimulus, trailed by the process of trust organism, with end result of purchase response. Furthermore, the stimulus of e-servicescape can be précised using by e-servicescape attributes. With increased usage of e-commerce, it has become an integral part of our daily lives, the scarcity of related e-servicescape research pushes us to probe further into e-servicescape, and how this mix, in combination with trust in e-commerce, affects customers' purchase intention. Lastly, this model is assessed to observe how results varies towards one key variable i.e. gender and its influence on customer purchase decisions (Fang, Wen, George, & Prybutok, 2016; Lian & Yen, 2014; Yoon & Occeña, 2015). As a resultant, this study not only provides value addition in theory to various stakeholders' knowledge towards application of SOR framework in developing economies but also makes available a parsimonious model to enable surge in online purchases from their e-commerce websites. This is achieved via persuasive online experiences and effective website design varied by gender experience.

The organization of the paper is as follows. Section 2makes available theoretical framework for the study that helps to formulate hypotheses in Section 3. Thereafter, research methodology provides various research methods applied in this study that later helps in analysis of the results. Later, results are discussed and study concludes with its contributions, limitations and scope for future research.

2. THEORETICAL FRAMEWORK

This study aims to develop e-servicescape model to explore consumers' understanding of e-servicescape and its effect on consequent assessment of website trust and behavioral purchase intention with the help of Stimulus-Organism-Response (SOR) framework for Indian online shoppers as depicted in Figure 1. We will also assess gender differences as a moderating factor in relationships amongst e-servicescape dimensions and trust.

2.1 Stimulus-Organism-Response Framework

In Stimulus-Organism-Response model, Stimuli (S) are external to an individual and they compose of different physical atmospheric factors (Bagozzi, 1986) that influence individual's behavior (Eroglu, Machleit, & Davis, 2003). In an online environment, it provides set of website dimensions that are influential in surging customer intention (Mollen & Wilson, 2010). Hence, current study uses e-servicescape

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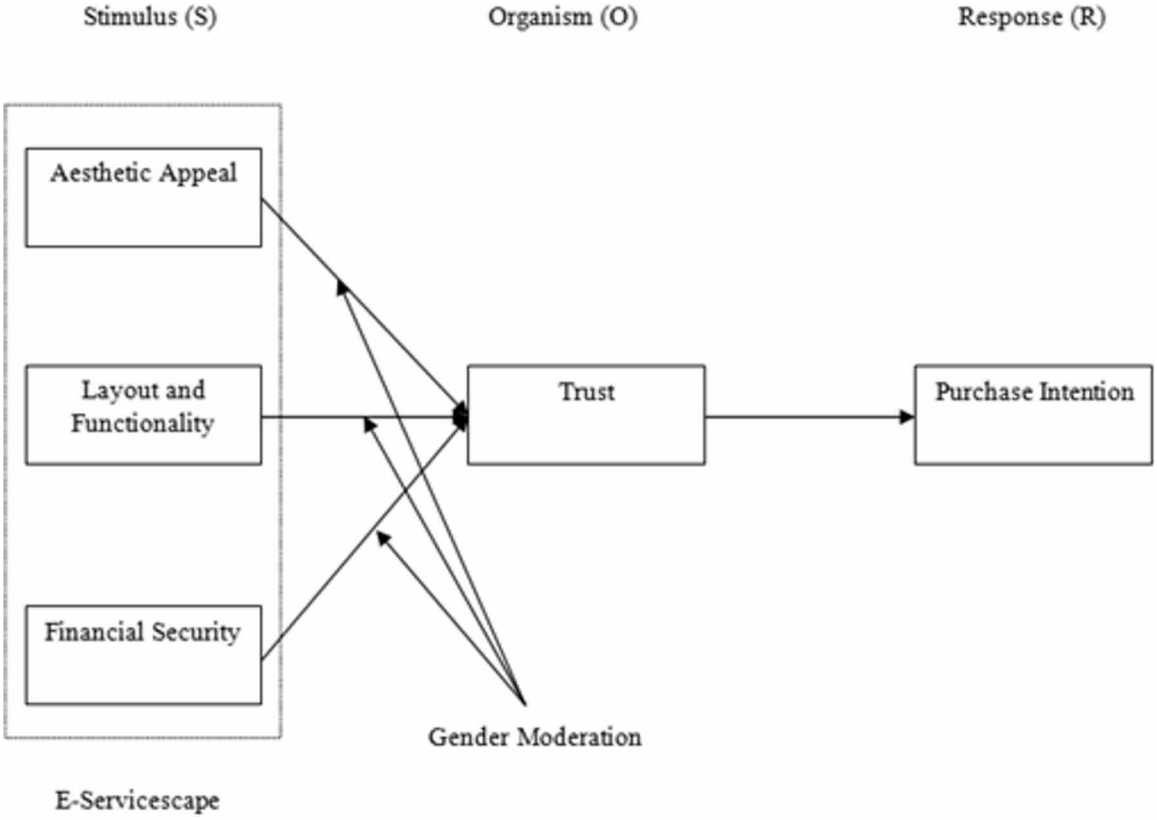
dimensions namely: Aesthetic appeal (Wang et al. 2011), Online layout & functionality (Wu et al., 2017) and Financial security (Harris & Goode, 2010); (Kim & Lennon, 2013) to be stimulus. Study argues that these dimensions creates a specific environment (Huang, Li, Mou, & Liu, 2017) that significantly effects customer purchase intention to shop on e-commerce websites.

Figure 1. Research model



Aesthetic appeal is website's complete visual impression and attraction. It is a tool for a website to differentiate itself from competitors and hence is considered key factor for e-retailers (Harris & Goode, 2010). Online layout and functionality are design aspects of a website that generates pleasurable interactions and user experiences. Online layout is defined as overall arrangement, adaptability, structure and organization of any website (Wu, Lee, Fu, & Wang, 2013) whereas functionality is the contents of a website (Law & Hsu,2005). Financial security in the online domain is the degree to which a customer believes that their personal or financial information will remain safe and not be stolen or shown, saved by unwanted parties through e-commerce purchase process (Azizi & Javidani, 2010; Flavián & Guinalíu, 2006). Efficiency and effectiveness of all these features hold website usability. Consequently, website usability aids in clarification of significant information and improves communication. At the same time, it enables a consumer to seek information in an easy manner.

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Organism (O) is defined as internal structures and processes that mediate amid external stimuli to individual and their final response (R) (Bagozzi, 1986). The organism is the cognitive and affective agent that mediates stimuli and responses of customers (Kim & Lennon, 2013). Here, cognitive agent represents customers' mental processes that comprise of customer thoughts towards acquisition, processes, retentions and retrieval of information (Eroglu, Machleit, & Davis, 2001; Fiore & Kim, 2007). On encounter with a stimulus, customer processes it into meaningful and useful information towards their final decision (Huang et al., 2017). Organism in current study is operationalized as trust (Lunardo & Mbengue, 2013; Rahul & Aggarwal, 2017) as consumer behavior studies advocate the importance of trust on website and its services while shopping online (Agag & El-Masry, 2016). (Kim, Ferrin, & Rao, 2009) define trust as the point of reliability and credibility on new technology by people. In context of this study, trust is defined as consumer's confidence towards the website and willingness to trust the sellers' actions in situation where customers may otherwise be vulnerable.

Response refers to a customer's outcome behavior of an approach and avoidance (Donovan & John, 1982). While, approach refers to positive response shown by customer during specific settings as purchase behavior and affirmative communication, avoidance is shown through negative communication and rejection intentions (Eroglu et al., 2001). According to previous studies, response is the final customer outcome like behavioral intentions (Brunner-Sperdin, Scholl-Grissemann, & Stokburger-Sauer, 2014) and purchase (Kim & Lennon, 2013). Therefore, this study assesses response via customers' purchase intention.

3. HYPOTHESES DEVELOPMENT

3.1 Aesthetic Appeal with Trust

According to a study by Harris & Goode (2010), online aesthetic is an online ambience form i.e. degree of attractiveness or appeal of beauty felt by consumers towards e-servicescape. In further addition, Wang, Minor, & Wei (2011) referred to web aesthetics as e-servicescape cues yielding an impression of attractiveness or beauty. This view is in concordant with various studies that suggest that the nature, size, website presentation and online images are crucial considerations (e.g. (Shobeiri, Laroche, & Mazaheri, 2013)). (Donnelly, 2001) stated that customer evaluates website on individualized information needs and therefore it must be tailored accordingly. Hence, it is obvious that a consumer wishes to enjoy aesthetic design of the service place and hence results in higher pleasantness effect (Loureiro & Sarmento, 2014; Wang et al., 2011). Customer satisfaction rises in an online interaction environment if it occurs in a more pleasant aesthetic e-servicescape. Such insights lead Hasan (2016); Seckler, Heinz, Forde, Tuch, & Opwis (2015) to conclude that a wide range of website visual characteristics affects users behaviour and argue that marketers and retailers must consider effects of website aesthetics. Thus, study assesses aesthetic appeal on attractiveness and beauty, entertaining and exciting referred from (Harris & Goode, 2010; Loureiro & Sarmento, 2014; Wang et al., 2011). This is strongly supported by recent empirical results that strongly links aspects of website aesthetic appeal (navigation, images, links and searches) to website trust (Kim, Chung, & Lee, 2011). (Al-Debei, Akroush, & Ashouri, 2015; Michaud Trevinal & Stenger, 2014) suggested that the website visual experience exerts a strong influence on continued usage. These findings have led researchers to argue implications of trust in online shopping experience and its association with aesthetic appeal of the e-service environment like (Teng, Ni, & Chen, 2018). Thus, we propose:

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H1. Aesthetic appeal has positive influence on trust.

3.2 Layout and Functionality with Trust

Manganari, Siomkos, Rigopoulou, & Vrechopoulos (2011) identified in his study that layout is a key factor to influence consumer decision making process. Hooper, Coughlan, & Mullen (2013) suggest that functionality and usability of a website are chief dimensions for consumer's evaluation of online environment. Manganari, Siomkos, Rigopoulou, & Vrechopoulos (2011) identified that online layout of websites are built on the basis of customer pleasure, that engages customer in further participation. Various studies have put forward suggestions and recommendations on website design, its effectiveness and also customer evaluations (e.g. Bai, Law, & Wen, 2008; Fu Tsang, Lai, & Law, 2010). Bai et al. (2008) defined functionality as consumers' usability of website interface and the navigations. Law and Hsu (2005) conducted measurement of online functionality through a verified measurement scale that consist of purchase information, product/service information, contact information, destination information and quality of information. A range of studies suggests that websites must provide effective base services and also help improve service experience (e.g. (Venkatesh, Chan, & Thong, 2012; Yeo, Goh, & Rezaei, 2017)). Recently, theorists have focussed on potential risks of erroneous website personalization (Frels & Kannan, 2001) and therefore suggested that negative usage behavior can be avoided by a cautious personalization approach (see (Kannan, 2016)), and this will yield more trust over continuous usage of website.

This study assessed online layout and functionality on content/information, navigation features and their usage easiness as referred from Montoya-weiss, Voss, & Grewal (2003); Srinivasan et al. (2002); Zeithaml, Parasuraman, & Malhotra (2002). According to Srinivasan et al. (2002) most crucial aspect of customer evaluation of a web site is its ease in usage/navigation usability. Also, various studies states that relevant information is crucial to website usage (Bauer, Grether, & Leach, 2002; Zeithaml et al., 2002). Similarly, Montoya-weiss et al. (2003) states that content information forms a key variable to consumer's assessment of a website services. Therefore, we propose that:

H2. Layout and functionality have a positive influence on trust.

3.3 Financial Security with Trust

Security in online shopping websites is considered a big concern as its abuse or failure can cause conditions of economic hardship through disclosure, destruction, alteration of data, service denial and/or fraud etc (Roca, García, & Vega, 2009). Tsang et al.(2010) suggests that online financial security and payment procedures are a key to ultimate purchase decision. As most consumers are unaware with usage of their personal and financial information given on e-commerce websites, therefore it is considered as one of the biggest barriers to e-commerce adoption and its growth (Shah, Peikari, & Yasin, 2014). With rising attacks on online information of customers, frauds and system vulnerabilities, consumers are getting more hesitant providing sensitive information to shopping websites (Tsang et al., 2010; Yenisey, Ozok, & Salvendy, 2005). In this sense, focussing on the key role of trust in online trade and exchange, studies have stressed on the significance of financial security in websites (e.g. (Barkhordari, Nourollah, Mashayekhi, Mashayekhi, & Ahangar, 2017; Bonsón Ponte, Carvajal-Trujillo, & Escobar-Rodríguez, 2015; Hartono, Holsapple, Kim, Na, & Simpson, 2014; Shah et al., 2014)). Thus, we propose:

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H3. Financial security has a positive influence on trust.

3.4 Trust with Purchase Intention

Every individual has different trust and belief patterns over others. These characteristic shows an impact upon customers' trust in e-commerce as well (Brengman & Karimov, 2012). (Casaló, Flavián, & Guinalíu, 2010; Ruiz-Mafe, Martí-Parreño, & Sanz-Blas, 2014) held that trust can lower down uncertainties regarding the future outcomes and is essential for a continued relationship for product or service of customer needs. Trust on online environment portrays inclination of an individual towards its services and processes. Online purchase requires trust to be imbedded not only between customer and retailer, but also amongst customer and the computer system built to carry out transactions. Studies have been conducted to assess trust in e-retail stores and verified it as a vital antecedent to drive purchase behaviour (Brengman & Karimov, 2012; Casaló et al., 2010; Ruiz-Mafe et al., 2014). Trustworthy website environment is crucial towards generating e-commerce success and surge consumer activities (Kim & Prabhakar, 2000). In short, trust on a websites includes customers beliefs and expectations about online merchants and their services (Casaló et al., 2010; Curras-perez, Ruiz-mafe, & Sanz-blas, 2014). To summarize, customer's general trusting nature plays a key role in determining their online purchase behavior. Consequently, the following hypothesis is constructed:

H4. Trust has a positive influence on purchase intention.

3.5 Mediating Role of Organism Component: Trust

This study assesses purchase intentions for e-commerce websites in developing economies by application of SOR framework. Additionally, study assesses effect of organism factor from SOR framework on cognitive and affective conditions consequently due to their contact with environmental cues i.e. Stimulus factors, that subsequently has effects on response factor (Loureiro & Ribeiro, 2011). As a result, organism factor/s (i.e. trust) act as mediating link between the other two components of SOR framework i.e. stimulus and response (Vieira, 2013). Plentiful studies have approved on mediating role of trust in identifying purchase intentions of customers through e-commerce websites (Ha, John, John, & Chung, 2016; Hong & Cha, 2013; Lwin, Wirtz, & Stanaland, 2016). Hence, these hypotheses are proposed:

H5: Aesthetic appeal has a positive indirect effect on purchase intentions through mediating trust.
H6: Layout and functionality has a positive indirect effect on purchase intentions through mediating trust.
H7: Financial Security has a positive indirect effect on purchase intentions through mediating trust.

3.6 Gender Moderation

Numerous studies under marketing domain have studied gender and its role, but only few have assessed relationship between gender and e-commerce (Ladhari & Leclerc, 2013; Rodgers & Harris, 2003). Available e-commerce related studies show that there exist significant differences amongst both genders. Their choices drives them towards adoption behavior and further usage (Lin, Featherman, Brooks, & Hajli, 2018; Venkatesh, Morris, & Ackerman, 2000). Results of gender moderation in online environment are not similar across all studies. One research dimension discusses and approves of gender dif-

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ferences across online environment usage behavior and it moderates usage and adoption behavior (Lim & Kwon, 2010; Lin et al., 2018; Liu, Li, Zhang, & Huang, 2017; Lu & Lee, 2010). On the other hand, a different research stream suggests that gender gap amongst usage of online environment is depleting as both male and female believe that key functions are equally important (Nadeem, Andreini, Salo, & Laukkanen, 2015; Zha, Zhang, Yan, & Xiao, 2014). Similarly, many studies confirmed that both have similar taste towards online shopping preferences like Ladhari & Leclerc (2013) found no significant difference amongst both genders during examination of websites and e-tailers receptiveness. Study by Zha, Zhang, Yan, & Xiao (2014) also showed no significant differences amongst both genders in online environment contexts. Likewise, study by Liu, Li, Zhang, & Huang (2017) demonstrated no significant difference in both genders on customer perception and expectation of online environment. Even study by Nadeem, Andreini, Salo, & Laukkanen (2015) stated that online environment usage and perception gap by both genders is declining. Therefore, this study attempts to address this inconsistency by assessing gender moderation effects on online retailer websites e-servicescape dimensions towards purchase intentions. Considering past research findings and their emphasis, study proposes three hypotheses:

H8. The effect of both the genders will remain same amongst aesthetic appeal and trust relationship.
H9. The effect of both the genders will remain same amongst layout & functionality and trust relationship.
H10. The effect of both the genders will remain same amongst financial security and trust relationship.

4. METHODOLOGY

This study utilized snowball technique (Coleman, 1958). This technique is a chain referral sampling method that uses convenience sampling of participants; the sample group grows through a network like a rolling snowball. This methodology is usually used for market research (Campbell & Wright, 2008). In this method, initially few respondents were approached and they were later asked to suggest other respondents who are willing to contribute and this process goes on subsequently. Participants voluntarily replied to questionnaire without any incentives in return. Suitable measures were utilized to ensure diverse demographic data of respondents is gathered. Furthermore, there are similar studies (Kurasaki, 2000) in the extant literature employing snowball sampling in a survey (Yadav & Rahman, 2017). To collect data, study aimed at retail customers with their previous experience of e-commerce website and its services towards browsing or purchase.

4.1 Sample

Questionnaire based study is adopted. Survey is designed in a structured and non-disguised manner where respondents were clearly told purpose of the survey and gained their consent with information. 5 variables (aesthetic appeal, financial security, layout and functionality, trust and purchase intention) with 21 items were included in survey apart than general demographic questions. Variables were measured on a 5-point Likert scale, except demography related questions. Each measure was drawn from earlier studies and was adapted for current research. For questionnaire refer to Table 2.

By application of snowball sampling, 1000 people were mailed the questionnaire and 306 replied back. Out of these 306 only 304 were considered usable, which comprises of 144 females and 160 males. Similar sample sizes have been taken in various studies and considered a fit (Kaushik & Rahman, 2015;

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Yadav & Mahara, 2018). Demography of respondents is briefed in Table 1. Sample demographics collected in this study is considered fit in similar studies like Alalwan (2018), conducted for social media habits. This kind of research majorly includes youth sample of age group 20-30 years. Major chunk of respodents are young and students who are ready to share their information easily. Demographics details shows that snoball method works well with young people as they are more networked and it also represents national data fit.

4.2 Measures

The items used to assess e-servicescape and trust items used in this study are taken from Harris & Goode (2010). Aesthetic appeal composes of four items, with sub dimensions as: visual appeal (two items), Originality of design (one item) and entertainment value (one item). Layout and functionality (four items) measured through sub-dimensions: information relevance (one item) and usability (three items). Financial security comprised of four items with sub dimensions: Ease of payment (two items) and perceived security (two items). Trust composed of 4 items taken directly from Harris & Goode (2010). Purchase intention was adapted from (Gao & Bai, 2014) with one item from (Yadav & Mahara, 2017).

As this study includes voluntary participation to fill questionnaire and further respondents' recommendation without any incentives in return, therefore questionnaire length fit was ensured to not overexert participants. Many items were removed initially due to reliability and validity issues. Later, total length of the questionnaire from Harris & Goode (2010) was perceived too long to get proper responses from respondents and avoid unit non-response biasness, therefore it was shortened up by removing most crosscheck items and few items that were not found fit for Indian consumers. This aided in better understanding of the questions asked.

Study used Armstrong & Overton (1977) to diagnose unit non-response biasness, through a comparison of "initial" and "delayed" participants based upon their response date. Non-response bias was assessed using t-test that compared sample means of initial 30 percent of the participants with delayed 30 percent participants. Results demonstrated no significant differences exist amongst the two sets, signifying no issue of unit non-response biasness with respondents' data.

In this approach of data collection, we avoided item non-response bias by providing help to the respondents for filling the form and avoided unit non-response bias by approaching people who are willing to take part in the survey. These two approaches worked well to gain good responses.

5. ANALYSIS

5.1 Preliminary Tests

Table 2 depicts the results of exploratory factor analysis. Items with poor loadings (loadings < 0.50) were removed from analysis. Remaining 18 items were assessed using principal component analysis (PCA) and resulted in 5 factors (Eigen values>1) which accounted for 71% variance. Reliability scores of all factors were found acceptable from 0.77to 0.87.

Complete latent model was created using results of exploratory factor analysis and tested with the help of SPSS AMOS to know relational as well as measurement properties of the model. Acceptable relative, comparative and absolute model fit indices were ensured using Bentler (1992). 5 factor structures

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were confirmed by first order confirmatory factor analysis (CFA). Indices resulted in good model fit to data. Convergent validity was confirmed by average variance extracted (AVE) (AVE ≥ 0.50) for all the factors individually. AVE varies from 0.57 to 0.61, confirms convergent validity. Further confirmation of convergent validity was given by path analysis through structural equation modelling (SEM) and all path coefficients were found statistically significant. Discriminant validity is confirmed if AVE is greater than the squared correlation coefficient between factors, which was true for all the factor pairs (Fornell & Larcker, 1981).

Table 1. Respondents demography

Measure	Item	Frequency	Percentage (%)
Total		304	100
Gender	Male	160	52.6
	Female	144	47.4
Age	Below 20	57	18.8
	20-30	157	51.7
	31-40	63	20.7
	Over 40	27	8.8
Occupation	Student	173	56.9
	Free Lancer	22	7.2
	Entrepreneur	33	10.8
	Employee	61	20.1
	Retired	15	5

5.2 Structural Model Test

SEM was used to test causal relations amongst variables for the proposed model for complete data (N=304). Joreskog and Sorbom (1993) suggests GFI and NFI acceptable values to be less than 0.9; Hu & Bentler (1999) suggests CFI value to be <0.95; Bollen & Long (1993) suggests RMSEA values to be less than 0.06. Fit indices of the model were a good fit (χ^2/df = 2.14, RMSEA = 0.04, CFI = 0.950, NFI = 0.935 and GFI = 0.925), similarly assessed by studies (Yadav & Mahara, 2017, 2018). These results gave strong support to the proposed model (Hair, Black, Babin, & Anderson, 2010; Hair, Anderson, Tatham, & William, 1995). Table 3 summarizes path analysis results. Relationships amongst all the causal paths were tested and confirmed. Aesthetic appeal is significantly and positively influenced by trust ($\beta = 0.523$, $p < 0.001$). Financial security is significantly influenced by trust ($\beta = 0.489$, $p < 0.00$); and layout and functionality is significantly influenced by trust ($\beta = 0.322$, $p < 0.00$). Purchase intention is significantly affected by trust ($\beta = 0.532$, $p < 0.00$) and it is the strongest of all relations. These results support hypotheses H1, H2, H3 and H4.

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Table 2. Results of reliability and convergent validity

Items No.	Items	Factor Analysis (PCA)	Cronbach's Alpha	Standardized Factor Loadings (λ)	Composite Reliability	Average Variance Extracted (AVE)
Aesthetic Appeal	I like the way this website looks	0.743	0.862	0.671	0.711	0.582
2	The design of this website is adventurous	0.733		0.628		
3	I think that this website is very entertaining	0.710		0.573		
4	The way this website displays its products is attractive	0.725		0.596		
Layout and Functionality 1	This website is easy to navigate	0.614	0.878	0.605	0.724	0.508
2	There are convenient ways to go among related pages and between different sections	0.754		0.738		
3	Navigation through this website is intuitive	0.815		0.756		
4	Information about products is easily accessed on this website	0.737		0.499		
Financial Security 1	When using this web site, paying for goods does not require a lot of details	0.686	0.773	0.762	0.799	0.571
2	When buying from this website I am confident in the security procedures	0.797		0.806		
3	Overall, this website seems security conscious	0.764		0.753		
Trust 1	This website is genuinely committed to my satisfaction	0.707	0.838	0.590	0.859	0.611
2	If this website makes a claim or promise about its product, it is probably true	0.816		0.927		
3	I feel I know what to expect from this web site	0.818		0.874		
4	I feel that I can trust this web site	0.524		0.695		
Purchase Intention 1	I would like to revisit this website in near future	0.852	0.843	0.826	0.823	0.591
2	I would recommend this website to my friends and others	0.851		0.739		
3	This website will be my first choice over others	0.811		0.699		

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Table 3. Hypotheses test

Hypotheses				Path Coefficient (β)	Error	t-value	p-value	Test Results
H1	Aesthetic Appeal	→	Trust	0.523	0.053	9.556	***	Supported
H2	Layout and Functionality	→	Trust	0.322	0.044	6.521	***	Supported
H3	Financial Security	→	Trust	0.489	0.045	9.788	***	Supported
H4	Trust	→	Purchase Intention	0.532	0.052	9.822	***	Supported

*** means p-value = 0.000

5.3 Mediating Effect of Organism: Trust

The mediating effect of trust on relationship between e-servicescape dimensions and purchase intentions was tested by use of extensively acknowledged method given by Baron & Kenny (1986). According to this approach, mediating effect of a variable is established once following four conditions are fulfilled.

First, independent variable/s (e-servicescape dimensions) has to significantly affect mediating variable (trust). Second, mediating variable must significantly affect the dependent variables (purchase intention). The two conditions are already fulfilled as shown in Table 3. Third, independent variables (e-servicescape dimensions) must directly influence dependent variable/s (purchase intention). Towards third condition assessment, direct effect of e-servicescape dimensions on purchase intention was assessed. Results shows that aesthetic appeal, layout and functionality and financial security affects trust ($\beta1 = 0.248$, $p < 0.001$; $\beta2 = 0.202$, $p < 0.001$; $\beta3 = 0.255$ $p < 0.001$ respectively). Fourth, path coefficients values of an independent variable/s to its dependent variable/s either reduce its value to prove partial mediation or it converts insignificant showing full mediation when any mediator/s is applied into a model. From Table 4, findings suggests that the path coefficient values for all e-servicescape dimensions to purchase intention were reduced ($\beta1 = 0.113$, $p < 0.001$; $\beta2 = 0.109$, $p < 0.001$; $\beta2 = 0.098$, $p < 0.001$ respectively) but remained statistically significant, therefore partial mediation of organism component i.e. trust was proved.

Table 4. Mediating effect of trust

Independent		Dependent	Direct Effect	Indirect Effect	Mediating Role
H5	Aesthetic Appeal	Purchase Intention	0.248***	0.113***	Partial Mediation
H6	Layout and Functionality	Purchase Intention	0.202***	0.109***	Partial Mediation
H7	Financial Security	Purchase Intention	0.255***	0.098***	Partial Mediation

*** means p-value ≤ 0.001

5.4 Moderating Effect of Gender

To conduct further analysis of hypotheses H8, H9 and H10, study requires usage of advanced multivariate analysis method (Hayes, 2009) by using AMOS 20.0 and multi-group analysis of both genders. (Byrne,

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2016) recommended use of structural and measurement constraints to assess model equality and authors methods have been applied by different studies (Yadav & Rangnekar, 2015, 2016) for multiple group analysis. Two models are assessed, females (N=144) and males (N=160). Goodness-of-fit indices for both the models were found significant i.e. male (χ^2/df=1.9, RMSEA= 0.04, CFI= 0.932, NFI = 0.925 and GFI = 0.945) and female models (χ^2/df=2.1, RMSEA= 0.05, CFI=0.926, NFI = 0.905 and GFI = 0.901).All causal paths were found significant in structural path analysis.

Table 5 shows results of moderation for the gender groups i.e. male and females. As results clearly shows that aesthetic appeal has significant and positive relationship with trust for both the genders i.e. male: β= 0.406, t = 4.12; female: β = 0.431, t = 4.22, thus accepting hypotheses H8. Similarly, layout and functionality has a significant and positive relationship with trust for both the genders i.e. male: β= 0.358, t = 3.64; female: β = 0.388, t = 3.91, thus accepting hypotheses H9. And finally, financial security has significant and positive relationship with trust for both the genders i.e. male: β= 0.427, t = 4.35; female: β = 0.489, t = 4.76, thus accepting hypotheses H10. Therefore, there is no moderation amongst both the genders for e-servicescape dimensions and trust on website.

5.5 Execution Time Summary

Table 5. Invariance test across gender

Hypotheses				Standardized beta values (β) (t) (p)		Test Results
				Male	Female	
H8	Aesthetic Appeal	→	Trust	0.406(4.12) ***	0.431(4.22) ***	M=F (Supported)
H9	Layout and Functionality	→	Trust	0.358(3.64) ***	0.388(3.91) ***	M=F (Supported)
H10	Financial Security	→	Trust	0.427(4.35) ***	0.489(4.76) ***	M=F (Supported)

*** means p-value ≤ 0.001

6. DISCUSSIONS AND IMPLICATIONS

6.1 Theoretical Implications

Results of the study authenticate the concept that e-servicescape dimensions lay high effect on customer's website trust, bundled in SOR framework. Findings of the study confirms with past studies stating that customers' website trustworthiness is mostly influenced by e-servicescape dimensions (Tran, Strutton, & Taylor, 2012). Amongst e-servicescape dimensions aesthetic appeal was found to be most influential and significant in relationship with online website trust. Results of the study confirm that individuals are more likely to purchase when they trust a website and its ambience while searching for information online. In this sense, findings of this study support the notion that buyer and seller relationship have trust as most crucial challenge in e-retail studies. These findings related to aesthetics of a website, showcases that aesthetic appeal or visuals of a website are crucial in creation of trust towards online retail customers. Therefore, due consideration must be given to designing user's interface (feel and look) of an e-commerce website. Elements to be included must be pleasing and have appealing graphics, fonts and theme for the website with displayed information and product assortment for browsing customers.

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Further results indicate that layout and functionality positively and significantly influences trust over e-commerce website. Considering website trust and relation of layout and functionality, online retailers must decide and design an optimized journey for customers' purchase experience. These findings are crucial and interesting as they recommend that online retailers must concentrate on aesthetic appeal to increase pleasing effects of website and also on its layout and functionality to ensure heightened website easiness and usability is generated towards services. Similarly, financial security is found to be a major influencing factor towards generating trust of customer. Financial security on e-commerce websites is considered a major issue amongst customers (Harris & Goode, 2010), as its abuse or failure can cause distrust for retailer and hardship for customers through disclosure, destruction, alteration of data, service denial and/or fraud etc. Therefore, all e-servicescape dimensions should be strategically culminated to keep customer pleased and comfortable while browsing through different pages and ensure website trust.

Study also assessed the role of organism component (trust) to fulfil a mediating role in determining consumers' purchase intentions from e-commerce websites (Ha et al., 2016; Hsu, Chang, Kuo, & Cheng, 2017; Lwin et al., 2016; Pelet, Ettis, & Cowart, 2017). Results indicate that trust partially mediates the relation between all e-servicescape dimensions and consumers' purchase intentions indirectly, even though differently. Therefore, it can be established that organism component of SOR model truly emphasizes on a persons' cognitive and affective conditions due to their relation with e-servicescape dimensions, that subsequently affects their response i.e. purchase intention (Loureiro & Ribeiro, 2011).

Exploring the role of gender helps retailers, marketers and other stakeholders verify need of gender-based specific strategies for both groups i.e. male and female. Results of gender moderation showed no difference towards services and features, this indicates that gap amongst taste and usability of e-commerce and its services is deteriorating. Findings from this study are in consistency with many latest studies that found no significant differences amongst both genders in the context of e-commerce websites. Like, Ladhari & Leclerc (2013) found no significant difference amongst both genders during examination of websites and e-tailers receptiveness. Therefore, when marketers and other stakeholders discussing e-servicescape dimensions they must keep in mind that all the environmental cues like aesthetics of website and security of services, etc must not be too customized as per gender. Too much emphasis on gender customized website can also result in dislike and distrust by customer leading to loss of customer.

6.2 Managerial Implications

This study endeavours to identify the significance of e-servicescape in the e-commerce context. Results of this study points to key significant implication i.e. e-retailers, website designers, architects of website and other stakeholders must ensure good quality of environmental cues and ensure customer of available safety and security. For consumers, willing to shop online, websites are the most crucial contact point for them to know products and services. As online consumers lack feature of touch or feel during product purchase process, effectiveness of website e-servicescape dimensions becomes more crucial as it ensures comfort required for peace of mind. A comfortable, useful and efficient website and its services do not just help create an easy checkout but they also remove customers post-purchase dissonance. To maintain long-term relationship with existing customers, retailers and managers must design website in terms of better e-servicescape features: outlook design, functionality and security which are at par with customer needs. A noteworthy discovery of this research is that aesthetic appeal shows highest significant impact on customer intentions. This implied that a good appearance appeal helps customers cherish e-commerce website and its aesthetics. Hence, website designers, architects and software engineers must emphasize

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on the visuals of websites and optimize their design effectiveness. Aesthetic appeal can be improved by usage of different colors, entertaining features, sounds and so on. It becomes vital that digital marketers, managers and other people involved are able to elicit positive emotion and preference towards products, their brands and organizations entirely.

Further it can be implied that financial security, layout and functionality are also crucial to customers purchase intentions. Once consumer identifies a website to be of low-quality e-servicescape or finds visually unattractive, not safe towards payment process and has complex/difficult layout and functionality, then consumer will consider website to be of low or no utility to him/her. Such alterations in judgement due to low-quality e-servicescape lead consumers' towards rival websites. Moreover, all these services and design aspects must be integrated into the development process of a website as overall environment or atmosphere experience of a website leads to customers trust and purchase behavior. For example, Alibaba the Chinese e-commerce giant has segregated its payment and financial security services to its subsidiary unit Alipay to provide ease in payments and various other features.

Another implication to this study is that too much customization can formulate a complicated interface for the users. As per (Reibstein, 1999), internet shoppers are mostly composed of males who are young and well educated. But results of the study imply that retailers, marketers and other stakeholders have no need for gender-based e-servicescape environment segmentation. As both the gender groups have similar taste towards website interface and services needed; therefore, websites must avoid gender specific customization. Reason being mediation of technology has depleted gender biased taste and usability gap for e-commerce websites. Consequently, simple and standard website interface with usable services are preferred by customers and also provides an environment of trust and comfort.

7. CONCLUSION

This study is aimed at identifying and assessing a model to surge customer purchase intentions on e-commerce platform in developing economies by applying SOR framework. Concurrently, the application and usefulness of SOR framework to online shopping environment is established through effective website design and other features (e-servicescape), where study proves to be of good value for identifying customer purchase intentions. Study identified that Stimulus (e-servicescape dimensions) creates response (purchase intention) via organism (trust) through a sequential and consistent flow where gender moderation does not show much difference to respondents' likability towards e-servicescape dimensions for an e-commerce website.

8. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Although this study helped identify effects of various e-servicescape dimensions for e-commerce platforms, future studies can also explore other relevant constructs of online environments like engagement, customization/personalization effect, interactivity, information effects and security to surge customers' purchase intentions in developing economies. This study used gender as a moderator to understand relations better, still future studies can gain more insights into customer behaviour by introducing other moderating variables like retailer type, type of device, occupation, internet usage, product attributes, etc. Although, study was focused towards developing country and sample was gathered from India, future

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studies can benefit by identifying cultural differences across different geographical boundaries. Finally, study did not take into account time series data of customer towards their experience with the websites as it has major implications. So, future studies can benefit by conducting time series study on customer behaviour towards e-commerce websites and their services.

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REFERENCES

Agag, G., & El-Masry, A. A. (2016). Understanding consumer intention to participate in online travel community and effects on consumer intention to purchase travel online and WOM: An integration of innovation diffusion theory and TAM with trust. *Computers in Human Behavior*, *60*, 97–111. doi:10.1016/j.chb.2016.02.038

Ahmed, E., & Akhlaq, A. (2015). Digital commerce in emerging economies: Factors associated with online shopping intentions in Pakistan. *International Journal of Emerging Markets*, *10*(4), 634–647. doi:10.1108/IJoEM-01-2014-0051

Alalwan, A. A. (2018). Investigating the impact of social media advertising features on customer purchase intention. *International Journal of Information Management*, *42*, 65–77. doi:10.1016/j.ijinfomgt.2018.06.001

Al-Debei, M. M., Akroush, M. N., & Ashouri, M. I. (2015). Consumer attitudes towards online shopping. *Internet Research*, *25*(5), 707–733. doi:10.1108/IntR-05-2014-0146

Armstrong, J. S., & Overton, T. S. (1977). Estimating Nonresponse Bias in Mail Surveys. *JMR, Journal of Marketing Research*, *14*(3), 396–402. doi:10.1177/002224377701400320

Azizi, S., & Javidani, M. (2010). Measuring e-shopping intention: An Iranian perspective. *African Journal of Business Management*, *4*(13), 2668–2675. Retrieved from http://www.academicjournals.org/AJBM

Bagozzi, R. P. (1986). *Principles of Marketing Management*. Toledo, OH: Science Research Associates. Retrieved from https://books.google.co.in/books/about/Principles_of_Marketing_Management.html?id=BIQoAQAAMAAJ

Bai, B., Law, R., & Wen, I. (2008). The impact of website quality on customer satisfaction and purchase intentions: Evidence from Chinese online visitors. *International Journal of Hospitality Management*, *27*(3), 391–402. doi:10.1016/j.ijhm.2007.10.008

Barkhordari, M., Nourollah, Z., Mashayekhi, H., Mashayekhi, Y., & Ahangar, M. S. (2017). Factors influencing adoption of e-payment systems: An empirical study on Iranian customers. *Information Systems and e-Business Management*, *15*(1), 89–116. doi:10.100710257-016-0311-1

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Baron, R. M., & Kenny, D. A. (1986). The Moderator-Mediator Variable Distinction in Social The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality*, *51*(6), 1173–1182. doi:10.1037/0022-3514.51.6.1173 PMID:3806354

Bauer, H. H., Grether, M., & Leach, M. (2002). Building customer relations over the Internet. *Industrial Marketing Management*, *31*(2), 155–163. doi:10.1016/S0019-8501(01)00186-9

Bentler, P. M. (1992). On the fit of models to covariances and methodology to the Bulletin. *Psychological Bulletin*, *112*(3), 400–404. doi:10.1037/0033-2909.112.3.400 PMID:1438635

Bollen, K., & Long, S. (1993). *Testing Structural Equation Models*. Sage Publications. Retrieved from https://tinyurl.com/yd7ksv35%0A

Bonsón Ponte, E., Carvajal-Trujillo, E., & Escobar-Rodríguez, T. (2015). Influence of trust and perceived value on the intention to purchase travel online: Integrating the effects of assurance on trust antecedents. *Tourism Management*, *47*, 286–302. doi:10.1016/j.tourman.2014.10.009

Brengman, M., & Karimov, F. P. (2012). The effect of web communities on consumers' initial trust in B2C e-commerce websites. *Management Research Review*, *35*(9), 791–817. doi:10.1108/01409171211256569

Brunner-Sperdin, A., Scholl-Grissemann, U. S., & Stokburger-Sauer, N. E. (2014). The relevance of holistic website perception. How sense-making and exploration cues guide consumers' emotions and behaviors. *Journal of Business Research*, *67*(12), 2515–2522. doi:10.1016/j.jbusres.2014.02.004

Buxbaum, O. (2016). *Key Insights into Basic Mechanisms of Mental Activity*. Springer international publishing.

Byrne, B. M. (2016). *Structural Equation Modeling With AMOS : Basic Concepts, Applications, and Programming*. Routledge; doi:10.4324/9781315757421

Cambra-Fierro, J., Melero-Polo, I., & Javier Sese, F. (2016). Can complaint-handling efforts promote customer engagement? *Service Business*, *10*(4), 847–866. doi:10.100711628-015-0295-9

Campbell, D. E., & Wright, R. T. (2008). Shut-up I don't care: Understanding the role of relevance and interactivity on customer attitudes toward repetitive online advertising. *Journal of Electronic Commerce Research*, *9*(1), 62–76. Retrieved from http://web.csulb.edu/journals/jecr/issues/20081/Paper5.pdf

Carlos Roca, J., José García, J., & José de la Vega, J. (2009). The importance of perceived trust, security and privacy in online trading systems. *Information Management & Computer Security*, *17*(2), 96–113. doi:10.1108/09685220910963983

Casaló, L. V., Flavián, C., & Guinalíu, M. (2010). Antecedents and Consequences of Consumer Participation in On-Line Communities: The Case of the Travel Sector. *International Journal of Electronic Commerce*, *15*(2), 137–167. doi:10.2753/JEC1086-4415150205

Coleman, J. S. (1958). Snowball sampling: Problems and techniques of chain referral sampling. *Human Organization*, *17*(4), 28–36. doi:10.17730/humo.17.4.q5604m676260q8n7

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Curras-perez, R., Ruiz-mafe, C., & Sanz-blas, S. (2014). Determinants of user behaviour and recommendation in social networks An integrative approach from the uses. *Industrial Management & Data Systems*, *114*(9), 1477–1498. doi:10.1108/IMDS-07-2014-0219

Cyr, D., & Bonanni, C. (2005). Gender and website design in e-business. *International Journal of Electronic Business*, *3*(6), 565. doi:10.1504/IJEB.2005.008536

Donnelly, V. (2001). *Designing Easy-to-use Websites : A Hands-on Approach to Structuring Successful Websites*. Addison-Wesley. Retrieved from https://tinyurl.com/yccjcjs5

Donovan, R., & John, R. (1982). Store Atmosphere: An Environmental Psychology Approach. *Journal of Retailing*, *58*(1), 34–57. Retrieved from https://www.researchgate.net/publication/248766608

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2001). Atmospheric qualities of online retailing: A conceptual model and implications. *Journal of Business Research*, *54*(2), 177–184. doi:10.1016/S0148-2963(99)00087-9

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2003). Empirical Testing of a Model of Online Store Atmospherics and Shopper Responses. *Psychology and Marketing*, *20*(2), 139–150. doi:10.1002/mar.10064

Fang, J. F., Wen, C., George, B., & Prybutok, V. R. (2016). Consumer heterogeneity, perceived value, and repurchase decision-making in online shopping: The role of gender, age, and shopping motives. *Journal of Electronic Commerce Research*, *17*(2), 116. Retrieved from https://pdfs.semanticscholar.org/0bca/6352595935287ebaa523e96776d6b96e80cf.pdf

Fastmoving. (2017). eCommerce Money Africa Confex 2017- Fastmoving review - Brand Activity. Retrieved from http://www.fastmoving.co.za/activities/ecommerce-money-africa-confex-2017-fastmoving-review-7710

Fiore, A. M., & Kim, J. (2007). An integrative framework capturing experiential and utilitarian shopping experience. *International Journal of Retail & Distribution Management*, *35*(6), 421–442. doi:10.1108/09590550710750313

Flavián, C., & Guinalíu, M. (2006). Consumer trust, perceived security and privacy policy. *Industrial Management & Data Systems*, *106*(5), 601–620. doi:10.1108/02635570610666403

Flavián, C., & Gurrea, R. (2007). Analyzing the Influence of Websites Attributes on the Choice of Newspapers on the Internet. In *E-Commerce and Web Technologies* (pp. 179–190). Springer Berlin Heidelberg; doi:10.1007/978-3-540-74563-1_18

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *JMR, Journal of Marketing Research*, *18*(1), 39–50. doi:10.1177/002224378101800104

Frels, J., & Kannan, P. K. (2001). *Consumers risk perceptions in conducting online transactions: An Empirical Investigation*. Academic Press. Retrieved from rhsmith.umd.edu

Fu Tsang, N. K., Lai, M. T. H., & Law, R. (2010). Measuring E-Service Quality for Online Travel Agencies. *Journal of Travel & Tourism Marketing*, *27*(3), 306–323. doi:10.1080/10548401003744743

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Gao, L., & Bai, X. (2014). Online consumer behaviour and its relationship to website atmospheric induced flow: Insights into online travel agencies in China. *Journal of Retailing and Consumer Services*, *21*(4), 653–665. doi:10.1016/j.jretconser.2014.01.001

Garbarino, E., & Strahilevitz, M. (2004). Gender differences in the perceived risk of buying online and the effects of receiving a site recommendation. *Journal of Business Research*, *57*(7), 768–775. doi:10.1016/S0148-2963(02)00363-6

Ha, H. Y., John, J., John, J. D., & Chung, Y. K. (2016). Temporal effects of information from social networks on online behavior: The role of cognitive and affective trust. *Internet Research*, *26*(1), 213–235. doi:10.1108/IntR-03-2014-0084

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th ed.). New York: Pearson. Retrieved from https://www.pearson.com/us/higher-education/program/Hair-Multivariate-Data-Analysis-7th-Edition/PGM263675.html

Hair, J. F., Jr., Anderson, R. E., Tatham, R. L., & William, C. (1995). Multivariate data analysis with readings. New Jersey: Prentice Hall.

Hammedi, W., Kandampully, J., Zhang, T. T., & Bouquiaux, L. (2015). Online customer engagement: Creating social environments through brand community constellations. *Journal of Service Management*, *26*(5), 777–806. doi:10.1108/JOSM-11-2014-0295

Harris, L. C., & Goode, M. M. H. (2010). Online servicescapes, trust, and purchase intentions. *Journal of Services Marketing*, *24*(3), 230–243. doi:10.1108/08876041011040631

Hartono, E., Holsapple, C. W., Kim, K. Y., Na, K. S., & Simpson, J. T. (2014). Measuring perceived security in B2C electronic commerce website usage: A respecification and validation. *Decision Support Systems*, *62*, 11–21. doi:10.1016/j.dss.2014.02.006

Hasan, B. (2016). Perceived irritation in online shopping: The impact of website design characteristics. *Computers in Human Behavior*, *54*, 224–230. doi:10.1016/j.chb.2015.07.056

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, *76*(4), 408–420. doi:10.1080/03637750903310360

Hong, I. B. (2015). Understanding the consumer's online merchant selection process: The roles of product involvement, perceived risk, and trust expectation. *International Journal of Information Management*, *35*(3), 322–336. doi:10.1016/j.ijinfomgt.2015.01.003

Hong, I. B., & Cha, H. S. (2013). The mediating role of consumer trust in an online merchant in predicting purchase intention. *International Journal of Information Management*, *33*(6), 927–939. doi:10.1016/j.ijinfomgt.2013.08.007

Hooper, D., Coughlan, J., & Mullen, R., M. (2013). The servicescape as an antecedent to service quality and behavioral intentions. *Journal of Services Marketing*, *27*(4), 271–280. doi:10.1108/08876041311330753

Hsu, C.-L., Chang, K.-C., Kuo, N.-T., & Cheng, Y.-S. (2017). The mediating effect of flow experience on social shopping behavior. *Information Development*, *33*(3), 243–256. doi:10.1177/0266666916651918

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*(1), 1–55. doi:10.1080/10705519909540118

Huang, D., Li, Z., Mou, J., & Liu, X. (2017). Effects of flow on young Chinese consumers' purchase intention: A study of e-servicescape in hotel booking context. *Information Technology & Tourism*, *17*(2), 203–228. doi:10.100740558-016-0073-0

Joreskog, K. G., & Sorbom, D. (1993). LISREL 8: Structural equation modeling with the SIMPLIS command language. *Scientific Software Internationa*, *16*, 202. Retrieved from https://tinyurl.com/ycpj9opp

Kannan, R. T. R. and P. K. (2016). The Era of e-Service. In *E-Service: New Directions in Theory and Practice New Directions in Theory and Practice* (pp. 15–34). Routledge. doi:10.4324/9781315291291-7

KANTAR IMRB. (2019). *ICUBE Digital adoption & usage trends* (21st ed.).

Kaushik, A. K., & Rahman, Z. (2015). An alternative model of self-service retail technology adoption. *Journal of Services Marketing*, *29*(5), 406–420. doi:10.1108/JSM-08-2014-0276

Kim, D. J., Ferrin, D. L., & Raghav Rao, H. (2009). Trust and satisfaction, two stepping stones for successful e-commerce relationships: A longitudinal exploration. *Information Systems Research*, *20*(2), 237–257. doi:10.1287/isre.1080.0188

Kim, J., & Lennon, S. J. (2013). Effects of reputation and website quality on online consumers' emotion, perceived risk and purchase intention: Based on the stimulus-organism-response model. *Journal of Research in Interactive Marketing*, *7*(1), 33–56. doi:10.1108/17505931311316734

Kim, K., & Prabhakar, B. (2000). Initial trust, perceived risk, and the adoption of internet banking. *Proceedings of the twenty first international conference on Information systems* (pp. 537–543). Academic Press. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.99.8121&rep=rep1&type=pdf

Kim, M. J., Chung, N., & Lee, C. K. (2011). The effect of perceived trust on electronic commerce: Shopping online for tourism products and services in South Korea. *Tourism Management*, *32*(2), 256–265. doi:10.1016/j.tourman.2010.01.011

Kshetri, N. (2007). Barriers to e-commerce and competitive business models in developing countries: A case study. *Electronic Commerce Research and Applications*, *6*(4), 443–452. doi:10.1016/j.elerap.2007.02.004

Kurasaki, K. S. (2000). Intercoder Reliability for Validating Conclusions Drawn from Open-Ended Interview Data. *Field Methods*, *12*(3), 179–194. doi:10.1177/1525822X0001200301

Ladhari, R., & Leclerc, A. (2013). Building loyalty with online financial services customers: Is there a gender difference? *Journal of Retailing and Consumer Services*, *20*(6), 560–569. doi:10.1016/j.jretconser.2013.07.005

Law, R., & Hsu, C. H. C. (2005). Customers' perceptions on the importance of hotel web site dimensions and attributes. *International Journal of Contemporary Hospitality Management*, *17*(6), 493–503. doi:10.1108/09596110510612130

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Lian, J. W., & Yen, D. C. (2014). Online shopping drivers and barriers for older adults: Age and gender differences. *Computers in Human Behavior*, *37*, 133–143. doi:10.1016/j.chb.2014.04.028

Lim, S., & Kwon, N. (2010). Gender differences in information behavior concerning Wikipedia, an unorthodox information source? *Library & Information Science Research*, *32*(3), 212–220. doi:10.1016/j.lisr.2010.01.003

Lim, Y. S., Heng, P. C., Ng, T. H., & Cheah, C. S. (2016). Customers' online website satisfaction in online apparel purchase: A study of Generation Y in Malaysia. *Asia Pacific Management Review*, *21*(2), 74–78. doi:10.1016/j.apmrv.2015.10.002

Lin, X., Featherman, M., Brooks, S. L., & Hajli, N. (2018, February 28). Exploring Gender Differences in Online Consumer Purchase Decision Making: An Online Product Presentation Perspective. *Information Systems Frontiers*, 1–15. doi:10.100710796-018-9831-1

Liu, Y., Li, Y., Zhang, H., & Huang, W. (2017). Gender differences in information quality of virtual communities: A study from an expectation-perception perspective. *Personality and Individual Differences*, *104*, 224–229. doi:10.1016/j.paid.2016.08.011

Loureiro, S., & Ribeiro, L. (2011). The effect of atmosphere on emotions and online shopping intention: Age differentiation. *Proceedings of the Australian and New Zealand Marketing Academy Conference*, Perth, Australia. Academic Press.

Loureiro, S., & Sarmento, E. (2014). The Role of Servicescape on Customers' Emotion, Perceived Quality and Image: the Medical Tourism Context. In 2014 Global Marketing (pp. 1717–1729). Academic Press. doi:10.15444/GMC2014.09.03.02

Lu, H. P., & Lee, M. R. (2010). Demographic differences and the antecedents of blog stickiness. *Online Information Review*, *34*(1), 21–38. doi:10.1108/14684521011024100

Lunardo, R., & Mbengue, A. (2013). When atmospherics lead to inferences of manipulative intent: Its effects on trust and attitude. *Journal of Business Research*, *66*(7), 823–830. doi:10.1016/j.jbusres.2011.06.007

Lwin, M. O., Wirtz, J., & Stanaland, A. J. S. (2016). The privacy dyad: Antecedents of promotion- and prevention-focused online privacy behaviors and the mediating role of trust and privacy concern. *Internet Research*, *26*(4), 919–941. doi:10.1108/IntR-05-2014-0134

Manganari, E. E., Siomkos, G. J., Rigopoulou, I. D., & Vrechopoulos, A. P. (2011). Virtual store layout effects on consumer behaviour. *Internet Research*, *21*(3), 326–346. doi:10.1108/10662241111139336

Michaud Trevinal, A., & Stenger, T. (2014). Toward a conceptualization of the online shopping experience. *Journal of Retailing and Consumer Services*, *21*(3), 314–326. doi:10.1016/j.jretconser.2014.02.009

Mollen, A., & Wilson, H. (2010). Engagement, telepresence and interactivity in online consumer experience: Reconciling scholastic and managerial perspectives. *Journal of Business Research*, *63*(9–10), 919–925. doi:10.1016/j.jbusres.2009.05.014

Montoya-weiss, M. M., Voss, G. B., & Grewal, D. (2003). Determinants of online channel use and overall satisfaction with a relational, multichannel service provider. *Journal of the Academy of Marketing Science*, *31*(4), 448–458. doi:10.1177/0092070303254408

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Nadeem, W., Andreini, D., Salo, J., & Laukkanen, T. (2015). Engaging consumers online through websites and social media: A gender study of Italian Generation Y clothing consumers. *International Journal of Information Management*, *35*(4), 432–442. doi:10.1016/j.ijinfomgt.2015.04.008

Narang, R., & Trivedi, P. (2016). Challenges and opportunities of e-tailing in emerging economies. In E-retailing challenges and opportunities in the global marketplace (pp. 50–71). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9921-2.ch003

Banerjee, N. (2017, January 9). Online retail consumers to cross 100 million by 2017: ASSOCHAM-Resurgent India study. *India Times.* Retrieved from https://economictimes.indiatimes.com/industry/services/retail/online-retail-consumers-to-cross-100-million-by-2017-assocham-resurgent-india-study/articleshow/56417797.cms

Pascual-Miguel, F. J., Agudo-Peregrina, Á. F., & Chaparro-Peláez, J. (2015). Influences of gender and product type on online purchasing. *Journal of Business Research*, *68*(7), 1550–1556. doi:10.1016/j.jbusres.2015.01.050

Pelet, J. É., Ettis, S., & Cowart, K. (2017). Optimal experience of flow enhanced by telepresence: Evidence from social media use. *Information & Management*, *54*(1), 115–128. doi:10.1016/j.im.2016.05.001

Rahul, M., & Aggarwal, A. (2017). Impact of perceived usability and perceived information quality on Indian consumer purchase intentions in online shopping: Implication of TAM and S-O-R theory. *International Journal of Technology Transfer and Commercialisation*, *15*(2), 160–183. doi:10.1504/IJTTC.2017.10008568

Reibstein, D. J. (1999). *Who is Buying on the Internet, 1999? EMarketer Newsletter, 4*. Retrieved from http://neumann.hec.ca/pages/jacques.nantel/notes/Marketing/textes/reibstein.pdf

Rodgers, S., & Harris, M. A. (2003). Gender and E-commerce: An exploratory study. *Journal of Advertising Research*, *43*(3), 322–329. doi:10.2501/JAR-43-3-322-329

Ruane, L., & Wallace, E. (2013). Generation Y females online: Insights from brand narratives. *Qualitative Market Research*, *16*(3), 315–335. doi:10.1108/13522751311326125

Ruiz-Mafe, C., Martí-Parreño, J., & Sanz-Blas, S. (2014). Key drivers of consumer loyalty to Facebook fan pages. *Online Information Review*, *38*(3), 362–380. doi:10.1108/OIR-05-2013-0101

Seckler, M., Heinz, S., Forde, S., Tuch, A. N., & Opwis, K. (2015). Trust and distrust on the web: User experiences and website characteristics. *Computers in Human Behavior*, *45*, 39–50. doi:10.1016/j.chb.2014.11.064

Shah, M. H., Peikari, H. R., & Yasin, N. M. (2014). The determinants of individuals' perceived e-security: Evidence from Malaysia. *International Journal of Information Management*, *34*(1), 48–57. doi:10.1016/j.ijinfomgt.2013.10.001

Sheth, J. N. (2011). Impact of Emerging Markets on Marketing: Rethinking Existing Perspectives and Practices. *Journal of Marketing*, *75*(4), 166–182. doi:10.1509/jmkg.75.4.166

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Shobeiri, S., Laroche, M., & Mazaheri, E. (2013). Shaping e-retailer's website personality: The importance of experiential marketing. *Journal of Retailing and Consumer Services*, *20*(1), 102–110. doi:10.1016/j.jretconser.2012.10.011

Srinivasan, S. S., Anderson, R., & Ponnavolu, K. (2002). Customer loyalty in e-commerce: An exploration of its antecedents and consequences. *Journal of Retailing*, *78*(1), 41–50. doi:10.1016/S0022-4359(01)00065-3

Statista. (2019). *India - number of internet users 2023.* Retrieved from https://www.statista.com/statistics/255146/number-of-internet-users-in-india/

Teng, H.-J., Ni, J.-J., & Chen, H.-H. (2018). Relationship between e-servicescape and purchase intention among heavy and light internet users. *Internet Research*, *28*(2), 333–350. doi:10.1108/IntR-10-2016-0303

Tran, G. A., & Strutton, D. (2019). Comparing email and SNS users: Investigating e-servicescape, customer reviews, trust, loyalty and E-WOM. *Journal of Retailing and Consumer Services*. doi:10.1016/j.jretconser.2019.03.009

Tran, G. A., Strutton, D., & Taylor, D. G. (2012). Do microblog postings influence consumer perceptions of retailers' e-servicescapes? *Management Research Review*, *35*(9), 818–836. doi:10.1108/01409171211256217

Venkatesh, M., Morris, Davis, & Davis. (2003). User Acceptance of Information Technology: Toward a Unified View. *Management Information Systems Quarterly*, *27*(3), 425. doi:10.2307/30036540

Venkatesh, V., Chan, F. K. Y., & Thong, J. Y. L. (2012). Designing e-government services: Key service attributes and citizens' preference structures. *Journal of Operations Management*, *30*(1–2), 116–133. doi:10.1016/j.jom.2011.10.001

Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, *46*(2), 186–204. doi:10.1287/mnsc.46.2.186.11926

Venkatesh, V., Morris, M., & Ackerman, P. (2000). A Longitudinal Field Investigation of Gender Differences in Individual Technology Adoption Decision-Making Processes. *Organizational Behavior and Human Decision Processes*, *83*(1), 33–60. doi:10.1006/obhd.2000.2896 PMID:10973782

Verbraken, T., Goethals, F., Verbeke, W., & Baesens, B. (2014). Predicting online channel acceptance with social network data. *Decision Support Systems*, *63*, 104–114. doi:10.1016/j.dss.2013.08.011

Vieira, V. A. (2013). Stimuli-organism-response framework: A meta-analytic review in the store environment. *Journal of Business Research*, *66*(9), 1420–1426. doi:10.1016/j.jbusres.2012.05.009

Wang, Y. J., Minor, M. S., & Wei, J. (2011). Aesthetics and the online shopping environment: Understanding consumer responses. *Journal of Retailing*, *87*(1), 46–58. doi:10.1016/j.jretai.2010.09.002

Wu, W.-Y., Lee, C.-L., Fu, C.-S., & Wang, H.-C. (2013). How can online store layout design and atmosphere influence consumer shopping intention on a website? *International Journal of Retail & Distribution Management*, *42*(1), 4–24. doi:10.1108/IJRDM-01-2013-0035

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Wu, W.-Y., Quyen, P. T. P., & Rivas, A. A. A. (2017). How e-servicescapes affect customer online shopping intention: The moderating effects of gender and online purchasing experience. *Information Systems and e-Business Management*, *15*(3), 689–715. doi:10.100710257-016-0323-x

Yadav, M., & Rahman, Z. (2017). Measuring consumer perception of social media marketing activities in e-commerce industry: Scale development & validation. *Telematics and Informatics*, *34*(7), 1294–1307. doi:10.1016/j.tele.2017.06.001

Yadav, M., & Rangnekar, S. (2015). The involved citizen: Who is s(he)? *International Journal of Management Practice*, *8*(2), 115–136. doi:10.1504/IJMP.2015.071669

Yadav, M., & Rangnekar, S. (2016). Role Clarity and Organizational Citizenship Behaviour: Does Tenure Matter? A Study on Indian Power Sector. *Global Business Review, 17*(3 suppl), 207S–224S. doi:10.1177/0972150916631216

Yadav, R., & Mahara, T. (2017). An Empirical Study of Consumers Intention to Purchase Wooden Handicraft Items Online: Using Extended Technology Acceptance Model. *Global Business Review*, *097215091771389*. doi:10.1177/0972150917713899

Yadav, R., & Mahara, T. (2018). Interactions and Participation on Social Commerce Websites: Exploratory Study. *Global Business Review*. doi:10.1177/0972150918779270

Yenisey, M., Ozok, A., & Salvendy, G. (2005). Perceived security determinants in e-commerce among Turkish university students. *Behaviour & Information Technology*, *24*(4), 259–274. doi:10.1080/0144929042000320992

Yeo, V. C. S., Goh, S. K., & Rezaei, S. (2017). Consumer experiences, attitude and behavioral intention toward online food delivery (OFD) services. *Journal of Retailing and Consumer Services*, *35*, 150–162. doi:10.1016/j.jretconser.2016.12.013

Yoon, H. S., & Occeña, L. G. (2015, June 1). Influencing factors of trust in consumer-to-consumer electronic commerce with gender and age. *International Journal of Information Management*. doi:10.1016/j.ijinfomgt.2015.02.003

Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2002). Service quality delivery through web sites: A critical review of extant knowledge. *Journal of the Academy of Marketing Science*, *30*(4), 362–375. doi:10.1177/009207002236911

Zha, X., Zhang, J., Yan, Y., & Xiao, Z. (2014). User perceptions of e-quality of and affinity with virtual communities: The effect of individual differences. *Computers in Human Behavior*, *38*, 185–195. doi:10.1016/j.chb.2014.05.039

Zhang, H., Lu, Y., Gupta, S., & Zhao, L. (2014). What motivates customers to participate in social commerce? The impact of technological environments and virtual customer experiences. *Information & Management*, *51*(8), 1017–1030. doi:10.1016/j.im.2014.07.005

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Chapter 37
Experiencing Commercial Videos for Online Shopping:
A Cross-Cultural User's Design Approach

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ABSTRACT

Although online shopping has become a popular and convenient instrument for companies to buy and sell products, the design of these web-shops does not always offer the rich multisensory experiences that physical retailing offers. In the chapter, the authors argue that introducing audio-visual contents in the design could provide dynamic multisensory information to offer more engaging experiences to the consumer. Despite existing controversies regarding universalism of the emotional experiences induced by perceptual processes, the authors present evidence that suggests cultural modulations of videos experiences. Spanish and Finnish participants interacted with audiovisual products depicting videos of a culturally loaded brand design. Content analysis of participants' verbalizations helped to identify categories and subcategories that defined the representation of the video elements and their relative weight depending on the cultural background of the viewer. Although results indicate common elements affecting viewers of the two countries, they differ in the relative weight to global aesthetics features.

INTRODUCTION

For some years now, Internet is considered a useful tool that helps companies to rapidly spread information about their products to very diverse geographical location at a very low cost. Internet use many times reduces the cost for marketing and also permits companies to offer their customers the possibility of buying from home independently of where the product or the company is located. The reduction of the product cost and the possibility of buying from any location make Internet shopping an attractive

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instrument for companies and customers. However, displaying the product on internet for online shopping greatly differ from the displays of the product in traditional physical shops where the costumers can not only look at the products from fixed angles, but also move and look at them from different distances and perspectives, touch them and even try them, Hence, internet does not usually offer the rich multimodal experiences than physical shopping offers. For these reason, because online shopping usually display the products in two dimensional surfaces and lacks the richer sensory experiences than the physical shops offer, the design of the online shop needs to take special care of the arrangement of the visual elements, the format of presentation, the combination of colours, etc. Usually the products are introduced by presenting pictures and verbal descriptions of their features, but the designer's job is to try to induce positive impressions and good experiences in the users by distributing the element of the web in particular ways. The choice of colours, sounds, and images seeks to influence the users and induce them to by the product (Childers et al. 2002). Despite these efforts, many aspects of the real shopping environment are missing in the static web displays, and this might introduce communication barriers between companies and customers. One way of reducing these possible problems is to introduce dynamic elements by adding video contents to the online shops. Videos can be useful devices to induce emotions and change consumers' perceptions of an object. The mental representations of a product can be influenced by the emotions attached to the audiovisual contents where the product is inserted (Moran, 1981). By exposing an individual to a video-based content about a product, emotions toward the product can be created, which might lead to a positive tendency to consume it (Wang & Cheong, 2006). However, to ensure that these audio-visual elements induce positive experiential, and informational representations of the products, we need research that helps to provide guidelines for enhancing visual communication with the users. As suggested by Childers, et al. (2002) costumers of online-shops do not only use the web to buy in a more efficient manner, but they also look for entertainment. Adding video contents to the shop web design may introduce this important hedonic dimension by making the presentation of the product richer and more attractive. Videos may provide attractive contexts where to display the products, to enhance their aesthetic features or to describe the quality of their manufactured elements. An aesthetically enhanced video might increase the probability that the consumer buy the product, but also may induce him/her to visit the online shop in the future, and to forward the link to other prospective shoppers (Reinecke & Gajos 2014). Recently, Ecklers and Rogers (2014) also suggested that audio-visual contents form part of the viral phenomena, highlighting the influences that videos might have as strategies for marketing (Purcell 2010).

As we mentioned, however, there is not enough research directed to investigate the impact that different elements have on the consumer experience. In addition, sometimes companies have made ill use of videos by applying emotional sensationalism and try to catch the audience attention through unconventional designs and ideas with the risk of triggering a negative reaction on the potential consumer (Ecklers & Rogers 2014) instead of the desired positive experience. But what element catches attention and interest in the consumers when exploring an online-shop? Interest is an important emotion for online shopping that has been explored in the context of film studies. According to Silvia (2005) interest involves evaluation of the degree to which an idea or event is complex, unexpected and difficult to process, but at the same time is evaluated as possible to cope and to understand. Thus, people find interesting complex or unusual events that can be understood after some effort (Silvia 2005a; 2005b; 2005c; 2006).

For the theory, interest is the more central emotion that filmmakers and scriptwriters should seek in their audiences. Interest keeps the viewers in their seats, with the motivation of spending their mental resources on the audiovisual sequences and with high expectations for the future. Interest gives an

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emotional structure to the video and provides the motivation to keep watching it (Tan, 1996). Although films and commercial videos differ in many aspects, the need to rise interest and to be able to influence the emotional experience of the viewer is common to both. The use of videos poses interesting psychological problems that are also common to films because they both integrate visual elements with music, sounds and narrative structure to convey meaning and emotions (Gross & Levenson 1995) and this combination can be used to rise interest for the presented products (in the case of commercial videos) or in the visual narrative and plot (in the case of films). Different aspects of the video design such as the shot composition, the movements of the camera, the music and sounds, the script for particular scenes interact to produce emotional reaction toward the product, and to influence the consumers' behaviour. Similarly, all these very different aspects of the video interact to conforming the users' experience of the product and capture their interest. Identifying the elements of videos that capture interest, and induce positive emotions, and understanding the way in which the audience experience them, is critical for the companies using videos with commercial goals (Kaikati & Kaikati 2004). Research should, therefore, provide answer to the question of how video contents can be used to enhance customers' experiences. Two recent studies (Silvia & Berg, 2011; Tarvainen et al., 2014) have tried to identify these elements by presenting people with short clips of pictures and asking viewers to rate the novelty, complexity, interest, and emotions elicited by the clips. Although the participants vary in their interest ratings, diverse combinations of novelty, complexity, and comprehensibility seem to predict interest. Similarly, in a recent study by Cañas-Bajo et al. (2017), participants were asked to signal the more interesting elements of a film and to indicate their emotional valence while watching the film, The results of this study showed that complex sequences that combined positive and negative emotions were rated as the more interesting parts of the film. In addition, studies should also be directed to identify elements that might differ for people with different cultural background.

Viewers' Experiences of Audio-Visual Contents

Experiencing a product involves creating a mental representation of the cognitive and emotional contents associated to the product. When researchers and designers discuss about users' (or consumers') experiences, they mean the conscious part of the symbolic representation of reality that we have in the mind (Newel & Simon, 1972). This means people have mental representations of their actions, their environment, their own internal states and their emotions, and that experience can be seen as the conscious part of mental representations (Saariluoma & Jokinen 2014). Consciousness is the result of appraisal processes involving three different information sources: the perceptual stimuli, the associative process in memory, and conscious reasoning processes (Roseman & Smith, 2001). These three processes proceed sequentially so that appraisal starts from the sensory and the perceptual processing of the stimuli whose aspects are detected and perceived by our senses. Information is then recovered from memory through fast and automatic associative processes, from the representation of the stimuli to the memory contents that start providing meaning to the events. Finally, the conscious reasoning process encodes the meaning and provides the bases of cognitive and emotional experiences that will endure in time and might influence behavior (Saariluoma & Jokinen, 2014). In this sense, appraisal processes define the cognitive aspect, which produces a specific emotional state. The result of the appraisal process determines whether an individual consciously likes or dislikes the stimuli (Scherer 2009; Saariluoma & Jokinen 2014; Eckler & Bolls 2011). Appraisal theory can also be applied to emotional states coming from audiovisual stimuli. Experiencing an audiovisual product involves creating a mental representation of the cognitive and the

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emotional contents associated with the product. It means that people have representations of the actions and the environment depicted in the product that combine with their own internal mental states. Videos might be useful tools to induce emotions and change consumers' perception of an object. The mental representations of a product can be influenced by the emotions attached to the audiovisual contents where the product is inserted (Moran, 1981). By exposing an individual to a video-based content about a product, external emotions will be created in consciousness. The information will be presented with sensitive additions that are implicit in the image and the sound, leading to a posterior appraisal when the viewer faces the product (Wang & Cheong, 2006).

Videos and other forms of audiovisual presentations could provide contexts that may influence appraisal processes by providing associations with the presented information and influencing the apperception of the product, in turn changing the viewer's emotional experience (Moggridge, 2010). Thus, the user experience includes thoughts, perceptions, or feelings when using a certain product, and the way that the product is presented may increase or decrease the quality of the experience (Albert, 2010; Albert & Tullis, 2013). Taking this approach might be critical for increasing the video's effectiveness in facilitating knowledge about the product and the customers' intention to buy it and other possible products from the same brand. Similarly, the impact of and interest of a video may be facilitated by understanding the factors affecting the audience's emotional and cognitive experiences of the video. Designing video for advertisements or to implement on-line shopping web sites should then start from understanding the different elements that influence the viewers' cognitive and emotional aspects (Garrett, 2010; Helfenstein, 2012; Norman, 2005).

Taking the users' experiences as a starting point is essential for increasing the effectiveness of the video in facilitating knowledge of the product. User-centred design aims to create products that meet the specific needs of the users in order to provide greater satisfaction and good experiences by reducing effort when interacting with the products (Norman 2005). As mentioned, identifying the elements that enhance users' experiences might be critical since some elements might not produce the desired experience for the users. For example, in the field of web design some studies have shown that adding features such as colours to facilitate the understanding or increasing the aesthetic of a product, could produce the opposite effect on the user experience by distracting users' attention and hinder understanding (Jiang & Benbasat 2004; Norman 2005). In audio-visual products, we might also find that introducing some technical or narrative features may have the opposite effect that the one intended. This is why focusing on the users' experiences might also be crucial for creating industrial applications that really meet the goals of the companies. However, this approach has not very frequently been used in studying online shopping. Users' approaches many times involves the use of methods that try to extract the mental representation of the user or consumer, and this in many occasions requires time consuming qualitative methods to assess mental contents. The study that we describe below represents one attempt to characterise the consumer's mental representation of the video contents and to identify the elements that capture the attention and interest of the viewer.

CROSSCULTURAL APPROACHES IN DESIGNING AUDIO-VISUAL CONTENTS

Understanding users' experience is even more important when shopping websites are aimed at a multicultural audience. For audio-visual elements to be successful, they need to adjust their contents to the type of product and to the cultural characteristics of the user. These cultural elements might influence

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users' experiences of the product. An obvious advantage of online shopping is that costumers can be reached from many different geographical and cultural backgrounds, but this advantage would only materialize if the features of the online shop match the needs of the costumers. For this reason, cross-cultural studies from a users' experience perspective are needed for successful and efficient design of online shopping interfaces. To the extent that competition between companies has become globalized, it is important to understand the users' experiences and the impact of their products across cultures. Creating cross-cultural attractive interfaces where consumers from different cultural backgrounds can experience pleasant thoughts and feelings is especially critical (Van Slyke 2010). In this context, it is possible that an audiovisual product developed in a country and a cultural context does not have the same impact on the user from another country or culture. Although, it might be possible to find some features that users may generally consider usable and attractive (e.g., designs that follow the laws of Gestalt), many factors are strongly influenced by cultural values (Ito & Nakakoji 1996). Thus, the success of a video design may depend not only on the coordination of the quality of individual technical or narrative elements comprising it, but also on external factors such as historical and cultural aspects, which might influence the consumer (Dempster, 2006). Audience reception studies (Hall, 1966; Morley, 2006; Tomlinson 1999) have stressed the idea that the messages conveyed through the media are not passively accepted by the audience, and that people interpret their meaning based on their cultural background. For audio-visual elements to be successful, they need to be adjusted to the type of a product and to the cultural characteristics of the users. Audio-visual elements of products displayed in online shopping web sites convey culturally differing perceptions, which influence users' experiences of the products, and thus affects the adoption of e-commerce (Pavlou & Chai 2002).

Cross-cultural studies have also tried to identify a number of dimensions in which cultural differences affect the type of relationships and communication of companies and organizations (Hofstede 2010; Trompennaars 2010; Kasemsap 2016). For example, Hostfede identified six cultural dimensions in which countries differ (Power distance; Individualism vs. Collectivism; Uncertainty avoidance; Masculinity vs. Femininity; Long-term vs. Short-term orientation; Indulgence versus Restraint). Obviously these dimensions may have an effect on how people experience and react to audiovisual products.

One important dimension in online shopping web design is aesthetics since many aesthetics elements have been shown to positively influence purchase intentions (Bloch 1995). The appeal of the product in first impression formation seems to influence behaviour before consciously considering of buying a product (Lindgaard et al. 2006). However, it is not clear whether there are universal features for successful design and many studies have shown that aesthetic impressions may vary across individual personalities, genders, and ages (Moss & Gunn 2009; Cyr et al. 2010; Reinecke & Bernstein 2011; Hsiu-Feng 2014). Thus, aesthetic experiences involve interpretative interaction with several states and actions and thus cannot be considered merely as an immediate response (Carroll 2001). Additionally, important for the design of online shops is the many demonstrations that aesthetics vary with geographical location and culture (O'Connell 2014). For example, in their studies Reinecke and Gajos (Reinecke & Gajos 2014) observed that geographically close countries share similar visual preferences regarding color and visual complexity. For example, Finland and Russia preferred the lowest visual complexity and colorfulness of all countries they study. Similarly, Northern European countries seemed to prefer lower colorfulness than Southern European countries. In a similar vein, Marcus & Gould (2000) showed that Asians prefer brighter, more colourful and animated web sites than Westerners and that these more colourful web sites are sometimes perceived as information overload by the Westerners. In general, all these studies suggest that the countries with a regular exchange of cultural values share similar website preferences.

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Hence, in designing video contents to convey positive emotions toward a product or a brand, it is critical to consider the cultural dimensions in which people differ, not only when making aesthetic judgments, but also when considering other aspects of the products.

The idea of culturability introduced by Barber and Badre (1998) and extended by Cyr and Trevor-Smith (2004) summarizes the importance of cultural design. Culturability represents the mixture of design elements and culture to achieve usability in webs

…color, spatial organization, fonts, shapes, icons, and metaphors, geography, language, flags, sounds, and motion contribute to the design and content of a Web page, which directly affects the way that a user interacts with the site. (Badre 2001).

To address culturability in web and video design attention needs to be paid to many features (visual complexity, music, animation, narrative features, etc.) that can be culturally determined. Decision about these elements from the users' perspective will have an impact on the representation that people make of the product and this mental representation would impact apperception of the product. Thus, the use of videos as a possible solution for enhancing emotional experiences and interest in web shopping calls for research intending to understand the multiple elements of videos that can impact these representations.

Thus, differences in national and cultural dimensions may have an effect on how people experience and react to audiovisual products For example, in a recent cross-cultural study (Cañas-Bajo el al. 2015) images and videos of Iittala products (Finnish design) were compared with the goal of finding whether participants from Finland and Spain, appraised the designs similarly. In the study participants interacted with different audiovisual products depicting images/videos of the brand design. Through content analysis, four main categories defining the representation of the product were identified. Interestingly, the relative weight of these categories depended on nationality of the participants and on the type of visual presentation (image/video). The results indicated cultural differences in some dimensions (memory, usefulness) regarding the products, however the differences regarding these dimension were reduced when participants were shown videos instead of static images. These results suggest that videos are effective in inducing emotions and in changing consumers' perception of an object. Therefore, when designing web interfaces for internationally oriented web shops, audio-visual content may be used to reduce cultural differences and have more global impact.

This proposal can influence how we think of videos and use them. As we argued, videos can be used in online shopping as a way of offering customers a rich multimodal experience that can be closer to the experience of a physical shop (Childers et al., 2002; Reinecke & Gajos, 2014), but also audiovisual presentations of the products can be used to reduce the communication limits due to cultural differences by providing richer perceptual, multisensory experiences of the products.

Some theories propose (Barrat, 2012) that perceptual and cognitive processes are independent modules with different properties: perceptual processes are universal and independent of cultural factors, while cognition is prone to be influenced by culture. Accordingly, to the extent to which videos depend on perceptual processing, cultural and contextual factors should play a smaller role than for other type of object representations. Hence, videos can be used to reduce cultural differences and represent an useful strategy to become more global (Purcell, 2010). However, more evidence is needed to support these claims.

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Are Users' Experiences of Videos Culturally Mediated?

Studies in this research area lack knowledge for identifying the factors that increase consumers' interest and the aspects of the video contents that help in creating pleasant users' experiences across different cultures (Cañas-Bajo et al. 2015). The aim of empirical case study that we describe below is to identify elements of audio-visual contents that enrich the product experience. Because the idea is to enhance cognitive and emotional mental contents of the consumer, the approach that we have taken in our research is to try to understand mental contents, and very specifically, what aspects of the displays capture interest in the viewers. The studies reviewed in the previous section also suggest that the answer to these questions might be culturally mediated. Hence, in our case study, (Cañas-Bajo & Silvennoinen, 2017) we have taken a cross-cultural approach and explored the mental contents and experiences of people from two countries, such as Finland and Spain, that are geographically distant (see Reinecke & Gajos 2014, for data showing differences in aesthetics judgment depending on geographical distance) and that also differ according to some Hostftede's cultural dimension. For instance, in the Hosftede's dimensions regarding "uncertainty avoidance", "collectivism" or "restrain" both countries present different results (Hofstede 2010). These differences has been found relevant when people from those countries buy new technological product (Cañas-Bajo et al., 2015).

In our study Spanish and Finnish participants were exposed to three videos representing Scandinavian design products and we investigated whether participants' mental representations of the videos include elements related to aesthetics qualities of the videos (e.g. the video is interesting, the video is colourful), but also if we could identify aesthetic emotions (Scherer 2009) and intentional aesthetics elements (Carroll 2001). According to Scherer an aesthetic experience is a mixture of interacting cognitive and emotional states when appraised produced aesthetic emotions (e.g. the video makes me feel nostalgic). Similarly, we tried to identify if intentional dimensions of aesthetic also impacted the viewers' experiences. Recent philosophical accounts of aesthetics in arts proposed that aesthetic experiences might also include appraisal of the aesthetics intention of specific element (e.g. the color is trying to capture my attention). From this view, the study not only assessed the elements of the video influencing the viewers' experience, but also aimed to provide support to the psychological reality of some aesthetics dimensions. In addition, we aimed to seek evidence of the importance of culture in modulating users' experiences of audiovisual products. Although appraisal theory and audience studies seem to suggest that culture plays a role in how we perceive and represent the external world, he question of the universality of emotions elicited by videos and films is subject to controversy. Thus, some cognitive theories assume that the capacity of making sense of a projected video is universal and not culturally determined (Barrat, 2012). According to this idea, a functioning perceptual system can visually allow any person to understand a film. According to the modularity hypothesis (Barrat, 2012), perceptual and cognitive processes are independent modules with different properties. As we mentioned, this hypothesis suggests that perceptual processes are universal and independent of cultural factors, while cognition is prone to be influenced by culture. Hence, to the extent that the presented stimuli depend on these modules, culture might have a larger or a smaller effect.

The universality of emotional processing is a classic question in the field of psychology (Darwin, 1872; Ekman & Friesen, 1971). Universalists have argued that basic emotions, such as hunger, fear, sadness, and so on, are universal and independent of culture. In their research and attempt to identify basic, culturally independent emotions, Ekman and Friesen (1971) provide evidence that facial emotional expressions are interpreted in similar ways by people from different cultures. The question of the

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universality of emotions is important for the video industry because if emotions are universal, video producers can use a culturally independent language (images) to convey such emotions. From this perspective, the visual language involved in video production (cuts, shots, angles, shadows, and so on) can be considered universal resources to convey culturally independent meanings and emotional experiences (Brown, 2003; Nielsen, 2005). From this standpoint, efficiently managing audiovisual resources should result in producing the desired emotional impact on the viewers.-

Against the idea of universality, the research on web and visual design has shown that aesthetic emotions may vary with culture. Additionally, communication studies have stressed that research should be targeted to features of the audience and that individual differences in culture and education may influence aesthetic emotions and the appreciation of cultural products. Films and other audiovisual products (series, clips, short films, etc.) are cultural items that can be influenced by individual factors regarding knowledge and orientation toward cultural products. Research on the so-called *cosmopolitan orientation* (Cleveland, et al., 2009; Hannerz, 1990; Skrbis & Woodward, 2007; Szerszynski & Urry, 2002; Woodward et a., 2008) has shown that knowledge and interest in cultural products, as well cultural habits of individuals, play a major role in the consumption of foreign products. *Cosmopolitan-oriented* people are identified by their interest in other cultures and geographically distant places and activities, as well as by their preference to consume products with different cultural combinations. A cosmopolitan orientation is usually associated with openness and compromise with social matters (Meuleman, & Savage, 2013).

In technology and design research, sociocultural differences and tendencies have been approached from the life-based design (LBD) paradigm (Leikas et al., 2013). This approach argues that individuals differ in their *forms of life* (Wittgenstein, 1958), constituting the habits, interests, and activities that they show in a given culture and context. Religious beliefs, support for a football team, and being part of a choir constitute forms of life. Cultural orientations are also considered aspects that comprise different forms of life (Rössel & Schroedter, 2015). In this theoretical context, designers have shown that people with different forms of life might vary in the types of activities and technological devices that are useful to them. From this perspective, designers need to pay attention to the aspects of individuals' lives and the contexts in which technology fits. Similarly, if cultural orientation and cosmopolitanism are considered forms of life, the design of cultural products should take into account the cultural habits of prospective consumers. People with interest in and openness to other cultures and consumers of cultural products may differ in many aspects that may impact their cultural experiences (Geertz, 1973). From this viewpoint, researchers and creators of audiovisual contents must consider different cultures and forms of life when targeting broad audiences. Thus, its approach is that culture may have an effect on how people experience and react to audiovisual products and that audiovisual companies should understand these different reactions when creating videos conforming to the cultural characteristics of its members. An audiovisual product created in a specific cultural context may not have the same impact on a viewer with a different cultural background. Thus, it is critical for designing video advertisements, industrial videos, or feature length films to understand viewers' experiences across cultures.

To sum up, different orientations and theoretical approaches assign varying roles and importance to cultural factors, and clearly more empirical studies are needed to try to understand the relative weight of universality and culturalism in the appreciation of video contents.

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AN EMPIRICAL STUDY ON CULTURAL INFLUENCES ON VIDEO EXPERIENCES OF VIDEO PRESENTATION OF CULTURALLY LOADED PRODUCTS

Method

In the study described in, (Cañas-Bajo & Silvennoinen, 2017). Spanish (N = 20) and Finnish (N = 20) participants were exposed to three videos representing Scandinavian design products (Videos of Iitala products) with audio-dubbings presented in Finnish or in Spanish depending on the participants' nationality (See Appendix A). Both Finnish and Spanish participants were presented each of the videos and then asked: what thoughts and emotions does the video suggest to you? What video elements would you highlight?). Participants were tested individually in a quiet at the University of Granada, Spain (for the Spanish participants) or at the University of Jyväskylä in Finland (for the Finnish participants). We performed content analyses (Weber 1990) to extract the basic dimensions of the participants' mental representations of the videos. The approach for the content analysis was data-driven because the focus was on analyzing the type of feelings, emotions and impressions attached to different properties of the videos by the participants. Semantic units were transformed into content categories and then the frequencies of the semantic units within the categories were recorded in the following manner. Through several iterations of categorisations and mutual agreement between the authors, the categories and sub-categories were identified. First, we identified single words, phrases, and idioms that constituted semantic units for describing cognitive and emotional experiences produced by features of the videos. The second phase of the analysis was to critically evaluate the semantic units into initial categories. This classification phase of the coded semantic units resulted in 30 categories (see Appendix B). In the third analysis phase, second level categorisation was conducted to construct higher-level main categories from the initial sub-categories. These higher-level main categories were related to overall impression of the video (aesthetics, emotion, memory, desirability, etc.), narrative structures (plot, characters, and scenario), visual design (light, colour, shapes) and audio design. The frequency of semantic units within each category was counted for statistical analyses. These analyses were conducted to detect what aspects of the videos raised the users' interest and how these aspects affected the emotional and cognitive experiences of the viewers.

Results[1]

As mentioned, semantic units referring to video contents and emotional experiences elicited by them were classified according to four main categories. The first category was "Overall impression of the video" and contained subcategories related to overall features of the video. Three of these features referred to aesthetics dimensions: 1) Aesthetic persuasion: represented aesthetic evaluations regarding the intentionality of the video. Examples: "*They are trying to make you think about the shapes of everything*" "*to sell these objects is fine"; 2)* Aesthetic emotion: represents aesthetic evaluations of the general emotions experienced by the viewers. Examples of this subcategory are: "*I liked it a lot" "It did not make me feel anything" "The video makes me feel calm"*. 3) Aesthetic Quality: Represents quality attributes attached to the video by the viewers. Examples of this subcategory might be *"The video gives warmth" "I think it is interesting"*. In addition to aesthetics some units referred to what we termed: 4) Memory matches & Associations: represented mental associations such as memories and familiarity with the context. For example verbalization such as "*you wake up in the morning and breakfast is made*",

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"*this suggests memories of Finland*". 5) Desirability: represented enhanced experience of the product through it presentation in the video. Examples: "*Makes you want to buy*"; and 6) Rhythm and length representing evaluation of the dynamics and rhythm of the footage. Examples: "*it felt like too long", "it moved forward all the time with a calm phase"*

The second main category referred to the "Narrative Structure of the video". This broad category also contained aesthetic element corresponding to the three aesthetics subcategories: persuasion, emotion *and* quality, but this time referring to narrative elements of the video. Examples of 1) aesthetic persuasion are "*that are tried to invent to represent some forms, how it can move and so on*", "*it didn't try to explain anything just showed*" 2) aesthetic emotion are "*Well sometimes analogies and metaphors annoy* me", "*this story didn't get me on its side concerning my emotions*" and 3) aesthetic quality are "*comparison between older and newer version was kind of useless*", "*There was interesting information that it takes 30 hours of work per one Aalto vase*". In addition, we identified units referring to the general description of the videos regarding the main idea perceived by the viewer. We termed this subcategory "Overall idea" and examples are "*they are talking about lamps and lights" "they are talking about design*" "*video featuring household items*". Some other subcategories within "Narrative structure" referred to evaluation of specific aspects of the storyline such as "*It explains how the design of curves and forms emerged" "It is interesting to see how it's done"(*Plots aspects subcategory); Evaluation of Character featured in the story line and their role: "*two artists involved in his work" "Then turn to the figure of the designer*"(Character subcategory); Evaluation of the Scenarios appearing in videos such as "*It seems the house of a couple" "what it does is use the Scandinavian landscape*" (Context subcategory); and Product presentation: evaluations on how the product is presented in the storyline. Examples: "*they see that each piece is unique" "Products were presented like in a catalogue*"

The third main category referred to elements of "Visual Design". Again some unit referred to the three aspects of aesthetics, persuasion, emotion, quality, as they related to visual elements. Examples of 1) aesthetic persuasion are "*all the elements a cozy atmosphere was tried to be created*", "*They try some kind of unity in here with the distribution of the elements*" 2) aesthetic emotion are "*peaceful feeling, because of the happy, bright images*", "*stillness, and safety inside the home walls*" and 3) aesthetic quality are "*the quality of the image was horrible and it disturbed me a lot"*, "*visually really stimulant*" In addition some units can be classified within the Composition subcategory that included evaluation of the visual composition of the element in the image. Examples are "*Quite a lot of graphic lines and details*", "*the video plays whit the camera angle of the view*"; some units were related to the Text subcategory that represented evaluation of the subtitles appearing in one of the videos. Example "*text, high-spaced video image were the core elements*"; Product presentation that included evaluations the way in which the product was visually and the fit within the general visual design. Examples: "*products were presented in their natural environment*". In addition, some subcategories referred to perceptual impressions; Materials referred to valuations regarding the material of the product and in other visual objects in the video. Examples: "*Soft wool and hard metal wire in that self, so that in here was lots of balancing elements*", "*there are a lot of wooden surfaces"*; Shapes referred to evaluation and comments on the visual shapes of object in the videos. Example: "*The shape of the vase was clearly the most important element here*"; Light referring to evaluations regarding the disposition of lights and lightning effects on the visual design. Examples: "*At the end of the video the room's lighting gets darker", "With the light and the glass, shadows came which looked nice"*; Colors included evaluation of the colors in the visual display and its integration into the overall visual design. Examples: "*there are lots of interesting colors in these*", "*Quite simple colors*"

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The fourth main category referred to the units regarding "Audio Design". Similarly, to the previous categories the Aesthetics categories regarding persuasion *(e.g. "Music was taken into account, and to all the parts that created the space),* emotion *(e.g. I like the music; The music wasn't supposed to disturb so much)* and quality were included as they applied to audio elements. (*e.g. the music suggests tranquility; the music influenced me)*. In addition, some units referred to the quality of the Narrator/off voice (e.g.*the voice was relaxing*); and to the ·Congruency of the music with other elements of the video (*e.g. Music and the forms were unified*; *I think the music wasn't the right one for this video*)

Figure 4 (see Appendix C) shows the mean number of verbalizations for each group (Finnish/Spanish) in each of the four higher-level categories. An analysis of variance (ANOVA) was carried out including Category as within-subjects variable and Nationality as between-subjects variable. Both main effects were significant (Category: $F(2, 81) = 41$; $p<.05$; $\eta_p = .52$; Nationality: $F(1, 38) = 8{,}38$; $p<.05$; $\eta = .12$). *"Overall impression of the video"* produced more verbalizations than the other categories (mean = 9.67). Moreover, Spanish reported more verbalizations (mean = 7.45) than Finish participants (mean = 5.24). Importantly, there was also a significant interaction, $F(2, 81) = 3{,}22$; $p<.05$; $\eta_p = .08$. Bonferroni corrected pairwise comparisons showed that there were significant differences between Spanish and Finnish participants in the first category: *"Overall impression of the product"* ($p<.01$) and a marginal difference in the fourth category *"audio design"* ($p= .056$). Thus, Spanish participants produced more verbalizations related to overall impression with the product and audio design (mean = 12.15) than Finnish participants (mean = 7.20).

When we analysed the specific subcategories within the overall categories, we observed that the differences in *"Overall impression"* between Spanish and Finish participants came from their verbalization regarding *Aesthetic quality* ($p < .05$) and *Memory matches* ($p < .05$). Similarly, we analysed the broader *"Audio design"* category and observed significant differences in Aesthetics persuasion ($p < .05$) with Spanish participants producing more verbalizations than Finnish participants, all other comparison within this category were not significant ($p > .05$).

Although the overall *"video design"* category did not reach significance, two of the subcategories within it did: *"Composition"* and *"Shapes"* were significant ($p < .05$), both showing more verbalizations by Spanish participants than by Finnish participants. Furthermore, the subcategory *"Plot"* was also significant ($p < .05$), although its higher-level category *"Narrative Structure"* was not. Again, Spanish made more verbalizations than Finnish.

DISCUSSION

The study reported here was designed to study possible differences between Spanish and Finnish participants in the emotional experiences elicited by videos in the context of online shopping. As we mentioned in the introduction, although design studies suggest that videos experiences might be culturally mediated, some psychological and film studies theories proposed that some emotional experiences are universal and that may be universal features that attract the viewers' interest. The results of the content analysis performed in the data form our empirical case study indicated that Finish and Spanish participants focused in different aspects of the videos. In general the Spanish participants produced more verbalizations than the Finnish, but importantly they also differed from the Finnish participants in their greater reliance in aspects related to the overall impression of the videos and in the audio categories. Regarding "overall impressions", the differences between the two groups came from the subcategory

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"aesthetic quality" where the Spanish participants verbalised more global perceptual and emotional aspects of the video (*"the video is colourful, it suggests calm, it is interesting"*. etc.) than the Finnish participants. However, these differences did not appear when local and concrete visual features such as shapes, colours or lighting of specific objects or parts of the videos were considered. Similarly, Spanish participants represented mental associations and global contextual features (e.g. *you wake up in the morning and breakfast is made; reminds me of my town, etc.*"). Hence, the pattern of the verbalizations suggests that there are qualitative differences in the elements of the video contents that capture attention and interest for the two groups. Thus, the Spanish participants seem to pay more attention than the Finnish to contextual factors and memories reflecting an overall, global approach to the video contents, while Finnish participants seen to pay more attention to local functional features. It is also interesting that the only differences found in the category of visual design referred to more global features, such as composition or shapes and differences in the narrative structure dimension, also came from the Spanish mentioning more features related to the overall plot.

Although these differences might be due to a number of factors, this global approach to perception by the Spanish participants could also be associated to higher scores in Hostftede "collectivism" dimension and lower in "Restraint" of countries such as Spain. Obviously, this hypothesis is speculative and should be the focus of further research, but is lo consistent with cognitive research suggesting that cultural factors influence the focus with which people perceive the world. For example, Colzato et al (2008) compared neo-calvinist and atheist Dutch participants in the global-local task (Navon 1977) and showed that neo-Calvinists focused more on the local features composing global figures than the atheists.

Similarly, the dimension of audio design also showed differences between the Spanish and Finnish participants. Thus, the Spanish participants also paid more overall attention to the audio design of the video, especially to the emotional aspects composing aesthetics elements of the audio, than the Finnish participants. This difference may also be related to the differences in the "collectivism" dimension since cultural studies in emotion perception (Massuda et al. 2008) suggest the less individualistic societies pay more attention to contextual cues (e.g. music) to interpret emotions. These cultural differences in appraising the elements of the video that are brought into consciousness (overt verbalizations) by Finnish and Spanish viewers have implications for the design of the contents and aesthetics elements of the videos. Thus, our results suggest that videos designed for Spanish audiences should enhance global contextual and emotional features (global plot, global associations, global emotions suggested by light, color and music in the video), whereas audiovisual contents for Finnish viewers should also enhance local features of specific parts of the videos and individual objects. Because we have compared only two countries, we are not at the moment able to dissociate whether the obtained differences are due to geographical distance as suggested by the research by Reinecke & Gajos (2014), or to cultural dimension such "uncertainty avoidance", "collectivism" or "restrain" (Hofstede 2010). Further research should help to understand the underlying reasons for these differences and to generalise some of our conclusions to countries varying in geographical locations and cultural values.

Note that the pattern of results goes against theoretical positions suggesting that many aspects of videos and films evoke universal emotions and experiences. Modular theories (Barrat, 2012) assume that perceptual processes are universal and independent of cultural factors, while cognition is prone to be influenced by culture. From this assumption, videos that contain more perceptual features should be less prone to cultural modulation that other type of stimuli. However, our results seem to indicate that despite the rich perceptual features of the presented videos, they were represented and experienced differently by our Finish and Spanish participants. This suggests that video design should pay attention to

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cultural factors when aiming to reach an international audience, and there is a need to adjust the video contents to the cultural characteristics of the viewers since the cognitive module may convey culturally different perceptions, which influence the viewers' experiences that may lead them to the adoption of e-commerce (Pavlou & Chai, 2002).

Although identifying aesthetic dimension was not the main goal of the study, it is important for aesthetics theories that we were able to identify in people mental representation of the video different aesthetic dimensions. Thus, we were able to classify units that reflected aesthetic contents of some visual, audio or narrative qualities of the video, separately from units that represented emotional aspects raised by the aesthetic quality of the video. But most interesting was the fact that we were able to identify in both Spanish and Finnish participants, what we called aesthetic persuasion that identifies elements clearly containing an interpretative dimension. Thus, within this dimension, mental contents as reflected by the participants' verbalizations referred to units where participants verbalized their interpretation of the intended meaning of different elements of the video (Carroll 2001).

These results indicate that audiovisual experiences involve evaluations of aesthetic persuasion regarding the overall impression of the video, and in more detail, concerning the narrative structure, visual design, and audio design. The elicitation of impression of aesthetic persuasion as a cognitive process can be explained with appraisal theory of emotion (Smith & Kirby 2001; Jokinen et al. 2015; Silvennoinen et al. 2015). Appraising aesthetic persuasion of an audiovisual representation requires information derived from all three-appraisal sources of information (Scherer 2009; Saariluoma & Jokinen 2014; Eckler & Bolls 2011). Thus, the evaluation of the aesthetic persuasion of a video includes perceiving the audiovisual stimuli, associations withdrawn from memories, and critical reasoning considering the intents of the aesthetics of the stimuli. In addition, aesthetic persuasion appraisals include visual literacy processes in detecting design methods and choices through which the aesthetic strives to create meanings, attitudes, and experiences and elicit emotions in the viewer.

Furthermore, overall impressions, narrative structure, visual and audio design involve aesthetic emotions and evaluations of aesthetic qualities. In appraisal theory of emotion, aesthetic emotion is conceptualized as a separate emotion typology from utilitarian emotions (Mastandrea 2014; Scherer 2009). Utilitarian emotions focus on their adaptive function, which help in adapting to certain stimuli or event. Aesthetic emotions are subjective affective responses to artifacts and to their intrinsic qualities (Mastandrea 2014). Thus, aesthetic emotion and aesthetic quality are intertwined in audiovisual experiences. Aesthetic emotion is a result of the cognitive evaluation of the significance of the event (in this case the audiovisual representation), this process also involves aesthetic qualities that are attributed to mentally represented information contents of the encountered audiovisual representation.

The categories presented in this paper illustrate the mentally represented contents of audiovisual experiences, and can be utilized to inform experience-driven design processes for online videos, and to understand the cognitive process of audiovisual experience from cross-cultural perspective. In addition, our study provides support to aesthetics theories that defend the multidimensional aspects of aesthetics including cognitive, emotional and intentional/interpretative aspects of it. Similarly, our results support and extend previous research suggesting that videos are effective in inducing emotions and in modulating consumers' perceptions. Thus, the mental representations of the viewers were affected by the properties associated to the audiovisual context.

A possible limitation of the study is the association of nationality to familiarity with the product and video presentation styles. Although, the use of familiar Finnish items had the advantage that allowed us to observe the influence of cultural aesthetics (for the Finnish participants the product aesthetics

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matched their aesthetics preferences) in the mental representations, it is possible that the differences that we obtained between Finnish and Spanish participants might be due to familiarity with the product more than with other cultural dimensions. However, the fact that familiarity was only important for images but not when video was presented, suggests that there is more than familiarity in the different ways that Finnish and Spanish participants appraised and mentally represented the objects. Further research with unfamiliar items should try to dissociate the role of familiarity form other cultural dimensions.

SOLUTIONS, RECOMMENDATIONS AND FUTURE DIRECTIONS

The main focus of our study was to answer the question of whether the way of experiencing commercial videos depended of the cultural background of the viewers. Our results seem to suggest that it does. However, some limitations of our study force us to be cautious with our conclusions. First, although we have selected culturally different countries (according to Hofstede's [2010] dimensions) to conduct our observations, these countries come from occidental cultures where many values and forms of life are similar. Hence, an obvious line of research from our data is to directly compare emotions from many more different cultural orientations and larger variations in values, habits, and forms of life. Second, a similar reasoning can be applied to the selected videos since they all come from the same brand, with highly shared values and aesthetics. Additionally, in our attempt to control the selection of videos, we have picked videos depicting similar objects and using similar aesthetic elements and it is possible other styles and products are more open to cultural differences. Third, individual differences in cultural background, age, and expertise might provide better insights into individual and social factors influencing emotional experiences with films. Expert studies in many fields have been highly influential in revealing mental representations that differ for knowledgeable individuals. Reports involving radiologists or chess experts show that perceptions (apperceptions) of objects change with experience. Similarly, cultural background, openness to new experiences, educational level, and age yield different results (Saariluoma et al., 2016). Cultural globalization is a relatively new phenomenon that unevenly impregnates people's lives. Future research should explore the roles of these individual factors in film experience.

CONCLUSION

The results of our study suggest that cultural factors related to global versus local perception and emotions modulate the mental contents of video viewers, and therefore influence how users experience culturally designed products. Different elements composing the overall impression of the video, and the emotional perceptions of music aesthetics seem to impact differently Spanish and Finnish viewers. Thus, the elements of the medium in which the product is presented affects viewers in different ways and could be utilized in providing guidelines in designing product advertisements or web applications. An essential contribution of this paper to user psychology is that results clearly show that there are relevant cultural differences in the way the video elements are apperceived. Thus, this study builds a bridge between the field of user experience, user psychology, and cross-cultural psychology.

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REFERENCES

Albert, W. (2010). *Measuring the user experience*. Morgan Kaufmann.

Albert, W., & Tullis, T. (2013). *Measuring the user experience: collecting, analyzing, and presenting usability metrics*. Newnes.

Badre, A. (2001). *The effects of cross cultural interface design orientation on world wide web user performance*. Academic Press.

Barber, D. B., & Badre, A. (1998). A Year It Was! Culturability: The merging of culture and usability, 1-14.

Barratt, D. (2012). The Geography of Film Viewing: What Are the Implications of Cultural-Cognitive Differences for Cognitive Film Theory? In 2012 Conference for the Society for Cognitive Studies of the Moving Image. SCSMI.

Bloch, P. H. (1995). Seeking the ideal form: Product design and consumer response. *Journal of Marketing*, *59*(3), 16–29. doi:10.2307/1252116

Brown, G. (2003) The Moving Camera. Part I. *Zerb,* 58.

Cañas-Bajo, J., Perälä, P. M., Silvennoinen, J. M., & Saariluoma, P. (2015, September). Affective contents of cross-cultural audiovisual experience. In *Proceedings of the 19th International Academic Mindtrek Conference* (pp. 82-88). ACM. 10.1145/2818187.2818294

Cañas-Bajo, J., & Silvennoinen, J. M. (2017). Cross-Cultural Factors in Experiencing Online Video Contents in Product Marketing. *International Journal of Art, Culture and Design Technologies*, *6*(1), 40–56. doi:10.4018/IJACDT.2017010103

Carroll, N. (2001). *Beyond aesthetics: Philosophical essays*. Cambridge University Press. doi:10.1017/CBO9780511605970

Childers, T. L., Carr, C. L., Peck, J., & Carson, S. (2002). Hedonic and utilitarian motivations for online retail shopping behavior. *Journal of Retailing*, *77*(4), 511–535. doi:10.1016/S0022-4359(01)00056-2

Cleveland, M., Laroche, M., & Papadopoulos, N. (2009). Cosmopolitanism, consumer ethnocentrism, and materialism: An eight-country study of antecedents and outcomes. *Journal of International Marketing*, *17*(1), 116–146. doi:10.1509/jimk.17.1.116

Colzato, L. S., van den Wildenberg, W. P., & Hommel, B. (2008). Losing the big picture: How religion may control visual attention. *PLoS One*, *3*(11), e3679. doi:10.1371/journal.pone.0003679 PMID:19002253

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Cyr, D., Head, M., & Larios, H. (2010). Colour appeal in website design within and across cultures: A multi-method evaluation. *International Journal of Human-Computer Studies*, *68*(1), 1–21. doi:10.1016/j.ijhcs.2009.08.005

Cyr, D., & Trevor-Smith, H. (2004). Localization of Web design: An empirical comparison of German, Japanese, and United States Web site characteristics. *Journal of the American Society for Information Science and Technology*, *55*(13), 1199–1208. doi:10.1002/asi.20075

Darwin, C. (1872). The Descent of Man and Selection in Relation to Sex. D. Appleton.

Dempster, A. (2006). Risky business: The art of managing creative ventures. In *Cultural Industries: The British Experience in International Perspective.* Humboldt-Universität zu Berlin.

Eckler, P., & Bolls, P. (2011). Spreading the virus: Emotional tone of viral advertising and its effect on forwarding intentions and attitudes. *Journal of Interactive Advertising*, *11*(2), 1–11. doi:10.1080/15252019.2011.10722180

Eckler, P., & Rodgers, S. (2014). Viral Advertising. The handbook of international advertising research, 184-202.

Ekman, P., & Friesen, W. V. (1971). Constants across cultures in the face and emotion. *Journal of Personality and Social Psychology*, *17*(2), 124–129. doi:10.1037/h0030377 PMID:5542557

Garrett, J. J. (2010). *Elements of user experience, the: user-centered design for the web and beyond*. Pearson Education.

Geertz, C. (1973). *The interpretation of cultures* (Vol. 5019). Basic Books.

Gross, J. J., & Levenson, R. W. (1995). Emotion elicitation using films. *Cognition and Emotion*, *9*(1), 87–108. doi:10.1080/02699939508408966

Hall Edward, T. (1966). *The hidden dimension*. Garden City, NY: Anchor.

Hannerz, U. (1990). Cosmopolitans and locals in world culture. *Theory, Culture & Society*, *7*(2), 237–251. doi:10.1177/026327690007002014

Helfenstein, S. (2012). Increasingly emotional design for growingly pragmatic users? A report from Finland. *Behaviour & Information Technology*, *31*(2), 185–204. doi:10.1080/01449291003793777

Hofstede, G. (2010). *National cultural dimensions*. Academic Press.

Hsiu-Feng, W. (2014). Picture perfect: Girls' and boys' preferences towards visual complexity in children's websites. *Computers in Human Behavior*, *31*, 551–557. doi:10.1016/j.chb.2013.05.033

Ito, M., & Nakakoji, K. (1996, August). Impact of culture on user interface design. In *International users interface* (pp. 105–126). John Wiley & Sons, Inc.

Jiang, Z., & Benbasat, I. (2004). Virtual product experience: Effects of visual and functional control of products on perceived diagnosticity and flow in electronic shopping. *Journal of Management Information Systems*, *21*(3), 111–147. doi:10.1080/07421222.2004.11045817

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Jokinen, J. P., Silvennoinen, J. M., Perälä, P. M., & Saariluoma, P. (2015, April). Quick affective judgments: Validation of a method for primed product comparisons. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (pp. 2221-2230). ACM. 10.1145/2702123.2702422

Kaikati, A. M., & Kaikati, J. G. (2004). Stealth marketing: How to reach consumers surreptitiously. *California Management Review*, *46*(4), 6–22. doi:10.2307/41166272

Kasemsap, K. (2016). Cultural Perspectives and Cultural Dynamics: Advanced Issues and Approaches. *International Journal of Art, Culture and Design Technologies*, *5*(1), 35–47. doi:10.4018/IJACDT.2016010103

Leikas, J., Saariluoma, P., Heinilä, J., & Ylikauppila, M. (2013). A methodological model for life-based design. *International Review of Social Sciences and Humanities*, *4*(2), 118–136.

Lindgaard, G., Fernandes, G., Dudek, C., & Brown, J. (2006). Attention web designers: You have 50 milliseconds to make a good first impression! *Behaviour & Information Technology*, *25*(2), 115–126. doi:10.1080/01449290500330448

Marcus, A., & Gould, E. W. (2000). Crosscurrents: cultural dimensions and global Web user-interface design. *Interactions, 7*(4), 32-46.

Mastandrea, S. (2014). How emotions shape aesthetic experiences. In P. P. L. Tinio & J. K. Smith (Eds.), *The Cambridge Handbook of the Psychology of Aesthetics and the Arts* (pp. 500–518). Cambridge, UK: Cambridge University Press, UK.

Masuda, T., Ellsworth, P. C., Mesquita, B., Leu, J., Tanida, S., & Van de Veerdonk, E. (2008). Placing the face in context: Cultural differences in the perception of facial emotion. *Journal of Personality and Social Psychology*, *94*(3), 365–381. doi:10.1037/0022-3514.94.3.365 PMID:18284287

Meuleman, R., & Savage, M. (2013). A field analysis of cosmopolitan taste: Lessons from the Netherlands. *Cultural Sociology*, *7*(2), 230–256. doi:10.1177/1749975512473991

Moggridge, B. (2010). *Designing media*. MIT Press.

Moran, T. P. (1981). The command language grammar: A representation for the user interface of interactive computer systems. *International Journal of Man-Machine Studies*, *15*(1), 3–50. doi:10.1016/S0020-7373(81)80022-3

Morley, D. (2006). Unanswered questions in audience research. *Communication Review*, *9*(2), 101–121. doi:10.1080/10714420600663286

Moss, G. A., & Gunn, R. W. (2009). Gender differences in website production and preference aesthetics: Preliminary implications for ICT in education and beyond. *Behaviour & Information Technology*, *28*(5), 447–460. doi:10.1080/01449290802332662

Navon, D. (1977). Forest before trees: The precedence of global features in visual perception. *Cognitive Psychology*, *9*(3), 353–383. doi:10.1016/0010-0285(77)90012-3

Newell, A., & Simon, H. A. (1972). Human problem solving: Vol. 104. *No. 9*. Englewood Cliffs, NJ: Prentice-Hall.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Nielsen, J. I. (2005). Bordwell on Bordwell. *Part IV-Levels of Engagement*, *16*, 9.

Norman, D. A. (2005). *Emotional design: Why we love (or hate) everyday things*. Basic books.

O'Connell, R. M. (2014). *Visualizing Culture: Analyzing the Cultural Aesthetics of the Web*. Peter Lang Publishing.

Pavlou, P. A., & Chai, L. (2002). What Drives Electronic Commerce across Cultures? Across-Cultural Empirical Investigation of the Theory of Planned Behavior. *Journal of Electronic Commerce Research*, *3*(4), 240–253.

Purcell, K. (2010). *The state of online video*. Washington, DC: Pew Internet & American Life Project.

Reinecke, K., & Bernstein, A. (2011). Improving performance, perceived usability, and aesthetics with culturally adaptive user interfaces. *ACM Transactions on Computer-Human Interaction*, *18*(2), 8. doi:10.1145/1970378.1970382

Reinecke, K., & Gajos, K. Z. (2014, April). Quantifying visual preferences around the world. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 11-20). ACM.

Roseman, I. J., & Smith, C. A. (2001). Appraisal theory. In K. R. Scherer, A. Schorr, & T. Johnstone (Eds.), *Appraisal processes in emotion: theory, methods, research* (pp. 3–19). Oxford, UK: Oxford University Press.

Rössel, J., & Schroedter, J. H. (2015). Cosmopolitan cultural consumption: Preferences and practices in a heterogenous, urban population in Switzerland. *Poetics*, *50*, 80–95. doi:10.1016/j.poetic.2015.02.009

Saariluoma, P., Cañas, J. J., & Leikas, J. (2016). *Designing for Life: A Human Perspective on Technology Development*. Springer. doi:10.1057/978-1-137-53047-9

Saariluoma, P., & Jokinen, J. P. (2014). Emotional dimensions of user experience: A user psychological analysis. *International Journal of Human-Computer Interaction*, *30*(4), 303–320. doi:10.1080/10447318.2013.858460

Scherer, K. R. (2009). The dynamic architecture of emotion: Evidence for the component process model. *Cognition and Emotion*, *23*(7), 1307–1351. doi:10.1080/02699930902928969

Silvennoinen, J. M., Rousi, R., Jokinen, J. P., & Perälä, P. M. (2015, September). Apperception as a multisensory process in material experience. In *Proceedings of the 19th International Academic Mindtrek Conference* (pp. 144-151). ACM. 10.1145/2818187.2818285

Silvia, P. J. (2005). Cognitive appraisals and interest in visual art: Exploring an appraisal theory of aesthetic emotions. *Empirical Studies of the Arts*, *23*(2), 119–133. doi:10.2190/12AV-AH2P-MCEH-289E

Silvia, P. J. (2005). Emotional responses to art: From collation and arousal to cognition and emotion. *Review of General Psychology*, *9*(4), 342–357. doi:10.1037/1089-2680.9.4.342

Silvia, P. J. (2005). What is interesting? Exploring the appraisal structure of interest. *Emotion (Washington, D.C.)*, *5*(1), 89–102. doi:10.1037/1528-3542.5.1.89 PMID:15755222

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Silvia, P. J. (2006). *Exploring the psychology of interest*. Oxford University Press. doi:10.1093/acprof:oso/9780195158557.001.0001

Silvia, P. J., & Berg, C. (2011). Finding movies interesting: How appraisals and expertise influence the aesthetic experience of film. *Empirical Studies of the Arts*, *29*(1), 73–88. doi:10.2190/EM.29.1.e

Skrbis, Z., & Woodward, I. (2007). The ambivalence of ordinary cosmopolitanism: Investigating the limits of cosmopolitan openness. *The Sociological Review*, *55*(4), 730–747. doi:10.1111/j.1467-954X.2007.00750.x

Smith, C. A., & Kirby, L. D. (2001). *Toward delivering on the promise of appraisal theory*. Academic Press.

Szerszynski, B., & Urry, J. (2002). Cultures of cosmopolitanism. *The Sociological Review*, *50*(4), 461–481. doi:10.1111/1467-954X.00394

Tan, E. S. (1996). *Emotion ond the Strtucture of Narrative film: Film as an Emotion Machine, prijev*. B. Fasting.

Tarvainen, J., Sjöberg, M., Westman, S., Laaksonen, J., & Oittinen, P. (2014). Content-based prediction of movie style, aesthetics, and affect: Data set and baseline experiments. *IEEE Transactions on Multimedia*, *16*(8), 2085–2098. doi:10.1109/TMM.2014.2357688

Tomlinson, J. (1999). *Globalization and culture*. University of Chicago Press.

Trompenaars, F., & Hampden-Turner, C. (2010). *Riding the waves of innovation: Harness the power of global culture to drive creativity and growth*. McGraw Hill Professional.

Van Slyke, C., Lou, H., Belanger, F., & Sridhar, V. (2010). The influence of culture on consumer-oriented electronic commerce adoption. *Journal of Electronic Commerce Research*, *11*(1), 30.

Wang, H. L., & Cheong, L. F. (2006). Affective understanding in film. *IEEE Transactions on Circuits and Systems for Video Technology*, *16*(6), 689–704. doi:10.1109/TCSVT.2006.873781

Weber, R. P. (1990). *Basic content analysis (No. 49)*. Sage. doi:10.4135/9781412983488

Wittgenstein, L. (1958). *Preliminary Studies for the "Philosophical Investigations"*. Generally Known as The Blue and the Brown Books.

Woodward, I., Skrbis, Z., & Bean, C. (2008). Attitudes towards globalization and cosmopolitanism: Cultural diversity, personal consumption and the national economy. *The British Journal of Sociology*, *59*(2), 207–226. doi:10.1111/j.1468-4446.2008.00190.x PMID:18498592

ADDITIONAL READING

Cañas-Bajo, J., Leikas, J., Jokinen, J., Cañas, J. J., & Saariluoma, P. (2016). How older and younger people see technology in Northern and Southern Europe: Closing the generation gap. *Gerontechnology (Valkenswaard)*, *14*(2), 110–117. doi:10.4017/gt.2016.14.2.010.00

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Cañas-Bajo, J., Perälä, P. M., Silvennoinen, J. M., & Saariluoma, P. (2015, September). Affective contents of cross-cultural audiovisual experience. In *Proceedings of the 19th International Academic Mindtrek Conference* (pp. 82–88). ACM. 10.1145/2818187.2818294

Cañas-Bajo, J., Santamaría-Muñoz, L., Valtanen, J. P., Berki, E., Ross, M., & Staples, G. (2015). Multicultural edutainment role models for women IT professionals – an innovative proposal to creative industries. *Twentieth International Conference on Outlook on Computing Education*.

Cañas-Bajo, J., & Silvennoinen, J. M. (2017). Cross-cultural factors in experiencing online video contents in product marketing. *International Journal of Art, Culture and Design Technologies*, *6*(1), 40–56. doi:10.4018/IJACDT.2017010103

Silvennoinen, J., Rousi, R., & Mononen, L. (2017). Creative Interpretation in Web Design Experience. *The Design Journal, 20*(sup1), S134-S145.

Silvennoinen, J., Vogel, M., & Kujala, S. (2014). Experiencing visual usability and aesthetics in two mobile application contexts. *Journal of Usability Studies*, *10*(1), 46–62.

Silvennoinen, J. M., & Jokinen, J. P. (2016). Appraisals of salient visual elements in web page design. *Advances in Human-Computer Interaction*.

Silvennoinen, J. M., & Jokinen, J. P. (2016, May). Aesthetic Appeal and Visual Usability in Four Icon Design Eras. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems* (pp. 4390-4400). ACM. 10.1145/2858036.2858462

Silvennoinen, J. M., Rousi, R., Jokinen, J. P., & Perälä, P. M. (2015, September). Apperception as a multisensory process in material experience. In *Proceedings of the 19th International Academic Mindtrek Conference* (pp. 144-151). ACM. 10.1145/2818187.2818285

KEY TERMS AND DEFINITIONS

Audiovisual Experience: People's cognitive and emotional impression of audiovisually presented products and materials.

Audiovisual Representation: Mental representations that incorporate visual and audio elements of the perceptual stimuli.

Cross-Cultural Factors: Dimensions in which cultural differences impact the type of relations and the types of communication. In this context, these dimensions may influence the way usability and aesthetics are perceived.

Global Aesthetics: Subjective quality of objects, related to subjective sensori-emotional values and judgements of sentiment and taste.

Mental Representation: Symbolic mental contents that people have of their actions, environment, and their own internal states.

User-Centered Design: A model that seeks to satisfy the user's needs when interacting with artifacts by providing a good experience of this interaction without investing larger efforts.

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ENDNOTE

[1] Results are all described in "Cross-Cultural Factors in Experiencing Online Video Contents in Product Marketing" (Cañas-Bajo & Silvennoinen, 2017). They are reproduced here with permission of IGI Global.

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APPENDIX A

Still-images of the videos used in the experiment and links to videos on YouTube.

Figure 1. YouTube link: https://www.youtube.com/watch?v=gCqw-NTVjT4

Figure 2. YouTube link: https://www.youtube.com/watch?v=YXiKgElEulg

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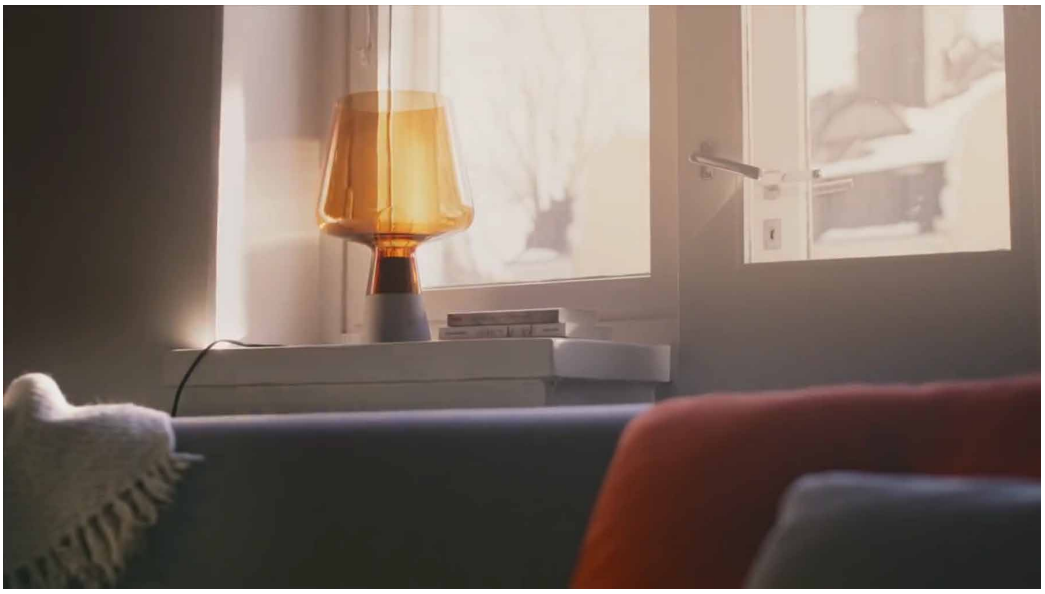
Figure 3. YouTube link: https://www.youtube.com/watch?v=bl9LsiQpcl4



APPENDIX B

Mean percentage semantic units within the categories and sub-categories produced by the Finish and Spanish groups after presentation of the videos (significant differences in bold).

Table 1.

Category and Sub-Categories	Finnish	Spanish
Overall Impression of the Video		
Aesthetic persuasion	1,05	1,05
Aesthetic emotion	2,55	3,40
Aesthetic Quality	2,00	4,20
Memories & Associations	0,9	2,70
Desirability	0,40	0,20
Rhythm & Length	0,30	0,60
Total	7,20	12,15
Narrative Structure		
Aesthetic persuasion	0,95	0,85
Aesthetic emotion	0,10	0,00
Aesthetic quality	0,30	0
Overall idea	1,45	1,7
Plots aspects	2,70	4,25

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Category and Sub-Categories	Finnish	Spanish
Characters	0,60	1,35
Context	0,20	0,45
Product presentation	1,50	0,85
Total	7,85	9,30
Visual Design		
Aesthetic persuasion	0,20	0,30
Aesthetic emotion	0,10	0,25
Aesthetic Quality	0,75	0,25
Product presentation	9	0,45
Composition	0,70	1,15
Text	0,20	,10
Shapes	0,60	1,70
Materials	0,20	,70
Light	0,60	,75
Colors	0,30	,55
Total	1,80	2,15
Audio Design		
Aesthetic persuasion	0,20	0,10
Aesthetic emotion	0,10	0,55
Aesthetic quality	0,70	0,65
Narrator / off voice	0,55	0,30
Congruency with video	0,25	0,55
Total	4,1	6,2

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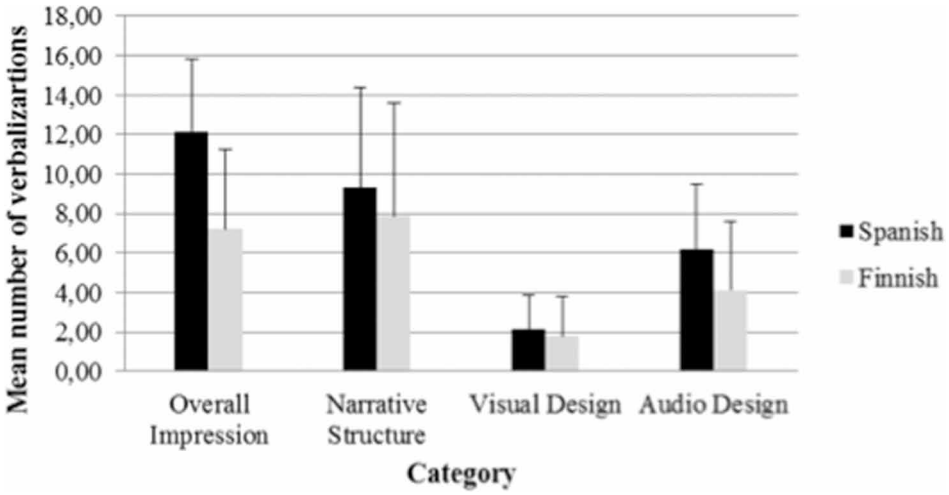
APPENDIX C

Figure 4. Number of verbalizations as a function of Nationality, Category.



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Chapter 38
Gamification in E-Commerce: Enhancing Digital Customer Engagement Through Game Elements

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ABSTRACT

The gamification term, derived from the game concept, is the use of game-design elements (e.g., points, badges, levels, and leaderboards) in non-game contexts, often with the purpose of motivating and directing individuals' certain behaviors to achieve specific goals and outcomes. The contexts in which gamification is being researched and implemented include education, health, marketing, human resources, social networks, digital platforms, etc. Many studies conducted in various domains tried to understand and explain how gamification can influence or foster individuals' motivation to conduct goal-directed behavior digitally. In most of these conducted studies, significant impact of gamification on human behavior has been observed and proved. By presenting academic findings from literature and discussing real-world implementation examples from the relevant domain, this study assesses the role of digital gamification in e-commerce domain. This chapter shows how various digital game design elements can influence consumer behavior in different e-commerce platforms.

GAMIFICATION CONCEPT

Humans have been playing games for thousands of years. Games are one of the oldest forms of human social interaction. The relevant literature includes various definitions of the game. Game is defined as a system in which players engage in an artificial conflict, defined by rules, which results in a quantifiable outcome (Salen and Zimmerman, 2004). All games have one or many of the following features: rules; structure, voluntary play, player effort, player investment, quantifiable outcomes, conflict, resolution, etc. (Juul, 2003; Seaborn and Fels, 2015). Two related but not exactly the same concepts game and play are being used interchangeable in many contexts. In game studies, the distinction between game and

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play is usually tied back to the concepts of paidia and ludus which have been put forward by Caillois (2001). Caillois (2001) placed the two complementary terms paidia and ludus at opposite ends of a play continuum. Paidia (i.e., playing) is the main power of improvisation, expressiveness, spontaneity, and joy which is usually present in children's free play. On the other hand, Ludus (i.e., gaming) consists of formal play including rules and arbitrary obstacles that defines winners and losers and commonly manifests itself in board games and video games. The play is broader than the game and encompasses it. While playing refers to a more free form, expressive, improvisational meanings and behaviors, gaming refers to playing which is structured by rules and competitive strife toward goals (Salen and Zimmerman, 2004).

The term gamification derived from the game concept. This term was used for the first time in 2002 by Nick Pelling, a British programmer and video game designer for digital products. However, gamification term did not become popular and mainstream until 2010. In the relevant literature, there is no universal definition of gamification. However, the gamification definition of Deterding, Dixon, Khaled, & Nacke (2011a) is the one that is widely accepted and used. According to Deterding et al. (2011a) gamification is the use of game design elements in non-game contexts. The central idea behind this innovative technique is to utilize game-design elements (e.g., points, badges, levels, achievements, and leaderboards) in real-world contexts (e.g., business, education, etc.), with the goal of directing and motivating certain behaviors of individuals digitally. That is, gamification utilizes game mechanics for non-entertainment purposes. This technique is more about motivating people and encouraging them to show the behavior you want. Gamification and game are different in terms of the purpose of play. Main focuses of gamification are changing players' behavior, digital engagement with their environment towards achieving meaningful interaction and engagement and potentially achieve rewards. However, games focus more on entertainment and pleasure (Xu, Buhalis, & Weber, 2017). Gamification applies elements of "gamefulness", "gameful interaction", and "gameful design" for a specific intention (Deterding et al., 2011a). Gamefulness refers to the experiential and behavioral quality of playing; gameful interaction refers to the objects, tools and contexts that bring about the experience of gamefulness, and gameful design refers to the designing for gamefulness by utilizing game design elements. Gamification is more related with games (ludus-type) than with play or playfulness (paidia-type) (Salen and Zimmerman, 2004).

Game design elements are the main building blocks of gamified applications. Game elements are being applied in diverse type of non-game contexts with varying degrees of success. There are various types of game design element and depending on the type and purpose of application, numerous game elements can be utilized in a single application. The most common type of game elements encountered in gamified platforms include points, badges, levels, leaderboards, performance graphs, meaningful stories, avatars, virtual currencies, customization (personalization), tasks, social network features, and teammates. Table 1 shows the descriptions of each game design element mentioned above.

In the related literature, it is possible to see various alternative terms which are being used to refer to gamification, such as 'serious games', "applied games" 'game based learning', 'games for a purpose', 'productivity games', 'behavioral games', etc. The most common interchangeable used term with gamification is the "serious games". Even though they are related, they refer to different things. Serious games which was introduced to the literature by Abt (1970) refer to the games designed for a purpose of educating rather than merely entertaining users. Whilst serious games do entertain up to certain extent, they go beyond and mainly focus on training and skill development, educating, and behavioral and attitudinal change process. The term game elements helps in distinguishing gamification from serious games (Deterding et al., 2011a). While gamification refers to the use of distinct game elements embedded in real-world contexts, serious games are fully-developed games serving a specific, non-entertainment

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purpose (Deterding et al., 2011a; Yongwen, Johnson, Moore, Brewer, & Takayama, 2013). It is possible to see serious games in action in various industries such as education, health care, aviation, military, engineering, etc. While gamification is the use of various game elements integrated in real-life contexts, serious games are standalone games which carry a specific, non-entertainment purpose (Deterding et al., 2011a; Yongwen et al., 2013). It is possible to see serious games in action in various industries such as education, health care, aviation, military, engineering, etc.

Table 1. Description of game design elements

Game Element	Description	Source
Points	Points are usually accumulated as a result of successful execution of certain activities in gamified environment. The main purpose of points is to numerically show user's progress on the given activity. Points can be classified as experience points, redeemable points, reputation points, etc. Points also play an important role in providing continous and immediate feedback about performance of the users.	Werbach and Hunter, 2012; Sailer, Hense, Mandl, & Klevers, 2013
Badges	Badges visually represents achievements of user. They can be earned and collected in the gamified applications. They are usually earned as a result of completion of particular activity or accumlation of certain amount of points. Similar to points they also provide feedback about user performance on the gamified platform.	Werbach and Hunter, 2012; Sailer et al., 2013
Levels	Levels represents user advancements in the gamified platform. Levels can be progressed by collecting points, conducting certain actions, completing specific tasks, etc. Levels can be utilized to stimulate the desire to go after the more challenging levels on the given platform.	Gatautis, Banyte, Piligrimiene, Vitkauskaite, & Tarute, 2016
Leaderboards	Leaderboards enable to rank users according to their relative success, measuring them against a certain success criterion. Leaderboards can foster competition and can create social pressure which will increase the users' level of engagement, participation and learning.	Burguillo, 2010; Costa, Wehbe, Robb, & Nacke, 2013
Performance graphs	Performance graphs provide information about the player's performance compared to their preceding performance during a game. In opposite to leaderboards, the users' performance is not compared to other users' performance in this kind of graphs. Instead, such kind of graphs evaluate the player's own performance over time.	Sailer et al., 2013
Meaningful stories	Meaningful stories are game design elements that do not relate to the player's performance. This kind of game design elements contextualizes activities and characters in the game, and gives them meaning. They can alter the meaning of real world activities by adding a narrative overlay. Narrative contexts can be oriented towards real, non-game contexts or they can act as analogies of real world settings.	Kapp, 2012;
Avatars	Avatars visually represents users within gamified platforms. Avatars are usually picked out or designed by the users. They are used to identify and differentiate users from others in a given platform.	Werbach & Hunter, 2012; Kapp, 2012
Virtual currency	Virtual currencies can be obtained by successfully completing activities and tasks on the gamified environment and these currencies can be used to purchase virtual items.	Liu, Alexandrova, & Nakajima, 2011
Customization/ Personalization	It refers to activities which enable users to modify certain aspects of the interface up to certain degree which brings personal relevance to the users.	Marathe and Sundar, 2011
Tasks	A quest or small mission is a task in that users complete in order to gain a certain rewards	Sailer et al., 2013
Social network features	They are social-related gamification features which include messaging, blogging, chatting and connecting to social networks	Aparicio, 2012
Teammates	This kind of features enable creation of team of players that cooperate towards achieving a shared objective.	Werbach and Hunter, 2012

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IMPLEMENTATION EXAMPLES OF GAMIFICATION IN E-COMMERCE

Electronic commerce (a.k.a. e-commerce) refers to commercial transactions conducted over electronic networks, primarily the internet. The most common type of e-commerce that we encounter on the Internet is online shopping. However, e-commerce is not just limited to online shopping. E-commerce is an umbrella term covering many different types of other electronic transactions such as online banking, online ticketing, online gambling, online taxing and various types of electronic government services. With the popularization of the social media and advancements in mobile digital platforms we also started to see new subsets of e-commerce such as social commerce and mobile commerce both of which provides new possibilities and opportunities to business owners and customers. Among many other business models on the Internet business-to-consumer (B2C) is the most common one. B2C e-commerce refers to a transaction conducted over the Internet between businesses and end consumers. According to eMarketer (2019), global B2C ecommerce sales will approach 5 trillion U.S. dollars by 2021. When it is thought about the number of global active internet users which were approximately 4.33 billion as of July 2019 (Statista, 2019), this large volume of global e-commerce sales is not surprising and expected to increase even more in the future.

It is now very easier and less costly than ever to start a new business online thanks to the advancements in the Internet, web and mobile technologies. On the other side, it is also very convenient and less costly for consumers to get product and services from many potential suppliers located in various locations around the globe. For the business owners, the first and foremost difficulty is how to attract to and keep customers at their online business platforms. Internet has considerably reduced the online consumers' switching costs which refer to the costs that consumers incur as a result of changing their brands, suppliers, or products. Online business owners are well aware of the fact that on the Internet their customers are just few clicks away from their direct competitors. Therefore, they continuously try to discover and impose new switching costs on their consumers by differentiating their products and services, introducing entirely new business models, etc. That is, they always try to find new means to make their customers to stay with them. Gamification is one of the technique that managers have started to utilize in their online businesses in order to increase customer experience, engagement and retention rate. In recent years, business owners started to leverage the gamification techniques in various types of online business platforms. By incorporating game elements to their online business platforms, business owners are trying to encourage and motivate customers to use their products and services more. Through gamification technique online business owners are trying to create a fun, challenging and persuasive environments which could possible encourage customers to engage with brand and offered services more and discourage them to switch to competitors' services.

Global companies from diverse sectors have started to incorporate gamification techniques into their marketing strategies. Among these companies are Starbucks, Amazon, eBay, Expedia, TripAdvisor, Airbnb, Delta Air Lines, etc. According to the estimations, the gamification market is expected to grow from 4.91 billion U.S. dollars in 2016 to approximately 12 billion in 2021 (Statista, 2018). One important thing to note is that gamified e-commerce does not mean transforming your online business (e.g. online store) into pure game. The main idea is to take game design elements such as points, badges, levels, leaderboards, avatars, virtual currencies, tasks and implement these elements in various e-commerce platforms, with the goal of motivating and encouraging the specific behavior you want. To put it in other words, gamification in e-commerce is the use of game design elements in an e-commerce context to drive

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customer engagement and motivate the desired action which could be the purchase frequency, positive reviews, dissemination of positive word of mouth, increased retention and loyalty, etc.

One of the most commonly used game design element in various gamified platforms are points. Points are usually accumulated as a result of successful execution of given activity and they numerically show user's progress (Werbach and Hunter, 2012; Sailer et al., 2013). Points enable to measure users' in-game behavior, and they serve as continuous and immediate feedback and as a reward (Sailer et al., 2013). In e-commerce businesses, point-based rewarding systems is one of the commonly utilized technique under loyalty programs. Through point-based system, customers earn reward points for each purchase they make or for each activity they successfully complete. Later, customers are usually offered various options to redeem these collected points. Depending on the nature of the business and policies of the loyalty program collected points can be converted into money, used as a discount, or exchanged for other valuable things. In order to increase customers' engagement and motivate them to conduct certain behavior even more, online business owners implement another type of gamified feature which is a tier system. This tier system corresponds to the levels advanced in games. Levels shows user progress in the gamified environment and they are advanced by collecting certain amount of points or successfully completing certain tasks (Gatautis et al., 2016). Starbucks, a coffee company, with its Starbucks Rewards program successfully implements above mentioned gamification features. Members of the Starbucks Rewards program collect stars as points on almost everything they purchase. Every time customers pay using a mobile application, they collect two stars for every dollar. When customers collect enough stars they can redeem these collected stars for free drinks or food at Starbucks stores. For example, at 25 stars, customers can add one customization to their drink for free; at 50, they can get a free brewed hot coffee, bakery item, or hot tea; at 150, they can get a free handcrafted drink, hot breakfast item, or parfait; at 200, they can get a free lunch sandwich, protein box, or salad; and at 400, they can redeem them for select merchandise or at-home coffee. Another feature of gamification which is also successfully implemented by Starbucks in its loyalty program is tier system. When customers sign up for Starbucks Rewards they start at the Green level. To get to Gold level, they need to earn 300 points in a 12-month period. Gold Level is the top tier of Starbucks' loyalty program that offers some benefits to frequent customers. Those perks include monthly double star days where members can earn 4 stars per $1, a personalized gold card, and a free food or drink item for every 125 stars collected. Tier system is an excellent gamification feature that provides customers with a goal to shoot for, makes them addicted to the brand, and feel valued with additional benefits offered to them at different levels. Levels can be utilized to stimulate the desire to follow the more challenging levels on the given platform. This tier system also allows businesses to segment customers according to their behavioral characteristics (e.g., spending behavior) which will help to carry out customized marketing strategies according to given segments characteristics.

Points and tier system are also successfully applied in civil aviation sector. Many airline companies have frequent-flyer programs which enable enrolled customers to accumulate points, also known as miles, which can be redeemed for air travel or other rewards. Customers earn mile points every time they fly with that company. The number of mile points customers earn depends on several factors such as route, class, tier, etc. Customers can advance through the tiers and take advantage of exclusive membership benefits as they earn more mile points. The most common types of tiers which are encountered in airline companies are Silver, Gold and Platinum levels. Most airline companies have mobile app which enable customers to track their mile points. Some of these mobile apps even enable customers to set travel goals and earn miles towards them.

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TripAdvisor, the world's largest online travel platform, is one of the companies that are effectively utilizing game design elements in its online platforms. Travelers around the world use the company's web site and mobile app to reach more than 760 million reviews and opinions of more than 8 million accommodations, restaurants, experiences, airlines and cruises. In order to increase number and quality of user contributions (e.g., review, photo, video, forum post, etc.), TripAdvisor is utilizing various game design elements such as points, levels and badges in their online platforms. Every time users contribute to TripAdvisor, they receive TripCollective points. For example, each review worth 100 points, each photo worth 30 points, each forum post worth 20 points, etc. There are six TripCollective levels and users advance levels by collecting points. While level one requires 300 points, level six corresponds to 10.000 points. Another game design element that TripAdvisor is effectively utilizing are the badges. Badges are one of the most commonly utilized game design element in many gamified platforms. They are among the most visible elements of gamification. Badges visually represents status, progress and achievements of user and they can be either earned or collected in the gamified platforms. This gamification feature provide feedback about user performance on the gamified platform (Werbach and Hunter, 2012; Sailer et al., 2013). Badges are a way of showing users' knowledge and expertise. In TripAdvsior platform, users collect badges as they contribute to the system by writing reviews or by adding other posts (e.g., photos, videos, etc.). Users also get badges in recognition of how helpful or useful their review or other posts have been. Some of the available badges in TripAdvisor are as follows. There is a New Reviewer badge which you collect by writing your first review. The more you write, the higher level badge you receive in this given category. There is a Passport Badge which recognizes the users for being world travelers. Once users add reviews for places in at least two destinations in the world, they get their Passport badge. There is also an Explorer badge which are given to the users for being one of the first to review a hotel, restaurant, or attraction in a given language. These various types of virtual badges act as incentives to encourage users for more reviews.

Gamification has also been utilized in online gambling platforms (e.g., online casino, online sports betting) in increasing player retention and creating loyalty. Most of these online platforms use various gamification techniques which can include special sign up bonus points or referral rewards for the purpose of increasing membership. In such platforms, players are usually rewarded with loyalty points if they stick around and use the given platform on a regular basis. These platforms are utilizing another well-known game design element which is leaderboards. Leaderboards rank players according to their relative success and they can stimulate competition and create a social pressure which will increase players' engagement and participation levels (Burguillo, 2010; Costa et al., 2013). Through leaderboards players can monitor their status and they can see where they rank on the specific event which will encourage them to return back to the given platform to improve their positions on the leaderboards. Most of these platforms also enable players share their position in leaderboards, their badges and other performance indicators on various social networking platforms, which in turn brings them additional bonus points and loyalty points. These game design elements on various type of online gambling platforms not only encourage customers to play more but also increase their motivation and loyalty levels towards the given platform.

Nike is one of the companies that successfully utilize gamification technology in sports domain. For many people, the lack of motivation is the main barrier for consistent training. Without a running partner, a personal trainer, or some other form of encouragement, it's difficult for people to acquire the habit. In order to address this issue Nike have introduced Nike Run Club app which is available for both android and iOS platforms. This mobile app includes necessary gamification and other tools that can motive someone to run better. These tools include, but not limited to GPS run tracking, audio guided runs,

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distance challenges (weekly, monthly and custom), competition on leaderboards, trophies and badges for celebrating achievements, sharing activities and achievements with friends on various online platforms, customized coaching plans for user goals, and nonstop motivation from friends. This gamified mobile app is a very nice example of how a brand can use game elements to get connected with its customers. This gamified app not only motivates users to do sports and engage with brand, but also enables Nike to collect valuable data about individual users which can be used for marketing purposes.

Businesses continuously seek for creative marketing strategies to promote their business and attract more and more consumers to their brand. Gamification has become a popular strategy for managers to keep their existing customers and reach potential ones over online platforms. Above mentioned examples have showed how companies in various fields successfully implement game design elements in attracting more customers and giving them a reason to keep returning to the brand and purchase or use products and services more.

GAMIFICATION AND USER MOTIVATION

Gamification technique has attracted attention of both scholars and practitioners because of its very wide application in various areas. Gamification has been studied in many different areas including but not limited to the following: education (Landers & Landers, 2014, Toda, Carmo, Silva, Bittencourt, & Isotani, 2019), crowdsourcing (Liu et al, 2011; Mekler, Brühlmann, Tuch, & Opwis, 2015), data-collection (Downes-Le Guin, Baker, Mechling, & Ruyle, 2012), health (Jones, Madden, & Wengreen, 2014; Cechetti, Bellei, Biduski, Mazuco Rodriguez, Roman, & De Marchi, 2019), marketing (Hofacker, Ruyter, Lurie, Manchanda, & Donaldson, 2016; Hamari, 2015; Hwang and Choi, 2019), social networks (Thom, Millen, & Dimicco, 2012), environmental protection (Liu et al, 2011), order handling (Sailer, Hense, Mayr, & Mandl, 2017) and workplace management (Mitchell, Schuster, & Jin, 2018). All of the above studies conducted in various domains tried to understand and explain how gamification can influence or foster individuals' motivation to conduct goal-directed behavior.

One of the main theoretical framework adopted in gamification studies is the self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2002). Many studies in the relevant field tried to explain user motivation and behavior within the scope of self-determination theory. Self-determination theory is a psychological framework which helps to understand human motivation. According to self-determination theory, individuals' motivation to conduct a certain behavior can be explained through self-determined continuum. This continuum ranges from non-self-determined to self-determined. At the right end of the self-determined continuum, there is intrinsic motivation in which individuals engage in an activity for potential pleasure and satisfaction that may be derived from it. At the left end of this continuum there is amotivation, which is lack of motivation or intention to engage in a given behavior. In the middle of this continuum there is extrinsic motivation in which individuals' behavior is driven by external factors (e.g., rewards or punishments) which are unrelated to the activity itself (Deci & Ryan, 1985; Ryan & Deci, 2000b).

Intrinsic and extrinsic motivation play an important role in shaping who we are and how we behave (Deci & Ryan, 2008). Extrinsic motivation is a drive to behave in certain ways based on external sources and it results in external rewards (Deci & Ryan, 1985). Extrinsic motivation occurs when an individual is motivated to perform a particular behavior or engage in a particular activity to earn certain rewards or avoid possible punishments. In other words under extrinsic motivation individuals engage in a behavior

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not because they find it pleasant and satisfying or because they enjoy it but in order to get something in return or escape from possible negative consequences. In a professional environment sources of extrinsic motivation can be money, awards, promotion, employee evaluations, etc. On the other side, in intrinsic motivation there are internal driving factors that inspire us to behave in a particular way, including our core values, our interests, and our personal sense of morality. That is, under intrinsic motivation individuals perform a behavior or an activity for its own sake rather than the desire for some external reward or fear of any punishment. The most productive force behind people's behavior is commonly considered as intrinsic motivation (Deci & Ryan, 2000; Ryan & Deci, 2000b). Therefore, when people are motivated intrinsically, they have a strong desire for the activity itself and enjoy it. Although intrinsic motivation is a stronger drive of behavior (Grant, 2008; Ryan, Frederick, Lepes, Rubio, & Sheldon, 1997), extrinsic motivation also has a behavioral impact (Cerasoli, Nicklin, & Ford, 2014). Gamification should combine intrinsic with extrinsic motivation to increase motivation and engagement (Deterding, Sicart, Nacke, O'Hara, & Dixon, 2011b). Using only extrinsic rewards may have negative behavioral impacts as study of Deci, Koestner, and Ryan (1999) suggested that extrinsic rewards can undermine intrinsic motivation to complete a task, especially if the task is engaging, interesting and beneficial to the user. This implies that if individuals find a given task enjoyable, interesting and engaging, that is, if they are already intrinsically motivated to the given task, the addition of specific reward structures could decrease already existing intrinsic motivation toward the given task.

Cognitive Evaluation Theory (CET) which is a sub-theory within self-determination theory further explains that individuals are driven by three fundamental psychological needs: autonomy, competence, and relatedness. Satisfaction of these three psychological needs is very important for an individual's intrinsic motivation (Ryan & Deci, 2000a). The need for competence refers to being capable and competent in controlling outcome of an activity and experience mastery of that given task. Need for autonomy refers to individuals' need to actively participate in determining their own behavior. The need for relatedness refers to need to be connected to and experience caring for others. Basic Psychological Needs Theory (BPNT) which is another sub-theory within self-determination theory states that satisfaction of autonomy, competence, and relatedness positively influences the psychological well-being of individuals (Ryan & Deci, 2000c). On the contrary, any situations or activities that impede these psychological needs would negatively impact wellness. In gamification literature, a number of studies showed the influence of various gamification features on individuals' intrinsic need satisfaction, motivation and engagement (Peng, Lin, Pfeiffer, & Winn, 2012; Thom, Millen, & Dimicco, 2012; Sailer et al., 2017; Xi and Hamari, 2019; Deterding et al., 2011a; Cechetti et al., 2019; Mekler et al., 2015; Sailer et al. 2013). The following paragraphs discusses the important findings of some of these selected studies.

In their study Xi and Hamari (2019) assessed the relationship between different gamification features (immersion, achievement and social-related features) and intrinsic need satisfaction (autonomy, competence and relatedness). Immersion-related gamification features mainly include avatars, role-play mechanics, storytellings, narrative structures, customization, etc. and they mainly try to immerse the player in a self-directed inquisitive activity. Achievement gamification features include points, virtual currency, badges, progress bars, leaderboards, etc. and they enable users to monitor their progress and performance. Social-relatedness features include groups, messages, blogs, connection to social networks and these features enable users to reinforce interpersonal relationships and strengthen social participation in gamified platforms. Xi and Hamari (2019) showed that immersion-related gamification features were only positively associated with autonomy need satisfaction. However, achievement and social-related features were found to be positively associated with all of the aspects of intrinsic need satisfaction (i.e.,

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autonomy, competence and relatedness). Their findings showed that gamification features such as badges, leaderboards, levels, tasks, etc. offer not only immediate feedback (which can engage users and generate flow experience) and skill development, but also help users to understand others in a gamified environment. This research also showed that social-related features not only facilitate the low-cost information exchange where users can acquire more skills and knowledge to achieve a sense of accomplishment but also enable users to get relatedness need satisfaction by communicating, talk and connecting with others in the gamified environment.

In an experimental study conducted over enterprise social network system (SNS) Thom et al. (2012) assessed the influence of extrinsic rewards on intrinsic motivation to conduct a given task. The extrinsic rewards in this experimental study was point-based incentive system on SNS. The goal of the incentive system was to encourage content contribution on SNS, so points were awarded for the addition of lists, photos and comments. In this experimental study it was found that the removal of the points system had a significant negative impact on the user activity. This study finding showed that gamification based extrinsic rewards do actually influence a segment of the user population to participate more intensely in a given activity.

Peng et al. (2012) manipulated game features and tried to assess how these manipulated game features effect players' three basic psychological needs. The results showed that availability of several choices in the game (e.g., choice of avatar customization, choice of how to grow strength of avatars) supported players' need satisfaction of autonomy. Additionally, the game's ability to dynamically adjusted difficulty levels based on players' performance and indicators for the players to see their achievements (e.g., heroism meter, achievement badges) led to increased satisfaction of the need for competence.

In another study conducted in a health domain Cechetti et al. (2019) assessed the influence of gamified elements on user intrinsic motivation to engage in particular behavior. Within the scope of this study two versions of an m-Health application were developed, one with the gamified elements and one without these elements. It was found that the app without gamification features did not necessarily motivate participants to change their habits regarding the specific treatment. On the other hand, gamified app resulted in higher user motivation and engagement. For example, gamification promoted the monitoring of blood glucose by participants, letting the participants acquire this habit.

Finally, in their study Sailer et al. (2017) utilized self-determination theory to understand motivational power of various game design elements on the fulfilment of basic psychological needs (i.e., perceived competence, relatedness, and autonomy). Their results showed that badges, leaderboards, and performance graphs positively influence competence need satisfaction and perceived task meaningfulness. Avatars, meaningful stories, and teammates were found to have impact on social relatedness. Sailer et al. (2017) stressed that gamification can have many forms and can include game elements in many different ways; therefore, it is not appropriate to study the motivational effects of gamification as a uniform concept. They suggested that the relationship between different game design elements and human behavior should be the main focus point. The findings of the above mentioned studies confirms the suggestion of Sailer et al. (2017) on the potential motivational effects of various game design elements. Therefore, in order to get the desired results careful attention should be paid to potential influences of various game design elements while designing gamified environments.

Another commonly utilized theories in gamification studies is Technology Acceptance Model (TAM) (Davis, 1989). TAM is an information systems theory that models how individuals come to accept and use a technology. TAM proposes that the acceptability and adoption of an information systems and technologies is determined by two main factors which are perceived usefulness (PU) and perceived ease of use

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(PEOU). PU refers to the degree to which an individual believes that the use of a system will improve his performance. On the other side, PEOU refers to the degree to which an individual believes that the use of a system will be easy and effortless. In TAM, perceived usefulness and perceived ease of use are the fundamental factors that determine users' attitude toward using a new technology. That is, when new technological innovation is perceived to be useful and ease to use, users develop positive attitudes towards it. Besides, perceived ease of use is a significant predictor of usefulness of a given technology. According to TAM, attitude toward a particular technological product significantly influences intention to use the given product. This model also suggests that perceptions about usefulness of a given technology directly influences users' intention to use it. Behavioral intention represents users' readiness to conduct a given behavior and it plays a significant role in influencing users' actual behavior. These proposed suggestions of TAM were examined and proved in various types of information system studies (Turner, Kitchenham, Brereton, Charters, & Budgen, 2010). Researchers also implemented TAM in gamification domain to analyze and understand the role of various gamification elements on users' behavioral intention to use the platforms in which such techniques are implemented. Significant positive influence of gamification elements on user behavior was observed in the studies that utilized TAM (Rodrigues, Oliveira, & Costa, 2016; Huang, Chen, & Liu, 2019; García-Jurado, Castro-González, Torres-Jiménez, & Leal-Rodríguez, 2019). Literature showed that gamification positively influences the users' perceptions about usefulness and ease of use of the platform in which gamified elements are implemented. Users' favorable perceptions about gamified platforms, in turn, plays an important role in forming favorable attitudes towards such platforms. Developing favorable attitude in the mind of consumers is very critical as it leads to behavioral intention to use platforms under question.

GAMIFICATION AND ONLINE CONSUMER BEHAVIOR

In the relevant literature, the influence of gamification on online consumer behavior has been assessed in numerous studies in various e-commerce contexts such as online retailing, online banking, online gambling, online travel, etc. Studies showed that gamification techniques do have a significant influence on online consumer behavior. Research findings showed that use of gamification e-commerce domain modify online consumer behaviors by increasing the level of interest, motivation, engagement, retention and loyalty. The following paragraphs discusses the findings of the selected studies from various e-commerce domains.

In their study, Hwang and Choi (2019) investigated whether and how gamified loyalty programs impact consumer loyalty toward loyalty programs and behavioral intentions to use them, along with the role of the type of rewards, namely self-oriented and altruistic rewards. Altruistic rewards refer to rewards that are designed to benefit someone other than the loyalty program participant (e.g., donation of rewards to others in need or to the communities), in contrast self-oriented rewards refer to rewards designed to benefit the participants themselves. Their study showed that gamified loyalty programs engender significantly greater consumer loyalty to LPs than do conventional LPs. The results confirmed that gamified loyalty programs (vs. conventional ones) increased consumer loyalty toward loyalty programs which in turn enhanced consumers' participation intention in loyalty programs and mobile app download intention. In this study it was also found that self-oriented rewards have a greater positive impact on consumer LP loyalty than do altruistic rewards.

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Also, Hofacker et al. (2016) developed a conceptual framework of gamification in the mobile marketing context. This framework defined the elements of gamification as story, mechanics, aesthetics, and technology, all of which influence marketing outcomes, including engagement, attitude, purchase, repurchase, and retention. Their model posits that consumer-related factors (e.g., characteristics, goals, and usage context) and product-related factors (e.g., type and life cycle) moderate the impact of gamification elements on marketing outcomes.

Eisingerich (2019) demonstrated how gamification can raise customer engagement. They analyzed relationships among gamification principles, individuals' engagement behaviors, and digital sales. In their study, they identified several gamification principles - social interaction, sense of control, goals, progress tracking, rewards, and prompts – which believed to play an important role in inducing people to take action. In addition to these gamification principles, they identified two main mechanisms - hope and compulsion - that explain how these principles influence behaviors. Hope refers to individuals' desire for a goal-congruent possible outcome. It represents a feeling that a currently unsatisfying situation can be improved. On the other side compulsion refers to a response to uncontrollable, repetitive and sometimes senseless desire to engage in certain behaviors. They found that hope positively mediates the relationship between gamification principles and customer engagement. On the contrary, compulsion was found to reduce the possibility of customer engagement. Compulsion was reported to have only a slight impact on customer engagement. That is, at the beginning individuals may feel forced to use and check their apps, however this compulsion will tend to decline over time. On the other side, hope is a stronger driver of customer engagement. Hope motivates and encourages customers to change their behaviors and makes them to take decisive actions in reaching their goals. Gamified apps should include social interaction, a sense of control, goal setting, and progress tracking, because these features motivate customers to hope for desired goals and engage more with the apps. This study finding implies that, instead of designing gamified apps that focus on compulsive use, practitioners should utilize hope as an alternative way to motivate customers to change their behaviors and achieve their objectives.

By utilizing the online reviews written on TripAdvisor platform, in their study Moro, Ramos, Esmerado, & Jalali (2019) tried to understand how each of the twelve gamification features used in TripAdvisor contributed to explaining review length and its sentiment score. In this study, three badge features – total number of badges, the passport badges and the explorer badges - were considered the most relevant ones, providing evidence of a relation between gamification features and traveler's behavior while writing reviews. In this study, it was found that visually appealing gamification features such as badges have a stronger effect on the review's length than simpler interaction counters.

By conducting research on online bookstore customers, in their study Hsu and Chen (2018) assessed the relationship among the experience of gamified marketing activities, perceived value (i.e., hedonic and utilitarian), satisfaction, brand love and desirable consumer behaviors. It was found that the experience of gamified marketing activities has a significant and positive impact on perceived hedonic and utilitarian value, which are in turn significantly influence satisfaction and brand love. Satisfaction, in turn, was found to have significantly positive impact on desirable consumer behaviors such as brand loyalty, positive word-of-mouth, and resistance to negative information. These research findings suggest that online retailers should incorporate gamification features to their marketing strategies if they want to better manage desirable consumer behavior.

Interesting results were obtained from gamification studies that assessed user behavior through Technology Acceptance Model (TAM). It was found that the more user perceives gamified apps to be useful and ease to use, the more satisfied he or she will become, thereby decreasing the tendency to quit

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using such kinds of apps in the future (Huang et al., 2019). García-Jurado et al. (2019) suggested different type of users respond differently to gamified environment. They suggested that marketers should provide a fun interface to Millennials and a platform easier to use to the Generation X, for gamification to be successful. Rodrigues et al. (2016) applied TAM to better understand the adoption of gamified business applications. They assessed the influence of gamification on consumer behavior in online banking context. They explored the relationship between gamification, socialness, ease-of-use, usefulness, enjoyment, and intention to use a gamified e-banking app, and the corresponding business impact. In this context, socialness describes the phenomenon of users treating technology or technology interfaces, such as websites, as social actors and perceive that the interfaces to exhibit lifelike attributes associated with personality or emotions. Results of their study showed that when applied to e-banking platform, game design elements and social cues provide several positive outcomes, particularly in terms of the users' perceptions about application's usefulness, its ease-of-use and users' intention to use the given e-business app. They suggested that for customers most financial products and services are complex to understand; however, the use of gamification in such apps can help to make a serious application more attractive and easy to use for customers.

All of the above mentioned studies assessed the role of gamification in different fields. Results of these studies showed that gamification is not a simply gameful design but it can be a very powerful marketing tool which can be used to encourage engagement with a company's products and services. It also worth to mention that users do not respond to gamification strategies in the same way. Literature showed that different gamification techniques may have different end results in different types of users. Therefore, in order to get the desired effect individual differences should be taken into consideration by practitioners while designing and implementing such techniques.

CONCLUSION

In order to stay competitive companies are constantly looking for new means to stay a step ahead of their competitors. Gamification, the use of game mechanics in non-gaming applications, has become one of the promising means for managers. Gamification are being applied in various fields to bring intended behavioral outcome. For many businesses gamification is one the powerful technique to create desirable consumer behaviors such as increased engagement, higher retention, brand loyalty, positive word-of-mouth, etc. Well-designed gamification strategy attracts the target audience's attention to the company's products and services. While interacting with gamified interface, customers are drawn closer to the company and associate their enjoyment with company's products and services. It is also worth to mention that there is no one-size-fits all in the implementation process of gamification in e-commerce domain. Managers should tailor their gamified environments in such a way that they get more positive customer responses. What gamification tools and strategies are best for your customers mainly depends your particular business, products and audience. Gamification is possible to be found in many forms and it can include main building blocks of game in many different ways (Sailer et al., 2017). For gamification strategies to be successful it is very important for managers to understand the motivational effects of different gamification features on consumer behavior. Therefore, it is important that online business owners customize gamification techniques by considering the nature of their business and psychographic and behavioral characteristics of their customers.

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Maybe today gamification have not yet reached its full potential yet but more and more managers have started to realize that they can implement this technique to change behaviors of consumers to achieve specific business outcomes. Originally, gamification was mostly about points, badges, and leaderboards, but it has changed to include additional game elements such as meaningful stories, avatars, virtual currency, personalization, tasks, social network features and many others. As game technologies improve, we will see transition and implementation of new game design elements in different non-game contexts. In the future we will also see gamification strategies built on top of virtual reality (VR) and augmented reality (AR) technologies which are already being applied in e-commerce field.

While gamification has brought lots of opportunities for business world, it has also brought ethical concerns and issues with itself. Gamification can be considered as a type of stealth marketing which is an act of advertising something to specific audience, without them realizing they are being marketed to. Stealth marketing is considered to be an unethical business practice by many. Currently, gamification is not formally regulated as a marketing practice. Researchers in this field has initiated discussions whether gamification should be regulated or monitored in some way (Thorpe and Roper, 2017; Marczewski, 2017). Gamification turns out to be unethical when the designer uses the psychology of users to manipulate them to do things which are not in their best interest (Marczewski, 2017). The use of random rewards to create addictive, gambling-like experiences that eventually lead certain users to be unable to exercise free will. As research developments advance and become more integrated into practice, more effective gamification will emerge and ethical issues will intensify even more (Thorpe and Roper, 2017). That is, as companies become more informed about the deep psychological mechanisms that underpin user engagement, they will have the opportunity of designing increasingly persuasive systems.

To sum up, gamification itself is not an unethical practice; however, the main emphasis here is on intention of the person designing and implementing it. Managers should develop such a system that will benefit both business itself and users equally. Gamified system should help online business owners to create a fun and engaging experience for their audience, which will eventually lead to a long-lasting and strong customer relationship. On the other side, such systems should help users to carry out their intended activities in an effective, efficient and at the same time entertaining manner but without being influenced by the system adversely. That is, gamified systems should help users, rather than causing harms to them.

REFERENCES

Abt, C. C. (1970). *Serious games*. New York: Viking Press.

Aparicio, A. F., Vela, F. L. G., Sánchez, J. L. G., & Montes, J. L. I. (2012). Analysis and application of gamification. *Proceedings of the 13th International Conference on Interacción Persona-Ordenado*. 10.1145/2379636.2379653

Burguillo, J. C. (2010). Using game theory and Competition-based Learning to stimulate student motivation and performance. *Computers & Education*, *55*(2), 566–575. doi:10.1016/j.compedu.2010.02.018

Caillois, R. (2001). *Man, Play, and Games*. Chicago, IL: University of Illinois Press.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Cechetti, N. P., Bellei, E. A., Biduski, D., Mazuco Rodriguez, J. P., Roman, M. K., & De Marchi, A. B. (2019). Developing and implementing a gamification method to improve user engagement: A case study with an m-Health application for hypertension monitoring. *Telematics and Informatics*, *41*, 126–138. doi:10.1016/j.tele.2019.04.007

Cerasoli, C. P., Nicklin, J. M., & Ford, M. T. (2014). Intrinsic Motivation and Extrinsic Incentives: A 40-Year Meta-Analysis. *Psychological Bulletin*, *140*(4), 980–1008. doi:10.1037/a0035661 PMID:24491020

Costa, J. P., Wehbe, R. R., Robb, J., & Nacke, L. E. (2013, October). *Time's Up: Studying Leaderboards For Engaging Punctual Behaviour.* Paper presented at the Gamification 2013: 1st International Conference on Gameful Design, Research, and Applications, Toronto, Canada. 10.1145/2583008.2583012

Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Quarterly*, *13*(3), 319–340. doi:10.2307/249008

Deci, E.L., Koestner, R., & Ryan, R.M. (1999). A meta analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin, 125*(6), 627.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Springer. doi:10.1007/978-1-4899-2271-7

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal Pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*(4), 227–268. doi:10.1207/S15327965PLI1104_01

Deci, E. L., & Ryan, R. M. (2008). Self-Determination Theory: A macro theory of human motivation, development, and health. *Canadian Psychology*, *49*(3), 182–185. doi:10.1037/a0012801

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. E. (2011a). From game design elements to gamefulness: Defining "Gamification". In *Mindtrek 2011 proceedings*. Tampere, Finland: ACM Press. doi:10.1145/2181037.2181040

Deterding, S., Sicart, M., Nacke, L., O'Hara, K., & Dixon, D. (2011b). Gamification. using game-design elements in non-gaming contexts. In *Proceedings of CHI Abstracts* (pp. 2425–2428). 10.1145/1979742.1979575

Downes-Le Guin, T., Baker, R., Mechling, J., & Ruyle, E. (2012). Myths and realities of respondent engagement in online surveys. *International Journal of Market Research*, *54*(5), 1–21. doi:10.2501/IJMR-54-5-613-633

Eisingerich, A. B., Marchand, A., Fritze, M. P., & Dong, L. (2019). Hook vs. hope: How to enhance customer engagement through gamification. *International Journal of Research in Marketing*, *36*(2), 200–215. doi:10.1016/j.ijresmar.2019.02.003

eMarketer. (2019). *Global Ecommerce 2019*. Retrieved from https://www.emarketer.com/content/global-ecommerce-2019

García-Jurado, A., Castro-González, P., Torres-Jiménez, M., & Leal-Rodríguez, A. L. (2019). Evaluating the role of gamification and flow in e-consumers: Millennials versus generation X. *Kybernetes*, *48*(6), 1278–1300. doi:10.1108/K-07-2018-0350

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Gatautis, R., Banyte, J., Piligrimiene, Z., Vitkauskaite, E., & Tarute, A. (2016). The impart of gamification on consumer brand engagement. *Transformations in Business & Economics*, *15*(1), 173–191.

Hamari, J. (2015). Do badges increase user activity? A field experiment on the effects of gamification. *Computers in Human Behavior*, *71*, 469–478. doi:10.1016/j.chb.2015.03.036

Hofacker, C., Ruyter, K. D., Lurie, N. H., Manchanda, P., & Donaldson, J. (2016). Gamification Design for Mobile Marketing Effectiveness. *Journal of Interactive Marketing*, *34*, 25–36. doi:10.1016/j.intmar.2016.03.001

Hsu, C., & Chen, M. (2018). How gamification marketing activities motivate desirable consumer behaviors: Focusing on the role of brand love. *Computers in Human Behavior*, *88*, 121–133. doi:10.1016/j.chb.2018.06.037

Huang, C.-K., Chen, C.-D., & Liu, Y.-T. (2019). To stay or not to stay? Discontinuance intention of gamification apps. *Information Technology & People*, *32*(6), 1423–1445. doi:10.1108/ITP-08-2017-0271

Hwang, J., & Choi, L. (2020, January). Having fun while receiving rewards?: Exploration of gamification in loyalty programs for consumer loyalty. *Journal of Business Research*, *106*, 365–376. doi:10.1016/j.jbusres.2019.01.031

Jones, B. A., Madden, G. J., & Wengreen, H. J. (2014). The FIT game: Preliminary evaluation of a gamification approach to increasing fruit and vegetable consumption in school. *Preventive Medicine*, *68*, 76–79. doi:10.1016/j.ypmed.2014.04.015 PMID:24768916

Juul, J. (2003). The game, the player, the world: Looking for a heart of gameness. In M. Copier & J. Raessens (Eds.), *Proceedings of Level-Up: Digital games research conference* (pp. 30–45). Utrecht, Netherland: University of Utrecht.

Kapp, K. M. (2012). *The gamification of learning and instruction: Game-based methods and strategies for training and education*. San Francisco, CA: Pfeiffer.

Landers, R. N., & Landers, A. K. (2014). An Empirical Test of the Theory of Gamified Learning: The Effect of Leaderboards on Time-on-Task and Academic Performance. *Simulation & Gaming*, *45*(6), 769–785. doi:10.1177/1046878114563662

Liu, Y., Alexandrova, T., & Nakajima, T. (2011). Gamifying intelligent environments. In *Proceedings of the 2011 International ACM Workshop on Ubiquitous Meta User Interfaces* (pp. 7–12). Scottsdale, AZ: ACM Press 10.1145/2072652.2072655

Marathe, S., & Sundar, S. S. (2011). What drives customization?: Control or identity? In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp.781–790). Vancouver, BC, Canada: ACM Press

Marczewski, A. (2017). The ethics of gamification. XRDS: Crossroads. *The ACM Magazine for Students*, *24*(1), 56–59. doi:10.1145/3123756

Mekler, E. D., Brühlmann, F., Tuch, A. N., & Opwis, K. (2015). Towards understanding the effects of individual gamification elements on intrinsic motivation and performance. *Computers in Human Behavior*, *71*, 525–534. doi:10.1016/j.chb.2015.08.048

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Mitchell, R., Schuster, L., & Jin, H. S. (2020, January). Gamification and the impact of extrinsic motivation on needs satisfaction: Making work fun? *Journal of Business Research*, *106*, 323–330. doi:10.1016/j.jbusres.2018.11.022

Moro, S., Ramos, P., Esmerado, J., & Jalali, S. M. (2019). Can we trace back hotel online reviews' characteristics using gamification features? *International Journal of Information Management*, *44*, 88–95. doi:10.1016/j.ijinfomgt.2018.09.015

Peng, W., Lin, J., Pfeiffer, K. A., & Winn, B. (2012). Need Satisfaction Supportive Game Features as Motivational Determinants: An Experimental Study of a Self-Determination Theory Guided Exergame. *Media Psychology*, *15*(2), 175–196. doi:10.1080/15213269.2012.673850

Rodrigues, L. F., Oliveira, A., & Costa, C. J. (2016). Playing seriously – How gamification and social cues influence bank customers to use gamified e-business applications. *Computers in Human Behavior*, *63*, 392–407. doi:10.1016/j.chb.2016.05.063

Ryan, R. M., & Deci, E. L. (2000a). The darker and brighter sides of human existence: Basic psychological needs as a unifying concept. *Psychological Inquiry*, *11*(4), 319–338. doi:10.1207/S15327965PLI1104_03

Ryan, R. M., & Deci, E. L. (2000b). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, *25*(1), 54–67. doi:10.1006/ceps.1999.1020 PMID:10620381

Ryan, R. M., & Deci, E. L. (2000c). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *The American Psychologist*, *55*(1), 68–78. doi:10.1037/0003-066X.55.1.68 PMID:11392867

Ryan, R. M., & Deci, E. L. (2002). Overview of self-determination theory: An organismic dialectial perspective. In R. M. Ryan & E. L. Deci (Eds.), *Handbook of self-determination research*. Rochester, NY: University of Rochester Press.

Ryan, R. M., Frederick, C. M., Lepes, D., Rubio, N., & Sheldon, K. M. (1997). Intrinsic motivation and exercise adherence. *International Journal of Sport Psychology*, *28*, 335–354.

Sailer, M., Hense, J., Mandl, H., & Klevers, M. (2013). Psychological perspectives on motivation through gamification. *Interaction Design and Architecture(s). Journal*, *19*, 28–37.

Sailer, M., Hense, J. U., Mayr, S. K., & Mandl, H. (2017). How gamification motivates: An experimental study of the effects of specific game design elements on psychological need satisfaction. *Computers in Human Behavior*, *69*, 371–380. doi:10.1016/j.chb.2016.12.033

Salen, K., & Zimmerman, E. (2004). *Rules of play: Game design fundamentals*. Cambridge, MA: MIT Press.

Seaborn, K., & Fels, D. I. (2015). Gamification in thoery and action: A survey. *International Journal of Human-Computer Studies*, *74*, 14–31. doi:10.1016/j.ijhcs.2014.09.006

Statista. (2018). *Value of the gamification market worldwide in 2016 and 2021 (in billion U.S. dollars).* Retrieved from https://www.statista.com/statistics/608824/gamification-market-value-worldwide/

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Statista. (2019). *Global digital population as of July 2019 (in millions).* Retrieved from https://www.statista.com/statistics/617136/digital-population-worldwide/

Thom, J., Millen, D., & Dimicco, J. (2012). Removing gamification from an enterprise SNS. In *Proceedings of the ACM 2012 Conference on Computer Supported Cooperative Work - CSCW 12* (pp. 1067-1070). Seattle, WA: ACM Press

Thorpe, A. S., & Roper, S. (2017). The Ethics of Gamification in a Marketing Context. *Journal of Business Ethics*, *155*(2), 597–609. doi:10.100710551-017-3501-y

Toda, A., Carmo, R. M., Silva, A. P., Bittencourt, I. I., & Isotani, S. (2019). An approach for planning and deploying gamification concepts with social networks within educational contexts. *International Journal of Information Management*, *46*, 294–303. doi:10.1016/j.ijinfomgt.2018.10.001

Turner, M., Kitchenham, B., Brereton, P., Charters, S., & Budgen, D. (2010). Does the technology acceptance model predict actual use? A systematic literature review. *Information and Software Technology*, *52*(5), 463–479. doi:10.1016/j.infsof.2009.11.005

Werbach, K., & Hunter, D. (2012). *For the win: How game thinking can revolutionize your business*. Philadelphia, PA: Wharton Digital Press.

Xi, N., & Hamari, J. (2019). Does gamification satisfy needs? A study on the relationship between gamification features and intrinsic need satisfaction. *International Journal of Information Management*, *46*, 210–221. doi:10.1016/j.ijinfomgt.2018.12.002

Xu, F., Buhalis, D., & Weber, J. (2017). Serious games and the gamification of tourism. *Tourism Management*, *60*, 244–256. doi:10.1016/j.tourman.2016.11.020

Yongwen, X., Johnson, P., Moore, C. A., Brewer, R. S., & Takayama, J. (2013). SGSEAM: Assessing Serious Game Frameworks from a Stakeholder Experience Perspective. In *Gamification 2013: 1st International Conference on Gameful Design, Research, and Applications* (pp.75-78). Toronto, Ontario, Canada: ACM Press.

ADDITIONAL READING

Alsawaier, R. S. (2018). The effect of gamification on motivation and engagement. *International Journal of Information and Learning Technology*, *35*(1), 56–79. doi:10.1108/IJILT-02-2017-0009

Baptista, G., & Oliveira, T. (2017). Why so serious? Gamification impact in the acceptance of mobile banking services. *Internet Research*, *27*(1), 118–139. doi:10.1108/IntR-10-2015-0295

Baptista, G., & Oliveira, T. (2019). Gamification and serious games: A literature meta-analysis and integrative model. *Computers in Human Behavior*, *92*, 306–315. doi:10.1016/j.chb.2018.11.030

Chou, Y. (2014). *Actionable Gamification: Beyond Points, Badges, and Leaderboards*. Milpitas, CA: Octalysis Media.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Duggan, K., & Shoup, K. (2013). *Business Gamification For Dummies* (1st ed.). Hoboken, NJ: John Wiley & Sons.

Eppmann, R., Bekk, M., & Klein, K. (2018). Gameful Experience in Gamification: Construction and Validation of a Gameful Experience Scale. *Journal of Interactive Marketing*, *43*, 98–115. doi:10.1016/j.intmar.2018.03.002

Kapp, K. M. (2012). *The Gamification of Learning and Instruction: Game-based Methods and Strategies for Training and Education* (1st ed.). San Francisco, CA: Pfeiffer.

Noorbehbahani, F., Salehi, F., & Zadeh, R. J. (2019). A systematic mapping study on gamification applied to e-marketing. *Journal of Research in Interactive Marketing*, *13*(3), 392–410. doi:10.1108/JRIM-08-2018-0103

KEY TERMS AND DEFINITIONS

B2C E-Commerce: Exchange of goods or services over the internet between businesses and customers.

Gamification: Use of game-design elements and game principles in non-game contexts.

Self-Determination Theory (SDT): A theory of motivation and personality that addresses three universal, innate and psychological needs which are competence, autonomy, and psychological relatedness.

Technology Acceptance Model (TAM): An information systems theory that models how individuals come to accept and use a technology.

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Chapter 39
An Exploration of the Impact of Virtual Reality Interfaces on Online Shopping

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ABSTRACT

Virtual reality presents exciting new opportunities for e-commerce with regard to the development of innovative shopping services. This article reports on an experimental investigation into the coordinated use of two human-computer interfaces (HCIs) for online shopping: virtual reality (VR) and webpages. We adopted the uses and gratification theory and technology acceptance model to determine how these HCIs affect online shopping intentions. Data from 98 participants revealed that entertainment value, informativeness, perceived ease-of-use, and perceived usefulness are the primary factors influencing the intention to use the VR HCI for online shopping ($p < 0.05$). Informativeness, perceived ease-of-use, and perceived usefulness are the main factors influencing the intention to use the webpage HCI for online shopping ($p < 0.05$). This study provides insights for businesses how to develop innovative shopping services using VR.

1. INTRODUCTION

The human-computer interfaces (HCIs) of online shopping platforms guide consumers in understanding the company's brand, products, prices, and services. Online shopping platforms that offer user-friendly and convenient HCIs bring customers significantly higher satisfaction (Jiang, Chan, Tan, & Chua,

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2010; Visinescu, Sidorova, Jones, & Prybutok, 2015). Furthermore, when users become accustomed to a certain service method (e.g., the way an online platform HCI is operated), the habit will induce them to continue using this service and prevent them from easily changing to another service (Hsu, Chang, & Chuang, 2015; Chou & Hsu, 2016). To meet consumer needs (e.g., search for products quickly or compare prices), many online shopping platforms use text, photos, videos, and hyperlinks to construct their HCIs. However, such designs mainly provide 2D visuals and lack 3D elements for senses such as sight, hearing, and touch. As virtual reality (VR) technology matures, some online shopping platforms are converting their HCI designs from webpages to VR. For instance, Amazon plans to launch VR shopping services using PlayStation VR and HTC Vive, and Chinese conglomerate Alibaba was the first to launch VR shopping services in 2016. With the preliminary introduction of VR shopping into the market, understanding the acceptance and usage motives of consumers is crucial. Webpage shopping is already mature, so whether it is necessary to invest in VR shopping and whether VR can attract more consumers are both issues of concern for e-commerce businesses. In terms of HCI, webpages and VR obviously offer different shopping environments; webpages provide abundant shopping information swiftly, whereas VR provides experiences of near-real shopping environments. Specifically, VR makes use of sensory devices to immerse users in a simulated world. Specially designed headsets and glasses can be used for visual immersion, while hand-held devices provide tactile immersion. This capacity for complete immersion means that businesses are now able to create custom, unique experiences for their customers (Violante, Vezzetti, & Piazzolla, 2019). Previous research involving VR has focused on improving VR technology (Postma & Katz, 2015) or applied VR to medical treatment (Chen et al., 2016), education (North, North, & Coble, 2015), and games (Seibert & Shafer, 2018). Few studies have applied VR to shopping, so the influence of different HCIs (VR and webpages) on the shopping intentions of consumers is unclear. Furthermore, compared to physical stores, VR can offer richer stimuli to promote consumption without time or space constraints (e.g., product, brand, and music). As a result, many VR-related studies used the S(stimuli)-O(organism)-R(response) model to identify effective stimuli (Eroglu, Machleit, & Davis, 2003; Roschk, Loureiro, & Breitsohl, 2017). The SOR model holds that stimuli have a strong influence on the emotions and perceptual state of consumers (organism) and ultimately result in acceptance or avoidance in consumers (response) (e.g., decide to make a purchase or not). For example, Martínez-Navarro, Bigné, Guixeres, Alcañiz, and Torrecilla (2018) examined the external stimuli that influence consumers (e.g., brand or product) and the emotions or perceptual responses (e.g., discomfort felt in a VR experience) of consumers regarding VR (Martínez-Navarro et al. 2018), and Bigne, Llinares, and Torrecilla (2016) used eye trackers to analyze the shopping choices of consumers. Despite the good explanatory power of the SOR model, it focuses on what businesses can use to attract consumers and overlooks the fact that the psychological motives of the consumers themselves also have a strong influence on consumer decisions. In other words, even though the development of new technology (e.g., VR and augmented reality) is amazing and can offer consumers rich and diverse stimuli, the acceptance and psychological perceptions of consumers with regard to new technology are often crucial factors determining whether a business can profit. For these factors, the uses and gratifications (U&G) theory and the technology acceptance model (TAM) provide a reliable theoretical foundation. The former indicates that the psychological motives of consumers (e.g., entertainment, convenience, and informativeness) are important factors that impact consumer decisions, whereas the latter explains the acceptance of consumers with regard to new technology (e.g., VR shopping) from the perspective of perceived ease-of-use and perceived usefulness (see literature review for details). This study thus examined how HCIs (WEB/

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VR) strengthen or weaken the online shopping intention of consumers using the uses and gratifications (U&G) theory and the technology acceptance model (TAM).

2. LITERATURE REVIEW

2.1 Uses and gratifications theory

Stemming from mass communication, the uses and gratifications (U&G) theory (Katz, Blumler, & Gurevitch, 1973) holds that different individuals choose and use communication media for varying purposes and further explains the psychological motive that prompts individuals to use media (e.g., search for information or entertainment). The U&G theory has been widely applied to study internet usage behavior and examine why and how consumers use certain online media. With social media as an example, researchers have used the U&G theory to discuss check-in intentions on Facebook and usage intentions on Instagram (Malik, Dhir, & Nieminen, 2016; Sheldon & Bryant, 2016). With the rapid development of online shopping, the psychological motives prompting consumers to choose certain online shopping platforms have become an important topic in e-commerce research. Existing research has found that entertainment (the subjective feelings that consumers derive from online media, such as pleasure, aesthetic enjoyment, emotional relaxation, and fun) (Hausman & Siekpe, 2009), convenience (the effort that online media designs can help consumers save in searching for, choosing, and using information) (Lim & Ting, 2012), and informativeness (the information that consumers can obtain when using online media) (Kaye & Johnson, 2004) are the main psychological motives behind the online media choices of consumers. These media include YouTube (Shao 2009), medical insurance websites (Cudmore et al. 2011), Twitter (Coursaris et al. 2010), and online games (Wu et al. 2010). As online shopping platforms share many of the same characteristics as these media (e.g., unrestricted by time or space, quick, easy to access), we assumed that entertainment, convenience, and informativeness are also the primary psychological motives behind the online shopping platform choices of consumers and used these three motives to examine the online shopping behavior of consumers. The main advantage of the U&G theory is its indication that individuals do not merely receive media information passively, as conventionally believed, but actively choose the media and information. Furthermore, the decisions of individuals are subject to the influence of various psychological factors. Despite these contributions, the U&G theory is limited primarily due to its neglect of the significant impact that the social conditions and environments surrounding individuals (e.g., different HCIs) may exert on individual decisions. This study therefore combined the U&G theory and the technology acceptance model (TAM) (described below) to make up for this shortcoming.

2.2 Technology Acceptance Model

The technology acceptance model (TAM) (Davis 1989) explains user behavior (such as whether a user accepts VR shopping) from the perspective of the user's inner cognition. TAM is currently one of the theory models most commonly used to examine user acceptance of information systems and has proven to be an effective tool in predicting willingness to use information system (Butt, Tabassam, Chaudhry, & Nusair, 2016).TAM holds that attitude towards using is an important factor that determines the behavioral intention of users, and two psychological factors influence attitude towards using: perceived usefulness

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(PU) and perceived ease of use (PEOU). TAM holds that when people have not had the experience of using a technology or do not have an in-depth understanding of a technology, they will have a psychological feeling called perception. PU is defined as the degree to which a user perceives that adopting a technology will help him or her increase work efficiency and productivity, and greater PU means that the user will be more willing to adopt the technology. PEOU refers to the amount of effort that the user believes will be needed to use the technology. Effort is a limited resource, so people will naturally expend their effort on activities that use the fewest resources (McNeil, Odell, & Tseng, 1991).As a result, Davis (1989) indicated that if an information system gives users the perception that it is easy to use, then users will be significantly more willing to use it. The VR and webpage online shopping platforms discussed in this study are both information systems. Thus, we can use TAM to clearly understand the usage intentions of users toward VR shopping and webpage shopping systems and provide reference for e-commerce decisions. Finally, despite the widespread use of TAM to explain the acceptance of various information technologies, TAM is limited in that it assumes that users adopt an information technology because they feel that the technology can benefit themselves and help them complete their work (i.e., pragmatism). This assumption disregards the influence of factors such as emotions and peers on user decisions. For this reason, later studies proposed more complex models (e.g., TAM 2 and TAM 3). Nevertheless, we took into account the limitations of actually executing our VR shopping experiment and questionnaire survey (Please see research limitations) and thus only adopted the two core constructs of TAM, PU and PEOU, for this study.

2.3 Human computer interface of online shopping platform

Online shopping involves a virtual shopping environment using an HCI (e.g., a webpage) that enables consumers to search for information about products and services and place orders (M. Kim & Lennon, 2000).An HCI is the medium of information exchange between humans and machines (e.g., an online shopping platform computer). Humans can use the interface to input commands into machines (e.g., a mouse, a keyboard, hand gestures), and then the machines use information technology to read and respond to the commands (e.g., artificial intelligence or natural language processing) (Lazar, Feng, & Hochheiser, 2017).HCIs contain three aspects: information design, interaction design, and sensorial design (Shedroff, 2001).The webpage designs of online shopping platforms are hampered in that their sensorial design is limited by the hardware; they mainly provide 2D visuals and are relatively lacking in 3D elements for senses such as sight, hearing, and touch. The development of VR removes this limitation. VR uses computers to simulate a 3D virtual environment, which gives users an immersive experience. The computer devices generally include a screen, sensors, and a computer (Serrano, Baños, & Botella, 2016). VR can simulate real shopping venues and give consumers richer and more interesting shopping experiences. As a result, many corporations are beginning to develop VR shopping services. Researchers have compared the shopping behavior of consumers in 3D VR and in physical stores. The results indicated that the shopping behaviors of consumers in the two environments are not the same; consumers spend significantly more money in VR than in physical stores but purchase similar products (van Herpen, van den Broek, van Trijp, & Yu, 2016). Researchers have also analyzed the psychological feelings that VR shopping and webpage shopping bring to consumers. The results revealed that VR shopping gave customers significantly greater satisfaction in terms of convenience, enjoyment, and quality guarantee (Lee & Chung, 2008).Although a small number of studies have been conducted on VR shopping, many of the early studies used desktop computer screens, stereo headphones, and inertial sensors to simulate

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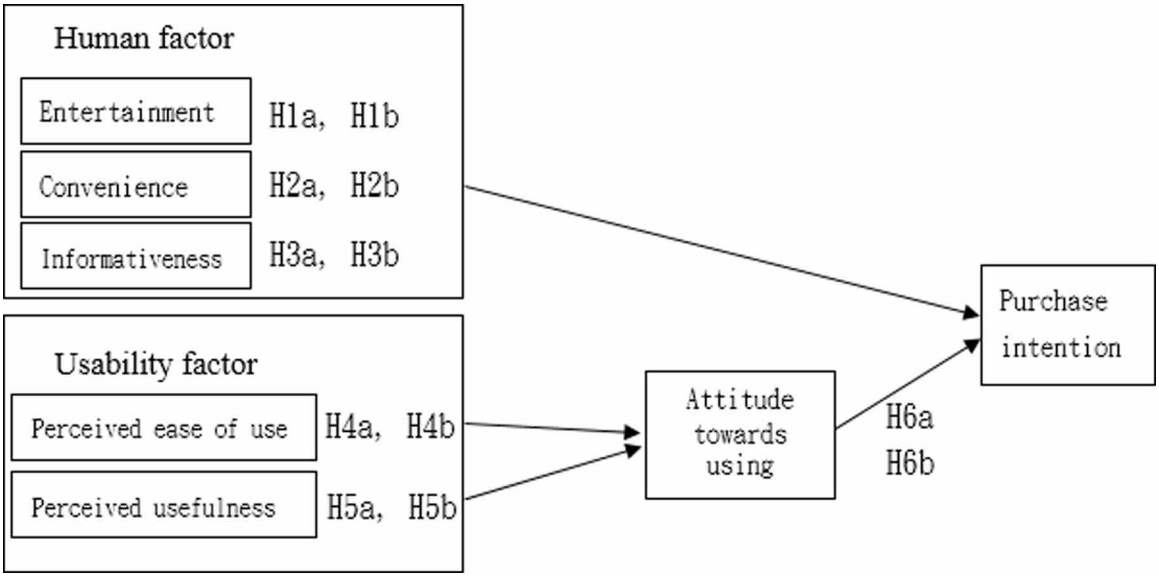
3D environments, which are significantly different from the latest VR headsets (e.g., PlayStation VR and Google Cardboard). Thus, it is still unclear whether consumers can accept shopping with VR headsets, which is what this study set out to establish. In addition to online shopping platforms, VR has also been used in physical stores. For example, IKEA uses VR to help customers design a customized kitchen. Customers enter the virtual kitchen through VR goggles and can change the paint colors, furniture, or lighting. As they walk around the room to see things from different angles, they can also add accessories and rearrange furniture. Car company Lexus, and Makeup company NARS have also developed specific VR applications. Despite this spread of VR technology, VR online shopping is the fastest-growing sector among VR applications, which is why we selected it as the focus of this study.

3. METHODOLOGY

3.1 Research model

This study constructed a research model combining the U&G theory and TAM (Figure 1) and used this model to examine how HCIs (WEB/VR) strengthen or weaken the online shopping intention of users. Specifically, this study focuses on two HCI-related constructs: human factors and usability factors. Human factors refer to user responses to the HCI, including entertainment value, convenience, and informativeness; usability refers to how a user perceives and interacts with an online shopping platform through the HCI. Below we provide detailed definitions of these two constructs.

Figure 1. Research model



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3.2 Research Hypothesis

(1) Entertainment refers to the subjective feelings that consumers derive from shopping on e-commerce platforms, such as pleasure, aesthetic enjoyment, emotional relaxation, and fun. Past studies using the U&G theory have demonstrated that entertainment is a crucial psychological factor for users. For instance, Shu (2011)) stated that fun is a crucial factor that attracts consumers to participate in group buying; Hausman and Siekpe (2009)) discovered that entertainment exerts a significant impact on the online purchase and repurchase intentions of consumers. Furthermore, VR shopping is a novel model of shopping compared to web shopping, and the immersive 3D interactive experiences that it offers can significantly enhance the feeling of pleasure that consumers can derive while shopping.

(2) Convenience refers to the time and effort that an e-commerce platform design can help consumers save in shopping and searching for information, thereby enabling consumers to achieve their objectives more easily. Research has shown that when consumers perceive greater convenience in a company's services, they are more willing to continue their patronage (Chiu, Wang, Fang, & Huang, 2014; Ozturk, Bilgihan, Nusair, & Okumus, 2016). In other words, the most important thing for companies wanting to keep their customers is to provide convenient services, and HCIs are a crucial factor that influences the amount of convenience that consumers perceive (Benbasat, 2014). With VR shopping, consumers do not have to go to physical stores in person and can purchase any product they want virtually anytime, anywhere. This form of shopping should be able to effectively enhance the amount of convenience perceived by consumers.

(3) Informativeness refers to the information that consumers can obtain regarding products and services when using e-commerce platforms (e.g., prices and discounts). Research has shown that the quality of information on shopping websites can directly impact the views that consumers have with regard to the products and services of the company/brand, which constitute the attitude that consumers have towards the company (Zia, 2009).The results of many studies indicate that when the information provided on a shopping website satisfies consumer needs to a greater degree, then the purchase intentions of the consumers will also be higher (Matzler, Würtele, & Renzl, 2006). The VR shopping model allows consumers to quickly and easily find the products they want and see all types of product information (e.g., price, similar products, price comparisons, and customer reviews). This form of shopping should therefore be able to effectively increase the degree of informativeness that consumers perceive.

(4) Perceived usefulness (PU) is the degree to which a user perceives that using an HCI will help him or her increase work efficiency (e.g., shopping more quickly). If an HCI is perceived to be more useful to a user, then said user will be more willing to use it.

(5) Perceived ease of use (PEOU) refers to how easy an HCI is to use as perceived by a user. A user will have a more positive attitude toward an HCI that is easier to use. Generally speaking, HCIs include information design, interaction design, and sensorial design. With VR shopping, VR simulations of actual shopping scenarios can provide consumers with more interesting shopping experiences. Such immersive experiences should be able to effectively enhance the PU and PEOU of consumers.

(6) Attitude towards using is the positive or negative rating that a user gives to the HCI of an online shopping platform. A consumer that has a more positive attitude towards using the online shopping platform will also have greater purchase intention.

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(7) Purchase intention is the likelihood that a consumer will purchase a product or a service. A greater purchase intention means that the probability of the consumer making a purchase is higher (Pappas, Kourouthanassis, Giannakos, & Chrissikopoulos, 2016).

Based on the discussion above, we put forward our hypotheses of this study, H1-H6:

H1a: An entertaining VR shopping interface design has a positive influence on the purchase intention of consumers.
H1b: An entertaining web shopping interface design has a positive influence on the purchase intention of consumers.
H2a: A convenient VR shopping interface design has a positive influence on the purchase intention of consumers.
H2b: A convenient web shopping interface design has a positive influence on the purchase intention of consumers.
H3a: An informative VR shopping interface design has a positive influence on the purchase intention of consumers.
H3b: An informative web shopping interface design has a positive influence on the purchase intention of consumers.
H4a: PEOU has a positive influence on the attitude towards using a VR shopping interface.
H4a: PEOU has a positive influence on the attitude towards using a web shopping interface.
H5a: PU has a positive influence on the attitude towards using a VR shopping interface.
H5b: PU has a positive influence on the attitude towards using a web shopping interface.
H6a: The attitude towards using a VR shopping interface has a positive influence on purchase intention.
H6b: The attitude towards using a web shopping interface has a positive influence on purchase intention.

3.3 Participants

The samples for the study comprised students from a national university in Taiwan. The selection of full-time students provided effective control for some important confounding factors such as technology acceptance, social roles, education level, and financial conditions. Cluster sampling was used to select participants from subject classes. A broad representation of the student population was obtained by selecting medium-size classes (20–50 students) from a wide range of courses in different departments and disciplines. A total of 10 classes were sampled. All students in the selected classes were invited to participate in the surveys. A total of 100 students agreed to participate in this survey. Inspection of the resulting questionnaires revealed 2 invalid (incomplete) questionnaires, so we recovered a total of 98 valid questionnaires. Among the participants, 50% were male (n = 49), and 50% were female (n = 49). With regard to their educational backgrounds, 68% were pursing their master's degree or higher (n = 67), while 32% were undergraduates (n = 31). All of the participants fell between 21 and 25 years in age (n = 98, 100%). Furthermore, 45% of the participants had never used VR before (n = 44), while the remaining 55% had used VR at least once (n = 54). Finally, 98% had experience in online shopping (n = 96).

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3.4 Experiment process

The experiment process comprised two phases: In the first phase, shopping experiment: The participants used Google Cardboard paired with a VR app (Supermercado VR Cardboard) (Roig, 2018) for VR shopping (Fig. 2). Next, the participants browsed an online shopping website (instacart.com) using a MacBook Air 13 for webpage shopping. In order for the participants to experience all of the functions of the shopping platforms, we asked the participants to perform the following steps: (a) purchase meat, drink, and milk products, with at least 2 items for each category, one of which has the lowest price in the category, (b) cancel pre-selected products in their shopping cart until their total is below USD 10, and (c) check out. The steps above ensure that the participants could experience all functions related to searching for products, comparing prices, canceling pre-selected products, and checking out. With these, the participants could evaluate the entertainment, convenience, informativeness, PU, and PEOU of the shopping platforms. In the second phase, after shopping, the participants completed a questionnaire to describe their experience. The questionnaire was designed based on the U&G theory and TAM and was refined in consultation with two experts in the field. It comprised 35 question items (Appendix 2) measured on a five-point Likert scale ranging from strong disagreement (1 point) to strong agreement (5 points). Furthermore, the questionnaire was also pre-tested on a sample of 20 students who were randomly selected. The completed questionnaires were then examined to identify major issues that needed amendment. Some questions were therefore rephrased to ensure the appropriateness of the questionnaire for the target respondents.

3.5 Questionnaire reliability

We used Cronbach's α to test the reliability of the questionnaire. The results showed that the Cronbach's α values of the various constructs of the questionnaire ranged from 0.72 to 0.91, thereby indicating good reliability. This means that the results can faithfully reflect the thoughts and opinions of the participants. The respective Cronbach's α values for the VR and webpage HCIs in the various constructs of the questionnaire were as follows: 0.85 and 0.77 in entertainment, 0.80 and 0.77 in convenience, 0.82 and 0.80 in informativeness, 0.85 and 0.86 in PEOU, 0.84 and 0.77 in PU, 0.91 and 0.81 in attitude, and 0.88 and 0.80 in purchase intention.

3.6 Data analysis

We used SPSS 21 for data analysis, t-tests to examine the differences among independent variables, and multiple regression analysis to test our hypotheses. Significance was tested as the 0.05 level. To ensure that our results are robust, we conducted a multicollinearity test to assess the degree of correlation among the independent variables in the research model. The results of the multicollinearity test (Appendix 2) revealed that the VIF (Variance Inflation Factor) values of the independent variables were all much smaller than the allowed range of 10 (Hair, 2006). Thus, no evidence could be established for the existence of collinearity among the variables.

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Figure 2. Virtual reality environment

VR device: Google Cardboard	Snapshot of VR app: Supermercado VR Cardboard (Roig, 2018)

3.7 Common Method Bias Assessment

As all the data in this study were self-reported and collected from individual respondents, common method bias was possible. Therefore, we used the analytical procedure suggested Liang, Saraf, Hu, & Xue (2007) to assess the severity of common method bias in these data. First, we introduced a new factor named 'method' to the model, and the common method factor indicators included all the principal constructs' indicators. Second, we calculated each indicator's variances substantively explained by the principal construct and by the method. Then, we examined the statistical significance of factor loadings of the method factor, and compared the variances of each observed indicator explained by its substantive construct and the method factor. The results (Appendix 3) show that the average substantively explained variance of the indicators is 0.84, while the average method-based variance is 0.012. The ratio of substantive variance to method variance is about 60:1. These results indicated that the method did not contribute substantially to the variance in the indicators and thus common method bias was unlikely to be a serious problem in this study.

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4. RESULTS AND DISCUSSION

4.1 Difference test

4.1.1 Web and VR HCIs

Table 1 presents the satisfaction analysis results of the participants with regard to the different HCIs (VR/Web). In terms of the psychological motive factors (entertainment, convenience, and informativeness), the participants were only significantly more satisfied with the VR HCI than with the web HCI in the entertainment aspect (i.e., VR 3.94: web 3.43). In the other psychological motive factors, the VR HCI derived lower satisfaction than the web HCI, particularly in informativeness (i.e., VR 3.08: web 3.91). This shows that VR has the advantage in bringing participants pleasure, aesthetic enjoyment, and fun (entertainment) with its 3D shopping environment but is in need of improvement in the other psychological motive factors to increase purchase intention. This result supports the finding derived by (Hausman & Siekpe, 2009) in that entertainment has a significant impact on the online purchase intention of consumers.

Table 1. Analysis of participant satisfaction in shopping with different HCIs

Construct	Mean satisfaction (1-5 points, 5=most satisfied)		t value	P value
	VR	WEB		
Entertainment	3.94	3.43	5.40	0.000*
Convenience	3.49	4.22	-7.85	0.000*
Informativeness	3.08	3.91	-7.91	0.000*
PEOU	3.89	4.36	-5.31	0.000*
PU	3.40	4.04	-6.37	0.000*
Attitude towards using	3.53	3.97	-4.24	0.000*
Purchase intention	3.25	3.93	-6.19	0.000*

*indicate $p < 0.05$

Observation of PEOU and PU revealed that the participants were significantly less satisfied with the VR HCI than with the web HCI (i.e., VR 3.40: web 4.04). To understand the cause of this, we examined the questionnaire data and found that question item PEOU 1 (this operation method was easy from the very beginning.) had the lowest mean satisfaction score (3.46) among the five question items in the PEOU construct, while question item PEOU 5 (getting familiar with the VR HCI was not difficult.) had the highest mean satisfaction score (4.12). Based on this result, we inferred that it took the participants some time to get accustomed to the VR HCI, and only when they were accustomed did their satisfaction increase. Furthermore, a portion of the participants ($n = 15$) reported that they experienced dizziness while using VR. Researchers have explained that this is because the VR equipment makes the eyes feel that the body is moving, but the body is not actually moving, and this difference in synchronization between the two causes dizziness (Newbutt, Sung, Kuo, & Leahy, 2017). This may also be one of the causes of lower satisfaction with VR shopping. The issue of VR has also been mentioned in other studies

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(Sayyad, Sen, & Höllerer, 2017), so companies developing VR shopping should first solve this problem and let more consumers experience VR shopping so that more consumers will accept VR shopping. Past research has indicated that once users adapt to new technology, their usage intention will indeed increase (Karahanna, Straub, & Chervany, 1999).

4.1.2 Gender

T-test results revealed no significant differences between the mean satisfaction of the male and female participants in the various constructs ($p < 0.05$). However, the mean satisfaction of the female participants was slightly higher than that of the male participants (male: 3.74, female: 3.94). Past research has shown that males place particular emphasis on not needing to wait and swift services (Mortimer & Clarke, 2011). In VR shopping, the interface design meant that it took more time to select products and check out, so this may be the cause of lower satisfaction among the male participants in this study. Thus, e-commerce businesses should enhance the convenience of VR shopping and shorten operation time. Another strategy that might benefit operations is focusing on female consumers during the initial launch of VR shopping.

4.1.3 Usage experience of VR

This study investigated whether the VR experience of participants influenced their satisfaction in VR shopping. The respective mean satisfaction scores given by participants with and without VR experience in the various constructs were as follows: 3.85 and 4.04 in entertainment, 3.40 and 3.58 in convenience, 2.94 and 3.24 in informativeness, 3.92 and 3.85 in PEOU, 3.32 and 3.48 in PU, 3.41 and 3.67 in attitude, and 3.14 and 3.37 in purchase intention. On the whole, the mean satisfaction of the participants was higher than a scale mean (3.00) regardless of VR experience. The mean satisfaction of the participants with no VR experience was slightly higher that of the participants with VR experience. However, t-test results indicated no significant differences between the mean satisfaction of the two groups of participants ($p<0.05$). This result has two major implications: (1) the participants with VR experience may have compared their VR shopping experience with past experiences, so their satisfaction standards may have been higher; (2) most of the participants with VR experience study had played VR games before, so they got the hang of VR shopping very quickly. In contrast, most of the participants with no VR experience were fairly young (between 18 and 25 years of age), so they became accustomed to VR operations very quickly and their lack of previous experience did not affect their shopping satisfaction. Based on the results above, we suggest that e-commerce businesses promote VR shopping to young consumers because they have greater adaptability and are more likely to accept VR shopping. However, they will also be more demanding with regard to the HCIs of VR shopping, which may mean that a VR HCI design similar to that in a VR game will gain more favor.

4.2 Hypothesis testing

We used multiple regression analysis to test the research model (Figure 1). Table 2 displays the test results, which we discuss by category below.

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Table 2. Hypothesis testing results

Hypothesis	Independent variable	Standardized β coefficient		Adjusted R^2		Dependent variable	Results	
		VR(a)	WEB(b)	VR(a)	WEB(b)		VR(a)	WEB(b)
H1a, H1b	Entertainment	0.208**	0.031	0.513	0.349	Purchase intention	Supported	Not supported
H2a, H2b	Convenience	0.130	0.201				Not supported	Not supported
H3a, H3b	Informativeness	0.521***	0.461***				Supported	Supported
H4a, H4b	PEOU	0.231**	0.178*	0.544	0.657	Attitude towards using	Supported	Supported
H5a, H5b	PU	0.601***	0.689***				Supported	Supported
H6a, H6b	Attitude towards using	0.801***	0.502***	0.638	0.244	Purchase intention	Supported	Supported

(*, **, and *** indicate $p < 0.05$, $p < 0.01$, $p < 0.001$, respectively.)

4.3 VR shopping

As shown in Table 2, H1a, H3a, H4a, H5a, and H6a all reached the level of significance, while H2a did not. This shows that in VR shopping, entertainment ($\beta = 0.208$, $p < 0.05$) and informativeness ($\beta = 0.521$, $p < 0.001$) both had significant impact on the purchase intention of the participants ($R^2 = 0.513$); PEOU ($\beta = 0.231$, $p < 0.01$) and PU ($\beta = 0.601$, $p < 0.001$) had significant influence on the attitude towards using ($R^2 = 0.544$), and attitude towards using ($\beta = 0.801$, $p < 0.001$) had significant influence on the purchase intention ($R^2 = 0.638$). As VR online shopping emphasizes immersion, this study examines the extent to which the level of immersion and sense of presence impact users. These results show that informativeness was the most important factor influencing the participants in VR shopping, followed by entertainment. Thus, when e-commerce businesses are developing VR shopping, they should ensure that the HCI design can provide adequate information on products and services. Although VR shopping offers a high degree of entertainment, what satisfies the needs of participants whose goal is buying things is finding the product information that they want. To understand why H2a (convenience) was not supported, we examined the questionnaire data of the convenience construct. The results indicate that the mean satisfaction scores of question items C2 (Using this VR while shopping allows me to find what I want quickly.) and C4 (The process of using VR shopping was smooth for me.) were only 3.00 and lower than those of the other question items. This may be because the VR equipment used in this study was not accompanied by a hand remote, thereby requiring the participants to gaze at products on the screen image for 1 to 2 sec to select them. This hindrance in operations is probably what caused the poor satisfaction with convenience. Furthermore, PEOU and PU both wielded a significant and positive influence on attitude towards using, which means that the more users perceived VR operations to be easy and helpful in completing their tasks, the more positive their attitude towards VR shopping was. Finally, according to H6a, e-commerce businesses looking to increase purchase intentions in users should focus on purchase intentions. In other words, they should enable users to feel happy and relaxed in the shopping environment and arouse their curiosity.

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4.4 Web shopping

As shown in Table 2, H3b, H4b, H5b, and H6b all reached the level of significance, while H1b and H2b did not. This shows that in web shopping, only informativeness ($\beta = 0.461$, $p < 0.001$) had a significant impact on the purchase intention of the participants ($R^2 = 0.349$); PEOU ($\beta = 0.178$, $p < 0.05$) and PU ($\beta = 0.689$, $p < 0.001$) had significant influence on attitude towards using ($R^2 = 0.657$), and attitude towards using ($\beta = 0.502$, $p < 0.001$) had significant influence on the purchase intention ($R^2 = 0.244$). These results show that informativeness was the most important factor influencing the participants in web shopping. In other words, regardless of the HCI, the main concern of the participants was still whether the HCI provided adequate product information and made it convenient for them to search for and compare the products they want. Furthermore, the development of web shopping HCIs is mature, and as they are much more common than VR shopping, so their lack of novelty may have resulted in entertainment having no significant influence on the web purchase intentions of the participant. In another aspect, most of the participants were already used to the conveniences of web shopping and thus probably considered convenience to be a basic requirement of web shopping. So this attitude may have resulted in convenience having no significant influence on the experiment results. The results of H4b, H5b, and H6b were identical to those associated with VR shopping, which tells us that when companies are developing HCIs for shopping, PEOU and PU are crucial factors.

5. CONCLUSION

This study employed the U&G theory and TAM to examine how different HCIs influence the purchase intention of consumers. Below, we summarize the key findings and practical implications of this explorative study.

5.1 Psychological motive factors of consumers

Based on the three psychological motive factors of the U&G theory (entertainment, convenience, and informativeness), we discovered that informativeness has the greatest influence in both methods of operation. In other words, consumers place lot of emphasis on price comparison and product information comparison when they are shopping. For this reason, companies developing online shopping platforms must pay special attention to informativeness. In contrast, entertainment only had significant influence on the VR HCI. For most of the participants, VR was a novelty that they had not experienced before. This curiosity led to a positive influence on purchase intention. Finally, convenience did not have a significant influence on purchase intention in either shopping scenario. However, the questionnaire results showed that the mean satisfaction scores for convenience were higher than the mean score for both VR and web shopping. This may indicate that while both HCIs already offer moderate to high levels of convenience, the participants may think that convenience is a basic service requirement of shopping platforms, and thus it had a less significant influence on participant intention.

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5.2 HCI factors

The two HCI factors of TAM (PEOU and PU) had significant and positive influence on the attitude towards using of the participants in both the VR and web HCIs, particularly PU. In other words, consumers attach a lot of importance to whether shopping platform HCIs can display information in a simple manner and help them complete their shopping quickly. Users derive more satisfaction from HCIs that are simpler, more efficient, and easier to understand. In addition, we also found that the attitude of users towards using shopping platform HCIs (i.e., positive or negative ratings) has significant influence on their purchase intention. As a result, companies must carefully design HCIs and ensure that they meet the needs and preferences of their target customers so as to effectively enhance the purchase intention of consumers.

5.3 Comparison of VR and web HCIs

(1) HCI: The HCI exerts a significant influence on the usage motives (entertainment, convenience, and informativeness) and purchase intentions of consumers. Both the VR and web HCIs in our experiment significantly enhanced the purchase intentions of consumers. The entertainment aspect of the VR HCI increased the purchase intention of users more significantly than that of the web HCI, while the informativeness aspect of the web HCI increased the purchase intention of users more significantly than that of the VR HCI. (2) Personal backgrounds of the participants: The participants displayed no significant differences with regard to gender, VR usage experience, and educational background, which means that these personal background factors do not influence the purchase intention of consumers. It is worth mentioning that the male participants mostly spent less time completing the tasks than the female participants. Furthermore, the undergraduates also mostly spent less time completing the tasks than the postgraduates.

5.4 Research contributions and practical implications

The main contributions of this study are as follows: (1) theoretical aspect: This study applied the U&G theory to study online shopping and furthers understanding on how HCIs (WEB/VR) strengthen or weaken the online shopping intention of users; (2) practical implications: Online shopping companies can use the results of this study to formulate differential marketing strategies, and make improvements in the important factors that influence the purchase intention of consumers. Specifically, online shopping companies can refer to the following suggestions: (a) the results of this study indicate that informativeness is a crucial factor of purchase intention, so developing companies can focus on this aspect, such as enabling consumers to compare prices and products or offering any other functions that allow consumers to understand and search for products; (b) compared to Website shopping and physical stores, VR can offer a higher degree of entertainment, which has been shown to be a key factor of purchase intention in our study. Accordingly, companies can use VR to develop entertaining shopping scenarios (e.g., shopping game, monopoly, lottery) to enhance consumers' intention to purchase; (c) PEOU and PU both wield influence on the purchase intention of users, so companies should make shopping HCI designs simple and easy to use (e.g., easy to operate, easy to learn, and less time-consuming); For example, VR shopping companies can use a combination of VR glasses with handheld devices to make it easier for consumers to click on virtual items; (d) according to literature and the results of this study, the purchase intentions

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of males and females vary, so companies developing online shopping platforms can develop different interfaces for different genders, such as a simple interface that enables quick shopping for males and an aesthetic and entertaining interface for females; (e) the participants of the experiment in this study were mainly between the ages of 16 and 25. Individuals within this age range are more accepting of VR and display more positive attitude toward VR; thus, companies can promote VR shopping to consumers at this age first. (3) Academic literature: VR shopping is currently in the initial introduction period, so there is limited foreign and domestic literature regarding this topic. So far, existing studies involving VR have focused on identifying the external stimuli that influence consumers (e.g., brand or product) and the emotions or perceptual responses (e.g., discomfort felt in a VR experience) of consumers regarding VR (Martínez-Navarro et al. 2018) or used eye trackers to analyze the shopping choices of consumers (Bigne et al., 2016). However, they disregarded the influence of HCIs and the internal psychological motives of consumers on their purchase decisions. This study thus has three primary contributions for VR shopping: (a) this study revealed the influence of the psychological motives of consumers, particularly informativeness and entertainment, on consumer willingness to engage in VR shopping; (b) this study demonstrated that HCIs (i.e., PU and PEOU) exert a positive impact on consumer attitude towards using, with PU having a particularly significant impact; (c) this study compared the influence of different HCIs (VR and websites) on consumer attitude towards using so that companies can use one or a mix of both to attract consumers. (4) Methodological implications: (a) We recommend using a combination of VR glasses with handheld devices for this type of VR shopping experiment. Several of our participants suggested that it is more convenient and intuitive to click on a virtual item with a handheld device than with eye contact. (b) We also recommend simplifying the experimental design in order to increase willingness to participate as well as the accuracy of collected data. Some of our participants suggested shortening the experiment time to a maximum of 30 minutes.

5.5 Research limitations and future research

(1) The participants of this study were mainly undergraduates and postgraduates between the ages of 16 and 25, so the results of this study can only be applied to consumers of similar age and educational background. Future studies can increase the sample range, such as including participants of younger or older ages to understand the views of different age groups toward online shopping and ensure that the study results are more circumspect. (2) This study used Google Cardboard (GC) for VR shopping. At present, GC offers wider compatibility and is easier to obtain. However, it caused dizziness in some of the participants, and the lack of a hand remote made using GC less convenient. These reasons may have caused the poorer satisfaction with VR shopping. (3) The VR software in this study was mainly for online shopping, so the results of this study may not be applicable to other non-shopping software (e.g., games and photography). (4) At the time of this study, no VR shopping software designed using images from real physical stores was available for our experiment. Due to time and labor constraints, we used Supermercado VR cardboard to conduct our experiments. This program presents animated shopping scenarios that are fairly close to real shopping scenarios but are still computer-generated scenarios. We recommend real-world VR shopping software or more complex VR system (e.g., HTC VIVE) for future studies for better results. (5) This study merely investigated the influence of entertainment, convenience, and informativeness on the online purchase intentions of consumers. Future studies can include more factors that influence purchase intention to ensure that the study results are more circumspect. (6) Aside

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from being applied to online shopping platforms, VR is also becoming common in other industries and physical stores. However, VR online shopping and the VR services of physical stores basically enable users to enter a virtual space via a VR device to experience the products and services that are offered, so they are essentially quite similar. This study is mainly a report regarding VR online shopping, and future studies can test this model on VR services in other industries and physical stores to explore any differences in user acceptance. (7) This study combined the U&G theory and TAM model to develop a questionnaire containing 7 constructs and 36 question items. In our shopping experiment, the participants used the VR device Google Cardboard to perform a series of shopping actions and then repeat the shopping actions on an online shopping website. At the end of the experiment, they filled out our questionnaire. Pre-test results indicated that on average, participants needed more than 30 minutes to complete the experiment and the questionnaire, which is significantly longer than the 15-20 minutes recommended by past studies. To prevent people from being unwilling to participate due to the experiment being too complex or the questionnaire being too long, we only adopted the two core constructs of TAM (PU and PEOU) and three crucial psychological motives (entertainment, convenience, and informativeness) to ensure that we could recruit enough participants and collect high-quality data. We suggest that future studies employ TAM2 and TAM 3 or include more psychological motives or control variables for more complete results. (8) The samples of this study were obtained in Taiwan; the results of this study may differ from those that would have been obtained had this study been conducted in another country due to differences in culture and consumption habits. We suggest that researchers apply the model constructed in this study to different countries or industries (e.g., health care, education, or gaming) to understand how users in different settings may differ.

6. REFERENCES

Benbasat, I. (2014). *Human-computer Interaction for Electronic Commerce: A Program of studies to improve the communication between customers and online stores. In Human-Computer Interaction and Management Information Systems: Applications. Advances in Management Information Systems* (pp. 33–44). Routledge.

Bigne, E., Llinares, C., & Torrecilla, C. (2016). Elapsed time on first buying triggers brand choices within a category: A virtual reality-based study. *Journal of Business Research*, *69*(4), 1423–1427. doi:10.1016/j.jbusres.2015.10.119

Butt, I., Tabassam, S., Chaudhry, N. G., & Nusair, K. (2016). Using technology acceptance model to study adoption of online shopping in an emerging economy. *Journal of Internet Banking and Commerce*, *21*(2), 1.

Chen, L., Lo, W. L. A., Mao, Y. R., Ding, M. H., Lin, Q., Li, H., ... Huang, D. F. (2016). Effect of virtual reality on postural and balance control in patients with stroke: A systematic literature review. *BioMed Research International*. PMID:28053988

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Chiu, C. M., Wang, E. T., Fang, Y. H., & Huang, H. Y. (2014). Understanding customers' repeat purchase intentions in B2C e-commerce: The roles of utilitarian value, hedonic value and perceived risk. *Information Systems Journal*, *24*(1), 85–114. doi:10.1111/j.1365-2575.2012.00407.x

Chou, S.-W., & Hsu, C.-S. (2016). Understanding online repurchase intention: Social exchange theory and shopping habit. *Information Systems and e-Business Management*, *14*(1), 19–45. doi:10.100710257-015-0272-9

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, *35*(8), 982–1003. doi:10.1287/mnsc.35.8.982

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2003). Empirical testing of a model of online store atmospherics and shopper responses. *Psychology and Marketing*, *20*(2), 139–150. doi:10.1002/mar.10064

Hair, J. F. (2006). *Multivariate data analysis*. Pearson Education India.

Hausman, A. V., & Siekpe, J. S. (2009). The effect of web interface features on consumer online purchase intentions. *Journal of Business Research*, *62*(1), 5–13. doi:10.1016/j.jbusres.2008.01.018

Hsu, M.-H., Chang, C.-M., & Chuang, L.-W. (2015). Understanding the determinants of online repeat purchase intention and moderating role of habit: The case of online group-buying in Taiwan. *International Journal of Information Management*, *35*(1), 45–56. doi:10.1016/j.ijinfomgt.2014.09.002

Jiang, Z., Chan, J., Tan, B. C., & Chua, W. S. (2010). Effects of interactivity on website involvement and purchase intention. *Journal of the Association for Information Systems*, *11*(1), 34–59. doi:10.17705/1jais.00218

Karahanna, E., Straub, D. W., & Chervany, N. L. (1999). Information technology adoption across time: A cross-sectional comparison of pre-adoption and post-adoption beliefs. *Management Information Systems Quarterly*, *23*(2), 183–213. doi:10.2307/249751

Katz, E., Blumler, J. G., & Gurevitch, M. (1973). Uses and gratifications research. *Public Opinion Quarterly*, *37*(4), 509–523. doi:10.1086/268109

Kaye, B. K., & Johnson, T. J. (2004). A Web for all reasons: Uses and gratifications of Internet components for political information. *Telematics and Informatics*, *21*(3), 197–223. doi:10.1016/S0736-5853(03)00037-6

Kim, J.-E., & Johnson, K. K. (2013). The impact of moral emotions on cause-related marketing campaigns: A cross-cultural examination. *Journal of Business Ethics*, *112*(1), 79–90. doi:10.100710551-012-1233-6

Kim, M., & Lennon, S. J. (2000). Television shopping for apparel in the United States: Effects of perceived amount of information on perceived risks and purchase intentions. *Family and Consumer Sciences Research Journal*, *28*(3), 301–331. doi:10.1177/1077727X00283002

Lazar, J., Feng, J. H., & Hochheiser, H. (2017). *Research methods in human-computer interaction*. Morgan Kaufmann.

Lee, K. C., & Chung, N. (2008). Empirical analysis of consumer reaction to the virtual reality shopping mall. *Computers in Human Behavior*, *24*(1), 88–104. doi:10.1016/j.chb.2007.01.018

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Liang, H., Saraf, N., Hu, Q., & Xue, Y. (2007). Assimilation of enterprise systems: The effect of institutional pressures and the mediating role of top management. *Management Information Systems Quarterly*, *31*(1), 59–87. doi:10.2307/25148781

Lim, W. M., & Ting, D. H. (2012). E-shopping: An Analysis of the Technology Acceptance Model. *Modern Applied Science*, *6*(4), 49. doi:10.5539/mas.v6n4p49

Malik, A., Dhir, A., & Nieminen, M. (2016). Uses and gratifications of digital photo sharing on Facebook. *Telematics and Informatics*, *33*(1), 129–138. doi:10.1016/j.tele.2015.06.009

Martínez-Navarro, J., Bigné, E., Guixeres, J., Alcañiz, M., & Torrecilla, C. (2018). The influence of virtual reality in e-commerce. *Journal of Business Research*.

Matzler, K., Würtele, A., & Renzl, B. (2006). Dimensions of price satisfaction: A study in the retail banking industry. *International Journal of Bank Marketing*, *24*(4), 216–231. doi:10.1108/02652320610671324

McNeil, M. R., Odell, K., & Tseng, C.-H. (1991). Toward the integration of resource allocation into a general theory of aphasia. *Clinical aphasiology, 20*, 21-39.

Mortimer, G., & Clarke, P. (2011). Supermarket consumers and gender differences relating to their perceived importance levels of store characteristics. *Journal of Retailing and Consumer Services*, *18*(6), 575–585. doi:10.1016/j.jretconser.2011.08.007

Newbutt, N., Sung, C., Kuo, H. J., & Leahy, M. J. (2017). *The acceptance, challenges, and future applications of wearable technology and virtual reality to support people with autism spectrum disorders. In Recent Advances in Technologies for Inclusive Well-Being* (pp. 221–241). Springer.

North, M. M., North, S. M., & Coble, J. R. (2015). Virtual reality therapy: An effective treatment for the fear of public speaking. *International Journal of Virtual Reality*, *3*(3), 1–6. doi:10.20870/IJVR.1998.3.3.2625

Ozturk, A. B., Bilgihan, A., Nusair, K., & Okumus, F. (2016). What keeps the mobile hotel booking users loyal? Investigating the roles of self-efficacy, compatibility, perceived ease of use, and perceived convenience. *International Journal of Information Management*, *36*(6), 1350–1359. doi:10.1016/j.ijinfomgt.2016.04.005

Pappas, I. O., Kourouthanassis, P. E., Giannakos, M. N., & Chrissikopoulos, V. (2016). Explaining online shopping behavior with fsQCA: The role of cognitive and affective perceptions. *Journal of Business Research*, *69*(2), 794–803. doi:10.1016/j.jbusres.2015.07.010

Postma, B. N., & Katz, B. F. (2015). Creation and calibration method of acoustical models for historic virtual reality auralizations. *Virtual Reality (Waltham Cross)*, *19*(3-4), 161–180. doi:10.100710055-015-0275-3

Roig, V. R. (2018). Supermercado VR Cardboard. Google play. Retrieved from http://vr-red.tk/

Roschk, H., Loureiro, S. M. C., & Breitsohl, J. (2017). Calibrating 30 years of experimental research: A meta-analysis of the atmospheric effects of music, scent, and color. *Journal of Retailing*, *93*(2), 228–240. doi:10.1016/j.jretai.2016.10.001

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Sayyad, E., Sen, P., & Höllerer, T. (2017). PanoTrace: interactive 3D modeling of surround-view panoramic images in virtual reality. *Paper presented at the 23rd ACM Symposium on Virtual Reality Software and Technology*. ACM. 10.1145/3139131.3139158

Seibert, J., & Shafer, D. M. (2018). Control mapping in virtual reality: Effects on spatial presence and controller naturalness. *Virtual Reality (Waltham Cross)*, *22*(1), 79–88. doi:10.100710055-017-0316-1

Serrano, B., Baños, R. M., & Botella, C. (2016). Virtual reality and stimulation of touch and smell for inducing relaxation: A randomized controlled trial. *Computers in Human Behavior*, *55*, 1–8. doi:10.1016/j.chb.2015.08.007

Shedroff, N. (2001). *Experience design 1*. New Riders Publishing.

Sheldon, P., & Bryant, K. (2016). Instagram: Motives for its use and relationship to narcissism and contextual age. *Computers in Human Behavior*, *58*, 89–97. doi:10.1016/j.chb.2015.12.059

Shu, W. (2011). Why do people make online group purchases? Risk avoidance, sociability, conformity, and perceived playfulness. *Management Information Systems Review*, *17*(1), 63–88.

van Herpen, E., van den Broek, E., van Trijp, H. C., & Yu, T. (2016). Can a virtual supermarket bring realism into the lab? Comparing shopping behavior using virtual and pictorial store representations to behavior in a physical store. *Appetite*, *107*, 196–207. doi:10.1016/j.appet.2016.07.033 PMID:27474194

Violante, M. G., Vezzetti, E., & Piazzolla, P. (2019). How to design a virtual reality experience that impacts the consumer engagement: The case of the virtual supermarket. *International Journal on Interactive Design and Manufacturing*, *13*(1), 243–262. doi:10.100712008-018-00528-5

Visinescu, L. L., Sidorova, A., Jones, M. C., & Prybutok, V. R. (2015). The influence of website dimensionality on customer experiences, perceptions and behavioral intentions: An exploration of 2D vs. 3D web design. *Information & Management*, *52*(1), 1–17. doi:10.1016/j.im.2014.10.005

Yoon, H.-Y. (2016). User acceptance of mobile library applications in academic libraries: An application of the technology acceptance model. *Journal of Academic Librarianship*, *42*(6), 687–693. doi:10.1016/j.acalib.2016.08.003

Zia, U. H. (2009). E-mail advertising: A study of consumer attitude toward e-mail advertising among Indian users. *Journal of Retail & Leisure Property*, *8*(3), 207–223.

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APPENDIX

Appendix 1. Questionnaire

Study construct	Question item	Reference
Entertainment	1. Using this operation method (VR/Web) makes me feel happy while shopping. 2. Using this operation method (VR/Web) makes me feel relaxed while shopping. 3. Using this operation method (VR/Web) makes me have fun while shopping. 4. I enjoy using this operation method (VR/Web) while shopping. 5. Using this operation method (VR/Web) while shopping satisfies my entertainment needs.	Kaye & Johnson, 2004; Hausman & Siekpe, 2009
Convenience	1. Using this operation method (VR/Web) while shopping is convenient and quick (for example, I do not have to get through crowds to get what I want). 2. Using this operation method (VR/Web) while shopping allows me to find what I want quickly. 3. This operation method (VR/Web) is simple and does not require too many unnecessary steps. 4. The process of using this operation method (VR/Web) was smooth for me. 5. I can solve any problems I encounter while using this operation method (VR/Web) by myself.	Kaye & Johnson, 2004; Kim & Johnson, 2013
Informativeness	1. Using this operation method (VR/Web) while shopping makes it easy to compare prices. 2. Using this operation method (VR/Web) while shopping helps me make purchase decisions. 3. Using this operation method (VR/Web) while shopping helps me compare products. 4. Using this operation method (VR/Web) while shopping increases my shopping efficiency. 5. Using this operation method (VR/Web) while shopping provides me with the information I am interested in.	Matzler et al., 2006; Lim & Ting, 2012
Perceived ease of use	1. This operation method (VR/Web) was easy from the very beginning. 2. This operation method (VR/Web) was easy to learn. 3. Completing the purchase process was easy. 4. The interactive experience of this operation method (VR/Web) was clear and user-friendly. 5. Getting familiar with this operation method (VR/Web) was not difficult.	Davis, Bagozzi, & Warshaw, 1989
Perceived usefulness	1. Using this operation method (VR/Web) took me less time and effort. 2. Using this operation method (VR/Web) enhanced shopping quality for me. 3. Using this operation method (VR/Web) allows me to complete my shopping more easily. 4. Using this operation method (VR/Web) allows me to obtain the information I want more easily. 5. This operation method (VR/Web) is very useful for shopping.	Davis et al., 1989
Attitude towards using	1. Using this operation method (VR/Web) makes me feel comfortable. 2. I like using this operation method (VR/Web) to purchase things that I need. 3. I like using this operation method (VR/Web) to search for product information on the shopping website. 4. I think using this operation method (VR/Web) for shopping is a good idea. 5. Using this operation method (VR/Web) makes me feel relaxed. 6. Using this operation method (VR/Web) makes me feel happy.	Lim & Ting, 2012; Yoon, 2016
Purchase intention	1. I intend to continue using this operation method (VR/Web) for shopping. 2. When I want to buy a specific product, I will search for a shopping website that has this operation method (VR/Web). 3. Shopping websites with this operation method (VR/Web) will be my first choice when I shop for products. 4. I may purchase products from shopping websites with this operation method (VR/Web). 5. I will recommend this operation method (VR/Web) to my friends and family.	Lim & Ting, 2012; Yoon, 2016

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Appendix 2. Multicollinearity test

Variables	Tolerance (TOL)	Variance Inflation Factor (VIF)
entertainment	0.968	1.033
convenience	0.500	2.000
informativeness	0.508	1.968
Perceived usefulness (PU)	0.627	1.595
Perceived ease of use (PEOU)	0.627	1.595
attitude towards using	1.000	1.000

Appendix 3. Common method bias analysis

Construct	Indicator	Substantive Factor loading (R1)	$R1^2$	Method Factor loading (R2)	$R2^2$
Entertainment	E1	0.776	0.602	0.013	0.0002
	E2	0.932	0.869	-0.182	0.0331
	E3	0.613	0.376	0.098	0.0096
	E4	0.621	0.386	0.26	0.0676
	E5	0.862	0.743	-0.116	0.0135
Convenience	C1	0.816	0.666	-0.012	0.0001
	C2	0.801	0.642	0.078	0.0061
	C3	0.882	0.778	0.023	0.0005
	C4	0.942	0.887	0.105	0.0110
	C5	0.859	0.738	-0.026	0.0007
Informativeness	I1	0.823	0.677	0.048	0.0023
	I2	0.791	0.626	-0.032	0.0010
	I3	0.912	0.832	-0.092	0.0085
	I4	0.948	0.899	-0.086	0.0074
	I5	0.726	0.527	0.175	0.0306
Perceived easy of use	PEOU1	0.921	0.848	-0.012	0.0001
	PEOU2	0.963	0.927	-0.013	0.0002
	PEOU3	0.896	0.803	0.015	0.0002
	PEOU4	0.971	0.943	-0.062	0.0038
	PEOU5	0.992	0.984	-0.037	0.0014
Perceived usefulness	PU1	0.852	0.726	0.101	0.0102
	PU2	0.993	0.986	-0.117	0.0137
	PU3	0.756	0.572	0.173	0.0299
	PU4	0.955	0.912	-0.051	0.0026
	PU5	0.862	0.743	-0.116	0.0135

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Construct	Indicator	Substantive Factor loading (R1)	$R1^2$	Method Factor loading (R2)	$R2^2$
Attitude twoard using	A1	0.822	0.676	0.047	0.0022
	A2	0.789	0.623	-0.029	0.0008
	A3	0.915	0.837	-0.088	0.0077
	A4	0.946	0.895	-0.083	0.0069
	A5	0.723	0.523	0.172	0.0296
	A6	0.849	0.721	0.098	0.0096
Purchase intention	PI1	0.991	0.982	-0.118	0.0139
	PI2	0.753	0.567	0.17	0.0289
	PI3	0.623	0.388	0.28	0.0784
	PI4	0.861	0.741	-0.115	0.0132
	PI5	0.817	0.667	-0.011	0.0001
Average		0.848	0.731	0.012	0.0120

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Chapter 40
Can Virtual Customer Service Agents Improve Consumers' Online Experiences?
The Role of Hedonic Dimensions

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ABSTRACT

This chapter focuses on the navigation experience in ecommerce. The authors address the impact of a number of hedonic dimensions, specifically perceived visual attractiveness, perceived enjoyment, and sociability, in consumers' online experiences. They develop and test a research model explaining how these factors affect trust, satisfaction, and ultimately, website loyalty. Findings from a survey carried out with 132 users of an airline's website, which displays a virtual customer service agent, support the model proposed. Specifically, results confirm that enriching consumers' sensory experiences online through aesthetics, an enjoyable experience, and a social interaction interface positively affects trust, satisfaction, and subsequently, loyalty.

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INTRODUCTION

Companies continuously search for strategies to improve their online interfaces and websites (Pappas *et al.*, 2017), hence improving the quality of online navigation for users. Interface design improvement, in particular through web personalization, has an enormous potential for making online commerce more like real world shopping, enriching consumers' shopping experiences online (Cyr *et al.*, 2006; Papadopoulou, 2007; Pappas *et al.*, 2017) as well as increasing trust, satisfaction, and loyalty (Pengnate & Sarathy, 2017).

Whilst in real life the shopping process can be considered a social event, ecommerce applications need to be able to replicate and integrate elements from the social context into their online context (Papadopoulou, 2007). Childers *et al.* (2002) argued that an important motivation for engaging in online retail shopping is the hedonic function of the website. In fact, the perceived sensory experience, derived from the aesthetics of the site which can render the navigating experience more enjoyable, has been pointed as an important strategy to enrich and facilitate navigation (Childers *et al.*, 2002; Lavie & Tractinsky 2004; Van der Heijden 2003; Robins & Holmes 2008; Cyr *et al.*, 2006).

The use of virtual customer-service agents has been noted to allow consumers to personalize their experience online (Alves & Soares, 2014; Moon *et al.*, 2013; Verhagen *et al*., 2014) by improving the perceived sociability and by rendering navigation experience more enjoyable for consumers (Wang & Fodness, 2010). Verhagen *et al.* (2014) argued that virtual customer service agents contribute to improve the quality of online service encounters, combining elements of both 'high tech' and 'high touch' and overcoming the detached and computer-mediated characteristics of internet.

Virtual customer-service agents are software systems that can be used in online settings to act as recommendation agents. They can combine multiple graphic options with high levels of interactivity encouraging two-way conversation and offering recommendations in an intuitive manner, thus enriching traditional websites' functions (Alves & Soares, 2014). These virtual customer service agents, act as recommendation agent and can take the form of human-like avatars offering a sort of social presence that can create feeling of warmth, and the perception that there is a personal, sociable and sensitive human contact (Etemad-Sajadi & Ghachem, 2015).

Earlier approaches to understand technology use have focused on utilitarian factors, in particular the Technology Adoption Model (TAM) which posits that perceived usefulness and perceived ease of use are the two beliefs relevant for determining attitudes toward technologies (Davis, 1989). However, hedonic factors have also been pointed as important not only to explain the decision to buy online but also to improve the quality and emotional pleasure of the user experience (Fiore *et al.*, 2005; Bilgihan, 2016). Our paper contributes to this stream of research by focusing on perceived visual attractiveness, perceived enjoyment and sociability. We set our study in a large airline's website with a virtual customer service agent represented by a human-like avatar. We posit that the aforementioned hedonic factors improve trust in the website given enhanced confidence in making good choices allowed by the presence of a virtual customer service agent which can take the functions of a seller. Previous studies establish the relevance of trust in an online firm as a set of beliefs that the other party will refrain from opportunistic behavior and will not take advantage of a specific situation. There is, however, insufficient knowledge about the factors that lead to trust development in online settings, especially because extant work shows inconsistent results (Kim & Peterson, 2017).

Moreover, online shopping-behavior studies aimed at understanding the consumer's adoption behaviors have focused either on different outcomes, such as loyalty (Forgas *et al.*, 2012), purchase/patronage intention (Van Der Heijden *et al.,* 2003; Kim *et al.,* 2008; Wang & Fodness, 2010; Dabholkar & Sheng,

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2012; Alves & Soares, 2014) or purchase (Kim *et al.*, 2008). However, studies focusing on loyalty are scarce. Loyalty is obviously an important outcome as, ultimately, the success of a business can be measured by the number of returning customers. In online transactions, loyalty, also referred to as e-loyalty, has been defined as the intention to visit and make purchases in the future (Forgas *et al.,* 2012). In parallel, it is also important to assess the satisfaction experienced with the decision to visit and shop online. Despite the fact that satisfaction and loyalty have an asymmetric relationship (Oliver, 1999), a satisfied customer is more likely to return (Pappas *et al.*, 2014). Thus, this paper probes on these two outcomes: satisfaction and loyalty.

Hence, this study focuses on the impact perceived visual attractiveness, perceived enjoyment and sociability of trust, satisfaction and subsequently, loyalty. This is particularly relevant in the sense that we know little about the role of the hedonic factors as antecedents of trust and satisfaction and their effect on e-loyalty in websites displaying a virtual customer service agents.

The remainder of this chapter is organized as follows: first, we present the conceptual background on the impact of hedonic factors in using online interfaces, leading to the proposed model and hypotheses. Then, the methodology and empirical study are discussed. The final section addresses the conclusion, limitations as well as makes suggestions for future research.

LITERATURE REVIEW AND HYPOTHESIS

Hedonic Factors in Online Use

Earlier approaches to understand technology adoption have focused mainly on utilitarian factors. However, hedonic dimensions have also been pointed as relevant not only to explaining the decision to buy online but also to improving the enjoyment of the consumption experience (Bilgihan, 2016). Before the advent of online shopping, Hirschman and Holbrook (1982) had long discussed how consumption experiences can offer satisfaction or enjoyment, independently of the instrumental (utilitarian) value (see also, Holbrook & Hirschman, 1982). This is linked to the hedonic value provided by these experiences translated in their potential to arouse fantasy, as well as emotions and entertainment (Holbrook & Hirschman, 1982). Positive interpersonal engagement offered by retail shopping can render delight to such experiences (Elmashhara & Soares, 2019). However, establishing a social connection with a potential buyer is far more difficult in the virtual context rather than in the real world (Etemad-Sajadi & Ghachem, 2015). Yet, in line with several authors, when potential buyers experience an inspiring, involving and fun-creative online experience, they are more likely to be involved (Kohler *et al.*, 2011). Social cues intrinsic in avatars taking the role of virtual customer service agents induce perceptions of website socialness, leading to increased pleasure and arousal (Wang & Fodness, 2007; Etemad-Sajadi & Ghachem, 2015).

Trust

The body of literature on trust is extensive, since it has been object of study of multiple disciplines given its centrality for interpersonal and intergroup behavior and its eclectic nature (Van Der Heijden *et al.*, 2003; Corritore *et al.*, 2003; Kim *et al.*, 2008). Exchange theories and relationship marketing posit that trust is a key condition for dyadic relationships (Schurr & Ozanne, 1985; Moorman *et al.*,1993). In short,

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trust refers to the confidence that one's partner is reliable and has integrity (Rotter, 1967; Moorman *et al.*, 1993). Trust has been defined as "the belief that a party's word or promise is reliable and a party will fulfill his/her obligations in an exchange relationship" (Schurr & Ozanne, 1985, p. 940). However, research in trust in online contexts produced inconsistent results (Kim & Peterson, 2017).

In online contexts, the role of trust is a prerequisite for exchanges as in other transaction contexts (Corritore *et al.*, 2003; Kim *et al.*, 2008; Pengnate & Sarathy, 2017), and has been studied often in the ecommerce literature (Kim & Peterson, 2017). Trust is essentially a belief that "the selling party or entity will fulfil its transactional obligations as the consumers understands them" (Kim *et al*., 2008, p. 545). Trust, thus, refers to the willingness to depend on the goodwill of the trader and act in accordance with the recommendations of the seller and/or website (McKnight *et al.*, 2002).

Studies on online trust have initially looked at technical aspects, such as privacy and security and perceived web quality (Kim *et al.*, 2008; Al-Debei *et al.*, 2015). For example, a substantial body of research focuses on the connections between trust and perceived risk (Jarvenpaa *et al.*, 2000; Van Der Heijden *et al.*, 2003; Chang & Chen, 2008). However, studies focusing on other behavioral determinants of trust in ecommerce and online settings are scarcer. Bart *et al.* (2005) looked at website and consumer characteristics antecedents of online trust. Website characteristics included factors such as navigation and presentation features while consumer characteristics, included factors such as familiarity, expertise with the website and online entertainment. Kim *et al.* (2008) have developed a model of the antecedents of trust and proposed the following typology of antecedents: Cognition (observation)-based: e.g., protection issues; Affect-based, such as reputation or word-of-mouth; Experience-based: e.g., familiarity, previous experience, etc. and Personality-oriented. Wang and Fodness (2010) argue that the emotional element of experience is important online and that virtual customer service agents can contribute to mimic the interaction with a salesperson thus eliciting positive emotions.

Below, we discuss the perceived visual attractiveness, perceived enjoyment, and sociability, as relevant dimensions for online use. We posit that these factors are relevant because they have an impact on trust followed by satisfaction with the online experience which, in turn, impacts on loyalty.

Perceived Visual Attractiveness

Perceived visual attractiveness refers to ''the degree to which a person believes that the website is aesthetically pleasing to the eye''(Van der Heijden, 2003, p. 544). Robins and Holmes (2008) found that page aesthetics affected users' decision to remain or leave the website. Other studies have shown that the interface visual aesthetics contributes to not only to users' satisfaction (Lavie & Tractinsky, 2004; Tractinsky *et al*., 2004) but also to online trust (Pengnate & Sarathy, 2017).

A meta-analysis of online trust relationships in e-commerce showed that design quality, referring to the "the perception of the balance, emotional appeal, aesthetics, and uniformity of the website's overall visual look" (Kim & Peterson 2017, p. 46) impacts online trust. This impact is due to the fact that a visually appealing website indicates the vendor's ability and professionalism, which tends to generate trust (Bart et al. 2005; Kim & Peterson 2017). Thus, the following hypothesis is proposed:

H1. The higher the perceived visual attractiveness, the greater online trust.

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Perceived Enjoyment

The Perceived Enjoyment dimension, that is, the perception that using the computer was "enjoyable in its own right, apart from any performance consequences that may be anticipated'' (Davis, Bagozzi, & Warshaw, 1992, p. 1113) was also pointed as an important factor. This factor was shown to impact positively both on the attitude towards use and the intention to use (Dickinger *et al.*, 2008; Teo & Noyes, 2011; Van der Heijden, 2003).

Hedonic consumption experiences are by definition enjoyable or pleasurable. Enjoyment of technology has been found to be related to online initial trust in e-commerce (Chen & Barnes, 2007), and, in general, a positive experience online can lead to trust in the company (Koufaris & Hampton-Sosa, 2002; see also Bilgihan, 2016). Indeed, enjoyment creates positive associations in one's minds that should nurture trust.

H2. The higher the perceived enjoyment, the greater online trust.

Sociability

With regard to the sociability dimension, it refers to the perception of social presence and sensitive human contact through the medium (Wang & Fodness, 2010). This perception of social stimuli as courtesy, kindness, empathy and sympathy has been deemed important to overcome the consequences of the lack of face-to-face interactions between the consumer and the seller in online settings (Alves & Soares, 2014). Verhagen *et al.* (2014) argued that virtual customer service agents contribute to improve the quality of online service encounters, combining elements of both 'high tech' and 'high touch' to form a new type of service encounter: the 'social online service encounter'. In the same line, a study by Wang and Fodness (2010) revealed that consumers' perceptions of sociability, emotional answers, and trust toward the online seller are more positive when the online store contains an avatar with the capacity to be likeable and to empathize with the consumer.

Using a virtual customer service agent has also been identified as an important factor to offer consumers a more personalized experience (Alves & Soares, 2014; Moon *et al.*, 2013). In particular, extant research has posited that avatar-like virtual customer service agents can contribute to mitigate one of the main limitations of ecommerce: the lack of personalization and possibility of interaction with a sales person. Avatars offer a degree of humanness and socialization, allowing consumers to engage in conversations with sellers. This interaction and dialogue contributes to reduce ambiguity, reduce risk and increase trust. Hence, some studies found social presence to positively impact trust (Gefen & Straub, 2003). Thus, we propose:

H3. The higher the sociability, the greater the online trust.

Satisfaction

Consumer satisfaction has been defined as pleasurable fulfilment (Oliver, 1999), referring to the consumer perception that the purchase/consumption positively fulfils some needs, desires or goals. Satisfaction is key for customer retention and loyalty (Pappas *et al.*, 2014). In fact, a satisfied customer is more likely to return (Lee *et al.*, 2009), making satisfaction not only a key factor that affects customers' online purchase behaviour but also an important factor of customer loyalty. In their seminal study, Szymanski and Hise

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(2000) developed and tested a model of the determinants of e-satisfaction, and found that convenience, site design, and financial security were the most relevant factors for e-satisfaction (see also, Lin & Sun, 2009).

Several studies have proposed a link between trust and satisfaction (Kim *et al.*, 2008; Wu, 2013; Pappas *et al.*, 2014; Kim & Peterson, 2017). For example, Pappas et al. (2014) found that trust impacts positively satisfaction, regardless the level of consumer experience with online shopping. A meta-analysis study of antecedents of outcome of online trust in e-commerce found that out of six consequences of trust studied, satisfaction was the most strongly related (Kim & Peterson, 2017). Hence:

H4. The higher the trust, the higher the satisfaction.

Loyalty

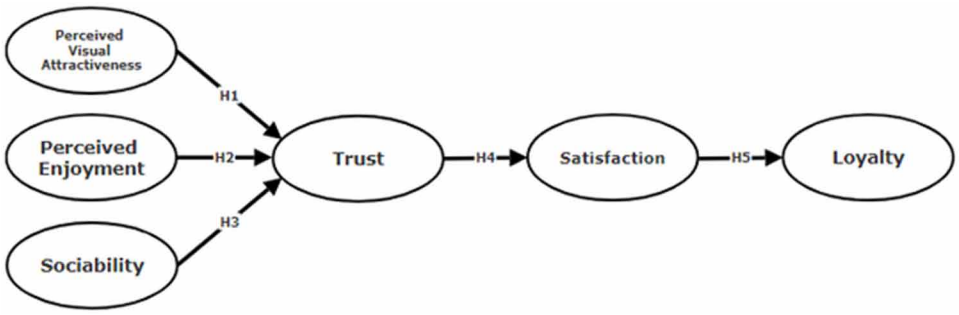
Gaining the loyalty of customers is arguably the ultimate goal of businesses. Loyalty has been defined as "a deeply held commitment to re-buy or re-patronize a preferred product/service consistently in the future, thereby causing repetitive same brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior" (Oliver, 1999, p. 34).

Previous research has shown that satisfaction has a positive relationship with online shopping tendency (Zhou *et al.,* 2007). The link between trust and loyalty has been investigates by several studies, including in the online context (Forgas *et al.,* 2012; Yüksel *et al.*, 2007; Lin & Sun, 2009). Thus, the following is proposed:

H5. The higher satisfaction, the higher loyalty.

Figure 1, below, displays the research model and the proposed hypotheses.

Figure 1. Research model



METHODOLOGY

The purpose of this study is to assess the antecedents of satisfaction and their implications after the introduction of an avatar in the website of a large airline company. This website is used for making reservations and buying flights. We will henceforth refer to this site as unidentifiedairline.com (for

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anonymity reasons). With such purpose in mind, we used a quantitative methodological approach as it seems to fit our research objectives. Our sample comprises 132 website users.

Profile of the Sample

The demographic profile of the respondents is presented in Table 1. The vast majority of respondents are male and middle-aged. Equally, most of them have a degree (86.4%) and around 60% belong to top management. Because we wanted to understand hedonic online experiences amongst those that are not new to the process, all of our participants are frequent flyers.

Data revealed that on a scale of 1 (disagree totally) to 7 (agree totally) the sample of respondents recommend the site unidentifiedairline.com (M=5.5; SD=1.2), if the respondents need to travel, they do not hesitate to book their travel through unidentifiedairline.com (M=5.6; SD=1.4). Also, they think the unidentifiedairline.com is a good site (M=5.10; SD=1.35) and in general they are very satisfied with unidentifiedairline.com (M=5.15; SD=1.20).

Table 1. Respondent profile

Variable		Frequency	% valid (Total)
Gender	Female	34	25.8%
	Male	98	74.2%
Age	73-55	61	46.6%
	54-39	61	46.6%
	38-24	8	6.1%
	>23	1	0.8%
Level of Education	Primary school	2	1.5%
	Secondary school	16	12.1%
	Higher education	114	86.4%
Occupation	Top Management	80	60.6%
	Middle Management	17	12.9%
	Qualified Workers	35	26.5%
Frequency of use the site unidentifiedairline.com	Sporadically	80	60.6%
	One time per week	30	22.7%
	More than one time per week	22	16.7%

Measurement Scales

Validated scales for the constructs of interest were sourced from the literature (van der Heijden, 2003 & 2004; Wang & Fodness, 2010; Alves & Soares, 2013; Forgas *et al.*, 2012).

In what concerns *perceived visual attractiveness* the items that tap into the construct are: "Overall, I find that unidentifiedairline.com looks attractive"; "The layout of unidentifiedairline.com is attractive" and "The colors, images and dynamic elements that are used on unidentifiedairline.com are attractive".

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All these items were measured using a seven-point Likert scale. For *sociability*, we used six items adapted from Wang and Fodness (2010) and Alves and Soares (2013). Specifically, respondents were asked to rate the company website for each of the following attributes: Friendly; Warm; Helpful; Polite; Informative and Intelligent. A seven-point rating scale (1 = describes poorly/ 7 = describes perfectly) was used to measure these items. Regarding *perceived enjoyment*, we resorted to prior work from van der Heijden (2003). Four seven-point semantic differential scaled items were used to classify the website navigation, specifically: Enjoyable/disgusting; Pleasant/unpleasant; Exciting/dull and Interesting/boring.

With regard to *Trust*, we used four items which were adapted from Bart, Shankar, Sultan and Urban (2005) and Alves and Soares (2014) and include the following items: "The unidentifiedairline.com website appears to be more trustworthy than other similar websites I have visited"; "The unidentifiedairline.com website represents a company or organization that will deliver on promises made"; "The information set out in the unidentifiedairline.com website deserves my trust"; "I trust the recommendations of the unidentifiedairline.com website". For *Satisfaction,*_we used three items adapted from Forgas et al. (2012). Specifically, respondents were asked to classify the company website for each of the following items: "The website meet my expectations"; "All the contacts with the unidentifiedairline.com website are satisfactory" and "In general, I am satisfied with the unidentifiedairline.com website".

Finally, the items that tap into *Loyalty* were adapted from Forgas et al. (2012). Specifically, the following items measured on a seven-point Likert scale were used: "I like the unidentifiedairline.com website"; "I think unidentifiedairline.com is a good website"; "If I need it, I shall continue to book a flight on the unidentifiedairline.com website" and "I shall continue to recommend unidentifiedairline.com website".

DATA ANALYSIS

In order to test our research hypotheses, we used the PLS with SmartPLS v.3.2 (Ringle, Wende, & Becker, 2015), which is a SEM tool that focuses on the prediction of dependent variables, is not so demanding with regard to multivariate normal data and uses both formative and reflective constructs (Fornell & Larcker, 1981).

Before testing the research hypotheses an assessment of the constructs' psychometric properties (convergent validity, reliability and discriminant validity) was performed. Furthermore, despite the measurement and structural parameters are estimated together, the PLS algorithm is computed in two stages: 1) the assessment of the measurement model and 2) the assessment of the structural model. This sequence ensures that the constructs' measures are valid and reliable before attempting to draw conclusions regarding the major relationships among constructs (Barclay *et al.,* 1995).

Assessment of the Measurement Model

In line with Mackenzie *et al.* (2005) recommendations, only the sociability construct was conceptualized as formative whereas the remaining constructs were considered as reflective. When examining the formative model, it is crucial to evaluate both the potential multicollinearity between items and the analysis of their weights (Róldan & Sanchez-Franco, 2012). High Collinearity between items cause unstable estimates and make difficult to isolate the distinct effect of an individual item on its intended construct. Frequently, the maximum variance inflation factor (VIF) value for each variable indicates

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the presence of multicollinearity, i.e., a VIF above 3.3 indicates a multicollinearity problem (Róldan & Sanchez-Franco, 2012). At the present study all items are below the VIF cut-off point (Table 2).

The next step requires the assessment of weights, which measures the contribution of each items to the variance of the construct. A significant level of at least 0.05 suggests that a formative indicator is relevant for building a composite construct (Róldan & Sanchez-Franco, 2012). In order to test the significance of weights a bootstrapping resampling procedure of 5000 resamples was computed. Along this process only two of six formative items measuring sociability were identified as having a t-value below 1.96. Yet, in line with several authors, we decided to keep these items because deleting an item would imply to remove a part of the composite construct (Roberts & Tatcher, 2009).

The measurement model for reflective constructs is assessed in terms of individual item reliability, construct reliability, convergent validity and discriminant validity. In other words, we have examined the Composite Reliability (ρc), Cronbach's Alpha and rho_A, all of which present values above 0.70 (Henseler *et al.,* 2016). Convergent validity is evidenced by the large and significant standardized loadings ($t > 1.96$) and the average variance extracted (AVE), which ranged from 0.65 to 0.87. This indicates that the items are above the recommended cut-off point and share (on average) at least half of their variance with the construct (Bagozzi & Yi, 1988; Chin, 1998). Table 2 indicates that all reflective latent constructs satisfy this condition.

Table 2. Measurement scales (Factor Loadings, Weights and Reliabilities)

Items for each construct (Reflective Constructs)	Factor Loading	t-value
Trust (CR=0.88;CA= 0.82; Rho=0.84; AVE= 0.65)		
The website appears to be more trustworthy than other similar websites.	0.72	13.4
The website represents a company that will deliver on promises made.	0.76	12.9
The information set out in the website deserves my trust.	0.89	40.0
I trust the recommendations of the unidentifiedairline.com website.	0.85	26.8
Satisfaction (CR=0.95;CA= 0.92; Rho=0.93; AVE= 0.87)		
The website meets my expectations	0.94	89.5
All the contacts with the unidentifiedairline.com website are satisfactory.	0.89	26.7
In general, I am satisfied with the unidentifiedairline.com website	0.95	127
Perceived Attractiveness (CR=0.94;CA= 0.91; Rho=0.91; AVE= 0.85)		
Overall, I find that unidentifiedairline.com looks attractive.	0.92	30.0
The layout of unidentifiedairline.com is attractive.	0.94	46.2
The colors, images and dynamic elements on the website are attractive	0.91	44.0
Perceived Enjoyment (PE) (CR=0.94;CA=0.91; Rho=0.92; AVE= 0.80)		
Enjoyable / Disgusting (1)	0.90	45.5
Pleasant / Unpleasant (2)	0.91	45.9
Exciting / dull (3) Interesting / boring (4)	0.84 0.92	25.7 49.6
Loyalty- affective + conative (CR=0.95;CA=0.93; Rho=0.95; AVE= 0.83)		
I like the unidentifiedairline.com website	0.95	146
I think unidentifiedairline.com is a good website	0.94	115

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Table 2. Continued

Items for each construct (Reflective Constructs)		Factor Loading	t-value
If I need it, I shall continue to book a flight from the airline website.		0.80	15.2
I shall continue to recommend unidentifiedairline.com website		0.95	89.7
Formative Construct - Sociability	**VIF**	**Weight**	**t-value**
1.Friendly	2.78	0.10	0.70
2.Warm	2.98	0.08	0.60
3.Helpful	3.28	0.59	3.51
4.Polite	2.24	0.07	0.50
5.Informative	2.47	0.45	2.44
6.Intelligent	3.32	0.04	0.50

This study follows two approaches to assess discriminant validity, which indicates the extent to which a given construct differs from other constructs. First, the Fornell-Larcker criterion was used, thereby we compare the square root of the AVE for each construct with the correlations between the focal construct and other constructs. For adequate discriminant validity, the diagonal elements should be significantly greater than the off-diagonal elements in the corresponding rows and columns (Roldán & Sánchez-Franco, 2012). Relying on this criterion, the data suggests acceptable discriminant validity (Fornell & Larcker, 1981). Second, we adopted the heterotrait-monotrait ratio (HTMT) as another criteria. Here we compared the obtained values with a predefined threshold (Henseler *et al.,* 2015). Table 3 shows that only one HTMT value equals the 0.85 threshold, so there are reasons to believe that there is no problem associated with discriminant validity.

Based on previous analyses, we concluded that the proposed measurement scales shows unidimensionality and conceptual consistency.

Table 3. Pearson Correlations, Means and Standard Deviations

Fornell-Larcker	1	2	3	4	5	6	HTMT	1	2	3	4
Loyalty	(0.91)						(1)				
Perceived Attractiveness	0.77	(0.92)					(2)	0.82			
Perceived Enjoyment	0.79	0.73	(0.89)				(3)	0.84	0.79		
Satisfaction	0.88	0.71	0.76	(0.93)			(4)	0.85	0.77	0.81	
Sociability	0.79	0.67	0.76	0.72	(-)		(5)	0.79	0.77	0.76	0.74
Trust	0.71	0.67	0.67	0.66	0.71	(0.81)	(6)				
Mean	5.27	4.94	5.00	4.93	5.04	5.20					
Standard Deviation	1.30	1.12	1.09	1.29	1.11	1.04					

Notes: The diagonal (in brackets) shows the square roots of the AVE;

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Assessment of the Structural Model

Based on a satisfactory assessment of the measurement model, the proposed hypotheses of the conceptual model can be estimated throughout the statistical significance of path coefficients. In order to generate the path coefficients, t-statistics and standard errors, the bootstrap procedure (5,000 resamples) was used. This technique generates a large number of sub-samples from the original sample through the systematic deletion of observations. The t-values and 95 percent bootstrap confidence intervals were computed to provide additional information on the stability of the coefficient estimates. As Castro and Roldán (2013) observed, the percentile approach is recommended because it has the advantage of being completely distribution free. Results are depicted in Table 4.

Table 4. Results of Hypothesis Testing

Paths Coefficients	Direct Effects	t-Value (bootstrap)	Conf. Interval	Supported
H1: Perceived Visual Attractiveness → Trust	0.29***	3.61	[0.179-0.443]	Yes
H2: Perceived Enjoyment → Trust	0.16*	1.90	[0.003-0.312]	Yes
H3: Sociability → Trust	0.39***	4.35	[0.178-0.504]	Yes
H4: Trust → Satisfaction	0.66***	10.95	[0.542-0.748]	Yes
H5: Satisfaction → Loyalty	0.88***	28.1	[0.812-0.922]	Yes
Controls				
Age → Loyalty	-0.07	1.62	[-0.140-0.001]	-
Education → Loyalty	-0.03	0.72	[-0.110-0.330]	-
Gender → Loyalty	0.04	0.99	[-0.025-0.116]	-

Based on t (4999); *p<0.05; t (0.05; 4999) = 1.645; ***p<0.001; t(0.001;4999) = 3.092; †bias-corrected and accelerated (BCa) BCI; one-tailed.

The predictive power of the model was also examined by assessing the cross-validated communality, the cross-validated redundancy index (Q2) and the coefficient of determination (R2) (Table 5). As acknowledged by Chin (1998), goodness-of-fit in a PLS estimation is demonstrated by strong factor loadings, significant path coefficients, high R2 values and Q2 values above zero. For instance, the proportions of the total variance in each endogenous construct explained by the model are: 78% for loyalty, 58% for trust and 43% for satisfaction. These values are largely above the minimum of 10% set for R2 of the endogenous variables. After analyzing the results it was concluded that the model showed predictive relevance.

Table 4 shows that all proposed hypotheses are positively and statistically significant. It is relevant to emphasize that the larger impact relates to the Hypothesis 5 that maintains that the higher the Satisfaction, the greater the loyalty (β=0.88; $p<0.001$). This is followed by the impact of Trust on Satisfaction (β=0.66; $p<0.001$) confirming H4.

The third larger impact relates to H3, which refers to the impact of Sociability on Trust (β=0.39; $p<0.001$).This is followed by H1 (β=0.29; $p<0.001$), which predicts that Perceived Visual Attractiveness (PVA) has a positive impact on Trust. Finally, it was also confirmed that Perceived Enjoyment has a positive and significant impact on Trust (β=0.16; $p<0.05$), confirming H2.

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Table 5. Effect size of the endogenous variables

Latent Variables	R^2	CV-C Q^2	CV-R Q^2
Loyalty	0.78	0.70	0.60
Perceived Visual Attractiveness	-	0.61	-
Perceived Enjoyment	-	0.61	-
Satisfaction	0.43	0.64	0.35
Sociability	-	0.45	-
Trust	0.58	0.41	0.34

CV-C (Cross-validated communality); CV-R (Cross-validated redundancy).

This study also applies several control variables, such as age, education and gender, however, results show that these do not affect significantly loyalty.

CONCLUSION

This study investigated the effect of hedonic factors in the navigation experience in satisfaction, trust and website loyalty. The primary theoretical contribution of this study lies in investigating the joint effects of hedonic and emotional functions embedded in a website featuring a virtual customer service agent of a large airline. This study focused on three major factors, namely, perceived visual attractiveness, sociability and perceived enjoyment. Taken as a whole, the results of our study confirm that these hedonic dimensions affect positively trust, which in turn affects satisfaction. Thus, pleasant online shopping environments seem to predispose consumers to trust more the e-seller, which impacts positively on the overall satisfaction with the online experience. This later subsequently impacts significantly and positively on loyalty. This is important since creating hedonic experiences online can be complex, where there is no real physical setting or store atmosphere to persuade consumers, as well as no one to physically interact with consumers. As this study suggests, virtual customer service agents, and other forms of immersive environments can facilitate such engagement with positive effects on the whole customer experience.

In particular, our study suggests that improving the aesthetics of the website improves the quality of the navigation and the quality of the consumer experience online, specifically by improving the trust on the site and this leads to satisfaction with the website. This corroborates Pengnate and Sarathy's (2017) findings that visual appeal helps to create a positive user experience and develop online trust. This, in turn, leads to higher loyalty.

Finally, certain shortcomings of the study need to be kept in mind. First, these results are not generalizable, though we believe this study may be a relevant contribution to the understanding of online behavior of consumers of airline companies. Second, this study did not focus on the utilitarian dimension of the consumer's online experience as our main goal was to understand the hedonic dimension and the former may affect the latter. Given the rapid advances of the graphical user interface technologies, it would be expected that in a near future the tasks assigned to this functionality will be more complex and interactive. Understanding how these developments affect consumer encounters online, for different types of tasks with varying levels of complexity, will remain a fertile area for further research.

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REFERENCES

Al-Debei, M. M., Akroush, M. N., & Ashouri, M. I. (2015). Consumer attitudes towards online shopping. *Internet Research*, *25*(5), 707–733. doi:10.1108/IntR-05-2014-0146

Alves, A., & Soares, A. M. (2014). L'introduction des avatars comme facteur de sociabilité sur les sites de e-commerce: Perspectives pour les petits détaillants. *Revue Française Du Marketing*, (249), 65–78.

Arnold, M. J., Reynolds, K. E., Ponder, N., & Lueg, J. E. (2005). Customer delight in a retail context: Investigating delightful and terrible shopping experiences. *Journal of Business Research*, *58*(8), 1132–1145. doi:10.1016/j.jbusres.2004.01.006

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, *16*(1), 74–94. doi:10.1007/BF02723327

Barclay, D., Higgins, C., & Thompson, R. (1995). The partial least squares (PLS) approach to causal modeling: Personal computer adoption and use as an illustration. *Technology Studies*, *2*(2), 285–309.

Bart, Y., Shankar, V., Sultan, F., & Urban, G. L. (2005). Are the drivers and role of online trust the same for all web sites and consumers? A large-scale exploratory empirical study. *Journal of Marketing*, *69*(4), 133–152. doi:10.1509/jmkg.2005.69.4.133

Bilgihan, A. (2016). Gen Y customer loyalty in online shopping: An integrated model of trust, user experience and branding. *Computers in Human Behavior*, *61*, 103–113. doi:10.1016/j.chb.2016.03.014

Castro, I., & Roldán, J. (2013). A mediation model between dimensions of social capital. *International Business Review*, *22*(6), 1034–1050. doi:10.1016/j.ibusrev.2013.02.004

Chang, H., & Chen, S. (2008). The impact of online store environment cues on purchase intention. *Online Information Review*, *32*(6), 818–841. doi:10.1108/14684520810923953

Chen, Y. H., & Barnes, S. (2007). Initial trust and online buyer behaviour. *Industrial Management & Data Systems*, *107*(1), 21–36. doi:10.1108/02635570710719034

Chin, W. (1998). The Partial Least Squares approach to structural equation modeling. In G. Marcoulides (Ed.), *Modern Methods for Business Research* (pp. 295–336). Mahwah, NJ: Erlbaum Associates.

Corritore, C. L., Kracher, B., & Wiedenbeck, S. (2003). On-line trust: Concepts, evolving themes, a model. *International Journal of Human-Computer Studies*, *58*(6), 737–758. doi:10.1016/S1071-5819(03)00041-7

Cyr, D., Hassanein, K., Head, M., & Ivanov, A. (2007). The role of social presence in establishing loyalty in e-service environments. *Interacting with Computers*, *19*(1), 43–56. doi:10.1016/j.intcom.2006.07.010

Cyr, D., Head, M., & Ivanov, A. (2006). Design aesthetics leading to m-loyalty in mobile commerce. *Information & Management*, *43*(8), 950–963. doi:10.1016/j.im.2006.08.009

Dabholkar, P. A., & Sheng, X. (2012). Consumer participation in using online recommendation agents: Effects on satisfaction, trust, and purchase intentions. *Service Industries Journal*, *32*(9), 1433–1449. doi:10.1080/02642069.2011.624596

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Quarterly*, *13*(3), 319–340. doi:10.2307/249008

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace. *Journal of Applied Social Psychology*, *22*(14), 1111–1132. doi:10.1111/j.1559-1816.1992.tb00945.x

Dickinger, A., Arami, M., & Meyer, D. (2008). The role of perceived enjoyment and social norm in the adoption of technology with network externalities. *European Journal of Information Systems*, *17*(1), 4–11. doi:10.1057/palgrave.ejis.3000726

Elmashhara, M. G., & Soares, A. M. (2019). The impact of entertainment and social interaction with salespeople on mall shopper satisfaction: The mediating role of emotional states. *International Journal of Retail & Distribution Management*, *47*(2), 94–110. doi:10.1108/IJRDM-06-2018-0112

Etemad-Sajadi, R. & Ghachem, L. (2015). The impact of hedonic and utilitarian value of online avatars on e-service quality. *Computers in Human Behavior*, *52*, 81–86. doi:10.1016/j.chb.2015.05.048

Fiore, A. M., Jin, H. J., & Kim, J. (2005). For fun and profit: Hedonic value from image interactivity and responses toward an online store. *Psychology and Marketing*, *22*(8), 669–694. doi:10.1002/mar.20079

Forgas, S., Palau, R., Sánchez, J., & Huertas-García, R. (2012). Online drivers and offline influences related to loyalty to airline websites. *Journal of Air Transport Management*, *18*(1), 43–46. doi:10.1016/j.jairtraman.2011.08.003

Fornell, C., & Larcker, D. F. (1981). Structural Equation Models with Unobservable Variables and Measurement Error. *JMR, Journal of Marketing Research*, *18*(1), 39–50. doi:10.1177/002224378101800104

Gefen, D., & Straub, D. (2003). Managing User Trust in B2C e-Services. *e-Service Journal*, *2*(2), 7–24. doi:10.2979/esj.2003.2.2.7

Hassanein, K., & Head, M. (2007). Manipulating perceived social presence through the web interface and its impact on attitude towards online shopping. *International Journal of Human-Computer Studies*, *65*(8), 689–708. doi:10.1016/j.ijhcs.2006.11.018

Hemp, P. (2006). Avatar-based marketing. *Harvard Business Review*, *84*(6), 48–57. PMID:16846188

Henseler, J., Hubona, G., & Ray, P. (2016). Using PLS path modeling in new technology research: Updated guidelines. *Industrial Management & Data Systems*, *116*(1), 2–20. doi:10.1108/IMDS-09-2015-0382

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modelling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135. doi:10.100711747-014-0403-8

Hirschman, E. C., & Holbrook, M. B. (1982). Hedonic consumption: Emerging concepts, methods and propositions. *Journal of Marketing*, *46*(3), 92–101. doi:10.1177/002224298204600314

Holbrook, M. B., & Hirschman, E. C. (1982). The experiential aspects of consumption: Consumer fantasies, feelings, and fun. *The Journal of Consumer Research*, *9*(2), 132–140. doi:10.1086/208906

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Jarvenpaa, S. L., Tractinsky, N., & Saarinen, L. (2000). Consumer trust in an internet store: A cross culture validation. *Journal of Computer-Mediated Communication*, *5*, 1–35. doi:10.1111/j.1083- 6101.1999.tb00337.x

Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, *44*(2), 544–564. doi:10.1016/j.dss.2007.07.001

Kim, Y. & Peterson, R. A. (2017). A Meta-analysis of Online Trust Relationships in E-commerce. *Journal of Interactive Marketing*, *38*, 44–54. doi:10.1016/j.intmar.2017.01.001

Kohler, T., Fueller, Matzler, Stieger, & Füller. (2011). Co-creation in Virtual Worlds: The Design of the User Experience. *Management Information Systems Quarterly*, *35*(3), 773–788. doi:10.2307/23042808

Koufaris, M., & Hampton-Sosa, W. (2002). *Customer trust online: examining the role of the experience with the Web-site.* Department of Statistics and Computer Information Systems Working Paper Series, Zicklin School of Business, Baruch College.

Lavie, T., & Tractinsky, N. (2004). Assessing dimensions of perceived visual aesthetics of web sites. *International Journal of Human-Computer Studies*, *60*(3), 269–298. doi:10.1016/j.ijhcs.2003.09.002

Lin, G. T. R., & Sun, C. (2009). Factors influencing satisfaction and loyalty in online shopping: An integrated model. *Online Information Review*, *33*(3), 458–475. doi:10.1108/14684520910969907

Mcknight, D., Choudhury, V., & Kacmar, C. (2002). The impact of initial customer trust on intentions to transact with web site: A trust building model. *The Journal of Strategic Information Systems*, *11*(3-4), 297–323. doi:10.1016/S0963-8687(02)00020-3

Moon, J. H., Kim, E., Choi, S. M., & Sung, Y. (2013). Keep the social in social media: The role of social interaction in avatar-based virtual shopping. *Journal of Interactive Advertising*, *13*(1), 14–26. doi:10.1080/15252019.2013.768051

Oliver, R. (1999). Whence Consumer Loyalty? *Journal of Marketing*, *63*, 33–44. doi:10.1177/00222429990634s105

Pappas, I. O., Kourouthanassis, P. E., Giannakos, M. N., & Lekakos, G. (2017). The interplay of online shopping motivations and experiential factors on personalized e-commerce: A complexity theory approach. *Telematics and Informatics*, *34*(5), 730–742. doi:10.1016/j.tele.2016.08.021

Pappas, I. O., Pateli, A. G., Giannakos, M. N., & Chrissikopoulos, V. (2014). Moderating effects of online shopping experience on customer satisfaction and repurchase intentions. *International Journal of Retail & Distribution Management*, *42*(3), 187–204. doi:10.1108/IJRDM-03-2012-0034

Pengnate, S., & Sarathy, R. (2017). An experimental investigation of the influence of website emotional design features on trust in unfamiliar online vendors. *Computers in Human Behavior*, *67*, 49–60. doi:10.1016/j.chb.2016.10.018

Ringle, C. M., Wende, S., & Becker, J.-M. (2015). *SmartPLS 3. Hamburg: SmartPLS*. Available from http://www.smartpls.com

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Roberts, N., & Thatcher, J. (2009). Conceptualizing and testing formative constructs: Tutorial and annotated example. *The Data Base for Advances in Information Systems*, *40*(3), 9–13. doi:10.1145/1592401.1592405

Robins, D., & Holmes, J. (2008). Aesthetics and credibility in web site design. *Information Processing & Management*, *44*(1), 386–399. doi:10.1016/j.ipm.2007.02.003

Roldán, J. L., & Sánchez-Franco, M. J. (2012). Variance-based structural equation modelling: Guidelines for using partial least squares in information systems research. In M. Mora (Ed.), *Research methodologies, innovations and philosophies in software systems engineering and information systems* (pp. 193–221). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-0179-6.ch010

Schurr, P. H., & Ozanne, J. L. (1985). Influences on exchange processes: Buyers' preconceptions of a seller's trustworthiness and bargaining toughness. *The Journal of Consumer Research*, *11*(4), 939–953. doi:10.1086/209028

Szymanski, D. M., & Hise, R. T. (2000). E-satisfaction: An initial examination. *Journal of Retailing*, *76*(3), 309–322. doi:10.1016/S0022-4359(00)00035-X

Van der Heijden, H. (2003). Factors influencing the usage of websites: The case of a generic portal in The Netherlands. *Information & Management*, *40*(6), 541–549. doi:10.1016/S0378-7206(02)00079-4

Van Der Heijden, H., Verhagen, T. & Creemers, M. (2003). Understanding online purchase intentions: contributions from technology and trust perspectives. *European Journal of Information Systems*, *12*, 41–48.

Verhagen, T., Van Nes, J., Feldberg, F., & Van Dolen, W. (2014). Virtual customer service agents: Using social presence and personalization to shape online service encounters. *Journal of Computer-Mediated Communication*, *19*(3), 529–545. doi:10.1111/jcc4.12066

Wang, L. C., & Fodness, D. (2010). Can avatars enhance consumer trust and emotion in online retail sales? *Journal of Marketing*, *3*(4). doi:10.1504/IJEMR.2010.036881

Yüksel, A. (2007). Tourist shopping habitat: Effects on emotions, shopping value and behaviours'. *Tourism Management*, *28*(1), 58–69. doi:10.1016/j.tourman.2005.07.017

KEY TERMS AND DEFINITIONS

Avatars: Similar to virtual customer service agents. Computer-generated characters with whom consumers can interact with when navigating an online platforms.

Perceived Enjoyment: Refers to the perception that using the website is enjoyable, pleasant and interesting.

Perceived Visual Attractiveness: Refers to the perception that the website is aesthetically pleasing.

Recommendation Agents: Similar to virtual customer service agents; Electronic screening tools that act as decision and recommendation aids to customize online shopping experiences.

Satisfaction: The perception by the consumer that the purchase/consumption positively fulfils some needs, desires or goals.

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Sociability: Refers to the perception of personal, sociable, and sensitive human contact in the website navigation.

Trust (Online Trust): The confidence that the website is reliable, has integrity and will fulfil his/her part.

Virtual Customer Service Agents: Computer-generated characters with whom consumers can interact with when navigating an online platforms.

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Chapter 41
Determinates of Live Support Chat in Organizational Intranets: An Empirical Study in Kuwait

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ABSTRACT

Live support chat (LSC) is a relatively new type of online customer support that is growing significantly in e-commerce websites. LSC bypasses the traditional types of customer support like phone, e-mail and web forms and it provides instant answers to customers' questions and concerns. Few researchers have empirically examined the factors affecting LSC at the individual level, however there is no evidence of research that explored the determinates of LSC in an organizational context and how it affects employees. This study attempts to fill this research gap by empirically examining the factors that affect LSC in the context of the organizational Intranets. Survey data from 389 employees at private and public organizations in Kuwait were collected to test the study hypotheses. The study findings have important implications at both the theoretical and practice levels.

INTRODUCTION

Live Support Chat (LSC) is a relatively new type of online customer support that is growing significantly in E-commerce websites. LSC bypasses the traditional types of customer support like phone, e-mail and web forms and it provides instant answers to customers' questions and concerns. We now live an era where online customers and employees are more demanding and require that their problems, questions and concerns be answered on the spot rather than even to wait for just a few hours to get a response. Few researchers have empirically examined the factors affecting LSC at the individual level (Ilk et al., 2012; Elmorshidy, 2013; Elmorshidy et al., 2015). There is also a limited number of research paper that

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explored the determinates of LSC in an organizational context and how it affects employees as demonstrated in section 2.2 of the paper. This study attempts to fill this research gap by empirically examining the factors that affect LSC in the context of the organizational Intranets.

Online chat may refer to any kind of communication over the Internet which offers an instantaneous transmission of text-based messages from sender to receiver; hence the delay for visual access to the sent message shall not hamper the flow of communications in any of the directions. (Andrews, 2010). Now not just text-based information can be communicated through LSC but also images, sound and videos. Although early attempts to implement LSC existed a few years ago in a limited number of websites, the wide spread and actual use of this technology has grown exceptionally in the past four years to reflect a new paradigm shift in online customer support in e-commerce websites. LSC just recently became a new standard of service that online customers demand and expect while shopping or doing business online. (Elmorshidy et al., 2015).

LSC is viewed as a cost-effective way to reduce purchasing risk through increasing social interaction. It has also been regarded as a good method to respond to consumers' questions, and to personalize the shopping experience. There is also evidence demonstrating that this customer service solution improves the online shopping experience itself and reduces purchase abandonment rates. (Elmorshidy et al., 2015).

In an observation by Shane at al. (2007), service agents could handle at least three chat sessions simultaneously without significant increase in average chat duration. Other studies indicated that commercial live chat systems allow service agents to multi-task ten or more chat sessions. This feature is promoted by LSC vendors as a unique strength of live chat systems to maximize service productivity (Ilk et al., 2012).

This paper starts by reviewing literature that leads to the development of the research hypotheses pertaining to the determinates of LSC in the context of the organizational Intranets. The paper then discusses the research methodology including the research model and sampling. The research results and finding are then provided and analyzed. The conclusion section at the end of the paper discusses theoretical contributions, implication for practice and the limitation of the study as well as recommendations for future research.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Live Support Chat in an Organizational Context

Glass and Li (2010) mentioned that one of the most appealing attributes of Instant Messaging (IM) as a live chat tool for businesses is the fact that unlike the delayed, asynchronous nature of e-mail, the current online status or presence of the intended recipients is displayed and allows for immediate response." They added that Approximately 45 to 50 percent of US firms currently permit their employees to use IM for business purposes and IM will be the de facto tool for voice, video and text chat with 95% of workers in leading global organizations. Glass and Li (2010) empirically investigated factors that influence individuals to adopt IM in the workplace. Findings showed that subjective norm, perceived critical mass, perceived usefulness and perceived ease of use were factor in determining IM adoption than the organization.

Ou et al. (2010) mentioned that Instant messaging (IM) technology as a live chat tool is currently growing rapidly in a variety of contexts. An IM has the capability to connect individuals instantly, thus

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enabling almost real time interaction in a cost-effective manner, unlike other communication tools such as e-mail, video conferencing and online communities. Although IM is widely used in social contexts, its adoption in the work place remains controversial. Ou et al (2010) added that live chat tools have a potential to empower teamwork by establishing social networks and facilitating knowledge sharing among organizational members. Organizations are increasingly allocating complex tasks to teams, which consequently require more efficient communication and knowledge sharing for problem solving. Benefitting from IMs characteristic of instantaneous connections, the collaborative process among team members can be much smoother. Instant communication provides organizations with the opportunity to become real-time enterprises.

Robb (2001) mentioned that IM as live chat tool is emerging as a potent weapon in the corporate communications arsenal, led primarily by leading lights in the financial sector. Ernst & Young, UBS Warburg, State Street Bank, Thomas Weisel Partners and PaineWebber, which have all implemented some kind of IM or live chat system. Though some of these are purely internally facing, IM is also evolving into an external tool to enhance interaction with financial planners. Todd Bertsch, CEO of A.W. Bench in New York City, for example, says that instant messaging via wireless handhelds has made his brokers far more productive and also lets financial planners focus on critical information (Robb, 2001).

Zhang and Fjermestad (2008) employed a comparative case study approach about how instant messaging (IM) as a live chat tool can be in various ways in small businesses for organizational benefits. They mentioned that in the global economy, benefits of IM low-cost yet productive communication technologies to communicate with dispersed partners was innovative. Their results showed that small business managers play an important role in creating a constructive and creative communication strategy to achieve several benefits such as productive enhancement, knowledge sharing, relationship building and customer support.

Ou et al. (2010) developed a research model that explains how instant messaging (IM) as a live chat tool technology enable employees to be empowered. The paper uses survey of 253 Chinese work professionals with respect to their use of IM tools at work. Results showed that IM does empower work teams via shaping the social networks and facilitating knowledge sharing in the workplace, resulting in heightened team performance.

Chieh-Peng and Chou-Kang (2011) mentioned that helping intention is an important value that holds the key to the continuous user growth of instant messaging (IM) as a live support tool. They conducted a study to validate a research model that examines online helping intention from a perspective of online social capital. Empirical testing of this model, through a survey of employees from seven large companies, confirms some theoretical expectations of this study. Two of the seven companies are from general service industries and the other five companies are from high-tech industries. Of the 500 questionnaires distributed to participants, 364 usable questionnaires were returned for an effective response rate of 72.8%. Helping intention is influenced by reciprocity, shared narratives, centrality, and network ties, whereas commitment and shared codes and language are not significantly related to helping intention.

Licoppe (2010) conducted two empirical case studies on the uses of mobile musical ringtone and of instant messaging in organizations, showing the kind of work that users actually do to pattern their environments with an orientation toward shaping in advance the way in which they might be interrupted and notified. Concerned with how they might be notified, the users are becoming more skilled and turning into "pragmatic amateurs," less inclined to accept the imposition of a summons (which also testifies to a kind of "crisis of the summons"), and with a keener sense for appreciating the working and pragmatic consequences of a given type of notification.

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Zhang and Fjermestad (2008) explained that independent low-cost instant messaging (IM) as live chat tools may allow small businesses with limited financial and technical resources to communicate and collaborate internally and externally. They added that little research has been done investigating IM in the small business context. Their study investigated how small businesses respond to and actively exploit the opportunities brought by IM. Two comparative case studies were conducted with two US small businesses. Multiple data collecting methods were used including observation, interview, and IM transcripts. Results showed that IM was found beneficial to small businesses in several way and that creative and constructive usage of IM could bring a variety of organizational benefits to small businesses. The study also showed that IM usage management is more a managerial issue than a technical one and a set of organizational and managerial factors were identified critical to the achievements of these benefits.

Ajjan et al. (2014) stated that Instant messaging has been widely utilized as a live chat tool by a variety of types of organizations to improve the efficiency and effectiveness of internal communication and knowledge management (KM). To date, though, the continuance use of enterprise instant messaging (EIM) and its impact on KM outcomes have not been well understood in both academia and practice. Ajjan et al. (2014) used the theory of planned behavior to explore factors that influence continual usage of EIM applications within organizations, as well as the impact of the continuance use decisions on knowledge creation, transfer, and retention within organizations. Results were useful in developing guidelines and strategies to increase the likelihood of the continuance use of EIM and to improve the potential outcome of its use within organizations.

Shen et al. (2012) investigated the adoption and use of instant messaging as a group-referent intentional social action. The concept of 'we-intention', which refers to one's perception of the group acting as a unit was the focus of interest. The cognitive, affective and social dimensions that contribute to 'we-intention' to adopt and use instant messaging were investigated. A survey was conducted, and the findings provided empirical evidence supporting the idea that cognitive, affective and social factors jointly lead to the development of we-intention. With the prevalence of instant messaging in organizations, managers are able to harness the collective wisdom of employees and find out the most effective solution to their problems. Managers also should make good use of the special features of instant messaging, such as messaging conferencing, chat room and white boarding, to promote employees' identification with the collaborative group and to enhance the similarity among group members.

Pazos et al. (2013) mentioned that fast-paced organizational environments and growing needs for permanent and fast connectivity have steered the adoption of technologies such as instant messaging (IM) for organizational communication. However, the use of IM as a communication tool to support task completion is not well understood. They conducted an exploratory mixed methods study investigating the use of IM as a communication tool to support task completion and multitasking in information technology organizations. The main purpose was to investigate IM use to support two types of tasks: collaboration and conflict tasks. They used a mixed methods approach incorporating quantitative and qualitative data from interviews and survey instruments. Results from the quantitative analysis suggest a significantly greater use of IM for collaboration tasks than for cognitive conflict tasks. The qualitative data helped in identifying specific tasks in the information technology corporate environment whose completion is supported by IM use. Those tasks were mapped into an existing task framework and analyzed using qualitative methods. Results from the qualitative analysis were used to complement and support the quantitative findings.

Licoppe (2014) studied the work and communication practices of two highly connected organizations, the members of which have all access to instant messaging (IM) as live chat support tools on a profes-

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sional basis. They documented the development of a communicational genre, that of 'quick questions', and analyze the sequence organization of such IM conversation threads. Results showed that 'quick questions' enable the collaborative accomplishment of complex, knowledge-intensive tasks by recruiting colleagues constituted as experts capable of quickly answering information requests related to ongoing tasks. 'Quick questions' articulate communicative practices, 'strong' distribution of tasks and 'organizing' in highly connected organizations. Licoppe (2014) argued that they enact a distinctive cognitive and moral economy based on minimal forms of interaction and exchanges (which we call 'contributions'), constituting a more general phenomenon.

Peslak et al. (2010) expressed that Instant messaging (IM) as a form of communication offers unique advantages to traditional email communication centered mostly on its immediacy. Levels of IM use are significantly less than email especially in business organizations. In order to understand IM behavior and encourage its adoption, Peslak et al. (2010) explored IM behavior using the Ajzen and Fishbein (1980) model of human behavior known as Theory of Reasoned Action (TRA). Results showed that attitude toward IM and "subjective norm" are positively associated with intention to use instant messaging. Also, the TRA model can be used to predict and understand the usage of instant messaging in the target population.

Hunt (2009) investigated contemporary business communication practices regarding instant messaging as a form of live chat support. The explode the strengths, weaknesses and best management practices of instant messaging in a small multinational company in the Oil & Gas industry. The research methodology included employee interviews, employee surveys, and direct observation. The interviews provided guidance for the development of the employee surveys. Findings showed that instant messaging is a highly utilized communication method in business and has become essential to efficient business operations.

Study Constructs

Drawing on research from North America, Europe and Australasia and based on several theoretical models, there is a wealth of evidence that suggest that a wide variety of factors influence LSC usage behavior. We provide the table (Table 1) to show how we extracted each factor for our study and the justification behind its selection. Those factors are perceived usefulness, perceived ease of use, compatibility, subjective norms, trust, and attitudes.

Compatibility

Compatibility was originally one of the factors determining the diffusion of innovation rate in the diffusion of innovation paradigm. It refers to the degree to which the use of the new technology is perceived to be consistent with the potential users' existing values, previous experience and needs. (Elmorshidy at al., 2015). Ifinedo (2018) empirically investigated the factors influencing students' continuance intention to use blogs to learn in an undergraduate-level course. The results showed that perceived usefulness and perceived compatibility have positive effects on students' attitudes towards blog use. Perceived compatibility perceived self-efficacy, and perceived support for enhancing social ties with blogs have significant effects on the positive impacts of learning with such tools. Ozturk et al. (2017) examined factors affecting restaurant customers' intention to use near field communication (NFC)-based mobile payment (MP) technology. More specifically, based on the valence theory, they examined the impacts of users' negative valence (perceived risk and acceptance). It was shown that compatibility exerts the

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greatest impact the intention to use MP services. Mkhize at al. (2016) empirically evaluated Learning Management System (LMS) usage in an open distance learning Institution in South Africa. The results revealed that both relative advantage and compatibility have a significant impact on the students' attitude towards the use of the LMS. Lee et al. (2011) investigate factors affecting business employees' behavioral intentions to use the e-learning system. Survey data were collected from 552 business employees using the e-learning system in Taiwan. The results showed that the effects of the compatibility is significant on both perceived usefulness and previewed ease of use and thus employees' intention to use the e-learning system. This discussion leads to the following hypotheses:

H1: Perceived compatibility of LSC services in the organizational Intranet positively influences employees' perceived usefulness of LSC.
H2: Perceived compatibility of LSC services in the organizational Intranet positively influences employees' perceived ease of use of LSC.
H3: Perceived compatibility of LSC services in the organizational Intranet positively influences employees' intention to use these services.

Table 1. Factors of the study and where they were extracted from

Study Construct	Theoretical Model Taken From	Justification
Compatibility	Diffusion of Innovation Theory (Rogers, 1960)	Diffusion of innovations is a theory that seeks to explain how, why, and at what rate new ideas and technology spread. Compatibility is the degree to which an innovation is perceived as being consistent with values, past experience, and need of potential adapters. An idea that is not compatible with their values, norms or practices will not as rapidly as an innovation that is compatible.
Trust	Theory of Perceived Risk (TPR) (Bauer, 1960)	In TPR, according to Bauer 1960, the two primary dimensions of risk are one related to uncertainty or probability of loss notion and the other is related to consequence or importance of loss notion. Bauer 1960 argues that at any transaction, individuals are forced to deal with uncertainty. Thus, trust will definitely have a positive effect on intention to use.
Subjective Norms	Theory of Planned Behavior (TBP) (Ajzen, 1991)	TBPP is a theory that links one's beliefs and behavior. Subjective norm is an individual's perception about the particular behavior, which is influenced by the judgment of significant others. (friend, parent, teacher). Subjective norms are shown to have a significant impact on intention to use.
Perceived Usefulness	Technology Acceptance Model (TAM) (Davis, 1989)	TAM is a Well-established model that has been studies intensively about how users accept and use the technology. Perceived Usefulness is shown to have a strong impact on intention to use the technology
Perceived Ease of Use	Technology Acceptance Model (TAM) (Davis, 1989)	TAM is a Well-established model that has been studies intensively about how users accept and use the technology. Perceived Ease of use is shown to have a strong impact on intention to use the technology
Attitude	Theory of Planned Behavior (TBP) (Ajzen, 1991) and Technology Acceptance Model (Davis, 1989)	In both TBP and TAM, attitude is shown to have a significant impact on intention to use.

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Perceived Usefulness

Perceived usefulness is defined as the degree to which an information technology system is perceived to provide benefits in performing certain activities (Davis, 1986). Dong et al. (2017) studied the factors affecting the usage of Internet of Things (IOT) in China. Perceived usefulness was shown to have a significant impact on intention to use Internet of Things. Koo et al. (2015) investigated the determinants of perceived usefulness of smart green information technology (IT) device in reducing electricity consumption. Though there are many determinants of intention to use a technology, perceived usefulness is a key determinant of continuance intention to use smart green IT devices. Almaiah (2018) empirically studied the Acceptance and usage of a mobile information system services in University of Jordan. The results revealed that user acceptance of mobile information system services is largely affected by trust, perceived security, perceived ease of use and perceived usefulness. Elmorshidy et al. (2015) empirically examined factors affecting live chat customer support in Kuwait through the technology acceptance model. The results showed a significant positive impact of perceived usefulness and perceived ease of use on the intention to use live chat support. In an empirical study by Sarrab et al. (2016), factors driving the adoption of mobile learning tools in Omani higher education were examined through the use of the technology acceptance model framework. Results showed that perceived usefulness has a significant effect on the adoption of mobile-learning. This discussion leads to the following hypothesis:

H4: Perceived usefulness of LSC services in the organizational Intranet positively influences employees' intention to use these services.

Perceived Ease of Use

Perceived ease of use is defined according to Davis (1989) as the degree to which the prospective user expects the target system to be free of effort. Al Zubi et al. (2017) mentioned that Individuals expect that, if a new technology is easy to use, this will create a positive attitude toward it. Al Zubi et al. (2017) examined the relationship between independent variables (technology, perceived usefulness, and perceived ease of use) and intention to use internet banking (IB) among 200 Small-to-Medium Enterprises SMEs owners in Yemen. The results showed a significant impact of perceived ease of use on intention to use IB among SMEs'. Joo et al. (2014) conducted a study to add new variables, namely user interface, personal innovativeness, and satisfaction in learning, to Davis's technology acceptance model TAM and also examine whether learners are willing to adopt mobile learning. The results of the structural equation modeling revealed that user interface and perceived ease of use had significant effects on perceived usefulness and intention to use. In a study of technology adoption in government agencies, Hamner and Qazi (2009) found a statistically significant association between perceived ease of use and attitude and intention to use. Elmorshidy et al. (2015) empirically examined factors affecting live chat customer support in Kuwait through the technology acceptance model. The results showed a significant positive impact of perceived ease of use perceived on the intention to use live chat support. Chin et al. (2015) explored Malaysian Internet and Mobile Banking consumers' intention in adopting a single platform E-payment system using TAM model. The empirical results showed that convenience, design, perceived risk, perceived usefulness and perceived ease of use influence consumers' intention to use single platform E-payment system. This discussion leads to the following hypothesis:

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H5: Perceived ease use of LSC services in the organizational Intranet positively influences employees' intention to use these services.

Trust

Perceived risk was defined as consumer's belief about the potential uncertain negative outcomes from the online transactions. E-commerce risk can be conceptualized as a function of data protection and system reliability. (Velmurugan, 2009). Yu et al. (2017) explored how trust can transfer among diverse business channels in smart phone industry. They further examined the impact of trust repairing strategies in creating the positive emotions of customers and consequently trust restoring when customers experience unfavorable events in the multichannel context. Based on an empirical survey of smart phone users, the results showed that brand users' that develop initial trust of telecom operators tend to transfer their trust to channel distributors; moreover, positive emotion has a mediating effect between trust repair and trust. Krom (2015) evaluated the significance of innovation driven online entrepreneurship as well as the impact of innovation on brand trust, customer satisfaction and brand loyalty in the extent of service innovations. Global online entrepreneurship was explored on a theoretical basis and correlation and regression analyses were used in order to evaluate the impact of the innovations of Google on brand trust, customer satisfaction and brand loyalty. According to the research findings, brand trust and customer satisfaction have a direct and positive relationship with brand loyalty. Musleh (2015) investigated the extension of the unified theory of acceptance and use of technology (UTAUT) model to online shopping. Trust was found to have a significant positive impact on the attitude towards online shopping and actual online shopping. Elmorshidy et al. (2015) empirically examined factors affecting live chat customer support in Kuwait. The results showed a positive impact of attitude on the intention to use live chat support. Paul and McDaniel (2014) examined the relationship between interpersonal trust and virtual collaborative relationship (VCR) performance in a study of 10 operational telemedicine projects in health care delivery systems. Their finding of a positive association between integrated interpersonal trust and performance not only yields the strongest support for a relationship between trust and VCR performance but also contradicts prior research. This discussion leads to the following hypotheses:

H6: Trust in LSC services in the organizational Intranet positively influences employees' attitude towards using LSC.
H7: Trust in LSC services in the organizational Intranet positively influences employees' intention to use these services.

Attitude

The social psychology literature on behavioral research has established attitudes as important predictors of behavior and behavioral intention. (Göckeritz, 2010). Arora and Rahul (2017) empirically examined the impact of trust on online shopping attitude among women shoppers in India in an attempt to explain how trust in online shopping impacts attitude and what is the impact of online shopping attitude on online shopping intention. Results showed that trust impacts significantly online shopping attitude. The study also showed that that online shopping attitude has a positive impact on online shopping intention. Cheng (2013) empirically examined consumer attitudes toward the use of and consumer behavioral intention to use a Radio Frequency Identification (RFID) door security system at Taipei Arena Ice

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Land. The results showed that attitudes toward using these systems have a significant positive impact on behavioral intentions to them. In a study by Elmorshidy et al. (2015), factors affecting live customer support chat in Kuwait were examined. The result showed that attitude of using live support chat has a significant impact on behavioral intentions to use this system. Yushkova and Feng (2017) examined the determinants of the intention to bring mobile phones for recycling. Using structural equation modeling, the study confirmed that attitude, social norms, and knowledge contribute positively and significantly to the intention to bring phones for recycling. Lee et al. (2015) investigated the relationship between attitudes towards using mobile application services and customer satisfaction. Attitudes have proven to be the most significant factor for customer satisfaction and compatibility. This discussion leads to the following hypothesis:

H8: Attitude towards using LSC services in the organizational Intranet positively influences employees' intention to use these services.

Subjective Norms

Subjective norm refers to users' perception of whether other important people perceive they should engage in the behavior (Elmorshidy et al., 2009). Diddi (2017) explored the role of values and norms towards consumers' intentions to patronize retail apparel brands engaged in corporate social responsibility (CSR). Data were collected via a web-based survey from a national sample of 407 US consumers. Findings revealed that moral norms, subjective norms, and attitudes were all important predictors of US consumers' intentions to patronize retail apparel brands engaged in CSR. Deng (2013) conducted a survey to examine the impact of subjective norms, behavioral attitude and perceived behavioral control on ethical purchase intention with 445 consumers selected by random sampling in Wuhan City, China. Results based on a structural equation model showed that behavioral attitude, subjective norms and perceived behavioral control had significantly influenced on ethical purchase intention of the respondents, with subjective norms being the strongest predictor of ethical purchase intention. Xiao et al. (2015) investigated the linear and nonlinear relationships among the concerned variables in electronic repository adoption. The results showed the perceived behavioral control which is a critical part of the planned behavior theory is not a significant predictor to electronic library adoption, while the subjective norms and attitude are the two significant predictors. Sang-Yon and Mi-Ryang (2013) examined the attitudes and perceptions of teachers toward the adoption of and intention to use Smart Education, more specifically the relationship between intention to use Smart Education and the consequential effect factors. The results of the study showed that attitude, subjective norms, teacher efficacy, resistance to class, and organizational citizenship behavior, respectively, affect intention for using Smart Education. Aghamolaei et al. (2012) examined fish Consumption in a Sample of People in Bandar Abbas, Iran to test the Application of the Theory of Planned Behavior. Multiple regression analysis revealed that attitude, subjective norms, and perceived behavioral control significantly predicted intention to eat fish. This discussion leads to the following hypothesis:

H9: Subjective norms of LSC services in the organizational Intranet positively influences employees' intention to use these services.

Based on the discussion above and our research model is illustrated in Figure 1.

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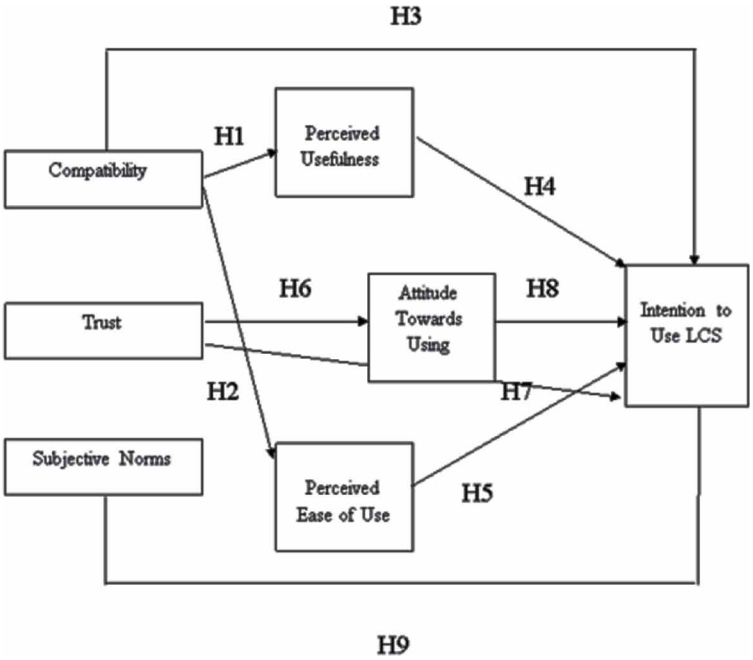
Figure 1. Research model



RESEARCH METHODOLGY

In this section we discuss our sample acquired in the state of Kuwait, how the survey questionnaire was developed and distributed as well as the different scales adopted for perceived usefulness, perceived ease of use, perceived compatibility, subjective norms, perceived trust, attitude and the intention to use scale.

Sampling

The sample selected for this study was the employees using LSC services in organizational Intranets in Kuwait. Kuwait is a small oil company with a small population. Public and private companies there have access to the latest advanced technology pertaining to computes, internet-bases applications and internal communications networks including intranets. It The population of employees in Kuwait is around 1,800,000 individuals. A total of 500 questionnaires were distributed to employees at 11 private and 7 public organizations totaling 18 organizations. Of those 18 organizations combined, we divided the destitution equally between 6 large organizations, 6 medium organizations and 6 small ones. We emphasized the confidentiality of responses in the cover letter. We have received a total of 427 surveys by the deadline, 38 questionnaires were excluded because respondents did not complete the questionnaire appropriately. The final sample size was 389, which represents a 77.8% response rate. The sample size is 2.2% of the population which is a representative sample size.

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Measures

The questionnaire developed to measure the variables of the study used a five-point Likert scale. The five-point Likert-type scale was used to increase response rate and response quality along with reducing respondents' "frustration level (Buttle. 1996).

Also, a five-point scale rather than a seven-point scale was chosen because it becomes possible to compare reliability coefficients with other research using five-point Likert Scales. (Saleh, & Ryan 1991). Finally, the literature suggests that a five-point scale appears to be less confusing and to increase response rate (Bouranta et al., 2009).

The perceived usefulness, perceived ease of use and attitude constructs were adopted from Davis (1989). The perceived compatibility scale was adopted from Wu and Wang (2005). The subjective norms scale was adapted from Al-Gahtani et al. (2007). The perceived trust scale was adapted from Kim et al. (2008). The intention to use scale was adapted from Ajzen (1991). The first part of the questionnaire was designed to obtain some demographic information including gender, age, and type of organization that the responder belongs to. Table 2 shows the demographic profile of the respondents.

Table 2. Demographic profile of respondents

Measure	Items	Frequency	Percent
Gender	Male	274	70.4
	Female	115	29.6
	Total	**389**	**100**
Age	16-19 years	0	0
	19-22 years	67	17.2
	23-25 years	140	35.9
	Above 25 years	182	45.9
	Total	**389**	**100**
Organization Type	Private	11	61
	Public	7	39
	Total	**18**	**100**
Organization Size	Large	6	33.3
	Medium	6	33.3
	Small	6	33.3
	Total	**18**	**100**

RESEARCH FINDINGS/RESULTS

Measurement Model

Model testing can be carried out using measurement model if it is reliable and valid. In this case, the reliability of measures and their convergent and discriminate validity can be verified. Fornell and Larcker

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(1981) suggested three criteria for verifying convergent validity: the factor loading for individual items is more than 0.50, the average variance extracted (AVE) are above 0.50 and the composite reliability (CR) of all the constructs is above 0.80. As shown in table 3, all three criteria were met, and thus, convergent validity of the measurement model is verified. For confirmation of validity of data Cronbach Alpha is calculated and as shown in it was in all the constructs above 0.90, which is higher than the minimum acceptable value of 0.60 as suggested by Nunnally (1978).

An exploratory factor analysis on SPSS was carried out to explore the variables of the research model. All the proposed constructs loaded on single component. AMOS v.16 was used to assess the validity and reliability of the data. The proposed model consisted of 26 items describing seven constructs: Perceived usefulness, perceived ease of use, perceived compatibility, perceived subjective norms, perceived trust, attitude and intention to use.

Table 3. Confirmatory factor analysis, validity analysis, and reliability test results

Concept	Item	Estimate	Average Variance Extracted (>0.50)	Composite Reliability (>0.80)	Cronbach Alpha (>0.60)
Perceived Usefulness	PU1	0.817			
	PU2	0.835			
	PU3	0.856	0.751	0.938	0.939
	PU4	0.823			
	PU5	0.874			
Perceived Ease of Use	PEU1	0.789			
	PEU2	0.745	0.765	0.942	0.953
	PEU3	0.759			
	PEU4	0.813			
Perceived Compatibility	PC1	0.836			
	PC2	0.784	0.747	0.933	0.947
	PC3	0.773			
	PC4	0.816			
Perceived Subjective Norms	PSN1	0.813			
	PSN1	0.834	0.742	0.958	0.955
Perceived Trust	PT1	0.841			
	PT2	0.847	0.774	0.948	0.931
	PT3	0.863			
	PT4	0.856			
Attitude	ATT1	0.877			
	ATT2	0.869	0.789	0.953	0.952
	ATT3	0.874			
	ATT4	0.843			
Intention to Use	IU1	0.843			
	IU2	0.854	0.762	0.931	0.949
	IU3	0.851			

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To assess the discriminate validity of the constructs, product moment correlations between the variables was conducted as shown in Table 4 below. This was to assess the associations among the eight constructs constituting the model. All the correlation coefficients were significant which show that the constructs have a high degree of relation to each other.

Table 4. Discriminate validity of constructs (correlation analysis)

Construct	PU	PEU	PC	PSN	PT	ATT	IU
PU	1						
PEU	0.773	1					
PC	0.312	0.836	1				
PSN	0.426	0.32	0.824	1			
PT	0.362	0.369	0.382	0.836	1		
ATT	0.402	0.311	0.478	0.323	0.785	1	
IU	0.476	0.463	0.593	0.365	0.462	0.879	1

Structural Model Analysis / Hypotheses Testing

Structural Equation modeling was applied next to investigate the relationships among the research variables and the standardized path coefficients for confirmation of the hypotheses proposed. As shown in Table 5, the measurement model test presented a good fit between the data and proposed measurement.

Table 5. Overall fit measurement / model evaluation

Measure	Suggested Value	Observed Value
Root mean square residual (RMR)	< 0.05	0.043
Comparative fit index (CFI)	> 0.9	0.961
Goodness of fit index (GFI)	> 0.9	0.974
Normed fit index (NFI)	> 0.9	0.977
Non-normed fit index	> 0.9	0.968
Root mean square error of approximation (RMSEA)	< 0.05	0.369

Path coefficients are standardized versions of linear regression weights which can be used in examining the possible causal linkage between statistical variables in the structural equation modeling approach. The standardization involves multiplying the ordinary regression coefficient by the standard deviations of the corresponding explanatory variable: these can then be compared to assess the relative effects of the variables within the fitted regression model. Table 6 shows the results of the hypotheses testing indicating the Standard Path Coefficients, T-Values, Significance and whether each hypothesis was supported or not.

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Table 6. Hypotheses testing results

Hypothesis	Standard Path Coefficients β	T-Values	Significance	Supported
H1: PC to PU	0.325	7.562	$p < 0.001$	Yes
H2: PC to PEU	0.334	7.785	$p < 0.001$	Yes
H3: PC to IU	0.271	6.394	$p < 0.001$	Yes
H4: PU to IU	0.347	7.452	$p < 0.001$	Yes
H5: PEU to IU	0.336	7.526	$p < 0.001$	Yes
H6: PT to ATT	0.328	7.426	$p < 0.001$	Yes
H7: PT to IU	0.326	7.681	$p < 0.001$	Yes
H8: ATT to IU	0.386	7.684	$p < 0.001$	Yes
H9: PSN to IU	0.287	7.453	$p < 0.001$	Yes

PC: Perceived Compatibility; PU = Perceived usefulness; PEU = Perceived ease of use; PT = Perceived trust; ATT = Attitude; PSN = Perceived subjective norms; IU = Intention to use.

PC has a significant positive effect on PU ($\beta = 0.325$), and thus hypothesis H1 is accepted, PC has a significant positive effect on PEU ($\beta = 0.334$), and thus hypothesis H2 is accepted, PC has a significant positive effect on IU ($\beta = 0.271$), and thus hypothesis H3 is accepted, PU has a significant positive effect on IU ($\beta = 0.347$), and thus hypothesis H4 is accepted, PEU has significant positive effect on IU ($\beta = 0.336$) and thus hypothesis H5 is accepted. PT has a significant positive effect on ATT ($\beta = 0.328$), and thus H6 is accepted, PT has a significant positive effect on IU ($\beta = 0.326$), and thus hypothesis H7 is accepted, ATT has a significant positive effect on IU($\beta = 0.386$), and thus hypothesis H8 is accepted, PSN has a significant positive effect on IU ($\beta = 0.287$), and thus hypothesis H9 is accepted.

Discussion of Results

In this section, the results of the study are compared to previous studies related to factors affecting live support chat in an organizational context only. Our study revealed that perceived usefulness of LSC has a positive impact on intention to use these services. This is confirmed by previous study (Glass & Li, 2010). The results also showed that perceived ease of use of LSC has a appositive impact on intention to use these services. This is confirmed by previous studies (Ceccucci et al., 2010; Glass & Li, 2010). The results of study also revealed that perceived compatibility of LSC has a significant positive impact on intention to use these, which conforms to other studies about live support chat (Ceccucci y et al., 2010; Luo et al., 2010). The study further released that perceived subjective norms of LSC has a positive impact on intention to use these services, which also conforms to previous studies related live chat support (To et al., 2008; Glass & Li, 2010; Shih & Fan, 2013). The results also revealed that perceived trust in LSC has a positive effect on intention to use these services as confirmed by previous studies about live support chat (Ajjan et al., 2014). Finally, the results showed that attitude towards using LSC has a significant positive effect on intention to use these services, which conforms to previous studies about live support chat (Peskal et al., 2010; Ceccucci et al., 2010).

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CONCLUSION

Theoretical Contributions

At the theoretical level, this study filled out a research gap by empirically investigating the factors that affect LSC service in the context of organizational Intranets. Few researchers have empirically examined the factors affecting LSC at the individual level (Ilk et al., 2012; Elmorshidy, 2013; Elmorshidy et al., 2015), and some researchers explored the determinates of LSC in an organizational context and how it affects employees. (Zhang & Fjermestad, 2008; Ou et al., 2010; Licoppe, 2010). This makes this research among the first studies to attempt do that. The results of this study also showed that several specific factors have a positive effect on intention to use LSC in an organizational context. These factors are perceived usefulness, perceived ease of use, perceived compatibility, perceived subjective norms, perceived trust, and attitude.

Implications for Practice

At the practice level, understanding the factors that influence LSC should be useful to developer and designer of LSC services and especially those who develop it in the Intranet of organizations. The study provides critical success factors as seen by the users (employees) of the organization that can make LSC services more customized to their needs, flexible and responsive. Organizations can also benefit from the findings of this study when developing their digital business strategy so it can accommodate LSC services. This should increase work efficiency, save time on solving problems, and strengthen employees' knowledge through sharing valuable information through these organizational instant chat services.

Limitations and Future Research

This study has a number of limitations. First, the study is limited in terms of the sample size and selection. The study focused on employees at private and public organizations in the state of Kuwait. The study did not focus on the type of business of these organizations (e.g. agricultural, industrial, technology). We recommend that this study be replicated with a focused approach that classifies organizations according to the type of business to explore how LSC is viewed and used in these organizations (according to their line of business). The second limitation is that this study was done only in Kuwait. To increase the external validity of the study, it is highly recommended to apply it again in organizations in other parts of world. Another limitation is that this study examined factors affecting LSC use in an organizational context only. We recommend that future research expand to examine factors affecting LSC in other contexts, which will also help increase both the internal and external validity of the study. Another limitation is that this study used cross-sectional data rather than longitudinal data. This means it focused more on observing respondents' behaviors rather than changes in behavior. Therefore, further research is encouraged to use longitudinal data to further explain the relationship between the variables of the study. Finally, this study used a quantitative approach to examine the factors affecting LSC in an organizational context. Using both quantitative and qualitative approaches will strengthen the analysis of the relationship between variables and will provide enhanced and better results that can prove the findings of this study.

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REFERENCES

Aghamolaei, T., Tavafian, S. S., & Madani, A. (2012). Fish Consumption in a Sample of People in Bandar Abbas, Iran: Application of the Theory of Planned Behavior. *Archives of Iranian Medicine*, *15*(9), 545–548.

Ajjan, H., Hartshone, T., Cao, Y., & Todriguez, M. (2014). Continuance use intention of enterprise instant messaging: A knowledge management perspective. *Behaviour & Information Technology*, *33*(7), 678–692.

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. doi:10.1016/0749-5978(91)90020-T

Ajzen, I., & Fishbein, M. (1980). *Understanding attitude and predicting social behavior*. Englewood Cliff, NJ: Prentice-Hall.

Al-Gahtani, S., Hubona, G., & Wang, J. (2007). Information technology (IT) in Saudi Arabia: Culture and the acceptance and use of IT. *Information & Management*, *44*(8), 681–691. doi:10.1016/j.im.2007.09.002

Alzubi, M. M., Farea, M., Al-Dubai, M., & Mustafa, M. (2017). The mediating role of awareness in the intention to use Internet banking among SMSs. *Journal of Internet Banking and Commerce*, *22*(2), 1–10.

Andrews, D. C. (2010). Online Customer Service Chat: Usability and Sociability Issues. Georgetown University. Retrieved from http://www.arraydev.com/commerce/jim/0203-01.htm

Arora, N. & Rahul, M. (2017).The impact of trust on online shopping attitude among women shoppers in India. *International Journal of Technology Transfer & Commercialization*, *15*(3), 360.

Bauer, R. A. (1960). *Consumer Behavior as Risk Taking.in dynamic marketing for a changing world*. Chicago: American Marketing Association.

Bouranta, N., Lonidas, C., & Paracantis, J. (2009). The relationship between internal and external service quality. *International Journal of Contemporary Hospitality Management*, *21*(3), 275–293.

Buttle, F. A. (1991). Analysing Service Quality in the Hospitality Industry Using the SERVQUAL Model. *Service Industries Journal*, *11*(3), 324–345. doi:10.1080/02642069100000049

Ceccucci, W., Peslak, A., & Sendall, P. (2010). An Empirical Study of Behavioral Factors Influencing Text Messaging Imation. *Journal of Information Technology Management*, *21*(1), 16–34.

Chen, S., & Lu, C. (2016). Exploring the Relationships of Green Perceived Value, the Diffusion of Innovations, and the Technology Acceptance Model of Green Transportation. *Transportation Journal*, *55*(1), 51-77.

Cheng, K. (2013). An Evaluation of RFID Door Security System At Taipei Arena Ice Land Based On Technology Acceptance Model. *International Journal of Management & Information Systems*, *17*(2), 117.

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, And User Acceptance of Information Technology. *Management Information Systems Quarterly*, *13*(2), 319–340. doi:10.2307/249008

Deng, X. (2013). Factors influencing Ethical Purchase Intentions of Consumers in China. *Social Behavior and Personality*, *41*(10), 1693–1703.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Diddi, S., & Niehm, L. (2017). Exploring the role of values and norms towards consumers' intentions to patronize retail apparel brands engaged in corporate social responsibility (CSR). *Fashion and Textiles*, *4*(1), 1–20.

Dong, X., Cheng, Y., Wang, Y., & Yan, J. (2017). Understanding usage of Internet of Things (IOT) systems in China: Cognitive experience and affect experience as moderator. *Information Technology & People*, *30*(1), 117–138.

Elmorshidy, A. (2013, March/April). Applying The Technology Acceptance And Service Quality Models To Live Customer Support Chat For E-Commerce Website. *Journal of Applied Business Research*, *29*(2), 589–595. doi:10.19030/jabr.v29i2.7659

Elmorshidy, A., Moustafa, M., Moughrabi, I., & Al Mezen, H. (2015). Factors Influencing Live Customer Support Chat Service: An Empirical Investigation in Kuwait. *Journal of Theoretical and Applied Electronic Commerce Research*, *10*(3), 63–76. doi:10.4067/S0718-18762015000300006

Erasmus, E., Rothmann, S., & Van Eeden, C. (2015). A structural model of technology acceptance. *SA Journal of Industrial Psychology*, *41*(1), 1–12.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *JMR, Journal of Marketing Research*, *18*(1), 39–50. doi:10.1177/002224378101800104

Glass, R., & Suhon, L. (2010).. . *Social Influence and Instant Messaging Adoption. Stillwater*, *51*(2), 24–30.

Göckeritz, S., Schult, W., Rendón, T., Cialdini, R., Goldstein, N., & Griskevicius, V. (2010). Descriptive normative beliefs and conservation behavior: the moderating roles of personal involvement and injunctive normative beliefs. *European Journal of Social Psychology*, *40*(April), 514–523.

Hamner, M., & Qazi, R. (2009). Expanding the technology acceptance model to include additional factors such as personal utility. *Government Information Quarterly*, *26*, 128–136. doi:10.1016/j.giq.2007.12.003

Henderson, D. L., Bradford, M., & Kotb, A. (2016). Inhibitors and Enablers of GAS Usage: Testing the Dual Factor Theory. *Journal of Information Systems*, *30*(3), 135–155.

Hunt, S. (2009). Instant Messenger Communication in Multinational Corporation. *Academy of Information and Management Sciences Journal*, *12*(1/2), 65–70.

Ifinedo, P. (2018). Determinants of students' continuance intention to use blogs to learn: An empirical investigation. *Behaviour & Information Technology*, *37*(4), 381–392.

Ilk, N., Goes, P., & Zhao, J. L. (2012). Cross-training in Live-chat Contact Centers: Is More Flexibility Always Better? In *SIGBPS Workshop on Business Processes and Services (BPS'12)*, December 15 (pp. 97-102).

Joo, Y. J., Lee, H. W., & Ham, Y. (2014). Integrating user interface and personal innovativeness into the TAM for mobile learning in Cyber University. *Journal of Computing in Higher Education*, *26*(2), 143–158.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, *44*(2), 544–564. doi:10.1016/j.dss.2007.07.001

Kim, S. Y., & Kim, M. R. (2013). Comparison of Perception toward the Adoption and Intention to Use Smart Education between Elementary and Secondary School Teachers. *Turkish Online Journal of Educational Technology*, *12*(2), 63–76.

Koo, C., Chung, N., & Nam, K. (2015). Assessing the impact of intrinsic and extrinsic motivators on smart green IT device use: Reference group perspectives. *International Journal of Information Management*, *35*(1), 64–79.

Krom, I. (2015). Global Online Entrepreneurship and the Impact of Innovation on Brands. *Emerging Markets Journal*, *5*(2), 90–101.

Kuhlman, S. T., Walch, S. E., Bauer, K. N., & Glenn, A. D. (2017). Intention to enact and enactment of gatekeeper behaviors for suicide prevention: An application of the theory of planned behavior. *Prevention Science*, *18*(6), 704–715.

Lee, C., Tsao, C., & Chang, W. (2015). The relationship between attitude toward using and customer satisfaction with mobile application services: An empirical study from the life insurance industry. *Journal of Enterprise Information Management*, *28*(5), 680–697. doi:10.1108/JEIM-07-2014-0077

Lee, Y., Hsieh, Y., & Chia-Ning, H. (2011). Adding Innovation Diffusion Theory to the Technology Acceptance Model: Supporting Employees' Intentions to use E-Learning Systems. *Journal of Educational Technology & Society*, *14*(4), 124–137.

Licoppe, C. (2010). The "Crisis of the Summons": A Transformation in the Pragmatics of "Notifications," from Phone Rings to Instant Messaging. *The Information Society*, *26*(4), 288–302.

Licoppe, C., Cudicio, R., & Proulx, S. (2014). Instant messaging requests in connected organizations: 'quick questions' and the moral economy of contribution. *Discourse Studies*, *16*(4), 488–513.

Lin, C. P., & Chiu, C. K. (2011). Understanding helping intention and its antecedents among instant messaging users. *Online Information Review*, *35*(3), 386–400.

Luo, X., Grung, A., & Shim, J. P. (2010). Understanding the Determinates of User Acceptance of Enterprise Instant Messaging: An Empirical Study. *Journal of Organizational Computing and Electronic Commerce*, *20*(1), 155–181. doi:10.1080/10919391003709179

Lwoga, E. (2014). Critical success factors for adoption of web-based learning management systems in Tanzania. *International Journal of Education and Development Using Information and Communication Technology*, *10*(1), 4–21.

Mitzner, T. L., Rogers, W. A., Fisk, A. D., Boot, W. R., Charness, N., Czaja, J. S., & Sharit, J. (2017). Predicting older adults' perceptions about a computer system designed for seniors. *Universal Access in the Information Society*, *15*(2), 271–280.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Mkhize, P., Mtsweni, E. S., & Buthelezi, P. (2016). Diffusion of innovations approach to the evaluation of learning management system usage in an open distance learning institution. *International Review of Research in Open and Distance Learning*, *17*(3), 295–312.

Musleh, J., Marthandan, G., & Aziz, N. (2015). An extension of UTAUT model for Palestine e-commerce. *International Journal of Electronic Business*, *12*(1), 95–115.

Nunnally, J. (1978). *Psychometric Theory* (2nd ed.). New York: McGraw-Hill.

Ou, C. X. J., Davisdon, R. M., Zhong, X., & Liang, Y. (2010). Empowering employees through instant messaging. *Information Technology & People*, *23*(2), 193–211.

Ozturk, A. B. (2016). Customer acceptance of cashless payment systems in the hospitality industry. *International Journal of Contemporary Hospitality Management*, *28*(4), 801–817.

Ozturk, A. B., Bilgihan, A., Salehi-Esfahani, S., & Hua, N. (2017). Understanding the mobile payment technology acceptance based on valence theory: A case of restaurant transaction. *International Journal of Contemporary Hospitality Management*, *29*(8), 2027–2049.

Paul, D., & McDaniel, R. R. (2004). A filed Study of the Effect of International Trust on Virtual Collaborative Prelateship Performance. *Management Information Systems Quarterly*, *28*(2), 183–227.

Pazos, P., Chung, J. M., & Micari, M. (2013). Instant Messaging as a Task-Support Tool in Information Technology Organizations. *Journal of Business Communication*, *50*(1), 68–86.

Peslak, A., Ceccuci, W., & Sendall, P. (2010). An Empirical Study of Instant Messaging (IM) Behavior Using Theory of Reasoned Action. Journal of Behavioral and Applied Management, 11(3), 263-278.

Robb, D. (2001). Ready or not...instant messaging has arrived as a financial planning tool. *Journal of Financial Planning*, 12.

Saleh, F., & Ryan, C. (1997). Comparing Rating Scales of Different Lengths: Equivalence of Scores From 5-Point and 7-Point Scales. *Psychological Reports*, *80*(2), 355–362. doi:10.2466/pr0.1997.80.2.355 PMID:9354085

Sarkar, S., & Khare, A. (2015). Moderating effect of price perception on factors affecting attitude towards online shopping. *Journal of Marketing Analytics*, *5*(2), 68–80.

Shae, Z.-Y., Garg, D., Bhose, R., Mukherjee, R., Guven, S., & Pingali, G. (2007). Efficient Internet Chat Services for Help Desk Agents. In *Proceedings of the International Conference on Services Computing*. 10.1109/SCC.2007.54

Shen, X. L., Lee, M. K., & Cheung, C. M. (2012). Harnessing collective intelligence of Web 2.0: Group adoption and use of Internet-based collaboration technologies. *Knowledge Management Research and Practice*, *10*(4), 301–311.

Shih, M. P., Yi-Chin, L., Tsang-Yao, C., & Shih-Hua, L. (2008). The Influence of Instant Messaging Usage Behavior on Organizational Communication Satisfaction. In *Proceedings of the 41st Annual Hawaii International Conference on System Sciences (HICSS 2008).*

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Shih, Y. C., & Fan, S. T. (2013). Adoption of instant messaging by travel agency workers in Taiwan: Integrating technology readiness with the theory of planned behavior. *International Journal of Business and Information*, *8*(1), 120–136.

To, P., Lio, C., Chiang, J., & Chang, C. (2008). An empirical investigation of the factors affecting the adoption of Instant Messaging in organizations. *Computer Standards & Interfaces*, *30*(3), 148–156.

Velmurugan, M. (2009). Security and Trust In E-Business: Problems and Prospects. *International Journal of Electronic Business Management*, *7*, 151–158.

Wu, J., & Wang, S. (2005). What drives mobile commerce? An empirical evaluation of the revised technologies acceptance model. *Information & Management*, *42*(5), 719–729. doi:10.1016/j.im.2004.07.001

Xiao, H., Cao, X., Cao, Q., & Lu, Y. (2015). Linear and Nonlinear Relationships on E-Repository Adoption. *Journal of Computer Information Systems*, *55*(4), 46–52.

Yoh, E., Damhorst, M., Sapp, S., & Laczniak, R. (2003). Consumer adoption of the Internet: The case of apparel shopping. *Psychology and Marketing*, *20*(12), 1095–1118. doi:10.1002/mar.10110

Yu, S., Wu, J., & Lin, W. (2017). Trust Transfer and Repair: A multichannel Study on the Smartphone Industry. *International Journal of Organizational Innovation*, *9*(4), 133–156.

Yushkova, E., & Feng, Y. (2017). What explains the intention to bring mobile phones for recycling? A study on university students in China and Germany. *International Economics and Economic Policy*, *14*(3), 2–3. doi:10.100710368-017-0383-5

Zhang, S. F., & Fjermestad, J. (2008). Instant messaging: Observations from two small e-commerce businesses. *Journal of Enterprise Information Management*, *21*(2), 179–197.

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APPENDIX

Table 7. Survey questionnaire

Construct	Item	Measure	Source
Perceived Usefulness (PU)	PU1	Live chat support is useful in solving my problems	Davis (1989)
	PU2	Live chat support is useful in increasing my productivity because I have more time to work on other issues	
	PU3	Live chat support is useful in increasing my effectiveness in finding ways to solve my problems	
	PU4	Live chat support is useful in making my problems getting solved easier	
	PU5	Live chat support is useful in solving my problem more quickly	
Perceived Ease of Use (PEU)	PEU1	Live chat support is easy to use	Davis (1989)
	PEU2	Live chat support is easy to learn	
	PEU3	Live chat support makes it easy for me to become more skillful in dealing with my problems	
	PEU4	I feel I have control over the use of live chat support	
Perceived Combativity (PC)	PC1	Using live chat support is compatible with all aspects of my work	Wu and Wang (2005)
	PC2	Using live chat support is completely compatible with my current situation	
	PC3	Using live chat fits well with the way I like to work	
	PC4	Using live chat support fits into my work style	
Perceived Subjective Norms (PSN)	PSN1	My friends who are important to me think I should use live chat support	Al-Gahtani et al. (2007)
	PSN2	My superiors/advisors who are important to me think I should use live chat support	
Perceived Trust (PT)	PT1	I believe the technologies supporting the live chat support system are reliable all the time	Kim et al. (2008)
	PT2	I believe the technologies supporting the live chat system are secure all the time.	
	PT3	Overall, I have confidence in the technology used in live chat support	
	PT4	Live chat support has the ability to reliably solve my problems over the Intranet	
Attitude (ATT)	ATT1	I like using live chat support	Davis (1989)
	ATT2	I feel good when I use live chat support to solve my problems and inquiries	
	ATT3	Overall, my attitude towards live chat support is favorable	
	ATT4	I strongly recommend other to use live chat support.	
Intention to use (IU)	IU1	I intend to use live support chat at work	Ajzen (1991)
	IU2	I intend to use live support frequently chat at work	
	IU3	Given that I have access to live support chat, I would definitely use live support chat	

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Chapter 42
Mobile Commerce Technologies and Management

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ABSTRACT

This chapter reveals the prospect of mobile commerce (m-commerce); m-commerce and trust; m-commerce, privacy, and security issues; m-commerce adoption and technology acceptance model (TAM); and the significant perspectives on m-commerce. M-commerce is used for business transactions conducted by mobile phones for the promotional and financial activities using the wireless Internet connectivity. M-commerce is the important way to purchase the online items through online services. The main goal of m-commerce is to ensure that customers' shopping experience is well-suited to the smaller screen sizes that they can see on smartphones and tablets. Computer-mediated networks enable these transaction processes through electronic store searches and electronic point-of-sale capabilities. M-commerce brings the new possibility for businesses to sell and promote their products and services toward gaining improved productivity and business growth.

INTRODUCTION

Recently, the emergence of wireless and mobile networks has made possible the admission of electronic commerce (e-commerce) to mobile commerce (m-commerce), which is defined as the buying and selling of commodities, services, and information on the Internet through the utilization of mobile handheld devices (Lee, Hu, & Yeh, 2009). M-commerce technology is widely acknowledged as the next business format and its emergence has changed the business landscape (Faqih&Jaradat, 2015). M-commerce is of growing interest for vendors and customers and with that its importance within the combination of marketing and distributing channels (Möhlenbruch, Dölling, & Ritschel, 2010). The wide utilization of m-commerce includes the applications in banking, shopping, ticketing, entertainment, event management, and education (Gupta, Muttoo, & Pal, 2016).

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E-commerce is the business that is transacted by transferring data electronically, especially over the Internet. (Kasemsap, 2016a). Through e-commerce, the cost for the entrepreneurs to sell their products can be saved and diverted to another aspect of their business (Kasemsap, 2016b). Both m-commerce and e-commerce applications have been enhanced by social networking sites, such as Facebook, Twitter, and LinkedIn (Lin & Lu, 2015). Social commerce is recognized as the commerce activities mediated by social media (Curty & Zhang, 2011). In social commerce, people explore the commerce opportunities by engaging in a collaborative online environment (Curty & Zhang, 2011). Organizations should accommodate and energize mobile users and design changes to their social networking sites to facilitate interaction and information sharing (Heinrichs, Lim, & Lim, 2011). Secure, reliable, and economical modes of payment play a critical role in the successful implementation of m-commerce (Lu, Yang, Chau, & Cao, 2011).

Advances in wireless technology have increased the number of people using mobile phones and accelerated the rapid development of mobile service conducted with these devices (Wang, Lin, &Luarn, 2006). M-commerce emerges as the ubiquitous technology among the existing wireless payment mode (Arora, 2016). Smartphones penetrate business and consumer markets, and mobile applications have engendered an innovative market (Keith, Babb, Lowry, Furner, &Abdullat, 2015). In order to attract more m-commerce users, companies and managers need to carefully consider elements (e.g., subjective norm, cost, risk, and enjoyment) that relate more to individuals' roles from both social and consumer perspectives (Zhang, Zhu, & Liu, 2012).

This chapter is based on a literature review of m-commerce. The extensive literature of m-commerce provides a contribution to practitioners and researchers by revealing the applications and implications of m-commerce in order to maximize the business impact of m-commerce in the digital age.

BACKGROUND

Development in the number of the Internet and telecommunications users since the late 1990s has provided companies with new ways to conduct business and exchange information through the development of the e-commerce market (Charbaji, Rebeiz, & Sidani, 2010). M-commerce is the new trend in business transactions (Hu, 2009) and the Internet-enabled smartphones become very popular these days (Hu, Zuo, Kaabouch, & Chen, 2010). Products are recommended to users based on their browsing behavior on the new mobile channel as well as the consumption behavior of heavy users of existing channels, such as catalogs and the Internet (Liu & Liou, 2011). Consumers use smartphones in their shopping experiences, such as browsing for product information and consulting friends before buying online (Ozuem & Mulloo, 2016). When shopping with a virtual catalog, customers can select products which meet their requirement concerning price range (Pierre, 2009).

Mobile devices, such as smartphones, tablets, and e-books readers, are gradually replacing traditional personal computers as the main method of accessing the Internet, organizing the widely deployed 3G/4G telecommunication technologies (Miao & Jayakar, 2016). Through m-commerce, users receive the large volumes of commercial messages (Wang, Hong, Xu, Zhang, & Ling, 2014). The evolution has triggered an increase in the use of mobile phones to conduct m-commerce and mobile shopping on the mobile web (Liou & Liu, 2012). M-commerce makes networks more productive by bringing together voice, data communication, and multimedia services (Wang, 2007). Regarding mobile shopping, the use context is

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found to have the mediating role between time saving and satisfaction as well as between mobility and satisfaction (Kim, Chung, Lee, & Preis, 2015).

The rapid development of information technology enables the increasing numbers of consumers to seek and reserve products online first and then consume them in brick-and-mortar stores (Xiao & Dong, 2015). Guillén et al. (2016) indicated that the rapid growth of social networks has led many companies to use mobile payment systems as business sales tools. M-commerce environments are characterized by the high complexity, including myriads of technical and organizational aspects (Veijalainen & Weske, 2003). It is necessary to investigate how to design and develop m-commerce applications to ensure the successfulness of their deployment (Binsaleh & Hassan, 2013). Mobile voice service and innovation experience of mobile data services affect subscribers' consumption intention greatly; subscribers' perceived ease of use and brand experience can affect the subscribers' attitude toward mobile data services (Qi, Li, Li, & Shu, 2009).

PRINCIPLES AND PRACTICES OF MOBILE COMMERCE

This section provides the prospect of m-commerce; m-commerce and trust; m-commerce, privacy, and security issues; m-commerce adoption and TAM; and the significant perspectives on m-commerce.

Prospect of Mobile Commerce

The proliferation of mobile devices has created many opportunities for m-commerce (Chen, 2012), and mobile phones serve a wide variety of customers as the multi-sided platforms (Campbell-Kelly, Garcia-Swartz, Lam, & Yang, 2014). While the traditional PC access to the Internet continues to be vital for exploiting the advantages of the Internet, the mobile access appears to attract more people because of flexible accesses to the Internet in the ubiquitous manner (Sumita & Yoshii, 2010). Mobile phones are the global communication and business devices (Eze & Poong, 2016). Many mobile applications can have a much larger impact on the emerging economies than those of the developed world (Patel, 2006).

The advent of m-commerce is a natural phenomenon of the wireless convergence (Moqbel, Yani-De-Soriano, & Yousafzai, 2012). M-commerce applications have two major characteristics: mobility and broad reach (Ngai & Gunasekaran, 2007). In today's digital economy and the extended enterprise paradigm, mobility is on the rise (Godbole, 2006). Regarding mobility, m-commerce users can conduct business through mobile devices in real time. With m-commerce, users can be reached at any time through mobile devices (Ngai & Gunasekaran, 2007). Access to multiple wireless networks leads to the high transaction completion probability even when individual wireless networks do not offer the continuous access (Varshney, 2007). Smartphone users can access the Internet and search information more easily with built-in keyboards, which allow for the rapid data entry regarding m-commerce applications (Okazaki & Mendez, 2013).

Group-oriented m-commerce services are likely to be transaction-oriented with the significant monetary value of business transactions (Varshney, 2008). The challenges in the group-oriented m-commerce services include how to provide group management for m-commerce users who may even experience connectivity problems; how to support transaction performance, such as reliability; how to charge for transactions and other business model and strategies issues for wireless service providers; and user issues including adoption, training, and trust issues (Varshney, 2008). Secure multicast is a key element

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of m-commerce infrastructure toward supporting the group-oriented m-commerce applications, such as mobile auctions, product recommendation systems, and financial services (Eltoweissy, Jajodia, & Mukkamala, 2008).

In the m-commerce schemes, the users can use their electronic identity to register, such as mobile phone number and e-mail address. Then, they can use their mobile phones to conduct transactions at any place and any time (Han et al., 2016). When m-commerce users move between the stores, the mobile information which includes user identification, stores, and item purchased are stored in the mobile transaction database (Argade & Chavan, 2015). In m-commerce, companies provide location based services to mobile users, who report their locations with a certain level of granularity to maintain a degree of anonymity (Chorppath & Alpcan, 2013). Yu et al. (2011) indicated that mobility management, which includes location management and handoff management, is essential in cellular wireless networks to provide service to mobile users.

Examples from the financial sector include the instant funds transfer (mobile banking) and share trading (mobile brokerage) (Petrova, 2008). Mobile banking is an emerging application of m-commerce that can become the additional revenue source to both banks and telecommunications service providers (Kim, Shin, & Lee, 2009). Mobile banking helps fulfill the personal banking requirements and provides the location-free conveniences. Mobile brokerage services allow mobile phone users to conduct financial transactions using client software at any place and any time (Lin, Lu, Wang, & Wei, 2011). Compared with online brokerage services and telephone-based trading services, mobile brokerage services have unique features, such as ubiquity and mobility (Lin et al., 2011). Investors are able to conduct financial trades without spatial and temporal constraints (Kleijnen, Ruyter, & Wetzels, 2007).

As advertisers increasingly rely on mobile-based data, consumer perceptions regarding the collection and use of such data becomes of great interest to scholars and practitioners (Eastin, Brinson, Doorey, & Wilcox, 2016). Knowing the demographic patterns in m-commerce usage activities can assist companies in improving their mobile advertising strategies (Chong, 2013). Over the years, mobile messaging has become an essential method of communication through the utilization of the Internet and mobile networks (Yow & Mittal, 2008). Perceived network externalities contribute to higher perceived usefulness and perceived ease of use and significantly affect the m-commerce-related short message service (SMS) adoption (Lu, Deng, & Wang, 2010). Smartphone-based mobile advertising is a promising marketing approach, especially in retail and point-of-purchase environments (Atkinson, 2013). Trust in SMS advertising and subjective norms contribute to the intention to use (Zhang & Mao, 2008).

This section is dealing with the prospect of m-commerce and the next section is dealing with m-commerce and trust. With the proliferation in the mobile device usage, most of the business activities are centered around mobiles. Realizing the importance of m-commerce app development, most of the business organizations implement their own mobile app to offer a better service to their customers. Businesses are lining up to build m-commerce app dedicated to access their products and services.

Mobile Commerce and Trust

Trust over the mobile platforms is more critical due to the open nature of wireless networks (Nilashi, Ibrahim, Mirabi, Ebrahimi, & Zare, 2015). The high level of trust enhances the transaction and eliminates perceived risks regarding m-commerce adoption (Li & Yeh, 2010). Despite the popularity and potentials of m-commerce, real m-commerce activities in many developing countries remain low due to the users concern about trust issues (Chong, Chan, & Ooi, 2011). One of the main reasons for low intention is

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uncertainty that leads to lack of trust that has been challenged and surveyed by the network capabilities (Siau & Shen, 2003) and interface design (Lee & Benbasat, 2003). The link between interface design and ease of use holds an important approach to motivating the females' utilization of m-commerce (Okazaki & Mendez, 2013).

The website with a greater level of trust is often associated with a higher degree of purchase intentions and higher customer retention rate (van der Heijden, Verhagen, & Creemers, 2003). M-commerce has empowered consumers to easily switch from one website to another at any time (Peng, Quan, & Zhang, 2013). By using websites for promotion and sales, companies are able to sell to markets (Falk & Hagsten, 2015). McKnight and Chervany (2001) claimed a well-designed mobile website with considering the ease of navigation and useful links to other websites give customers adequate information for making purchase decisions. Chae and Kim (2003) stated that limitation in system resources (e.g., small screens in mobile device and reduced multimedia processing capabilities) can constrain the development of trust in m-commerce.

Many predictors of trust have been acknowledged in previous literature, such as perceived site attribute (Wakefield, Stocks, & Wilder, 2004) and website quality (Koufaris & Hampton-Sosa, 2004). With the aid of information technology, a virtual shopping environment is effective in prompting the transactions and has implications of building trust (Li & Yeh, 2010). Trust plays a crucial role in the formation of dependent relationships represented by online transactions (Li, Pieńkowski, van Moorsel, & Smith, 2012). The user's trust behavior toward m-commerce application is composed of three constructs: using behavior, reflection behavior, and correlation behavior (Yan, Dong, Niemi, & Yu, 2013). However, the difficult task for m-commerce is to ensure consumers' trust by making them feel comfortable with wireless transactions (Kapoor, 2016).

This section is dealing with the prospect of m-commerce and trust and the next section is dealing with m-commerce, privacy, and security issues. With the increased usage of smartphones, there are a sizable reduction in the number of people browsing through desktops. Everyone prefers to purchase using a mobile app as they find it more interesting and quick. Consumers are greatly benefited from a mobile app because they need not search for the discounted products and latest collections. Trust is very important to make consumers satisfied with m-commerce application. Most online consumers are intensely aware that various websites are collecting and storing their private information. The more consumers trust companies, the more willing they are to share data regarding m-commerce application.

Mobile Commerce, Privacy, and Security Issues

Mobile devices are at a higher security risk due to the large amount of critical financial and personal data available on them (Adlakha, 2016). In m-commerce, consumers are facing higher security and privacy risks because of the data transaction in a wireless environment (Chong, Darmawan, Ooi, & Lin, 2010). It is essential to consider the maximum security that is an urgent precedence in the m-commerce applications (Nilashi et al., 2015). For example, a secure credit-card mechanism for m-commerce should securely protect the corresponding transactions and personal information (Leu, Huang, & Wang, 2015).

Security is the most important issue for the widespread deployment of m-commerce applications based on mobile agent technology (Muñoz & Maña, 2011). Mobile agent is the technological promising product that can migrate from host to host toward autonomously performing tasks (Chang & Lin, 2006). Most of the existing solutions (e.g., execution tracing, code obfuscation, encrypted code execution, and partial result encapsulation) mainly cover the security threats of mobile agents' code (Shibli, Masood,

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Ghazi, & Muftic, 2015).For secure communications in public network environments, various three-party authenticated key exchange (3PAKE) protocols are proposed to provide the transaction confidentiality and efficiency in the m-commerce environments (Yang & Chang, 2009). Cryptography is one of the most important elements in providing security for the m-commerce systems (Hu, Hoang, & Khalil, 2011).

Regarding security issues, the secure m-commerce system must have the following properties: confidentiality, authentication, integrity, authorization, availability, and non-repudiation (Lee, Kou, & Hu, 2008). The authentication and authorization of transactions are generally performed by certification authority (Pai &Wu, 2011). For business transactional tasks, both perceived usefulness and perceived security affect the user's intention to utilize m-commerce (Leonard, 2010). Chen (2008) indicated that perceived transaction, perceived transaction rapidity, privacy, and security concerns are the important antecedents of consumer intention to m-commerce.

Big data is a data management system that can reduce the need for storage facilities for data and lower the computational requirements for various sectors (Kasemsap, 2016c). When the adoption of big data is properly aligned to the business, existing governance structures can be easily adjusted to address security, assurance, and general approach to embracing new technologies (Kasemsap, 2017a). Regarding privacy perspectives, consumers' mobile information privacy concerns are largely rooted in the big data-related ecosystem (Cleff, 2007).

Nowadays, digital consumer is no longer entirely anonymous since every form of communication virtually generates the data that can be collected, aggregated, and analyzed (Wessels, 2012). Information gathered for one purpose can be readily retrieved for another, and the possible linkage between mass amounts of aggregated data about an individual makes collected data personally identifiable (Eastin et al., 2016). Okazaki et al. (2009) indicated six determinants toward individuals' information privacy concerns in online settings (i.e., data collection, data control, unauthorized secondary use, improper access, location tracking, and awareness related to these practices).

This section is dealing with the prospect of m-commerce, privacy, and security issues, whereas the next section is dealing with m-commerce adoption and technology acceptance model. Consumers' lack of trust remains the largest single obstacle to growth in the mobile content and commerce industry. M-commerce brings the new challenges in providing information security as information travels through multiple networks often across wireless links. Online businesses must strive to maintain open privacy policies along with strong encryption and authentication processes in order to stay ahead of the attackers. When consumers feel free of risks and have high level of trust in the intention to utilize m-commerce, they actually adopt it.

Mobile Commerce Adoption and Technology Acceptance Model

The technology acceptance model (TAM) has been used for several years to predict the attitudes and behaviors of consumers of mobile services (Molina-Castillo & Meroño-Cerdan, 2014). TAM can be applied to predict consumer's acceptance to the mobile telecommunication innovations in the presence of network externalities (Wang, Lo, & Fang, 2008). TAM with trust is utilized to explore the influence of perceived ease of use and perceived usefulness in mobile shopping on customers' attitudes and behavioral intention to use, mobility, convenience, and information richness, characterized by m-commerce (Chen & Lan, 2014).

Jung et al. (2009) considered TAM, content, and cognitive concentration in a mobile TV service for the potential users who intend to use and suggested that cognitive concentration has the critical impacts

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on consumer's intention to subscribe the mobile TV service. Luarn and Lin (2005) extended TAM with three factors (i.e., credibility, self-efficiency, and financial cost) and examined consumer's behavioral intention to use the mobile banking. User satisfaction is recognized as one of the useful measures of m-commerce system success (Wang & Liao, 2007). Thus, it is an essential to identify the user requirements for establishing the m-commerce system standards (Büyüközkan, 2009). Brand loyalty is the tendency of customers to keep buying the same brand of a particular product instead of trying other brands (Kasemsap, 2016d). Users' continuance usage and satisfaction on m-commerce can promote brand loyalty (Hew, Lee, Ooi, & Lin, 2016).

The adoption of mobile phones tends to lead to an increase in the demand for mobile content (Eze & Poong, 2016). Investigating mobile technology adoption is the growing interest for technology developers, marketing managers, and researchers (Su & Adams, 2009). Network designers, service providers, and application developers must carefully take the considerations of various users into account to provide better services and attract them to m-commerce (Pedersen, Methlie, & Thorbjornsen, 2002). The importance of perceived value in customer decision making is well-recognized (Pihlström & Brush, 2008).

Perceived compatibility, perceived usefulness, and perceived ease of use are positively related to the behavioral intention to use m-commerce (Halbach & Gong, 2013). Position experience, cognitive style, and computer self-efficacy are the major factors that can predict the suitability of applying mobile devices (e.g., personal digital assistants and tablets) technology for insurance tasks (Lee, Cheng, & Cheng, 2007). Users greatly value the accuracy of the reliability and simplicity of the m-commerce applications (Choi & Stvilia, 2013). Retailers have increased their investment in mobile shopping channels to deliver the content, products, and promotions to customers toward enhancing m-commerce adoption (Liu & Liou, 2011).

Adopters perceive smartphones as both an essential device in which to invest money and a symbolic device to signal their affiliation and timely technology adoption (Kim, Chun, & Lee, 2014). The ability of customer value and the lock-in mechanism are important for maintaining online shoppers through m-commerce (Shih, 2012). Mobile users perceive their devices as a method to quickly assist them in their offline activities, such as rapid communication, price checking, and location-related services (Narang & Arora, 2016). Location-based m-commerce incorporates location-aware technologies, wire-free connectivity, and locationalized web-based services to support the processing of location-referent transactions (Wyse, 2009).

Significant Perspectives on Mobile Commerce

M-commerce is the modern technology which has enhanced the way of conducting business transactions (Sharma, 2016). M-commerce is an emerging discipline involving the use of mobile computing technologies (Faqih &Jaradat, 2015). M-commerce developers and practitioners must understand consumers' perception of m-commerce applications in order to better design and deliver the m-commerce service (Chen, Li, Chen, & Xu, 2011). In m-commerce, the consumer has to deal with the online vendor and the payment provider (Köster, Matt, & Hess, 2016). Consumers order products and services at the online vendor and provide personal information (e.g., financial data) to the mobile payment provider (Köster et al., 2016).

Mobile technologies allow companies to execute various activities toward communicating with current and potential customers (Kapoor, 2016). Modern marketers have the capability to aggregate multiple information sources to establish personal profiles about consumers, which can be used to nar-

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rowly target individuals with various forms of marketing communications (Vesanen, 2007). The benefits of m-commerce include the easy purchase process, instant updating of the information, improved customer satisfaction, cost savings, new opportunities for business, and the ability for the customer to use it everywhere (Kasemsap, 2016e). M-commerce offers the convenience of personalized marketing on mobile phones (Kaur & Malhotra, 2016).

Mobile tasks performed on handheld devices significantly challenge the m-commerce developers to adopt new methods and design guidelines that take into account contextual variations in the m-commerce environments (Chan & Fang, 2003). Companies and businesses have opted to adopt m-commerce to offer more widespread services to their different stakeholders (Alfahl, Sanzogni, Houghton, & Sandhu, 2014). The increased mobile usage is a clear example of the growth of mobile services as it offers the significant opportunities as the independent sales channel toward deserving special attention from researchers (Aldas-Manzano, Ruiz-Mafe, & Sanz-Blas, 2009).

Business process management is the development and control of processes used in a company, department, and project to ensure they are effective (Kasemsap, 2017b). With the emergence of business process management, the focus has shifted to the development of electronic services that integrate business processes and that diversify the functionalities available to customers (Chou & Seng, 2012). Due to its inherent characteristics (e.g., ubiquity, personalization, flexibility, and dissemination), m-commerce promises business market potential, great productivity, and high profitability (Siau, Lim, & Shen, 2003). The Internet-enabled mobile handheld devices are one of the most important components of the m-commerce system, making it possible for mobile users to directly interact with m-commerce applications. Enhancing users' ability and their sense of personal control can promote the use of future mobile text-based applications and services (Mahatanankoon & O'Sullivan, 2008).

There are various barriers that obstruct the proliferation of m-commerce, such as mobile devices inefficiency, lack of consumer's trust, incompatible networks, poor network coverage, limited bandwidth, low speed, lack of security, high cost of handsets, and lack of awareness (Gupta, 2016). Poor usability of mobile Internet sites for commerce activities is the major obstacle for the adoption of mobile solutions (Chan & Fang, 2009). Even though providing a mobile site for mobile device users may greatly enhance their news reading experience, many news organizations cannot afford the additional option due to limited funding and staffing resources (Lu, Wang, & Ma, 2013).

FUTURE RESEARCH DIRECTIONS

The classification of the extensive literature in the domains of m-commerce will provide the potential opportunities for future research. M-commerce describes online sales transactions that use wireless electronic devices, such as handheld computers, mobile phones, and laptops. These wireless devices interact with computer networks that have the ability to conduct the online merchandise purchases. Customer satisfaction is significant because it provides marketers and business owners with an effective marketing metric that they can utilize to manage and improve their businesses (Kasemsap, 2016f). Creating positive customer experiences across all stages of the product's life cycle drives higher satisfaction among current customers, which builds customer loyalty (Kasemsap, 2016g). An examination of linkages among m-commerce, customer satisfaction, and customer loyalty would seem to be viable for future research efforts.

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Consumer attitude influences the way consumer thinks and it is important for the marketers who study it to understand how consumer behaves toward increasing business profit (Kasemsap, 2017c). The use of social media has created the highly effective communication platforms where any user, virtually anywhere in the world, can freely create the content and disseminate this information in real time to a global audience (Kasemsap, 2017d). Social media offers a chance to redefine the delivery of service to customers, thus changing the way they think about a company's brands while considerably lowering service costs (Kasemsap, 2017e). Web mining techniques can be applied with the effective analysis of the clearly understood business needs and requirements (Kasemsap, 2017f). Business process management is the development and control of processes used in a company, department, and project to ensure they are effective (Kasemsap, 2017g). Considering the relationships among m-commerce, consumer attitude, social media, web mining, and business process management would be beneficial for future research directions.

CONCLUSION

This chapter highlighted the prospect of m-commerce; m-commerce and trust; m-commerce, privacy, and security issues; m-commerce adoption and TAM; and the significant perspectives on m-commerce. M-commerce is used for business transactions conducted by mobile phones for the promotional and financial activities using the wireless Internet connectivity. M-commerce is the important way to purchase the online items through online services. The main goal of m-commerce is to ensure that customers' shopping experience is well-suited to the smaller screen sizesthat they can see on smartphones and tablets. Computer-mediated networks enable these transaction processes through electronic store searches and electronic point-of-sale capabilities.

M-commerce brings the new possibility for businesses to sell and promote their products and services toward gaining improved productivity and business growth. There are a number of business opportunities and grand challenges of bringing forth viable and robust wireless technologies ahead for fully realizing the enormous strength of m-commerce in the digital age and thereby meeting both the basic requirements and advanced expectations of mobile users and providers. The successful future of m-commerce depends on the power of the underlying technology drivers and the attractiveness of m-commerce applications toward obtaining m-commerce adoption.

REFERENCES

Adlakha, M. (2016). Mobile commerce security and its prevention. In S. Madan & J. Arora (Eds.), *Securing transactions and payment systems for m-commerce* (pp. 141–157). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0236-4.ch007

Aldas-Manzano, J., Ruiz-Mafe, C., & Sanz-Blas, S. (2009). Mobile commerce adoption in Spain: The influence of consumer attitudes and ICT usage behaviour. In B. Unhelkar (Ed.), Handbook of research in mobile business, second edition: Technical, methodological and social perspectives (pp. 282–292). Hershey, PA: IGI Global.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Alfahl, H., Sanzogni, L., Houghton, L., & Sandhu, K. (2014). Mobile commerce adoption in organizations: A literature review and preliminary findings. In I. Lee (Ed.), *Trends in e-business, e-services, and e-commerce: Impact of technology on goods, services, and business transactions* (pp. 47–68). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-4510-3.ch003

Argade, D., & Chavan, H. (2015). Improve accuracy of prediction of users future m-commerce behaviour. *Procedia Computer Science*, *49*, 111–117. doi:10.1016/j.procs.2015.04.234

Arora, J. B. (2016). Regulatory framework of mobile commerce. In S. Madan & J. Arora (Eds.), *Securing transactions and payment systems for m-commerce* (pp. 176–192). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0236-4.ch009

Atkinson, L. (2013). Smart shoppers? Using QR codes and green smartphone apps to mobilize sustainable consumption in the retail environment. *International Journal of Consumer Studies*, *37*(4), 387–393. doi:10.1111/ijcs.12025

Binsaleh, M., & Hassan, S. (2013). Systems development methodology for mobile commerce applications: Agile vs. traditional. In H. El-Gohary (Ed.), *Transdisciplinary marketing concepts and emergent methods for virtual environments* (pp. 264–278). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-1861-9.ch018

Büyüközkan, G. (2009). Determining the mobile commerce user requirements using an analytic approach. *Computer Standards & Interfaces*, *31*(1), 144–152. doi:10.1016/j.csi.2007.11.006

Campbell-Kelly, M., Garcia-Swartz, D., Lam, R., & Yang, Y. (2014). Economic and business perspectives on smartphones as multi-sided platforms. *Telecommunications Policy*, *39*(8), 717–734. doi:10.1016/j.telpol.2014.11.001

Chae, M. H., & Kim, J. W. (2003). Whats so different about the mobile Internet? *Communications of the ACM*, *46*(12), 240–247. doi:10.1145/953460.953506

Chan, S. S., & Fang, X. (2003). Mobile commerce and usability. In E. Lim & K. Siau (Eds.), *Advances in mobile commerce technologies* (pp. 235–257). Hershey, PA: Idea Group Publishing. doi:10.4018/978-1-59140-052-3.ch011

Chan, S. S., & Fang, X. (2009). Interface design issues for mobile commerce. In D. Taniar (Ed.), *Mobile computing: Concepts, methodologies, tools, and applications* (pp. 526–533). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-054-7.ch045

Chang, C. C., & Lin, I. C. (2006). A new solution for assigning cryptographic keys to control access in mobile agent environments. *Wireless Communications and Mobile Computing*, *6*(1), 137–146. doi:10.1002/wcm.276

Charbaji, R., Rebeiz, K., & Sidani, Y. (2010). Antecedents and consequences of the risk taking behavior of mobile commerce adoption in Lebanon. In H. Rahman (Ed.), *Handbook of research on e-government readiness for information and service exchange: Utilizing progressive information communication technologies* (pp. 354–380). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-671-6.ch018

Chen, L. D. (2008). A model of consumer acceptance of mobile payment. *International Journal of Mobile Communications*, *6*(1), 32–52. doi:10.1504/IJMC.2008.015997

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Chen, S. C. (2012). To use or not to use: Understanding the factors affecting continuance intention of mobile banking. *International Journal of Mobile Communications*, *10*(5), 490–507. doi:10.1504/IJMC.2012.048883

Chen, Y., & Lan, Y. (2014). An empirical study of the factors affecting mobile shopping in Taiwan. *International Journal of Technology and Human Interaction*, *10*(1), 19–30. doi:10.4018/ijthi.2014010102

Chen, Z. S., Li, R., Chen, X., & Xu, H. (2011). A survey study on consumer perception of mobile-commerce applications. *Procedia Environmental Sciences*, *11*, 118–124. doi:10.1016/j.proenv.2011.12.019

Choi, W., & Stvilia, B. (2013). Use of mobile wellness applications and perception of quality. *Proceedings of the American Society for Information Science and Technology*, *50*(1), 1–4.

Chong, A. Y. L. (2013). Mobile commerce usage activities: The roles of demographic and motivation variables. *Technological Forecasting and Social Change*, *80*(7), 1350–1359. doi:10.1016/j.techfore.2012.12.011

Chong, A. Y. L., Chan, F. T. S., & Ooi, K. B. (2011). Predicting consumer decisions to adopt m-commerce: Cross country empirical examination between China and Malaysia. *Decision Support Systems*, *53*(1), 34–43. doi:10.1016/j.dss.2011.12.001

Chong, A. Y. L., Darmawan, N., Ooi, K. B., & Lin, B. (2010). Adoption of 3G services among Malaysian consumers: An empirical analysis. *International Journal of Mobile Communications*, *8*(2), 129–149. doi:10.1504/IJMC.2010.031444

Chorppath, A. K., & Alpcan, T. (2013). Trading privacy with incentives in mobile commerce: A game theoretic approach. *Pervasive and Mobile Computing*, *9*(4), 598–612. doi:10.1016/j.pmcj.2012.07.011

Chou, T. H., & Seng, J. L. (2012). Telecommunication e-services orchestration enabling business process management. *Transactions on Emerging Telecommunications Technologies*, *23*(7), 646–659. doi:10.1002/ett.2520

Cleff, E. (2007). Privacy issues in mobile advertising. *International Review of Law Computers & Technology*, *21*(3), 225–236. doi:10.1080/13600860701701421

Curty, R. G., & Zhang, P. (2011). Social commerce: Looking back and forward. *Proceedings of the American Society for Information Science and Technology*, *48*(1), 1–10. doi:10.1002/meet.2011.14504801096

Eastin, M. S., Brinson, N. H., Doorey, A., & Wilcox, G. (2016). Living in a big data world: Predicting mobile commerce activity through privacy concerns. *Computers in Human Behavior*, *58*, 214–220. doi:10.1016/j.chb.2015.12.050

Eltoweissy, M., Jajodia, S., & Mukkamala, R. (2008). Secure multicast for mobile commerce applications: Issues and challenges. In A. Becker (Ed.), *Electronic commerce: Concepts, methodologies, tools, and applications* (pp. 930–951). Hershey, PA: IGI Global. doi:10.4018/978-1-59904-943-4.ch077

Eze, U. C., & Poong, Y. S. (2016). Investigating the moderating roles of age and ethnicity in mobile commerce acceptance. In J. Prescott (Ed.), *Handbook of research on race, gender, and the fight for equality* (pp. 90–112). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0047-6.ch005

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Falk, M., & Hagsten, E. (2015). E-commerce trends and impacts across Europe. *International Journal of Production Economics*, *170*, 357–369. doi:10.1016/j.ijpe.2015.10.003

Faqih, K. M. S., & Jaradat, M. R. M. (2015). Assessing the moderating effect of gender differences and individualism-collectivism at individual-level on the adoption of mobile commerce technology: TAM3 perspective. *Journal of Retailing and Consumer Services*, *22*, 37–52. doi:10.1016/j.jretconser.2014.09.006

Godbole, N. (2006). Relating mobile computing to mobile commerce. In B. Unhelkar (Ed.), *Handbook of research in mobile business: Technical, methodological, and social perspectives* (pp. 463–486). Hershey, PA: IGI Global. doi:10.4018/978-1-59140-817-8.ch033

Guillén, A., Herrera, L. J., Pomares, H., Rojas, I., & Liébana-Cabanillas, F. (2016). Decision support system to determine intention to use mobile payment systems on social networks: A methodological analysis. *International Journal of Intelligent Systems*, *31*(2), 153–172. doi:10.1002/int.21749

Gupta, P. (2016). Exploring barriers affecting the acceptance of mobile commerce. In S. Madan & J. Arora (Eds.), *Securing transactions and payment systems for m-commerce* (pp. 234–250). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0236-4.ch012

Gupta, R., Muttoo, S. K., & Pal, S. K. (2016). Understanding fraudulent activities through m-commerce transactions. In S. Madan & J. Arora (Eds.), *Securing transactions and payment systems for m-commerce* (pp. 68–93). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0236-4.ch004

Halbach, M., & Gong, T. (2013). What predicts commercial bank leaders' intention to use mobile commerce?: The roles of leadership behaviors, resistance to change, and technology acceptance model. In M. Khosrow-Pour (Ed.), *E-commerce for organizational development and competitive advantage* (pp. 151–170). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-3622-4.ch008

Han, J., Yang, Y., Huang, X., Yuen, T. H., Li, J., & Cao, L. (2016). Accountable mobile e-commerce scheme via identity-based plaintext-checkable encryption. *Information Sciences*, *345*, 143–155. doi:10.1016/j.ins.2016.01.045

Heinrichs, J. H., Lim, J. S., & Lim, K. S. (2011). Influence of social networking site and user access method on social media evaluation. *Journal of Consumer Behaviour*, *10*(6), 347–355. doi:10.1002/cb.377

Hew, J. J., Lee, V. H., Ooi, K. B., & Lin, B. (2016). Mobile social commerce: The booster for brand loyalty? *Computers in Human Behavior*, *59*, 142–154. doi:10.1016/j.chb.2016.01.027

Hu, J., Hoang, X. D., & Khalil, I. (2011). An embedded DSP hardware encryption module for secure e-commerce transactions. *Security and Communication Networks*, *4*(8), 902–909. doi:10.1002ec.221

Hu, W. (2009). Fundamentals of mobile commerce systems. In W. Hu (Ed.), *Internet-enabled handheld devices, computing, and programming: Mobile commerce and personal data applications* (pp. 1–25). Hershey, PA: IGI Global. doi:10.4018/978-1-59140-769-0.ch001

Hu, W., Yeh, J., Yang, H., & Lee, C. (2008). Mobile handheld devices for mobile commerce. In A. Becker (Ed.), *Electronic commerce: Concepts, methodologies, tools, and applications* (pp. 152–162). Hershey, PA: IGI Global. doi:10.4018/978-1-59904-943-4.ch015

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hu, W., Zuo, Y., Kaabouch, N., & Chen, L. (2010). A technological perspective of mobile and electronic commerce systems. In M. Khosrow-Pour (Ed.), *E-commerce trends for organizational advancement: New applications and methods* (pp. 16–35). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-964-9.ch002

Jung, Y., Perez-Mira, B., & Wiley-Patton, S. (2009). Consumer adoption of mobile TV: Examining psychological flow and media content. *Computers in Human Behavior*, *25*(1), 123–129. doi:10.1016/j.chb.2008.07.011

Kapoor, N. (2016). Consumer perception to mobile commerce. In S. Madan & J. Arora (Eds.), *Securing transactions and payment systems for m-commerce* (pp. 217–233). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0236-4.ch011

Kasemsap, K. (2016a). Advocating electronic business and electronic commerce in the global marketplace. In S. Dixit & A. Sinha (Eds.), *E-retailing challenges and opportunities in the global marketplace* (pp. 1–24). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9921-2.ch001

Kasemsap, K. (2016b). Implementing electronic commerce in global marketing. In I. Lee (Ed.), *Encyclopedia of e-commerce development, implementation, and management* (pp. 591–602). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9787-4.ch043

Kasemsap, K. (2016c). Mastering big data in the digital age. In M. Singh & D. G. (Eds.), Effective big data management and opportunities for implementation (pp. 104–129). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0182-4.ch008

Kasemsap, K. (2016d). Role of social media in brand promotion: An international marketing perspective. In A. Singh & P. Duhan (Eds.), *Managing public relations and brand image through social media* (pp. 62–88). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0332-3.ch005

Kasemsap, K. (2016e). Investigating the roles of mobile commerce and mobile payment in global business. In S. Madan & J. Arora (Eds.), *Securing transactions and payment systems for m-commerce* (pp. 1–23). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0236-4.ch001

Kasemsap, K. (2016f). Promoting service quality and customer satisfaction in global business. In U. Panwar, R. Kumar, & N. Ray (Eds.), *Handbook of research on promotional strategies and consumer influence in the service sector* (pp. 247–276). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0143-5.ch015

Kasemsap, K. (2016g). Encouraging supply chain networks and customer loyalty in global supply chain. In N. Kamath & S. Saurav (Eds.), *Handbook of research on strategic supply chain management in the retail industry* (pp. 87–112). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9894-9.ch006

Kasemsap, K. (2017a). Software as a service, Semantic Web, and big data: Theories and applications. In A. Turuk, B. Sahoo, & S. Addya (Eds.), *Resource management and efficiency in cloud computing environments* (pp. 264–285). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-1721-4.ch011

Kasemsap, K. (2017b). Mastering business process management and business intelligence in global business. In M. Tavana, K. Szabat, & K. Puranam (Eds.), *Organizational productivity and performance measurements using predictive modeling and analytics* (pp. 192–212). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0654-6.ch010

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Kasemsap, K. (2017c). Mastering consumer attitude and sustainable consumption in the digital age. In N. Suki (Ed.), *Handbook of research on leveraging consumer psychology for effective customer engagement* (pp. 16–41). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0746-8.ch002

Kasemsap, K. (2017d). Professional and business applications of social media platforms. In V. Benson, R. Tuninga, & G. Saridakis (Eds.), *Analyzing the strategic role of social networking in firm growth and productivity* (pp. 427–450). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0559-4.ch021

Kasemsap, K. (2017e). Mastering social media in the modern business world. In N. Rao (Ed.), *Social media listening and monitoring for business applications* (pp. 18–44). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0846-5.ch002

Kasemsap, K. (2017f). Mastering web mining and information retrieval in the digital age. In A. Kumar (Ed.), *Web usage mining techniques and applications across industries* (pp. 1–28). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0613-3.ch001

Kasemsap, K. (2017g). Mastering business process management and business intelligence in global business. In M. Tavana, K. Szabat, & K. Puranam (Eds.), *Organizational productivity and performance measurements using predictive modeling and analytics* (pp. 192–212). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0654-6.ch010

Kaur, R., & Malhotra, H. (2016). SWOT analysis of m-commerce. In S. Madan & J. Arora (Eds.), *Securing transactions and payment systems for m-commerce* (pp. 48–67). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0236-4.ch003

Keith, M. J., Babb, J. S., Lowry, P. B., Furner, C. P., & Abdullat, A. (2015). The role of mobile-computing self-efficacy in consumer information disclosure. *Information Systems Journal*, *25*(6), 637–667. doi:10.1111/isj.12082

Kim, D., Chun, H., & Lee, H. (2014). Determining the factors that influence college students adoption of smartphones. *Journal of the Association for Information Science and Technology*, *65*(3), 578–588. doi:10.1002/asi.22987

Kim, G., Shin, B., & Lee, H. G. (2009). Understanding dynamics between initial trust and usage intentions of mobile banking. *Information Systems Journal*, *19*(3), 283–311. doi:10.1111/j.1365-2575.2007.00269.x

Kim, M. J., Chung, N., Lee, C. K., & Preis, M. W. (2015). Motivations and use context in mobile tourism shopping: Applying contingency and task–technology fit theories. *International Journal of Tourism Research*, *17*(1), 13–24. doi:10.1002/jtr.1957

Kleijnen, M., Ruyter, K. D., & Wetzels, M. (2007). An assessment of value creation in mobile service delivery and the moderating role of time consciousness. *Journal of Retailing*, *83*(1), 33–46. doi:10.1016/j.jretai.2006.10.004

Köster, A., Matt, C., & Hess, T. (2016). Carefully choose your (payment) partner: How payment provider reputation influences m-commerce transactions. *Electronic Commerce Research and Applications*, *15*, 26–37. doi:10.1016/j.elerap.2015.11.002

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Koufaris, M., & Hampton-Sosa, W. (2004). The development of initial trust in an online company by new customers. *Information & Management*, *41*(3), 377–397. doi:10.1016/j.im.2003.08.004

Lee, C., Hu, W., & Yeh, J. (2009). Mobile commerce technology. In M. Khosrow-Pour (Ed.), *Encyclopedia of information science and technology* (2nd ed., pp. 2584–2589). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-026-4.ch412

Lee, C., Kou, W., & Hu, W. (2008). Mobile commerce security and payment methods. In A. Becker (Ed.), *Electronic commerce: Concepts, methodologies, tools, and applications* (pp. 292–306). Hershey, PA: IGI Global. doi:10.4018/978-1-59904-943-4.ch027

Lee, C. C., Cheng, H. K., & Cheng, H. H. (2007). An empirical study of mobile commerce in insurance industry: Task–technology fit and individual differences. *Decision Support Systems*, *43*(1), 95–110. doi:10.1016/j.dss.2005.05.008

Lee, Y. E., & Benbasat, I. (2003). Interface design for mobile commerce. *Communications of the ACM*, *46*(12), 48–52. doi:10.1145/953460.953487

Leonard, L. N. (2010). C2C mobile commerce: Acceptance factors. In I. Lee (Ed.), *Encyclopedia of e-business development and management in the global economy* (pp. 759–767). Hershey, PA: IGI Global. doi:10.4018/978-1-61520-611-7.ch076

Leu, F. Y., Huang, Y. L., & Wang, S. M. (2015). A secure m-commerce system based on credit card transaction. *Electronic Commerce Research and Applications*, *14*(5), 351–360. doi:10.1016/j.elerap.2015.05.001

Li, F., Pieńkowski, D., van Moorsel, A., & Smith, C. (2012). A holistic framework for trust in online transactions. *International Journal of Management Reviews*, *14*(1), 85–103. doi:10.1111/j.1468-2370.2011.00311.x

Li, Y. M., & Yeh, Y. S. (2010). Increasing trust in mobile commerce through design aesthetics. *Computers in Human Behavior*, *26*(4), 673–684. doi:10.1016/j.chb.2010.01.004

Lin, J., Lu, Y., Wang, B., & Wei, K. K. (2011). The role of inter-channel trust transfer in establishing mobile commerce trust. *Electronic Commerce Research and Applications*, *10*(6), 615–625. doi:10.1016/j.elerap.2011.07.008

Lin, K. Y., & Lu, H. P. (2015). Predicting mobile social network acceptance based on mobile value and social influence. *Internet Research*, *25*(1), 107–130. doi:10.1108/IntR-01-2014-0018

Liou, C. H., & Liu, D. R. (2012). Hybrid recommendations for mobile commerce based on mobile phone features. *Expert Systems: International Journal of Knowledge Engineering and Neural Networks*, *29*(2), 108–123.

Liu, D. R., & Liou, C. H. (2011). Mobile commerce product recommendations based on hybrid multiple channels. *Electronic Commerce Research and Applications*, *10*(1), 94–104. doi:10.1016/j.elerap.2010.08.004

Lu, Y., Deng, Z., & Wang, B. (2010). Exploring factors affecting Chinese consumers usage of short message service for personal communication. *Information Systems Journal*, *20*(2), 183–208. doi:10.1111/j.1365-2575.2008.00312.x

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Lu, Y., Wang, X., & Ma, Y. (2013). Comparing user experience in a news website across three devices: iPhone, iPad, and desktop. *Proceedings of the American Society for Information Science and Technology*, *50*(1), 1–4. doi:10.1002/meet.14505001133

Lu, Y. B., Yang, S. Q., Chau, P. Y. K., & Cao, Y. Z. (2011). Dynamics between the trust transfer progress and intention to use mobile payment services: Across-environment perspective. *Information & Management*, *48*(8), 393–403. doi:10.1016/j.im.2011.09.006

Luarn, P., & Lin, H. H. (2005). Toward an understanding of the behavioral intention to use mobile banking. *Computers in Human Behavior*, *21*(6), 873–891. doi:10.1016/j.chb.2004.03.003

Mahatanankoon, P., & OSullivan, P. (2008). Attitude toward mobile text messaging: An expectancy-based perspective. *Journal of Computer-Mediated Communication*, *13*(4), 973–992. doi:10.1111/j.1083-6101.2008.00427.x

McKnight, D. H., & Chervany, N. L. (2001). *Conceptualizing trust: A typology and e-commerce customer relationships model*. Paper presented at the 34th Annual Hawaii International Conference on System Sciences (HICSS 2001), Maui, HI. 10.1109/HICSS.2001.927053

Miao, M., & Jayakar, K. (2016). Mobile payments in Japan, South Korea and China: Cross-border convergence or divergence of business models? *Telecommunications Policy*, *40*(2/3), 182–196. doi:10.1016/j.telpol.2015.11.011

Möhlenbruch, D., Dölling, S., & Ritschel, F. (2010). Interactive customer retention management for mobile commerce. In K. Pousttchi & D. Wiedemann (Eds.), *Handbook of research on mobile marketing management* (pp. 437–456). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-074-5.ch023

Molina-Castillo, F., & Meroño-Cerdan, A. (2014). Drivers of mobile application acceptance by consumers: A meta analytical review. *International Journal of E-Services and Mobile Applications*, *6*(3), 34–47. doi:10.4018/ijesma.2014070103

Moqbel, A., Yani-De-Soriano, M., & Yousafzai, S. (2012). Mobile commerce use among UK mobile users: An experimental approach based on a proposed mobile network utilization framework. In A. Zolait (Ed.), *Knowledge and technology adoption, diffusion, and transfer: International perspectives* (pp. 78–111). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-1752-0.ch007

Muñoz, A., & Maña, A. (2011). TPM-based protection for mobile agents. *Security and Communication Networks*, *4*(1), 45–60. doi:10.1002ec.158

Narang, B., & Arora, J. B. (2016). Present and future of mobile commerce: Introduction, comparative analysis of m commerce and e commerce, advantages, present and future. In S. Madan & J. Arora (Eds.), *Securing transactions and payment systems for m-commerce* (pp. 293–308). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0236-4.ch015

Ngai, E. W. T., & Gunasekaran, A. (2007). A review for mobile commerce research and applications. *Decision Support Systems*, *43*(1), 3–15. doi:10.1016/j.dss.2005.05.003

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Nilashi, M., Ibrahim, O., Mirabi, V. R., Ebrahimi, L., & Zare, M. (2015). The role of security, design and content factors on customer trust in mobile commerce. *Journal of Retailing and Consumer Services*, *26*, 57–69. doi:10.1016/j.jretconser.2015.05.002

Okazaki, S., Li, H., & Hirose, M. (2009). Consumer privacy concerns and preference for degree of regulatory control. *Journal of Advertising*, *38*(4), 63–77. doi:10.2753/JOA0091-3367380405

Okazaki, S., & Mendez, F. (2013). Exploring convenience in mobile commerce: Moderating effects of gender. *Computers in Human Behavior*, *29*(3), 1234–1242. doi:10.1016/j.chb.2012.10.019

Ozuem, W., & Mulloo, B. N. (2016). Manifested consumption: Mobile storefront. In A. Diab (Ed.), *Self-organized mobile communication technologies and techniques for network optimization* (pp. 356–373). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0239-5.ch013

Pai, H. T., & Wu, F. (2011). Prevention of wormhole attacks in mobile commerce based on non-infrastructure wireless networks. *Electronic Commerce Research and Applications*, *10*(4), 384–397. doi:10.1016/j.elerap.2010.12.004

Patel, A. (2006). Mobile commerce in emerging economics. In B. Unhelkar (Ed.), *Handbook of research in mobile business: Technical, methodological, and social perspectives* (pp. 429–434). Hershey, PA: IGI Global. doi:10.4018/978-1-59140-817-8.ch030

Pedersen, P. E., Methlie, L. B., & Thorbjornsen, H. (2002). *Understanding mobile commerce end-user adoption: A triangulation perspective and suggestions for an exploratory service evaluation framework*. Paper presented at the 35th Annual Hawaii International Conference on System Sciences (HICSS 2002), Maui, HI. 10.1109/HICSS.2002.994011

Peng, J., Quan, J., & Zhang, S. (2013). Mobile phone customer retention strategies and Chinese e-commerce. *Electronic Commerce Research and Applications*, *12*(5), 321–327. doi:10.1016/j.elerap.2013.05.002

Petrova, K. (2008). Mobile commerce applications and adoption. In A. Becker (Ed.), *Electronic commerce: Concepts, methodologies, tools, and applications* (pp. 889–897). Hershey, PA: IGI Global. doi:10.4018/978-1-59904-943-4.ch072

Pierre, S. (2009). Security issues concerning mobile commerce. In D. Taniar (Ed.), *Mobile computing: Concepts, methodologies, tools, and applications* (pp. 2653–2659). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-054-7.ch201

Pihlström, M., & Brush, G. J. (2008). Comparing the perceived value of information and entertainment mobile services. *Psychology and Marketing*, *25*(8), 732–755. doi:10.1002/mar.20236

Qi, J., Li, L., Li, Y., & Shu, H. (2009). An extension of technology acceptance model: Analysis of the adoption of mobile data services in China. *Systems Research and Behavioral Science*, *26*(3), 391–407. doi:10.1002res.964

Sharma, M. (2016). Services of mobile commerce. In S. Madan & J. Arora (Eds.), *Securing transactions and payment systems for m-commerce* (pp. 251–274). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0236-4.ch013

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Shibli, M. A., Masood, R., Ghazi, Y., & Muftic, S. (2015). MagicNET: Mobile agents data protection system. *Transactions on Emerging Telecommunications Technologies*, *26*(5), 813–835. doi:10.1002/ett.2742

Shih, H. P. (2012). Cognitive lock-in effects on consumer purchase intentions in the context of B2C web sites. *Psychology and Marketing*, *29*(10), 738–751. doi:10.1002/mar.20560

Siau, K., Lim, E., & Shen, Z. (2003). Mobile commerce: Current states and future trends. In E. Lim & K. Siau (Eds.), *Advances in mobile commerce technologies* (pp. 1–17). Hershey, PA: Idea Group Publishing. doi:10.4018/978-1-59140-052-3.ch001

Siau, K., & Shen, Z. (2003). Building customer trust in mobile commerce. *Communications of the ACM*, *46*(4), 91–94. doi:10.1145/641205.641211

Su, Q., & Adams, C. (2009). Mobile commerce adoption: A novel buyer-user-service payer metric. *Journal of Electronic Commerce in Organizations*, *7*(4), 59–72. doi:10.4018/jeco.2009070106

Sumita, U., & Yoshii, J. (2010). Enhancement of e-commerce via mobile accesses to the Internet. *Electronic Commerce Research and Applications*, *9*(3), 217–227. doi:10.1016/j.elerap.2009.11.006

van der Heijden, H., Verhagen, T., & Creemers, M. (2003). Understanding online purchase intentions: Contributions from technology and trust perspectives. *European Journal of Information Systems*, *12*(1), 41–48. doi:10.1057/palgrave.ejis.3000445

Varshney, U. (2007). Supporting dependable group-oriented mobile transactions: Redundancy-based architecture and performance. *International Journal of Network Management*, *17*(3), 219–229. doi:10.1002/nem.619

Varshney, U. (2008). A middleware framework for managing transactions in group-oriented mobile commerce services. *Decision Support Systems*, *46*(1), 356–365. doi:10.1016/j.dss.2008.07.005

Veijalainen, J., & Weske, M. (2003). Modeling static aspects of mobile electronic commerce environments. In E. Lim & K. Siau (Eds.), *Advances in mobile commerce technologies* (pp. 137–170). Hershey, PA: Idea Group Publishing. doi:10.4018/978-1-59140-052-3.ch007

Vesanen, J. (2007). What is personalization? A conceptual framework. *European Journal of Marketing*, *41*(5/6), 409–418. doi:10.1108/03090560710737534

Wakefield, R. L., Stocks, M. H., & Wilder, W. M. (2004). The role of web site characteristics in initial trust formation. *Journal of Computer Information Systems*, *45*(1), 94–103.

Wang, C. C., Lo, S. K., & Fang, W. (2008). Extending the technology acceptance model to mobile telecommunication innovation: The existence of network externalities. *Journal of Consumer Behaviour*, *7*(2), 101–110. doi:10.1002/cb.240

Wang, J. (2007). Mobile commerce. In D. Taniar (Ed.), *Encyclopedia of mobile computing and commerce* (pp. 455–460). Hershey, PA: IGI Global. doi:10.4018/978-1-59904-002-8.ch075

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Wang, X., Hong, Z., Xu, Y., Zhang, C., & Ling, H. (2014). Relevance judgments of mobile commercial information. *Journal of the Association for Information Science and Technology*, *65*(7), 1335–1348. doi:10.1002/asi.23060

Wang, Y. S., & Liao, Y. W. (2007). The conceptualization and measurement of m-commerce user satisfaction. *Computers in Human Behavior*, *23*(1), 381–398. doi:10.1016/j.chb.2004.10.017

Wang, Y. S., Lin, H. H., & Luarn, P. (2006). Predicting consumer intention to use mobile service. *Information Systems Journal*, *16*(2), 157–179. doi:10.1111/j.1365-2575.2006.00213.x

Wessels, B. (2012). Identification and the practices of identity and privacy in everyday digital communication. *New Media & Society*, *14*(8), 1251–1268. doi:10.1177/1461444812450679

Wyse, J. E. (2009). Location-aware query resolution for location-based mobile commerce: Performance evaluation and optimization. In D. Taniar (Ed.), *Mobile computing: Concepts, methodologies, tools, and applications* (pp. 3040–3067). Hershey, PA: IGI Global. doi:10.4018/978-1-60566-054-7.ch229

Xiao, S., & Dong, M. (2015). Hidden semi-Markov model-based reputation management system for online to offline (O2O) e-commerce markets. *Decision Support Systems*, *77*, 87–99. doi:10.1016/j.dss.2015.05.013

Yan, Z., Dong, Y., Niemi, V., & Yu, G. (2013). Exploring trust of mobile applications based on user behaviors: An empirical study. *Journal of Applied Social Psychology*, *43*(3), 638–659. doi:10.1111/j.1559-1816.2013.01044.x

Yang, J. H., & Chang, C. C. (2009). An efficient three-party authenticated key exchange protocol using elliptic curve cryptography for mobile-commerce environments. *Journal of Systems and Software*, *82*(9), 1497–1502. doi:10.1016/j.jss.2009.03.075

Yow, K. C., & Mittal, N. (2008). Mobile commerce multimedia messaging peer. In A. Becker (Ed.), *Electronic commerce: Concepts, methodologies, tools, and applications* (pp. 514–523). Hershey, PA: IGI Global. doi:10.4018/978-1-59904-943-4.ch042

Yu, F. R., Wong, V. W. S., Song, J. H., Leung, V. C. M., & Chan, H. C. B. (2011). Next generation mobility management: An introduction. *Wireless Communications and Mobile Computing*, *11*(4), 446–458. doi:10.1002/wcm.904

Zhang, J., & Mao, E. (2008). Understanding the acceptance of mobile SMS advertising among young Chinese consumers. *Psychology and Marketing*, *25*(8), 787–805. doi:10.1002/mar.20239

Zhang, L., Zhu, J., & Liu, Q. (2012). A meta-analysis of mobile commerce adoption and the moderating effect of culture. *Computers in Human Behavior*, *28*(5), 1902–1911. doi:10.1016/j.chb.2012.05.008

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

ADDITIONAL READING

Abu-Shanab, E., & Ghaleb, O. (2012). Adoption of mobile commerce technology: An involvement of trust and risk concerns. *International Journal of Technology Diffusion*, *3*(2), 36–49. doi:10.4018/jtd.2012040104

Anderson, J., & Vakulenko, M. (2014). Upwardly mobile. *Business Strategy Review*, *25*(4), 34–39. doi:10.1111/j.1467-8616.2014.01118.x

Anong, S. T., & Kunovskaya, I. (2013). M-finance and consumer redress for the unbanked in South Africa. *International Journal of Consumer Studies*, *37*(4), 453–464. doi:10.1111/ijcs.12014

Basoglu, N., Daim, T., & Polat, E. (2014). Exploring adaptivity in service development: The case of mobile platforms. *Journal of Product Innovation Management*, *31*(3), 501–515. doi:10.1111/jpim.12110

Boakye, K. G. (2015). Factors influencing mobile data service (MDS) continuance intention: An empirical study. *Computers in Human Behavior*, *50*, 125–131. doi:10.1016/j.chb.2015.04.008

Bryson, D., Atwal, G., Chaudhuri, H. R., & Dave, K. (2015). Understanding the antecedents of intention to use mobile Internet banking in India: Opportunities for microfinance institutions. *Strategic Change*, *24*(3), 207–224. doi:10.1002/jsc.2005

Chang, C. C., Chang, S. C., & Yang, J. H. (2013). A practical secure and efficient enterprise digital rights management mechanism suitable for mobile environment. *Security and Communication Networks*, *6*(8), 972–984. doi:10.1002ec.647

Chen, J., & Shen, X. L. (2015). Consumers decisions in social commerce context: An empirical investigation. *Decision Support Systems*, *79*, 55–64. doi:10.1016/j.dss.2015.07.012

Chong, A. (2013). Understanding mobile commerce continuance intentions: An empirical analysis of Chinese consumers. *Journal of Computer Information Systems*, *53*(4), 22–30. doi:10.1080/08874417.2013.11645647

Dan, L., & Jing, Z. (2011). TAM-based study on factors influencing the adoption of mobile payment. *China Communications*, *8*(3), 198–204.

Gao, L., & Bai, X. (2014). An empirical study on continuance intention of mobile social networking services. *Asia Pacific Journal of Marketing and Logistics*, *26*(2), 168–189. doi:10.1108/APJML-07-2013-0086

Garrett, J. L., Rodermund, R., Anderson, N., Berkowitz, S., & Robb, C. A. (2014). Adoption of mobile payment technology by consumers. *Family and Consumer Sciences Research Journal*, *42*(4), 358–368. doi:10.1111/fcsr.12069

He, W. (2013). A survey of security risks of mobile social media through blog mining and an extensive literature search. *Information Management & Computer Security*, *21*(5), 381–400. doi:10.1108/IMCS-12-2012-0068

Hew, J. J., Lee, V. H., Ooi, K. B., & Wei, J. (2015). What catalyses mobile apps usage intention: An empirical analysis. *Industrial Management & Data Systems*, *115*(7), 1269–1291. doi:10.1108/IMDS-01-2015-0028

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Humphreys, L. (2013). Mobile social media: Future challenges and opportunities. *Mobile Media & Communication*, *1*(1), 20–25. doi:10.1177/2050157912459499

Jung, J. C., Ugboma, M. A., & Liow, A. K. (2015). Does Alibabas magic work outside China? *Thunderbird International Business Review*, *57*(6), 505–518. doi:10.1002/tie.21739

Jung, Y. (2014). What a smartphone is to me: Understanding user values in using smartphones. *Information Systems Journal*, *24*(4), 299–321. doi:10.1111/isj.12031

Kim, M. J., & Park, J. (2014). A return on investment assessment model for a mobile user interface project at the predevelopment stage. *Human Factors and Ergonomics in Manufacturing & Service Industries*, *24*(2), 216–225. doi:10.1002/hfm.20368

Lee, J. S., & Lin, K. S. (2013). An innovative electronic group-buying system for mobile commerce. *Electronic Commerce Research and Applications*, *12*(1), 1–13. doi:10.1016/j.elerap.2012.09.005

Mervyn, K., & Allen, D. K. (2012). Sociospatial context and information behavior: Social exclusion and the influence of mobile information technology. *Journal of the American Society for Information Science and Technology*, *63*(6), 1125–1141. doi:10.1002/asi.22626

Mir, I. (2011). Consumer attitude towards m-advertising acceptance: A cross-sectional study. *Journal of Internet Banking & Commerce*, *16*(1), 1–22.

Nicholas, D., Clark, D., Rowlands, I., & Jamali, H. R. (2013). Information on the go: A case study of Europeana mobile users. *Journal of the American Society for Information Science and Technology*, *64*(7), 1311–1322. doi:10.1002/asi.22838

Ozcan, P., & Santos, F. M. (2015). The market that never was: Turf wars and failed alliances in mobile payments. *Strategic Management Journal*, *36*(10), 1486–1512. doi:10.1002mj.2292

Park, J., Han, S. H., Kim, H. K., Moon, H., & Park, J. (2015). Developing and verifying a questionnaire for evaluating user value of a mobile device. *Human Factors and Ergonomics in Manufacturing & Service Industries*, *25*(6), 724–739. doi:10.1002/hfm.20588

Peng, H., & Liu, W. (2011). Drivers and barriers in the acceptance of mobile payment in China. *Communications in Information Science and Management Engineering*, *1*(5), 73–78.

Sheng, M. L., & Teo, T. S. H. (2012). Product attributes and brand equity in the mobile domain: The mediating role of customer experience. *International Journal of Information Management*, *32*(2), 139–146. doi:10.1016/j.ijinfomgt.2011.11.017

Sigman, B. P., & Boston, B. J. (2013). Digital discernment: An e-commerce web site evaluation tool. *Decision Sciences Journal of Innovative Education*, *11*(1), 29–46. doi:10.1111/j.1540-4609.2012.00367.x

Slade, E. L., Dwivedi, Y. K., Piercy, N. C., & Williams, M. D. (2015). Modeling consumers adoption intentions of remote mobile payments in the United Kingdom: Extending UTAUT with innovativeness, risk, and trust. *Psychology and Marketing*, *32*(8), 860–873. doi:10.1002/mar.20823

Wong, C. H., Tan, G. W. H., Tan, B. I., & Ooi, K. B. (2015). Mobile advertising: The changing landscape of the advertising industry. *Telematics and Informatics*, *32*(4), 720–734. doi:10.1016/j.tele.2015.03.003

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Xu, C., Peak, D., & Prybutok, V. (2015). A customer value, satisfaction, and loyalty perspective of mobile application recommendations. *Decision Support Systems*, *79*, 171–183. doi:10.1016/j.dss.2015.08.008

Zhou, T., & Li, H. (2014). Understanding mobile SNS continuance usage in China from the perspectives of social influence and privacy concern. *Computers in Human Behavior*, *37*, 283–289. doi:10.1016/j.chb.2014.05.008

KEY TERMS AND DEFINITIONS

Electronic Commerce: The business conducted through the use of computers or other electronic appliances without the exchange of paper-based documents.

Internet: The worldwide computer network that provides information on many subjects and enables users to exchange the messages.

Mobile Commerce: The business that is conducted on the Internet through the use of mobile phones or other wireless, handheld electronic devices.

Mobile Payment: The point of sale payment made through the wireless devices, such as a mobile phone and personal digital assistant.

Smartphone: The mobile phone with the highly advanced features.

Technology: The purposeful application of information in the design, production, and utilization of products and services.

Technology Acceptance Model: The most widely utilized model to predict and explain the user acceptance of information technology.

Transaction: The exchange of products or services between a buyer and a seller.

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Chapter 43
The Impact of Emergent Technologies in the Evolutionary Path for M-Commerce

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ABSTRACT

M-commerce is a fast-growing opportunity and is acting as an innovative lever for achieving the purpose of increasing sales while better interacting with the clients. Simultaneously, several emerging technologies have appeared in the market and promise to change the current m-commerce paradigm. Therefore, this chapter plans to explore a set of new trend technologies that can plan to build a more efficient relation between the consumer and the m-commerce platform. This study conducted surveys with several market players like marketers and IT leaders to understand their point of view, perceive the relevance and impact of these emergent technologies in m-commerce, identify resistance and challenge points to the proposed change, and look how to allow cohabitation between this new e-commerce paradigm and the traditional physical trade. The main novelty of this study is the inclusion of multiple points of view on the evolution of m-commerce which will allow companies and citizens to perceive the impact of emerging technologies in the future of m-commerce.

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INTRODUCTION

Nowadays, any relevant small or big company has a digital presence, even if most part of cases there isn't a delineated strategy in the business (Razavi et al., 2010). The consumers interact each day more with different forms of digital presence for a business. The companies, on another hand, show their presence in the social networks, threw: digital advertising across multiple platforms; websites, mobile applications and even in gaming solutions. The shopping environment, in a few decades, has moved from physical stores to hybrid solutions that merge physical space with the digital world, creating the new concept of Omnichannel presence (Frazer, 2014).

One strong concern of a company is the overall exposition of the business and product over the Internet. The consumers with a behavior pulled by the trend movements, convenience, the proliferation of portable digital devices (that provide easy and fast access) – are feeling the wealth of the new commerce solutions. So the focus is in: strong, clear and clean presence over all the digital channels. Another relevant aspect is developing innovative approaches for gaining new customers while keeping strong ties to the first time visitor to an m-commerce provider. The loyalty client programs should always be appealing, trendy and effective to maximize its goal: keep a consumer connected to a product, solution or brand.

Currently, there is a new blurring between online (e-commerce), and offline retail as described in (Rogojanu et al., 2018) as we planned to propose in our solution. This new technological framework means a powerful tool that can and should be used. This preliminary study plans to provide a reflection of a possible evolutionary path to all the previous topics that were presented. The proposed solution binds the future physical store and m-commerce in this new era. The introduction of new technologies that will enable a stronger tie with consumers such as: Chatbot with Artificial Intelligence (AI) agents for interacting, improved location based services, Virtual Reality (VR) and Augmented Reality (AR) for creating a new product showroom and improving the loyalty programs with the support of a Blockchain structure – are the key for the proposal. By conducting surveys with several market players such as marketers and IT leaders we will understand their point of view, resistance to the proposed change, the relevance of the new proposed solution and the timetable proposed for their implementation.

The manuscript is organized as follows: Initially, a conceptual analysis of the characteristics and properties of emerging technologies with potential impact on m-commerce is performed, respectively: (i) Location Based Services (LBS); (ii) 5G and Delay Tolerant Networks (DTN); (iii) Bluetooth and Near Field Communications (NFC); (iv) Augmented Reality (AR) and Virtual Reality (VR); (v) Internet of Things (IoT); (vi) blockchain; and (vii) Artificial Intelligence (AI). The adopted methodology and the main results of the study are presented below. After that, some solutions and recommendations are presented in the adoption of these emerging technologies in the context of the m-commerce paradigm. Finally, the conclusions of the work are presented and some indications are given about relevant future works in this field.

BACKGROUND

Location Based Services (LBS)

The geographic position of the consumer is of great relevance to the retail activity, in particular for a conventional store. The crucial elements to LBS have been a two-way wireless data communications link

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plus navigation data inputs to permit a screened flow of information from LBS data servers. Today, most LBS system designers consider the fusion of Global Position Satellite (GPS) receivers and cellular phone services the starting point. This approach provides geo-detection in outdoor scenarios. In fact, for a local store is very relevant to understand when a consumer is in the near vicinity of the store, but also when he is the near region. So, it would be relevant to define a zone in the vicinity of the retail store where all possible consumers will get a notification for promoting a visit to the store. (Kanfade et al., 2018)

The GPS approach is widely used for LBS in outdoor solutions. However, it is not suitable for solutions in the scenario of non-line-of-sight (NLOS) and several indoor scenarios where there is almost no coverage of GPS signal. In indoor locations, the common approach uses the support of Wi-Fi for position detection. The common solution involves the Wi-Fi fingerprinting to obtain the desired accuracy. This preliminary solution has the cost of a new calibration for each environment. A new approach is an adaptive Wi-Fi trilateration-based indoor localization system that provides better accuracy, as required for the LBS (Yi et al., 2018). A new model that can improve accuracy relies on a range-based localization algorithm in non-GPS positioning systems. This model adopts the enhanced Kalman Filter (KF) and Centroid Localization Algorithm that can manipulate noise signal from raw Received Signal Strength Indicator (RSSI). The solution shows that the proposed model improves the accuracy percentage by more than 80% (Din et al., 2018).

Xiaojie Zhu (2019) resumes the newest challenges in LBS architectures, which include: minimizing resources consumption, improving accuracy while taking into consideration the user privacy with all UE regulations.

5G and Delay Tolerant Networks (DTN)

The evolution of mobile network from 2.5G to 3G, enabled the development of e-commerce to the m-commerce contributes to the fact that mobile commerce activity will be the important content in the future mobile application.

A reliable and fast path for all the information sharing with a mobile user is a relevant topic for the existence of a comfortable channel between the retail store and end user. According to Kshetri (2018), Wi-Fi and 5G networks will play a relevant role in this achievement. The 5G will enable the creation of better and strong ties in e-commerce, but will also new business models within the next upcoming years (Yrjölä, et al., 2018).

The 5G will open a new world that will provide a wide range of interesting requirements, such as enhanced mobile broadband, massive machine type communications, ultra-reliable communications, low latency and support an increasing number of connected devices. Chochliouros, et al. (2017) advocate that 5G will provide the chance for the development of an all-new architecture proposed, aiming to attend several operators/service providers and "engage" them in a modern multi-tenant ecosystem that will work as leverage for the 5G adoption.

Even with the future coverage of 5G and Wi-Fi some undesirable scenarios may occur like the lack or low network coverage and temporary congestion of the networks. In fact, the numbers of devices that work with the support of a network do increase exponentially every year. The combination of AI, machine learning and contextually rich, real-time data streams delivered by IoT sensors and networks, along with the conventional data services that will be powered by the 5G can cause problems in the network in particular in the early days of 5G. A strategy of building classes of tolerance to the delay can provide an interesting approach in order to avoid congestion of the network, as the traffic dramati-

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cally increases. Some future and current services can have their communication delayed in a convenient way without harming their function (Esaki, 2009; Penurkar, 2015). The DTN networks also referred as Disruptive Tolerant Networks can play a relevant role in a smart prioritization of the traffic generated in severe communication scenarios.

A DTN is a network designed so that intermittent or disruptive communication scenarios will not avoid communication between nodes, there are several aspects for an adequate design on this approach: (i) support of fault-tolerant methods and technologies; (ii) even under severe communication scenarios, it is expected that a computer, machine, electronic system or network to maintain limited functionality even when a large portion of its data has been destroyed or rendered inoperative; (iii) fast recover from network attacks; and (iv) minimize latency even under severe communications.

Bluetooth (BT) and Near Field Communications (NFC)

In the scenarios of short-range and proximity communications, the BT and NFC technologies surely will play a relevant role.

Bluetooth is a specification for a wireless network in a Persona Area Newark (PAN) context. The BT solution enables the data exchange between a bundle of heterogeneous devices as long as they have BT support. The previous versions of BT enabled proximity detection systems with the support of the measurement of the signal strength. It was possible with relatively poor accuracy the distance in meters, but it was not possible to determinate the direction. A new desired feature is now present in BT 5.1, announced by the Bluetooth Special Interest Group: the development a positioning service that can now determine the direction of a BT signal that enables the precision detection of a BT device with the accuracy down to the centimeter. This feature is possible after the introduction of two innovative methods: Angle of Arrival (AoA) and Angle of Departure (AoD).

Several new features will improve BT efficiency such as (Monteiro et al., 2012; Alshahrani & Walker, 2013): (i) faster connections with low power; (ii) connection broadcast improvements; (iii) near filed communication that can be spread on point of sales (PoS), security check-in, eTickets and small range data transfers.

NFC is promising in providing a reliable and secure paired communication between two distinct devices. Because it is only reliable within a short-range scenario, the risks of interception are very low, so it can be considered a secure solution. In comparison with other available technologies – it achieves physical-level security but sacrifices convenience.

Public Digital Terminals (PDT) can also perform a relevant role in the commerce activity. There is a wide array of PDTs that a common person uses frequently including Automated Teller Machines (ATM), interactive kiosks, and self-service kiosks. The widespread use of smartphones and tablets has given rise to the next generation of m-commerce solutions. A proximity-aware solution to address the security, privacy and accessibility concerns when using PDTs will be of great relevance (Misbhauddin & Alshamari, 2018).

The issue of tracking a customer using Bluetooth Low Energy (BLE) is also presented in the literature (Shende et al., 2017). In this proposed solution the tracking of the clients is supported by BT beacons that are set up in the retail shop vicinity. Taking into consideration the clients' profile, supported by their shopping patterns and purchase behavior, a mobile application can detect the presence of a client and send this information to a server. The server can react worth personalized offers for the client, this way stimulating the process of shopping in a retail store.

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The short-range technologies such as NFC can be used instead of SMS and/or Bluetooth solutions. It can be demonstrated that NFC, compared with SMS technology, is faster and more convenience (Alshahrani, 2013). The NFC is a common support for contactless payment systems that has several proposed mechanism to grant the necessary security (Chattha, 2014; Oleh Zolotukhin, 2018; Raza et al., 2018). Some studies also present the future relevance of wireless technologies such as Zigbee (Dhauta & Kapoor, 2017). It can demonstrate the eligibility of a BT solution for several use cases, such as: (i) localization/route of a client in a small area; (ii) payment support; (iii) broadcast of promotion or sales of products; and (iv) interaction with products.

Augmented Reality (AR) and Virtual Reality (VR)

The main definition of VR is supported by the definition of the concepts virtual" and reality. The "virtual" is a near reality concept that is applied in VR. The VR can create a reality that will bring a new reality approach for a human. On the other hand: AR can be defined as an enhanced version of the reality created with the support of technology to add more information to an image or scenario.

Both technologies can be used to enhance the experience of a consumer with a product (Hah et al., 2011; Stoyanova et al., 2013). Some approaches propose this enhancement experience in a stadium: amplifying the sports contents, invisible to the spectators and generating new content on-screen to improve the sports experience in a stadium (Hurwitz & Jeffs, 2009).

The m-commerce experience also can be improved. The idea is to offer to consumers a similar experience to a visit in a physical retail shop. The technology that supports the sort can also build an interesting bundle with AR, the AR experience can be triggered by the presence of the consumer (Erışık, et al., 2015). A shopping assistant prototype with simulated augmented reality information that helps the consumer in the process of online shopping or in a physical store is also a proposal (Ganapathy et al., 2011). Some studies also suggest that provide a comparison between a normal shopping experience and an AR shopping experience are promising (Stoyanova et al., 2015). Integrating LBS solutions, previously discussed, with AR also improves the shopping effectiveness (Adhikari, et al., 2015).

The AR is a very interesting approach, but pushing one step forward to VR, the final virtual scenario created around a product or service will grant a much better experience to the consumer: the combined experience of a 3 environment of a physical store with the e-commerce characteristics will, for sure, enhance the consumer desire, this way, bringing a new push o the e-commerce (Yu & Pan, 2012; Speicher, 2018). The interaction and the visual impact of a store virtual scenario on a phone will be the key in the future (Jayachandran et al., 2017; Kang, 2017).

Internet of Things (IoT)

The IoT is a connected ecosystem between all the existing computing devices with mechanical and digital machines, objects, animals or people that with the support of a unique identifier are enable to transfer directly data without human-to-human or human-to-computer interaction.

The IoT will sure have a relevant role in the future concept of a retail shop or even in an e-commerce solution, the chance to generate physical interactions will be of considering relevance. A smart shopping platform including four components, location of everything component, data collection component, data filtering/analyzing component and data mining component is proposed in (Rezazadeh et al., 2018).

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The association, as described in the definition of IoT, of each product with a unique identifier can provide a way to build virtual assistants, real-time stock update and product georeferencing (Chen et al., 2010). The solutions addressed will also face new security issues, as described in: (Li et al., 2017),

Blockchain

The term Blockchain derives from the structure of the digital records that are linked together in a single list, named as chain. The main purpose of Blockchain was to store transactions made by the crypto currencies, such as bitcoins, but it has several other applications. Blockchain technology may pull a variety of industries, including e-commerce, financial services, real estate, supply chain management, health care, academia and more.

Besides the possible scenario of a transaction on an e-commerce site that is supported by crypto currency, the technology that supports Blockchain can have other applications. In order to provide several bottlenecks in the current loyalty programs such as lost paper coupons, payback process complications, setup of several mobile applications and the grow of heterogeneous solutions the Blockchain technology can provide a new approach. It may provide more usability for users, use only digital content and more detailed information can be gathered from the companies' perspective (Bülbül & İnce, 2018).

The issue of managing a queue in shopping that supported by e-commerce has the big challenge of delivering requests from clients that can be queued, also, can be solved more efficiently with the support of Blockchain (Yadav et al., 2018).

Artificial Intelligence (AI)

The AI topic is by definition the ability for a digital system to perform a task commonly associated with intelligent human beings. The AI is a strong topic of research in several areas: manufacturing; traffic control; eHealth systems; traffic management; risk management; car industry; efficient stock optimization, gaming, and several others. This trend has an evolutionary path, and nowadays AI technologies is becoming a path for e-commerce solutions: topics such as keyword advertising, multivalent decision making, social networks management, information retrieval, semantic web, logistic management, and clients support with the help of Chabot's support (Zeng, et al., 2008).

The presence of AI tools and solutions suffered a recent but important evolution: the initial monolithic system became a distributed artificial intelligence, known as intelligent agent technology (Galuszewska & Sahut, 2003). One strong goal in the e-commerce scenario is the chatbot technology for consumer contact and support. Some bibliographic sources provide studies about future chatbot integration in commerce services (Pricilla et al., 2018; Rychalska et al., 2018; Albayrak et al., 2018; Santoso, et al., 2018). Furthermore, the AI concept is also a relevant topic of research in providing a new and efficient tool in optimizing the commerce and e-commerce ecosystem and is in detailed described in the literature (Rao et al., 2018).

E-commerce is an example of a large-scale multi-agent system. Consequently, it is of great relevance to study and integrate a model and devise an implementation for the large-scale knowledge sharing solution with the support of Bayesian networks, game theory and network security, as proposed in: (Ai-Ping et al., 2006). An electronic platform is a possible application of such a concept. Such a platform can be viewed as a collection of software agents: customer, search engine, catalog, manufacturer, dealer, and bank agents, all of them on the Internet and the need and ability to negotiate with each other efficiently.

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It is clear that the retail organizations much have a clear vision about the customer's needs, expectations and forms of fulfillment and this task can be achieved through the support of AI and the ability to store and analyzing an encoded sentiment data based on feedbacks considering the context and the environment. (Rogojanu et al., 2018).

FOCUS OF THE ARTICLE

The chapter plans to provide a reflection about an evolutionary path for both: physical retail shop and electronic commerce platform. Nowadays, it is common for a commerce business to have presence in a multichannel: shoppers are not only shopping online, but are in fact merging their online and offline shopping practices. Several technologies can enable a much richer experience in optimizing the entire ecosystem. Among these technologies are included VR/AR, BT, LBS, IoT, AI, and Blockchain. This study collects the opinion from marketers, IT leader and other professionals in the IT sector on the relevance and impact of emergent technologies in m-commerce. It also intends exploring how it would be possible to allow cohabitation between this new e-commerce paradigm and the traditional physical trade.

This study adopts a quantitative methodology through the use of a questionnaire. Quantitative research is a statistical study that aims to describe the characteristics of a study, numerically assessing the hypotheses formulated considering a research problem. The information is typically collected through a structured questionnaire with clear and objective questions. According to Creswell (2018), the quantitative methodology is especially indicated to generate accurate and reliable measures that allow statistical analysis. The sample should also be large enough to enable a reliable statistical analysis. Additionally, Queirós et al. (2017) argue that in a quantitative survey it is especially important to look at the representativeness of the results that should be based on probabilistic criteria for sample selection.

The survey is organized into three dimensions (e.g., contextual, evaluative, and forecast) as depicted in Table 1. In the contextual dimension, an attempt is made to characterize the profile of respondents. For this purpose, information is collected on professional experience, company size, and the number of years of experience in e-commerce and m-commerce. Next, in the evaluative dimension, respondents are asked to classify the degree of relevance of six emerging technologies that have contributed to the evolution of the m-commerce paradigm. Finally, in the forecast dimension, respondents are asked about the impact of the technologies identified in the previous point on the shopping experience in a physical store, namely if the shopping experience in a physical store could be improved with the integration of those technologies.

In the contextual dimension, multiple choice boxes were used to get textual and numeric information. Instead, in the evaluative dimension, a multiple choice grid was employed. A Likert scale composed of five levels (i.e., 1. little importance to 5. great importance) was adopted for all questions presented in the evaluative dimension.

A total of 83 respondents was received and considered valid. The profile of respondents is detailed in Table 2. Two profiles of respondents stand out: marketing professionals and IT tech engineers. In total, these two profiles represent more than 60% of the sample. The size of the company is quite heterogeneous, with most respondents working in large enterprises followed by micro companies. The majority of the respondents have experience in e-commerce for more than 10 years. Although the e-commerce experience is quite significant, the number of years of experience in m-commerce is relatively low, and most respondents (43.4%) have less than 2 years of experience.

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Table 1. Organization of the survey

Dimension	Variables	No. of items
Contextual	Professional occupation	4
	Size of the company	
	Years of experience in e-commerce	
	Years of experience in m-commerce	
Evaluative	Relevance: Virtual Reality / Augmented Reality	6
	Relevance: Bluetooth	
	Relevance: Location Based Services	
	Relevance: Internet of Things	
	Relevance: Artificial Intelligence	
	Relevance: Blockchain	
Forecast	Engagement	1

Table 2. Sample characteristics

Variable	Absolute frequency	Relative frequency
Professional occupation		
CEO	13	0.157
CTO	8	0.096
Marketing	19	0.229
IT Tech	31	0.373
Other	12	0.145
Size of the company		
Micro companies (less than 10 employees)	20	0.241
Small enterprise (10 to 49 employees)	18	0.217
Medium-sized enterprise (50 to 249 employees)	12	0.145
Large enterprise (250 or more employees)	33	0.398
Years of experience in e-commerce		
Less than 2 years	19	0.229
Less than 5 years	17	0.205
Less than 10 years	22	0.265
More than 10 years	25	0.301
Years of experience in m-commerce		
Less than 2 years	36	0.434
Less than 5 years	28	0.337
Less than 10 years	12	0.145
More than 10 years	7	0.084

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The results of the questionnaire are presented in Table 3. The findings allow us to conclude that artificial intelligence and the internet of things are the two technologies that present the greatest potential impact on the evolution of the m-commerce paradigm. These two technologies simultaneously register the highest mean and mode. The importance of these two technologies in the evolution of m-commerce is also highlighted in the literature. Huang & Rust (2018) emphasizes the role that artificial intelligence as a source of innovation in services with particular impact on the retail sector. In the same vein, Chen (2018) proposes the use of artificial intelligence models that can exploit information about customers stored in a database, namely for marketing and sales services. On other perspectives, the IoT promises to bring disruptive innovation to the online purchasing process. The traditional purchasing process based on a human-human or human-thing model evolves into a thing-thing model. In a model based on IoT, a great diversity of devices is connected as wearables, smart-watches, or fitness trackers that allow creating smart applications (Turban et al., 2017). In fact, IoT is related to other technologies that increment the potential impact in the retail sector, such as big data, M2M, cloud computing and industry 4.0 (Almeida, 2017). Despite the unequivocal benefits of the introduction of IoT associated to the increase of commercial transactions and improving the online shopping experience, several challenges persist, especially in terms of security, technological dependence, integration and social impact on employability (Bena et al., 2017).

The analysis of the standard deviation allows us to deepen our knowledge about the behavior of the variables under study. Bluetooth, VR/AR, and Blockchain are the technologies that registered the most divergent opinions. The impact of these technologies is seen in a relatively heterogeneous way, and the opinions on their impact on the evolution of m-commerce differed significantly. Bluetooth proved to be essentially useful in an initial phase of m-commerce adoption, but it has gradually lost importance in recent years due to the evolution of NFC and ZigBee (Pine, 2017). VR/AR is still very emerging technologies and whose practical application is still relatively little known by retailers, but which offers a lot of potential when combined with artificial intelligence (Smith, 2018). Finally, blockchain intends to significantly reduce trade costs by increasing transparency and facilitating process automation. However, several challenges still persist in its adoption, such as (Bodó et al., 2018; Ganne, 2018): (i) scalability; (ii) privacy and security; (iii) data standardization; (iv) legal validity; and (v) governance.

Table 3. Statistical analysis of the questionnaire

Variable	Mean	Mode	Std. dev.
Relevance: Virtual Reality / Augmented Reality	3.542	4	1.140
Relevance: Bluetooth	2.723	3	1.243
Relevance: Location Based Services	3.964	4	0.890
Relevance: Internet of Things	4.229	5	0.888
Relevance: Artificial Intelligence	4.289	5	0.904
Relevance: Blockchain	3.398	4	1.136

Table 4 shows a statistical hypothesis test considering the number of years of experience (YE) in m-commerce. ANOVA was applied to test the equality of the averages of the four groups of years of experience in m-commerce. For this purpose, a significance level of 0.05 was adopted and it was as-

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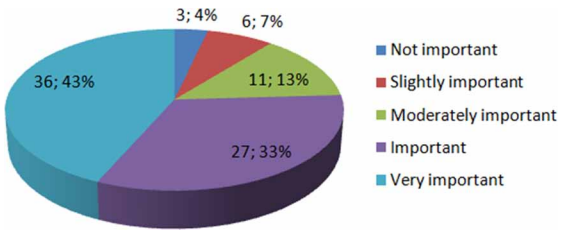
sumed that the errors are independent and come from a normal distribution with mean equal to zero and constant variance. A large p-value for the F-test means that the data obtained are consistent with the null hypothesis, and there is no evidence of a linear relationship or explain the variance of the dependent variable (relevance of each considered emergent technology). The results show that only the blockchain technology presents a value below 0.05, which indicates that the user groups with more years of experience in m-commerce consider that blockchain will have greater relevance in the development of m-commerce when compared to the junior users in m-commerce.

Table 4. Hypothesis test for the number of years of experience in m-commerce

Variable	Mean (YE < 2)	Mean (YE < 5)	Mean (YE < 10)	Mean (YE ≥ 10)	Prob > F
Relevance: Virtual Reality / Augmented Reality	3.333	3.607	3.667	4.143	0.341
Relevance: Bluetooth	2.722	2.821	2.833	2.143	0.624
Relevance: Location Based Services	4	3.893	4.167	3.714	0.704
Relevance: Internet of Things	4.139	4.214	4.417	4.429	0.744
Relevance: Artificial Intelligence	4.111	4.393	4.333	4.714	0.347
Relevance: Blockchain	3.083	3.393	4.167	3.714	0.029

Next, the study sought to explore the respondents' perception of the use of the above technologies in increasing shopping experience in a physical store. The information collected in Figure 1 is unanimous in considering that its impact should not be negligible. More than 75% of respondents considered that the impact of the use of these technologies on the shopping experience in a physical store is important or quite important. Only 3.61% of respondents mentioned that these technologies would not have any impact. These findings are aligned with the results of recent studies published in the literature, which refer that the incorporation of new technologies in a physical store positively affects both the experience and the buying intention (Foroudi et al., 2018; Mosquera et al., 2018). Additionally, Grewal et al. (2017) and Almeida (2018) mention the use of these technologies in fostering big data collection, contribute to a better analytical analysis of business profitability, and provide new insights and forecasts using predictive analysis models.

Figure 1. Impact of emergent technologies in the shopping experience at a physical store



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SOLUTIONS AND RECOMMENDATIONS

A bundle of new technologies described in the previous session can and should be implemented in order to enrich the shopping experience. The inquiry results described in the previous section also validate the relevance of the solution that will be proposed in this section.

The authors believe in a merged and new approach: the physical store experience can be enhanced with the support of new technologies enabling a best advising and fitting between the consumer profile, product exhibition, and product advice. On the other hand, the e-commerce experience can and should be more similar as possible to a physical store shop. This means an enhanced overall experience for the consumer in both scenarios, real and virtual shopping. The solution is to combine actual technologies and integrate them with new trend technologies to achieve an optimized solution.

The LBS solutions can be a major key aspect in the new proposed model in several ways. Nowadays, the LBS solutions are already integrated into a premature form. The proposal is to turn LBS into a key element in promoting shopping activity. But, new challenges arise, one of them is the new data regulation in Europe that takes into consideration the data privacy of each user, and should and will be taken into consideration in this proposal. (Tian, Liu, Wu, & Hu, 2017; Jung & Park, 2017)

Nowadays, the user can be informed about the existence in the vicinity of a retail shop that fits its typical customer behavior stored in its customer profile acquired in many forms. This information, at the moment, is broadcasted to promote a visit to a physical store, when the consumer is traveling in the vicinity. The new challenge is to acquire as much information as possible from a visitor/potential client taking into consideration the new regulations, in particular, in Europe: General Data Protection Regulation (GDPR). The UE has developed legislation concerning the protection of UE citizens with regard to the processing of personal data and on the free movement of such data. A new privacy concept called user-centric privacy framework (UPF) can be adopted in this particular solution: a user adapting system that follows the adaptable privacy statement that complies with best privacy practices and with the actual legal regulations; supported by privacy-enhancing technologies for single-user and group-based activities; provide user-controlled privacy considerations. (Garcia-Barrios, 2009)

The privacy of a citizen will be for sure, even, a more relevant discussion topic in the next years. A key factor for acquiring and maintaining new data from the clients is through the device's ID when connected to Wi-Fi, 4G/5G, mobile application login, and loyalty programs. Each day fewer consumers are comfortable about sharing their personal data. Several approaches are presenting different forms of dealing with the LBS issue and user protections: user identifiers are permuted at regular intervals to prevent identification based on statistical analysis of long time sequences (Takbiri et al., 2017); location privacy preservation protocol (Deb et al., 2010), and several others. The basic idea is to refer to a client with a unique identifier, not necessarily correlated with a name, address, email or any other sensitive personal data. The common approach of generating a consumer profile threw the data mining of conventional data as the user, email, professional occupation, age, and potential income will only be possible – with a clear authorization of the user, and even then – with restrictions. On the other hand, most users are leading their concerns to the data privacy issue and new privacy issues methodologies are presented, such as User-Tailored Privacy (UTP) to adapt Facebook's privacy features to the user's personal preferences (Knijnenburg, 2017; Namara et al., 2018) and several others mirroring the new concern and regulations.

In the actual state of technology it isn't feasible to track a mobile user without the need to acquire its personal data or identification, and e.g. if a user changes its connecting devices the data mining process used in the client's profile definition with AI tools can predict from the unknown new consumer if it

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fits in a behavior type of a previously stored profile and with a good level of liability understand that this unknown client is in reality – a previous profile stored in the client's profile database or a new one. All of this can be achieved without interference in personal critical data and, consequently, it is not an irregular procedure taking into consideration the GDPR.

The effective loyalty programs will also be relevant for enabling the consumer to cooperate on sharing some useful data as presented in Chakraborty (2018) and Sumarliyanti et al. (2018). The loyalty program data, taking into consideration the authorized items supported by GDPR, can be stored in a blockchain structure for a group of retails, this way, using the benefits of this technology, such as: trust, transparency, security, and reliability of data processing. Also, it can be stated that a shared loyalty platform will mean less cost in building and supporting it.

The fast-growing of solutions supported in IoT can and will be a challenging issue in the near future (Liu et al., 2018). The ability to generate interactions between a user in a physical store and the shopper can be very promising. As an example, a user that stands near a exhibition stand of a product in a store can generate an relevant event: change in the lightning; sound message about the product; a VR-AR animation that starts for fully exploring the potential of a product or for collecting statistical metrics about the average time that a shopper stands looking for the product exhibition. The association of an IP address, smart capacity processing can promote the described interaction process. The technologies of Wi-Fi, Bluetooth, and NFC can be of great relevance for the determination of the client's position in the physical space of a store.

Machine learning (ML) is one of the main approaches to address the problem of big data mining. ML can enable the e-commerce ecosystem bringing self-innovate and improvement by accumulating prior knowledge (Rao et al., 2018). The data collected and processed with the ML tool will enable a much richer decision-making service for marketing strategy. This also means a better approach to the customer's expectation and needs (Rogojanu et al., 2018), enabling to overcome also the inefficacy of the customer behavior: the majority of the shoppers do not do the purchase in the first visit (Yeo et al., 2018).

The interaction between a client in a shopping process on a conventional approach or online can be more efficient with the introduction of a full support solution that could enable a much richer shopping experience. The customer could and should be advised in real time to enable a faster shopping time experience providing all the relevant information that the customer needs in the shopping moment. This important interaction solution can be supported by an intelligent conversational agent (CA). A CA also widely known as chatbots is a computer program to simulate the conversations between human and machine (Leong et al., 2017; Albayrak et al., 2018).

Enriching the shopping experience, while merging the experience of a retails shop experience with the electronic experience, is the emergent challenge. It should also be considered another relevant experience in an electronic shopping experience: the product visualization and interaction with the client in a common physical store. But we can also have referred that the physical experience of the shopper can and should be enriched with the ability to sense the product more in detail.

Nowadays, Virtual Reality (VR) and Augmented Reality (AR) are a new and extend existing customer experience: increasing interaction with user or equipment motion, applications have been strongly continuing to produce and reach more user experience target (Atalar & Özcan, 2017). The VR and AR solution can be understood as a process for overlaying virtual information of products on the real world (Li & Chen, 2010). With most of the information in the digital form and with the typical use of JPEG format as a form for enabling the visualization of the products – the JPEG AR standardization has been started in 2012, enabling the integration of images in an AR scenario – the JPEG committee enabled

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the development of a standard, JPEG AR (ISO/IEC 19710). This part is an extension of relevant JPEG standards with image-based AR application, which is ideal for AR application's behaviors.

The enrichment of the experience, keeping in mind the proposed evolutionary path for electronic and conventional shopping development, means bringing the AR/VR experience, as previously referred, to the physical store. The introduction of new hardware in-store will enable the desired enrichment: virtual mirrors and touch-screen digital signage - all integrated into a physical store, and often making use of shoppers own mobile devices, ranging from tablet PCs to smartphones, as described in Bodhani (2013).

On another perspective, this revolution will also affect the way we think about electronic commerce applications: visiting an electronic store can be a panoramic experience where visitors can select a product they are interested in and freely view the product from any angle by rotating the tablet or smartphone. Products can be displayed as if it were in the hands of the user by a photo-based augmented reality system (Photo AR), allowing comparison with other objects possessed by the user as described in: (Ohta et al., 2014). The 3D experience in an e-commerce store is also described in Khedwala et al. (2018). As a final remark in Chakraborty & Gupta (2017) that explored the factors impacting the adoption of augmented reality in online purchases in India, an important finding was identified, which concluded that people who are Gadget Lovers and those who prefer to buy online frequently were more likely to try Augmented Reality.

FUTURE RESEARCH DIRECTIONS

The introduction of several technologies and the new proposal for an evolutionary path for the e-commerce, taking into consideration a merging between the physical store and the electronic stores open a new bundle of new research topics for the near future.

The AR/VR conceptualization and implementation will push the mobile phones, tablets and other personal communication devices within the Personal Area Network (PAN) will be pushed to new features and more powerful integrations of AR/VT features. It will also be expected that new algorithms will perform more efficiently the files required to induce the new paradigm around VR/AR.

The challenge of using LBS is essentially in managing the compromising between the actual and future regulations around user privacy and the ability to keep on tracking the users in a more efficient way. The R&D challenges points to the determination with expected increasing accuracy the position of the customer. Nowadays we can easily spot a user in a store, but we need to spot a user near a product in a part of the store where user intervention should be as minimal as possible to be effective (e.g. we should expect the user to remember to turn on the Bluetooth on its device on entering a shopping zone).

The flow of data within the ecosystem of electronic commerce will increase with the introduction of the proposed solution. All new signaling will be used to spot, interact, promote, generate AR/VR objects and dealing with future loyalty platforms. A topic of research can be the definition of priorities in this big flow of information and in some cases implement DTN approaches to avoid special coverage areas, delays and congestion instants in the network. The application of the concept of an overlay network that can disseminate lower priority traffic will be a major concern, enabling a DTN solution.

A platform supported by LBS, IoT, AI, and Blockchain that collects and deals with relevant information about the shopper and the electronic commerce business should have an enhanced mechanism of security. Some studies should work around new proposals for hard secure algorithms that could be efficient even in elementary hardware modules that will build the censoring network, for example in a

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product exhibition stand. In the topic of research of AI, the speed of processing can enable fast responses when, for example, a client is in the advising process to get the product that best fits his profile.

CONCLUSION

The proposed solution plans to describe a possible evolutionary path for electronic commerce solutions. During the chapter, it is clear that the authors believe in the introduction of several technologies with the focus to promote a better shopping experience, consequently better results for the m-commerce business. The results of the survey among professionals working in e-commerce and m-commerce showed that IoT and AI have greater potential in the context of the evolution of m-commerce paradigm. These technologies will play a crucial role in identifying the client, understand the client, advice and enrich the experience of "feeling" a product prior to the final and desired shopping act being done. Additionally, it was possible to identify that users with more years of experience in the adoption of m-commerce identify blockchain technology as offering greater relevance in the development of m-commerce than users with fewer years of experience.

The conventional activity of shopping in a physical store can also be improved by building new displays and interacting capabilities. Also new forms of building metrics about customer behavior around the new product exhibition and their impact in the number of visitors that leave the store with at least one purchase successfully. A key to the success of the proposed solution will be the interaction supported by IoT sensors and actuators around a product with the support of AI. This approach will keep on collecting data, processing it and elaborating strategies for maximize customer satisfaction.

The enrichment of the experience of navigating through an online store was also tooled into consideration. Again a solution of AR/VR combined with AI agents can promote the desirable merging between the two worlds: physical and electronic commerce platform. Additionally, the relevance of a trustful, reliable and easy-of-use loyalty program supported by the Blockchain technology was demonstrated that can optimize in a secure way the process.

REFERENCES

Adhikari, A., Zheng, V. W., Cao, H., Lin, M., Fang, Y., & Chang, K. C.-C. (2015). IntelligShop: Enabling Intelligent Shopping in Malls through Location-Based Augmented Reality. *Proceedings of the 2015 IEEE International Conference on Data Mining Workshop (ICDMW)*, 1604 - 1607. 10.1109/ICDMW.2015.103

Ai-Ping, L., Yan, J., & Quan-Yuan, W. (2006). On Organizational Knowledge for MultiAgent System Development. *Proceedings of the 2006 International Conference on Hybrid Information Technology*, 399 - 402. 10.1109/ICHIT.2006.253518

Albayrak, N., Özdemir, A., & Zeydan, E. (2018). An overview of artificial intelligence based chatbots and an example chatbot application. *Proceedings of the 26th Signal Processing and Communications Applications Conference (SIU)*, 1 - 4. 10.1109/SIU.2018.8404430

Almeida, F. (2017). Concept and Dimensions of Web 4.0. *International Journal of Computers and Technology*, *16*(7), 7040–7046. doi:10.24297/ijct.v16i7.6446

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Almeida, F. (2018). Big Data: Concept, Potentialities and Vulnerabilities. *Emerging Science Journal*, *2*(1), 1–10. doi:10.28991/esj-2018-01123

Alshahrani, A. M. (2013). NFC performance in mobile payment service compared with a SMS-based solution. *Proceedings of the International Conference on Green Computing, Communication and Conservation of Energy (ICGCE)*. 10.1109/ICGCE.2013.6823445

Alshahrani, A. M., & Walker, S. (2013). An NFC E-ticket system with offline authentication. *Proceedings of the 9th International Conference on Information, Communications & Signal Processing*.

Atalar, M., & Özcan, M. (2017). New augmented reality application in E-commerce and M-commerce. *Proceedings of the 2017 International Conference on Computer Science and Engineering (UBMK)*, 332 - 336. 10.1109/UBMK.2017.8093403

Bena, Y., Gulumbe, M., & Rahman, A. (2017). IoT on E-Commerce, Present and Future: A Review of Alibaba Case Study. *Journal of Information Systems Research and Innovation*, *11*(1), 41–46.

Bodhani, A. (2013). Getting a purchase on AR. *Engineering & Technology*, 46 - 49.

Bodó, B., Gervais, D., & Quintais, J. (2018). Blockchain and smart contracts: The missing link in copyright licensing? *International Journal of Law and Information Technology*, *26*(4), 311–336. doi:10.1093/ijlit/eay014

Bülbül, Ş., & İnce, G. (2018). Blockchain-based Framework for Customer Loyalty Program. *Proceedings of the 3rd International Conference on Computer Science and Engineering (UBMK)*, 342 - 346.

Chakraborty, I. (2018). Hierarchical Bayesian Modeling for Clustering Sparse Sequences in the Context of User Profiling in Customer Loyalty Program. *Proceedings of the 2018 IEEE International Conference on Big Data (Big Data)*, 4678 - 4683. 10.1109/BigData.2018.8621915

Chattha, N. A. (2014). NFC – Vulnerabilities and defense. *Proceedings of the 2014 Conference on Information Assurance and Cyber Security (CIACS)*, 35 - 38. 10.1109/CIACS.2014.6861328

Chen, M. (2017). The analysis of model for electronic commerce - artificial intelligent. *Journal of Asian Business Strategy*, *7*(2), 39–43.

Chen, R., Peng, L., & Qin, Y. (2010). Supermarket shopping guide system based on Internet of things. *Proceedings of the IET International Conference on Wireless Sensor Network 2010 (IET-WSN 2010)*, 17 - 20. 10.1049/cp.2010.1020

Chochliouros, I. P., Kostopoulos, A., Spiliopoulou, A. S., Dardamanis, A., Neokosmidis, I., Rokkas, T., & Goratti, L. (2017). Business and market perspectives in 5G networks. *Proceedings of the 2017 Internet of Things Business Models, Users, and Networks*, 1 - 6. 10.1109/CTTE.2017.8260997

Creswell, J. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Thousand Oaks, CA: SAGE Publications.

Deb, R., Kazary, S., Islam, K. R., & Ahmed, R. (2010). Preserving Location Privacy in Peer-to-Peer Environments. *Proceedings of the 2010 International Conference on Data Storage and Data Engineering*, 49 - 53. 10.1109/DSDE.2010.26

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Dhauta, S., & Kapoor, S. (2017). Interactive intelligent shopping cart using RFID and ZIGBEE modules. *Proceedings of the 2017 International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC)*, 764 - 769. 10.1109/I-SMAC.2017.8058282

Din, M. M., Jamil, N., & Aziz, N. F. (2018). Adopting Centroid and Amended Trilateration for better accuracy of range-based non-GPS localization. *Proceedings of the 4th International Conference on Computer and Information Sciences (ICCOINS)*, 1 - 6.

Erışık, D., Karaman, A., Alptekin, G. I., İncel, Ö. D., Burçak, O., & İşbilen, M. (2015). Design of sensor-based augmented reality software (SARAS). *Proceedings of the 23nd Signal Processing and Communications Applications Conference (SIU)*, 2218 - 2221. 10.1109/SIU.2015.7130316

Esaki, H. O. (2009). IP over DTN: Large-delay asynchronous packet delivery in the internet. *Proceedings of the 2009 International Conference on Ultra Modern Telecommunications & Workshops*, 1-4.

Foroudi, P., Gupta, S., Sivarajah, U., & Broderick, A. (2018). Investigating the effects of smart technology on customer dynamics and customer experience. *Computers in Human Behavior*, *80*, 271–282. doi:10.1016/j.chb.2017.11.014

Frazer, E. S. (2014). Omnichannel retailing: the merging of the online and off-line environment. *Proceedings of the Global Conference on Business and Finance*, 655-657.

Galuszewska, M., & Sahut, J.-M. (2003). Intelligent agent stakes for e-commerce. *Proceedings of the Symposium on Applications and the Internet Workshops*, 131 - 135.

Ganapathy, S., Anderson, G. J., & Kozintsev, I. V. (2011). MAR shopping assistant usage: Delay, error, and utility. *Proceedings of the 2011 IEEE Virtual Reality Conference*, 207 - 208. 10.1109/VR.2011.5759471

Ganne, E. (2018). *Can Blockchain revolutionize international trade?* World Trade Organization. Retrieved 28 February 2019, from https://www.wto.org/english/res_e/booksp_e/blockchainrev18_e.pdf

Garcia-Barrios, V. M. (2009). User-centric Privacy Framework: Integrating Legal, Technological and Human Aspects into User-Adapting Systems. *Proceedings of the 2009 International Conference on Computational Science and Engineering*, 176 - 181. 10.1109/CSE.2009.280

Grewal, D., Roggeveen, A., & Nordfält, J. (2017). The Future of Retailing. *Journal of Retailing*, *93*(1), 1–6. doi:10.1016/j.jretai.2016.12.008

Hah, S., Park, J., & Kim, J.-d. (2011). Sensitivity of image based Augmented Reality fitting simulation. *Proceedings of the 2011 IEEE International Symposium on Mixed and Augmented Reality - Arts, Media, and Humanities*, 107 - 108. 10.1109/ISMAR-AMH.2011.6093667

Huang, M., & Rust, R. (2018). Artificial Intelligence in Service. *Journal of Service Research*, *21*(2), 155–172. doi:10.1177/1094670517752459

Hurwitz, A., & Jeffs, A. (2009). EYEPLY: Baseball proof of concept — Mobile augmentation for entertainment and shopping venues. *Proceedings of the 2009 IEEE International Symposium on Mixed and Augmented Reality - Arts, Media and Humanities*, 55 - 56. 10.1109/ISMAR-AMH.2009.5336723

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Jayachandran, K., Chilakamarri, S., Coelho, D., & Mueller, K. (2017). A virtual reality grocery shopping game to improve awareness for healthy foods in young adults. *Proceedings of the 13th International Conference and Expo on Emerging Technologies for a Smarter World (CEWIT)*, 1 - 5. 10.1109/CEWIT.2017.8263138

Jung, K., & Park, S. (2017). Collaborative caching techniques for privacy-preserving location-based services in peer-to-peer environments. *Proceedings of the 2017 IEEE International Conference on Big Data (Big Data)*, 4497 - 4506. 10.1109/BigData.2017.8258490

Kanfade, M. M., Ambade, S. D., & Bhagat, A. P. (2018). Location Based Notification System. 2018 *Proceedings of the International Conference on Research in Intelligent and Computing in Engineering (RICE)*, 1 - 6.

Kang, H. J. (2017). Designing next generation marketplace: The effect of 3D VR store interface design on shopping behavior. *Proceedings of the 2017 IEEE Virtual Reality (VR)*, 411 - 412. 10.1109/VR.2017.7892351

Khedwala, M., Momin, F., Pachhapure, U., & Shaikh, S. (2018). Analysis of Auto Generation of 3D Model Using Multiple 2D Graphics to Manifest through Augmented Reality. *Proceedings of the 2018 International Conference on Smart City and Emerging Technology (ICSCET)*, 1 - 5. 10.1109/ICSCET.2018.8537310

Knijnenburg, B. P. (2017). Privacy? I Can't Even! Making a Case for User-Tailored Privacy. *IEEE Security and Privacy*, *15*(4), 62–67. doi:10.1109/MSP.2017.3151331

Kshetri, N. (2018). 5G in E-Commerce Activities. *IT Professional*, *20*(4), 73–77. doi:10.1109/MITP.2018.043141672

Leong, P. H., Goh, O. S., & Kumar, Y. J. (2017). MedKiosk: An embodied conversational intelligence via deep learning. *Proceedings of the 13th International Conference on Natural Computation, Fuzzy Systems and Knowledge Discovery (ICNC-FSKD)*, 394 - 399. 10.1109/FSKD.2017.8393301

Li, R., Song, T., Capurso, N., Yu, J., Couture, J., & Cheng, X. (2017). IoT Applications on Secure Smart Shopping System. *IEEE Internet of Things Journal*, *4*(6), 1945–1954. doi:10.1109/JIOT.2017.2706698

Li, X., & Chen, D. (2010). Augmented reality in e-commerce with markerless tracking. *Proceedings of the 2nd IEEE International Conference on Information Management and Engineering*, 609 - 613. 10.1109/ICIME.2010.5478308

Liu, L., Zhou, B., Zou, Z., Yeh, S.-C., & Zheng, L. (2018). A Smart Unstaffed Retail Shop Based on Artificial Intelligence and IoT. *Proceedings of the IEEE 23rd International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD)*, 1 - 4. 10.1109/CAMAD.2018.8514988

Misbhauddin, M., & Alshamari, M. (2018). Towards a Proximity-Aware, Accessible and Personalized Public Digital Terminal An Initial Study. *Proceedings of the 21st Saudi Computer Society National Computer Conference (NCC)*. 10.1109/NCG.2018.8593129

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Monteiro, D. M., Rodrigues, J. J., & Lloret, J. (2012). A secure NFC application for credit transfer among mobile phones. *Proceedings of the 2012 International Conference on Computer, Information and Telecommunication Systems (CITS)*, 1-5. 10.1109/CITS.2012.6220369

Mosquera, A., Olarte-Pascual, C., Ayensa, E., & Murillo, Y. (2018). The role of technology in an omnichannel physical store: Assessing the moderating effect of gender. *Spanish Journal of Marketing*, *22*(1), 63–82. doi:10.1108/SJME-03-2018-008

Namara, M., Sloan, H., Jaiswal, P., & Knijnenburg, B. P. (2018). The Potential for User-Tailored Privacy on Facebook. *Proceedings of the 2018 IEEE Symposium on Privacy-Aware Computing (PAC)*, 31 - 42. 10.1109/PAC.2018.00010

Ohta, M., Nagano, S., Otani, H., & Yamashita, K. (2014). Augmented reality product display system on a 360-degree view inside store. *Proceedings of the IEEE 3rd Global Conference on Consumer Electronics (GCCE)*, 167 - 168. 10.1109/GCCE.2014.7031164

Oleh Zolotukhin, M. K. (2018). Authentication Method in Contactless Payment Systems. *Proceedings of the 2018 International Scientific-Practical Conference Problems of Infocommunications. Science and Technology (PIC S&T)*. 10.1109/INFOCOMMST.2018.8632065

Penurkar, P. P. (2015). Congestion avoidance and control in DTN. *Proceedings of the 2015 International Conference on Energy Systems and Applications*, 755-760.

Pine, J. (2017). *Technology and Emergency Management*. Hoboken, NJ: Wiley.

Pricilla, C., Lestari, D. P., & Dharma, D. (2018). Designing Interaction for Chatbot-Based Conversational Commerce with User-Centered Design. *Proceedings of the 5th International Conference on Advanced Informatics: Concept Theory and Applications (ICAICTA)*, 244 - 249. 10.1109/ICAICTA.2018.8541320

Queirós, A., Faria, D., & Almeida, F. (2017). Strengths and Limitations of Qualitative and Quantitative Research Methods. *European Journal of Education Studies*, *3*(9), 369–387.

Rao, H.-k., Zeng, Z., & Liu, A.-p. (2018). Research on personalized referral service and big data mining for e-commerce with machine learning. *Proceedings of the 4th International Conference on Computer and Technology Applications (ICCTA)*, 35 - 38. 10.1109/CATA.2018.8398652

Raza, A., Shaikh, H., Qureshi, M. S., Qayyum, N. U., & Shah, A. (2018). A Conceptual framework for Measuring Acceptance of Contactless Payment Methods. *Proceedings of the IEEE 5th International Conference on Engineering Technologies and Applied Sciences (ICETAS)*, 1 - 5. 10.1109/ICETAS.2018.8629179

Razavi, A. R., Krause, P. J., & Strømmen-Bakhtiar, A. (2010). From business ecosystems towards digital business ecosystems. *Proceedings of the 4th IEEE International Conference on Digital Ecosystems and Technologies*, 290 - 295. 10.1109/DEST.2010.5610633

Rezazadeh, J., Sandrasegaran, K., & Kong, X. (2018). A location-based smart shopping system with IoT technology. *Proceedings of the IEEE 4th World Forum on Internet of Things (WF-IoT)*, 748 - 753. 10.1109/WF-IoT.2018.8355175

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Rogojanu, I., Suciu, G., Ditu, M.-C., & Pasat, A. (2018). Smart Shopping Technologies for Indoor Markets. *Proceedings of the 2018 IEEE International Conference on Computational Science and Engineering (CSE)*, 99 - 103. 10.1109/CSE.2018.00020

Rychalska, B., Glabska, H., & Wroblewska, A. (2018). Multi-Intent Hierarchical Natural Language Understanding for Chatbots. *Proceedings of the Fifth International Conference on Social Networks Analysis, Management and Security (SNAMS)*, 256 - 259. 10.1109/SNAMS.2018.8554770

Santoso, H. A., Winarsih, N. A., Mulyanto, E., Saraswati, G. W., Sukmana, S. E., Rustad, S., . . . Firdausillah, F. (2018). Dinus Intelligent Assistance (DINA) Chatbot for University Admission Services. *Proceedings of the 2018 International Seminar on Application for Technology of Information and Communication*, 417 - 423. 10.1109/ISEMANTIC.2018.8549797

Shende, P., Mehendarge, S., Chougule, S., Kulkarni, P., & Hatwar, U. (2017). Innovative ideas to improve shopping mall experience over E-commerce websites using beacon technology and data mining algorithms. *Proceedings of the 2017 International Conference on Circuit, Power and Computing Technologies (ICCPCT)*, 1-5. 10.1109/ICCPCT.2017.8074202

Smith, A. (2018). *What's the influence of augmented reality on the ecommerce industry?* Retrieved 28 February 2019, from https://www.itproportal.com/features/whats-the-influence-of-augmented-reality-on-the-ecommerce-industry/

Speicher, M. (2018). Shopping in Virtual Reality. *Proceedings of the 2018 IEEE Conference on Virtual Reality and 3D User Interfaces (VR)*, 1 - 2.

Stoyanova, J., Brito, P. Q., Georgieva, P., & Milanova, M. (2015). Comparison of consumer purchase intention between interactive and augmented reality shopping platforms through statistical analyses. *Proceedings of the 2015 International Symposium on Innovations in Intelligent Systems and Applications (INISTA)*, 1 - 8. 10.1109/INISTA.2015.7276727

Stoyanova, J., Gonçalves, R., Coelhc, A., & Brito, P. (2013). Real-time augmented reality shopping platform for studying consumer cognitive experiences. *Proceedings of the 2nd Experiment@ International Conference (exp.at'13)*, 194 - 195. 10.1109/ExpAt.2013.6703069

Sumarliyanti, H., P. W., & Munajat, Q. (2018). Customer Loyalty in Go-Food: The Antecedent of Satisfaction. *Proceedings of the 2018 International Conference on Advanced Computer Science and Information Systems (ICACSIS)*, 283 - 387. 10.1109/ICACSIS.2018.8618250

Takbiri, N., Houmansadr, A., Goeckel, D. L., & Pishro-Nik, H. (2017). Limits of location privacy under anonymization and obfuscation. *Proceedings of the 2017 IEEE International Symposium on Information Theory (ISIT)*, 764 - 768. 10.1109/ISIT.2017.8006631

Tian, Y., Liu, H., Wu, Z., & Hu, J. (2017). Enhancing utility approach for user-centered location privacy service. *Proceedings of the 8th IEEE International Conference on Software Engineering and Service Science (ICSESS)*, 455 - 458. 10.1109/ICSESS.2017.8342954

Turban, E., Whiteside, J., King, D., & Outland, J. (2017). Mobile Commerce and the Internet of Things. In *Introduction to Electronic Commerce and Social Commerce.* Cham: Springer. doi:10.1007/978-3-319-50091-1_6

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Xiaojie Zhu, E. A. (2019). A privacy-preserving framework for outsourcing location-based services to the cloud. *IEEE Transactions on Dependable and Secure Computing*, 1–1.

Yadav, A., Yadav, D., Gupta, S., Kumar, D., & Kumar, P. (2018). Online Food Court Payment System using Blockchain Technology. *Proceedings of the 5th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON)*, 1 - 7.

Yeo, J., Hwang, S.-w., Kim, S., Koh, E., & Lipka, N. (2018). Conversion Prediction from Clickstream: Modeling Market Prediction and Customer Predictability. *IEEE Transactions on Knowledge and Data Engineering*, 1–1.

Yi, G. H., Djaswadi, G. W., & Khir, M. H. (2018). An Adaptive Wi-Fi Trilateration-Based Indoor Localization. *Proceedings of the 2018 International Conference on Intelligent and Advanced System (ICIAS)*, 1 - 6.

Yrjölä, S., Ahokangas, P., & Matinmikko-Blue, M. (2018). Novel Context and Platform Driven Business Models via 5G Networks. *Proceedings of the IEEE 29th Annual International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC)*, 1 - 7. 10.1109/PIMRC.2018.8580819

Zeng, D., Wang, F.-Y., Zheng, X., Yuan, Y., Chen, G., & Chen, J. (2008). Intelligent-Commerce Research in China. *IEEE Intelligent Systems*, *23*(6), 14–18. doi:10.1109/MIS.2008.106

ADDITIONAL READING

Ashraf, A., Thongpapani, N., Menguc, B., & Northey, G. (2017). The Role of M-Commerce Readiness in Emerging and Developed Markets. *Journal of International Marketing*, *25*(2), 25–51. doi:10.1509/jim.16.0033

Balaji, M., & Roy, S. (2017). Value co-creation with Internet of things technology in the retail industry. *Journal of Marketing Management*, *33*(1-2), 7–31. doi:10.1080/0267257X.2016.1217914

Chhonker, M., Verma, D., & Kar, A. (2017). Review of Technology Adoption frameworks in Mobile Commerce. *Procedia Computer Science*, *122*, 888–895. doi:10.1016/j.procs.2017.11.451

Lamptey, H. (2018). Mobile Commerce in Developing Countries: An Evaluation of Selected Articles Published between 2009 and 2015. *Science and Technology*, *8*(1), 17–26.

Petrescu, M., & Krishen, A. (2018). Novel retail technologies and marketing analytics. *Journal of Marketing Analytics*, *6*(3), 69–71. doi:10.105741270-018-0040-z

Reformat, B. (2016). Information and communication technologies as a source of marketing innovations in retail – trends. *Journal of Economics and Management*, *23*(1), 45–53.

Zhang, R., Chen, J., & Lee, C. (2013). Mobile Commerce and Consumer Privacy Concerns. *Journal of Computer Information Systems*, *53*(4), 31–38. doi:10.1080/08874417.2013.11645648

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KEY TERMS AND DEFINITIONS

Agent: Software developed to automate and perform a task on a network for the user.

Chatbot: Computer program that tries to simulate a human being in conversation with people.

General Data Protection Regulation (GDPR): Regulation for the protection of the data and identity of European Union citizens that started to be idealized in 2012 and was adopted in 2016.

Omnichannel: Communication and sales strategy between channels that organizations use to improve customer experience.

Personal Area Network (PAN): Computer network for interconnecting devices centered on an individual person's workspace.

Wi-Fi: Wireless network in which users can have access to the internet only by radio wave signal.

ZigBee: Set of specifications for wireless communication between electronic devices, with emphasis on low operating power, low data transmission rate and low implementation cost.

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Chapter 44
Secure Payment Modes Technology for E-Commerce Applications

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ABSTRACT

E-commerce refers to business and customers buying and selling products online. There are significant improvements in the areas of initiating sale of products, placing orders, making payments, and transfer of funds. This has led to a much better global economy and better living standards for all. While buying products online, it is essential to know the payment method that ensures authentication and also many other security issues. There are many payments modes available in market today. This chapter presents different protocols and its security issues that relate to a specific payment mode.

INTRODUCTION

Commerce is the most major aspect of any civilization. Improving Commerce can bring prosperity into all segments of society. In today's world there have been major changes to the commerce industry. The most important of it is the introduction of computers into the commerce industry. Computerization of commerce has taken the world by a storm. There are significant improvements in the areas of initiating sale of products, placing orders, making payments, and transfer of funds. This has led to a much better global economy and better living standards for all.

Payment started with the barter system centuries ago. Goods were exchanged directly between people in the barter system. The major drawback of barter system was that the buyer and the seller had to mutually like the goods that they had in surplus. This led to next generation of payment method called Commodity Money System. Here, the buyer would buy goods from the seller in exchange of some commodity in the

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form of gold, silver, corn etc. Commodity Money slowly evolved into standard of having paper notes at the exchange parameter. The cash payment method does not require the seller to like the commodity that he/she is going to receive in exchange for the goods. About 80 percent of all the transactions in the world are done through cash payment. The process is simple and there is no bank involvement. There is however an overhead of printing notes.

The cash payment method is very insecure. There is no record of the transaction maintained. There is a possibility for generating counterfeit notes. Cash Payment is mostly used for low-value payments. Check Payment is employed for making medium to high value payment. A record of the transaction is maintained at the bank at the cost of the transaction fee. However, it is not a guaranteed form of payment since the checks do not represent real time cash. There is a possibility that the checks could be turned down by the buyer's bank due to various reasons. As the volume of check processing started increasing, banks had to think about ways of improving the turn-around time for payment processing.

Problems of traditional processing system (Raj Garg, 2016):

- **Lack of Security:** It is because the consumer has to send all the confidential data on paper, which is not secured and encrypted.
- **Lack of Convenience:** Traditional Processing system requires consumer to send paper cheques duly signed by them before performing any transaction. This may lead to in convenience by consumers.
- **Lack of Time and Eligibility:** Not all the buyers may have the bank accounts.

E-commerce (electronic commerce or EC) is the buying and selling of goods and services, or the transmitting of funds or data, over an electronic network, primarily the internet. These business transactions occur either as business-to-business, business-to-consumer, consumer-to-consumer or consumer-to-business. The terms e-commerce and e-business are often used interchangeably. The term e-tail is also sometimes used in reference to transactional processes for online shopping.

Advantages of E-Commerce

The advantages of E-Commerce are as follows:

- E-commerce helps organization to provide better customer services.
- E-Commerce reduces paper work a lot.
- E-Commerce increased the productivity of the organization.
- E-Commerce provides option of virtual auctions.
- Customers need not to travel to shop a product thus less traffic on road and low air pollution.
- E-Commerce application provides user more options to compare and select the cheaper and better option.

Applications of E-Commerce

The applications of E-commerce are used in various business areas such as retail and wholesale and manufacturing. The most common E-commerce applications are as follows:

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Marketing

E-commerce marketing is a practice of redirecting and guiding online customers to an e-commerce website and convincing them to buy the products or the services online.

E-Commerce Marketing can be divided in to two major actions: maintaining and driving the website traffic and optimizing the user experience. Both the factors are essential and failure of one result in undetermined success of other. Big commerce is the leading e-commerce platform for growing mid-market retailers.

Finance

Most of the financial companies have been using E-commerce to a large extent. The customers can check their online account statements, balance, transfer money to other accounts and also pay their bill through online banking or e-banking systems. As the main developing trend of e-commerce in finance realm, the finance trends provide many advantages like the funds circulation can be delivered to whole world quickly, improving efficiency, improving security, can connect more number of users and have instantaneous access to information.

Manufacturing

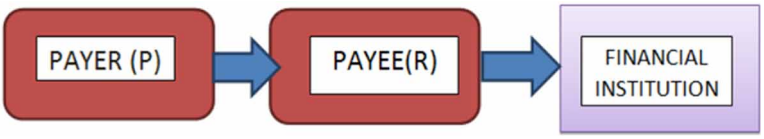
Manufacturing can be defined as a process of collecting the raw materials and then converting them into finished qualitative goods or products for the consumers.

In order to raise the profitability and also to improve the customer's service many companies/ manufacturers move their supply chain operations on to internet using an electronic exchange which is a forum where all the manufacturers, suppliers, customers buy and sell goods and also trade the market information. Also effective e-commerce lies in the ability to deliver a buyer-centric and engaging online experience that enables customers to interact and transact with the brand and allows manufacturers to reduce administrative costs, increase sales and improve brand loyalty. This is achieved by reducing costs.

Different Payment Modes of E-Commerce

Electronic Commerce industry is exploding at a fast pace. One of the key aspects of electronic commerce is payments. There are different methods to pay electronically. These can be through Credit Cards, Electronic Checks, Electronic Cash, Debit Cards, or Charge Cards.

Figure 1. Typical scenario of e-commerce system involves three types of actors



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- **Payer (P)/Consumer:** Payer transfers some money to his/her wallet.
- **Payee (R) / Merchant:** Payer transfers the withdrawn money to the payee's (R) wallet
- **Financial Institution:** A bank with whom both payer and payee have accounts.
- Main factors which help society to make use electronic payment systems are:
- **Decrease in Technology Cost:** Since the technology used in networks is being decreased day by day, the internet is becoming almost free everywhere.
- **E-Commerce is Secure:** The usage of secure electronic transaction ensures the security of financial transactions on internet.
- **Minimal Operational and Processing Cost, Time:** Due to reduced technology cost the processing cost of various commerce activities are becoming less with much more less usage of Paper and Time.
- **Increasing Online Commerce:** Considering the above two factors many Organizations are leading towards Online Commerce (Raj Garg, 2016).

E-Commerce involves trading using the latest electronic equipment and software between the sellers and the buyers. The trade in e-commerce is conducted in a slightly different way than the traditional trading. The first form of automated payments was to disburse salaries to employees from an employer's account. Gradually, the information revolution changed the outlook of the banking sector and computerized majority of the functions. This is achieved with the help of different E-commerce payment systems which is explained in detail in next section.

TYPES OF E-PAYMENT SYSTEMS

Bogdan-Alexandru URS (2015)presented the most used electronic payment systems are as following: Smart card-based e-payment system, online payment system, Mobile phone based payment system, E-Wallet Payment System and the E-Cheque Payment System. New payment types are continuously discovered and there are additional methods that exist or are being developed continuously each year.

Digital Cash

e-Cash or digital cash is purely software based, anonymous, untraceable, online token payment system, available on Unix, Windows as well as Macintosh platform (Rachna & Singh, 2013). Digital Cash entails the use of digital wallet where in it works as a system of purchasing cash credits in small amounts and storing them in the computer and using it for the electronic purchases. The digital cash numbers are unique and are issued by banks, money in your bank is converted into digital code. Also referred as e-currency, e- cash, e-money etc. Figure 2 represents e-cash processes in general:

Security in E-Cash

Any E-cash system to be accepted, security is one of the prime concerns that need to be considered. The originality of the message being transferred among consumers, merchants and banks need to be secured to avoid any unauthorized individual intercepting or changing the content of the messages. In order to protect E-cash from such illegal activity, E-cash system must possess quality such as integrity,

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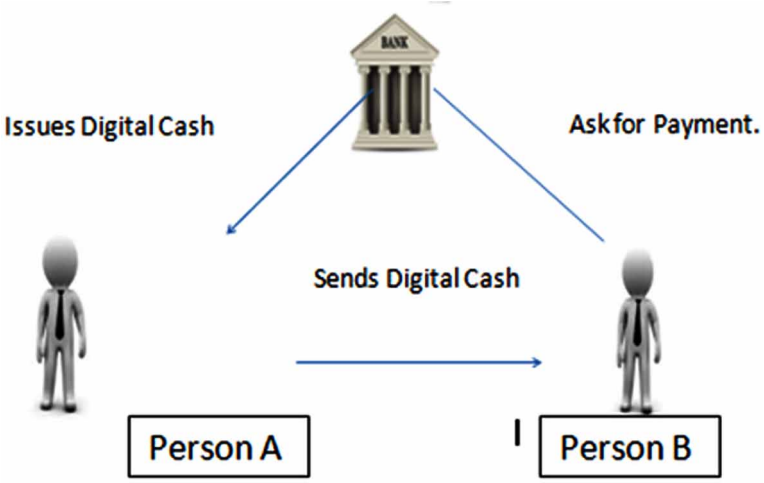
nonrepudiation and able to authenticate. All parties must know to whom they are dealing with, before engaging or committing in any transaction. Integrity comes in place where the message sent by consumers, merchants and banks must be intact when it reaches respective recipients. Razali (2002) discussed that once the integrity and authentication are achieved, consumers, merchants or banks could no longer deny the bank transactions.

Figure 2. The usage of digital cash



Credit Cards

There are two major organizations issuing 80% of the credit cards in the market today. They are:

- Visa International and
- MasterCard.

An overview of the credit card processing is depicted in the Figure 3.

- Card Issuer
- Financial Network
- Acquirer
- Card Holder
- Merchant

There are four main partners in a Credit Card transaction.

1. The Issuing Bank is the bank that maintains the account of the buyer and issues a Credit Card to the buyer. The issuing bank also sets a limit on the amount of purchases that can be made using the card and the percentage of interest on the unpaid portion of the bill.

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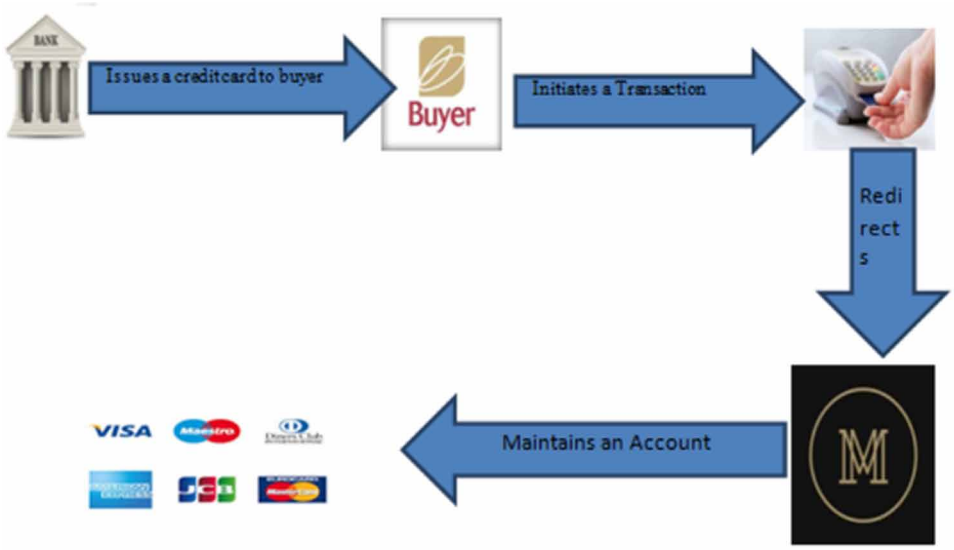
2. The cardholder is also known as the buyer in the transaction. The cardholder initiates a transaction.
3. The merchant is the seller of goods and services.
4. The merchant maintains an account with a bank or a financial institution known as the acquirer. Acquiring institutions contracts with merchants to enable them to accept credit card transactions and charges a certain percentage of fees for the transaction.

Figure 3. Entities in conventional credit card processing system



Credit Card Payment Process

A Credit Card Payment is a two-step process:

1. Authorization
2. Capture/Settlement

Authorization is a process in which the merchant verifies the cardholder's identification and credit limit. The merchant sends the credit card information like the card number, expiration date, and amount to the acquirer. The acquirer will forward the card details to the issuing bank via the existing financial network. The credit card issuer will either return an approval, decline or referral for the authorization request. If the transaction was approved, then the merchant can deliver the goods purchased to the buyer. A transaction can be declined for various reasons like unavailable credit, bad credit history, wrong address, etc.

Capture/Settlement is the process of actual transfer of funds from the cardholder's account to the merchant's account. It collects the money for the merchant after the goods have been delivered.

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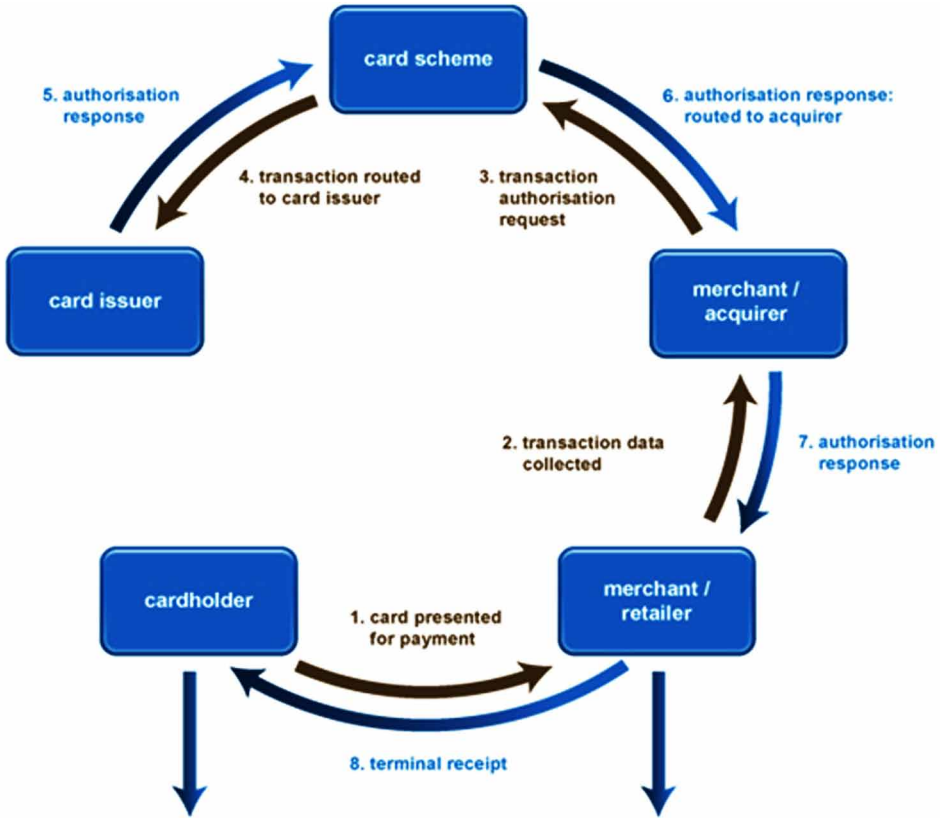
Debit Cards

Debit card, like credit card is a small plastic card with a unique number mapped with the bank account number. It is required to have a bank account before getting a debit card from the bank. The major difference between debit card and credit card is that in case of payment through debit card, amount gets deducted from card's bank account immediately and there should be sufficient balance in bank account for the transaction to get completed. In case of credit card there is no such compulsion. Having restriction on amount being in bank account also helps customer to keep a check on his/her spending.

The Figure 4 demonstrates the usage of debit cards.

Figure 4. Debit card payment processing cycle



Smart Card

Smart card is again similar to credit card and debit card in appearance but it has a small microprocessor chip embedded in it, used to perform financial transactions. It has the capacity to store customer work related/personal information. Smart card is also used to store money which is reduced as per usage. Smart card can be accessed only using a PIN of customer (Chakrabarti & Kardile, 2002, as cited in Sumanjeet, 2009). Smart cards are secure as they store information in encrypted format and are less expensive, provides faster processing. Mondex and Visa Cash cards are examples of smart cards.

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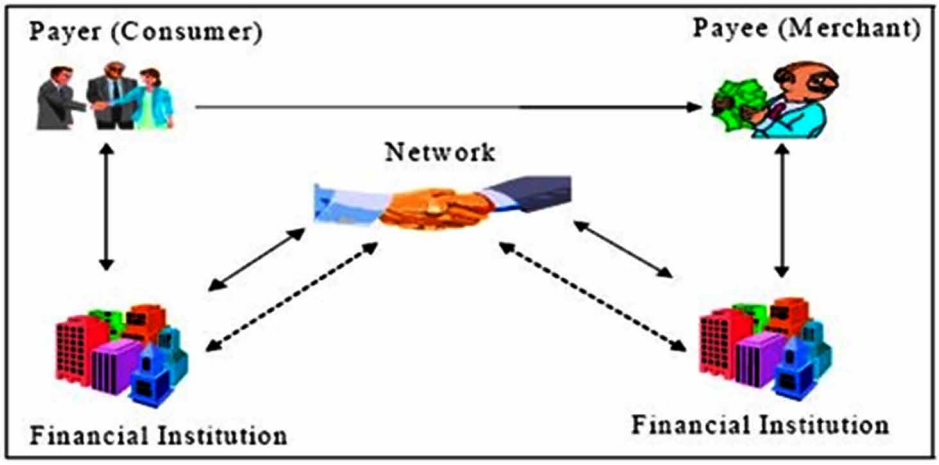
Figure 5. Smart card

Online Cheque or Electronic Fund Transfer

Electronic Fund transfer is a transaction that happens among the accounts of same bank or different bank without the intervention of bank staff members which share a common computerized network. EFT's are also called as online transactions or PIN-Debit transaction. In EFT's there is a financial house called as Automated Clearing House (ACH) responsible for transferring the money from Payer consumer) to Payee (Merchant) account on the completion of transaction.

Figure 6. The figure depicts the usage of Electronic Fund Transfer [EFT]



Electronic Wallets (E-Wallets)

E-wallet applications may reside on mobile devices, computers or on Web servers at a service that manages digital wallet information. These apps can make online purchasing faster populating order forms

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with billing, shipping and other information that you'd normally type manually. Some digital wallets may also store other important personal information, such as your driver's license and health care card data. If you lose a mobile device that has a digital wallet, people who find it won't be able to read its information because it's encrypted.

Electronic wallets being very useful for frequent online shoppers are commercially available for pocket, palm-sized, handheld, and desktop PCs as presented by the authors (Kaur & Pathak, 2015). They offer a secure, convenient, and portable tool for online shopping. They store personal and financial information such as credit cards, passwords, PINs, and much more. E-Wallets allow higher speed and much more efficiency for online shoppers.

Figure 7. The figure depicts the usages of E-wallet

METHODS OF ONLINE PAYMENT

Credit cards constitute a popular method of online payment but can be expensive for the merchant to accept because of transaction fees primarily. Debit cards constitute an excellent alternative with similar security but usually much cheaper charges. Besides card-based payments, other forms of payment have emerged and sometimes even claimed market leadership. Wallets like PayPal and Alipay are playing major roles in the ecosystem.

Net Banking

This is a system; well known that does not involve any sort of physical card. It is used by customers who have accounts enabled with Internet banking. Instead of entering card details on the purchaser's site, in this system the payment gateway allows one to specify which bank they wish to pay from. Then the user is redirected to the bank's website, where one can authenticate oneself and then approve the payment. Typically there will also be some form of two-factor authentication.

It is typically seen as being safer than using credit cards, with the result that nearly all merchant accounts in India offer it as an option.

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PayPal

PayPal is a global e-commerce business allowing payments and money transfers to be made through the Internet. Online money transfers serve as electronic alternatives to paying with traditional paper methods, such as cheques and money orders. It is subject to the US economic sanction list and other rules and interventions required by US laws or government. PayPal is an acquirer, a performing payment processing for online vendors, auction sites, and other commercial users, for which it charges a fee. It may also charge a fee for receiving money, proportional to the amount received. The fees depend on the currency used, the payment option used, the country of the sender, the country of the recipient, the amount sent and the recipient's account type.

Paymentwall

Paymentwall an e-commerce solutions providing company launched in 2010, offers a wide range of online payment methods that its clients can integrate on their website.

Google Wallet

Google Wallet was launched in 2011, serving a similar function as PayPal to facilitate payments and transfer money online. It also features a security that has not been cracked to date and the ability to send payments as attachments via email.

Mobile Money Wallets

In developing countries the banked population is very less, especially in tier II and tier III cities. Taking the example of India, there are more mobile phone users than there are people with active bank accounts. Telecom operators, in such geographies, have started offering mobile money wallets which allows adding funds easily through their existing mobile subscription number, by visiting physical recharge points close to their homes and offices and converting their cash into mobile wallet currency. This can be used for online transaction and E-Commerce purchases. Many payment options such as Airtel Money and M-Pesa in Kenya, ATW are being accepted as alternate payment options on various E-Commerce websites.

Comparison of E-Payment Systems

The table below shows the comparison of various E-payment systems such as Digital cash, credit cards, debit cards, smart cards, EFT, E-wallets against various features like users, transaction, efficiency etc., as presented by Sumanjeet (2009).

SECURITY MECHANISMS IN E-COMMERCE APPLICATIONS

E-commerce security is the protection of e-commerce assets from unauthorized access, use, alteration, or destruction. While security features do not guarantee a secure system, they are necessary to build a secure system. Online payment security protecting card details is the primary security risk with electronic

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transactions. Customers are very comfortable using cards in shops and over the phone despite the ever-present risk of details being copied or stolen. With payments over the Internet, there is more resistance towards disclosing card information.

Table 1. Statistics of online shoppers as a percentage of Internet users in India

S. No	Feature	Digital Cash	Credit Cards	Debit Cards	Smart Cards	Electronic Fund Transfer	E-Wallets
1	Users	Any User	Any Credit Card Holders	Any user with a bank or credit card account	Any user with a bank or credit card account	Any User with a bank account	Any User with a bank account
2	Payment Time	Prepaid	Paid later	Prepaid	Prepaid	Direct Debit	Quick Payments
3	Transaction	Online	Online	Offline	Offline	Online	Online
4	Transfer Limit	Depends on Prepaid limit	Depends on limit of credit card	Depends on amount of money in account	Depends on amount of money Saved	Depend on account limits	Depends on Merchant
5	Mobility	No	Yes	Yes	Yes	Yes	Yes

Perception can get in the way of fact. Both software and hardware companies have invested a great deal to further protect online data and build up customer confidence. Be aware of the security issue and help customers to feel at ease by telling them about the precautions we have taken. In the current Internet climate it is vitally important that we are not only secure but are seen to be secure.

Security is an essential part of any transaction that takes place over the internet. Customer will lose his/her faith in e-business if its security is compromised (Tutorials Point, 2017).

Following are the essential requirements for safe e-payments/transactions:

- **Authentication:** Verifies who you say you are. It enforces that you are the only one allowed to logon to your Internet banking account.
- **Authorization:** Allows only you to manipulate your resources in specific ways. This prevents you from increasing the balance of your account or deleting a bill.
- **Encryption:** Deals with information hiding. It ensures you cannot spy on others during Internet banking transactions.
- **Auditing:** Keeps a record of operations. Merchants use auditing to prove that you bought specific merchandise.
- **Integrity:** prevention against unauthorized data modification.
- **Nonrepudiation:** prevention against any one party from reneging on an agreement after the fact.
- **Availability:** prevention against data delays.

Measures to Ensure Security

Major security measures are following:

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- **Encryption:** It is a very effective and practical way to safeguard the data being transmitted over the network. Sender of the information encrypts the data using a secret code and specified receiver only can decrypt the data using the same or different secret code.
- **Digital Signature:** Digital signature ensures the authenticity of the information. A digital signature is an e-signature authentic authenticated through encryption and password.
- **Security Certificates:** Security certificate is unique digital id used to verify identity of an individual website or user.

Some of the best known options for the encryption and security of personal and card details are explained below. Almost every payment solution mentioned in this online payments tool includes this technology as standard. Online retailers will not need extra security measures if they use these market-tested and well-established products (Camenisch, Piveteau, Stadle, 1996).

Protocols for Securing E-Commerce Transaction

The security of E-Commerce transactions depends both on the network protocols and the payment framework used to perform the transaction.

Network Transport Security

Models such as Digi Cash, First Virtual, and Millicent provide a secure payment method. However, the transaction still depends on the privacy and authentication of the data stream. Basic TCP/IP networking protocols do not include encryption and strong authentication. Higher level protocols such as HTTP, FTP, and Telnet do little to provide advanced security measures beyond user id and password authentication. All information sent using these protocols is unencrypted, so the data stream lacks confidentiality.

Traditional networking protocols and applications are unable to enforce strong security measures for performing E-Commerce transactions securely. This lack of security led to the design and implementation of many new security protocols that strive to reach different security goals. There are some secure transport protocols that provide confidentiality and authentication between systems and applications by using encryption. The following section describes some of the more popular secure transport protocols.

Virtual Private Networking (VPN)

Virtual Private Networking technology provides the medium to use the public Internet backbone as an appropriate channel for private data communication. With encryption and encapsulation technology, a VPN essentially carves out a private passageway through the Internet. VPNs will allow remote offices, company road warriors, and even business partners or customers to use the Internet, rather than pricey private lines, to reach company networks. So the companies can save a lot of money.

Virtual private networks are flexible. They are point-to-multipoint connections, rather than point-to-point links. They can be set up or closed down at the network administrators will, making them ideal for short-term projects.

VPN has many advantages: It is much cheaper for connecting WANs than 800 numbers or dedicated T1 lines. It provides encryption and authentication services for a fairly good measure of privacy. Main-

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tenance of the WAN-to-WAN connection is left to Internet Service Providers. It is highly flexible, and can be set up and taken down very easily.

IPSec (Ipv6)

IPsec is a framework of open standards developed by the Internet Engineering Task Force (IETF). IPsec provides security for transmission of sensitive information over unprotected networks such as the Internet. IPSec acts at the network layer, protecting and authenticating IP packets between participating IPSec devices ("peers"), such as Cisco routers. IPsec provides the following network security services.

1. **Data Confidentiality:** The IPsec sender can encrypt packets before transmitting them across a Network.
2. **Data Integrity:** The IPSec receiver can authenticate packets sent by the IPSec sender to ensure that the data has not been altered during transmission.
3. **Data Origin Authentication:** The IPSec receiver can authenticate the source of the IPSec packets sent.
4. **Anti-Replay:** The IPSec receiver can detect and reject replayed packets.

Secure Socket Layer (SSL)

SSL is the Secure Sockets Layer protocol. Version 2.0 originated by Netscape Development Corporation, and version 3.0 was designed with public review and input from industry.

SSL (Secure Sockets Layer) is a communication system that ensures privacy when communicating with other SSL-enabled products. Technically speaking, SSL is a protocol that runs above TCP/IP and below HTTP or other top-level protocols. It is symmetric encryption nested within public-key encryption, authenticated through the use of certificates. An SSL connection can only occur between an SSL-enabled client and an SSL-enabled server. In fact, when a server is running in SSL mode, it can only communicate through SSL.

SSL allows traffic to be scrambled (or encrypted). The standard SSL developed by Netscape provides a high level of protection. It meets the following security requirements like:Authentication, Encryption, Integrity, and Non-reputability.

Secure Electronic Transaction (SET)

SET encrypts payment card transaction data and verifies that both parties in the transaction are genuine. SET, originally developed by Mastercard and Visa in collaboration with leading technology providers, has a large corporate backing and is perceived to be more secure as a result of its validation from card companies.

Private Communications Technology

SSL, created by Netscape, provides users with authentication of the server they are attaching to, encryption of the data sent and received, and integrity of the data being sent and received. PCT, created by Microsoft, provides protection against eavesdropping on a network or altering a network packet.

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The Private Communications Technology (PCT) protocol furnishes the following elements of transmission security for client/server relationships over the Internet:

- Provides symmetric session-encryption keys between servers and clients.
- Accommodates authentication of server to client via Certificate of Authority (CA) trusted public keys; optionally, it also authenticates client to server.
- Verifies message integrity with hash function message digests, as explained earlier for the SET protocol.

Secure Hypertext Transfer Protocol (SHTTP)

SHTTP extends the HTTP internet protocol with public key encryption, authentication and digital signature over the internet. Secure HTTP supports multiple security mechanism providing security to end users. SHTTP works by negotiating encryption scheme types used between client and server.

CONCLUSION

Technology has inarguably made our lives easier. It has cut across distance, space and even time. One of the technological innovations in banking, finance and commerce is the Electronic Payments. E-Commerce or Electronics Commerce sites use electronic payment where electronic payment refers to paperless monetary transactions. Electronic Payments provides greater freedom to individuals in paying their taxes, licenses, fees, fines and purchases at unconventional locations and at whichever time of the day, 365 days of the year. Electronic payment has revolutionized the business processing by reducing paper work, transaction costs, labor cost. Being user friendly and less time consuming than manual processing, it helps business organization to expand its market expansion.

FUTURE RESEARCH DIRECTIONS

On the basis of present study, the first remark is that despite the existence of variety of e-commerce payment systems, credit cards are the most dominant payment system. Second, alternative e-commerce payment systems are some countries are debit cards. In fact, like many other studies, the present study also reveals that the smart card based e-commerce payment system is best and it is expected that in the future smart cards will eventually replace the other electronic payment systems. Third, given the limited users bases, e-cash is not a feasible payment option. Thus, there are number of factors which affect the usage of e-commerce payment systems. Among all these user base is most important. Added to this, success of e-commerce payment systems also depends on consumer preferences, ease of use, cost, industry agreement, authorization, security, authentication, non-refutability, accessibility and reliability and anonymity and public policy.

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REFERENCES

Bogdan-Alexandru, U. R. S. (2015). Security Issues and Solutions in E-payment Systems. *Fiat Iustitia,* (2), 172-179. Retrieved from http://oaji.net/articles/2016/2064-1452602042.pdf

Camenisch, J., Piveteau, J. M., & Stadler, M. (1996). An Efficient Fair Payment System. *ACM Conference on Computer and Communications Security*, 88–94.

Confederation of Indian Industry. (2016). *E-Commerce in India: A Game Changer for the Economy*. Retrieved from http://www.bing.com/cr?IG=6F0F7F2F91334641BE5B3DE4745E7E89&CID=2B68C210B2166BF20A09C91FB3106ADC&rd=1&h=CQvneHAH_csyTTkglzFhbQUkKBR5oc1HDUEEsVBxqtQ&v=1&r=http%3a%2f%2fwww.italiaindia.com%2fimages%2fuploads%2fpdf%2fapril-2016-e-commerce-in-india.pdf&p=DevEx,5065.1

Kaur, K., & Pathak, A. (2015). E-Payment System on E-Commerce in India. *International Journal of Engineering Research and Applications*, *5*(2), 79–87. Retrieved from http://www.ijera.com/papers/Vol5_issue2/Part%20-%201/M502017987.pdf

Rachna, & Singh, P. (2013). Issues and Challenges of Electronic Payment Systems. *International Journal for Research in Management and Pharmacy, 2*(9), 25-30. Retrieved from https://raijmronlineresearch.files.wordpress.com/2017/08/3_25-30-rachna-et-al.pdf

Raj Garg, C. A. (2016). Importance of E-Commerce Payment System in Less paper Work. *International Journal of Business Quantitative Economics and Applied Management Research*, *2*(11), 47–59. Retrieved from http://ijbemr.com/wp-content/uploads/2016/05/IMPORTANCE-OF-E-COMMERCE-PAYMENT-SYSTEM-IN-LESS-PAPER-WORK.pdf

Razali, R. (2002). *Global Information Assurance Certification Paper*. Retrieved from https://www.giac.org/paper/gsec/1799/overview-e-cash-implementation-security-issues/103204

Sumanjeet, S. (2009). Emergence of payment systems in the age of electronic commerce: The state of art. *2009 First Asian Himalayas International Conference on Internet, 3*(3), 18-40. Retrieved from https://globip.com/articles/asiapacific-vol3-article2.pdf

Tutorials Point. (2017, August 15). *E-Commerce Security Systems*. Retrieved from https://www.tutorialspoint.com/e_commerce/e_commerce_security.htm

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Chapter 45
Predictors of the Continued Adoption of WECHAT Mobile Payment

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ABSTRACT

This research article integrates the technology acceptance model and diffusion of innovation theory to explore the factors predicting the continuance intention to use WECHAT mobile payment services in China. The results showed that perceived usefulness, perceived ease of use, perceived service quality, social influence, internet self-efficacy, relative advantage, compatibility, and complexity of were all significant predictor of the continued intention to use WECHAT mobile payment services. However, trust in the internet was not significant determinants of the continued intention to use. The results also demonstrated that internet self-efficacy is a predictor of perceived ease of use, relative advantage, compatibility and complexity of mobile payment services. Again, perceived ease of use and social influence were found to have a significant impact on the perceived service quality of WECHAT mobile payment. The implications of these findings on the adoption of mobile payments are discussed.

INTRODUCTION

E-commerce (EC) is defined as the use of the internet to exchange goods and services including information in a protected and secured manner (Kanchanopast, 2014). It is also the integration of business processes for business transactions to be conducted online through a computer network system (Kanchanopast, 2014). E-commerce also has the capacity to increase the efficiency, effectiveness, and performance of organizations (Ray, 2011). EC is also about the integration of business processes such as electronic fund transfer, supply chain management, online transaction processing, e-marketing, cooperate purchasing and value chain integrations (Thomas & Jose, 2015). Mobile payment is a kind of mobile transactions which

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has to do with the payment transactions completed or enabled through a digital mobile technology via handsets with or without the use of mobile telecommunications networks (Diniz, Porto de Albuquerque, & Cernev, 2011). Mobile payment development and integration into the e-commerce platform have revolutionized the consumer engagement and completion of payments online through mobile payment apps. The mobile payment era has changed and provides a convenient environment for consumers to pay for goods and services without recourse to a banking card, visa/master card or any banking card payment system. Mobile payment has arisen due to the consumer desire to shop online through mobile handsets and tablets. This desire is premised on the availability of the internet and affordable smartphones which retail outlets are cashing on to provide better mobile shopping services to consumers and also as a better means to reaching the consumer faster (Yang & Forney, 2013). The mobile payment technology according to Diniz et al. (2011) has the capacity to deal with two very important issues on the demand and supply side of payment. The demand side offers a great chance for financial inclusion for persons are out of the catchment domains of traditional banking while the supply side creates opportunities for financial institutions to provide different services at low cost to the poorest sections of society (Diniz et al., 2011). The success of mobile payment technology in China is based on the massive technological investment in the development of electronic commerce in China.

The consumer's interaction with an EC technology will be incomplete without paying for the kind of good and services purchased online. The payment of goods and services has shifted from the desktop computers to notebooks and mobile or wireless systems of payment. In China, the mobile payment system has developed and spread so rapidly to the extent that is it has become a daily phenomenon. Mobile payment transactions in China reached RMB 294.97 trillion as at 2017 and it is expected to reach RMB 793 trillion in 2021. There are several mobile technology applications that are used by consumers to complete their transactions with vendors online in China. Statistics available indicate that as of February 2017, the majority of users of mobile payment services in China use Alipay and WeChat which represents 39% and 33% respectively of the mobile payment market in China. These mobile payment methods (Alipay AND WECHAT) are the two dominants mobile payment transactions in China. Other smaller mobile payment services are Apple Pay, Xiaomi Pay, and Huawei Pay which represents 5%, 2%, and 1% usage respectively in China.

The objective of this study is to investigate the factors influencing the continued adoption of the WECHAT mobile payment in China for payment of goods and services. The focus on WECHAT is because it is the most widely used mobile payment services in China. It has been opined that the consumer reluctance to uptake mobile payment services is due to the lack of adequate studies that critically examine the factors affecting the consumer acceptance and the factor discoursing its adoption (Bailey, Pentina, Mishra, & Ben Mimoun, 2017). Hence understanding the factors driving the continued adoption of WECHAT payment services can contribute to the designing and implementation of payment systems aimed at improving the efficiency and service quality of mobile payment services such as Apple Pay, PayPal, Alipay Wallet, and WeChat Wallet. Ultimately, these factors can largely ensure the users of mobile payment according to Zhou (2013) are empowered to use mobile access points such as smartphones to engage in payment of goods and services. Furthermore, understanding these factors can help companies to better appreciate and understand the consumer better and therefore can according to (Shin, 2010) increase the number of users of such payment systems. This study integrated the Technology Acceptance Model (TAM) and the Diffusion of Innovation Theory (DOI) to explore the predictors of the continuance intention to use WECHAT mobile payment. The integration of these two models is to provide a better contextual explanatory power for the adoption mobile payment services. The results

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of this integration on mobile payment adoption have contributed to enriching the e-commerce literature and by extension the mobile payment adoption literature. The research questions to be explored are: what factors predict the continued intention to use WECHAT mobile payment services and what is the significant impact of these predictors on the continuance intention to use?

The rest of this research paper is organized in the following manner: the research theoretical framework, research model and hypotheses development, results and data analysis, discussion and conclusion and limitation and future works are presented.

RESEARCH THEORETICAL FRAMEWORK

Technology Acceptance Model (TAM)

Perceived usefulness and perceived ease of use are the two major determinants of the user acceptance of new information technologies in the Technology Acceptance Model proposed by Davis (1989). The Technology Acceptance Model is considered the most widely applied theory to examine the intention to use a technology-related application in different fields and studies (Lai, 2017; Surendran, 2012). According to Davis (1989), Perceived usefulness is the extent to which a new user feels that the use of technology application will improve his or her job performance while the perceived ease of use is the user firm belief that in using any new technology-related applications it will be free from effort or challenges. These usefulness and ease of use of new technologies are crucial predictors of the actual use of technology (Davis, 1989). Recent studies have validated the direct impact of these two major determinants on the intention to use information system applications such as e-commerce/online shopping (Chen & Lan, 2018), e-government services (Mensah, Vera, & Mi, 2018; Susanto, Diani, & Hafidz, 2017), e-banking (Samar, Ghani, & Alnaser, 2017) and e-learning systems (Gamble, 2018).

TAM has been modified or combined with other models to examine the user acceptance of information systems. For instance, a model name the TAM-TPB model was developed to integrate TAM and the Theory of Planned Behavior and TAM2 which included new factors in the original TAM (Taylor & Todd, 1995; Venkatesh, Morris, Davis, & Davis, 2003). Trust was integrated with TAM to explore the user adoption of online shopping which explained some variance in the intended online behavior (Gefen, Karahanna, & Straub, 2003). This integration showed that online trust can be achieved through understanding that the vendor has nothing to gain by cheating, that are available adequate safety mechanisms in the website interface and also that the is easy to use (Gefen et al., 2003). Another study also integrated TAM with the TOE framework to expand the characteristic determinants for the adoption of e-commerce by SMEs (Awa, Ojiabo, & Emecheta, 2015). In a similar study, TAM was integrated with perceived risk to explain the customer acceptance of e-commerce which explains about 78.2% of the variance in the user's acceptance of e-commerce (ALraja & Aref, 2015). The results of this integrated model revealed that information misuse risk, failure to gain product benefits risk and functionality ineffective risk and perceived ease of use were significant determinants of the consumer acceptance of e-commerce (ALraja & Aref, 2015). Also, in the study by Zhao, Xue, Jin, Li, and He (2016), TAM was combined with TRA to study factors influencing the mobile e-commerce software adoption and use. Their study demonstrated that perceived usefulness, perceived ease of use, perceived security and perceived entertainment had both a direct and indirect impact on the consumer attitudes and intention to use while subject norms, as well as attitudes, had a direct effect on consumer intention to use (Zhao

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et al., 2016). In examining the internet banking adoption issues in Pakistan, TAM was again integrated with customer service and customer satisfaction which revealed that perceived usefulness, perceive of ease of use, customer service and satisfaction are direct motivation factors for internet banking in that country (Ghani, Rahi, Yasin, & Alnaser, 2017).

Diffusion of Innovation (DOI) Theory

The Diffusion of Innovation (DOI) theory developed by Rogers (1995) to examine the way new technology-related applications are adopted within the population. Diffusion according to Rogers (1995, 2003), is the process through which a particular technological innovation is channeled or diffused in a frame of time among members of a social system. The diffusion of a particular technology can cover these areas: Firstly, characteristics of an innovation which may influence the adoption of such technologies. Secondly, the decision-making process when a person wants to adopt a new technology or product. Thirdly, the characteristics of a person can make them want to use an innovative technology. Fourthly, the consequences for the persons and society to use a new technology/innovation and lastly, the communication channels applied during the process of adoption (Rogers, 1995, 2003). According to Rogers (1995), there are four main factors that affect the diffusion of new technology innovation which are innovation itself, communication channels, time and a social system. Innovation has to do with an idea or practice that is considered new by users. The communication channel is a system which enables the user or consumers of new technology to share information with one another. The channel process is very important because the quicker or faster communication channel is, the quicker the process of diffusion of new technologies (Rogers, 1995). Time perspective in the diffusion process has to do with the time of uptake of the new innovation until the moment it stops to be in use. It takes notice of the pace with which an innovation is diffused into society and the extent to which it is used by a variety of users. Lastly, the social system is considered as an interrelated segment which is engaged in dealing with a problem to achieve a common goal (Rogers, 1995). All of these four elements are based on the crucial factor of human capital which implies that innovation should be adopted and used extensively in order for its sustainability (Rogers, 1995).

The extent to which an innovation is adopted can be as a result of five attributes such as relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003). Relative advantage is the user understanding that the use of an innovation-related technology would be advantageous to him or her. When innovation is considered by the user to be of greater benefits then it will lead to faster adoption rate. Complexity is the extent to which the user-perceives an innovation to be consistent with the values, past experiences and meeting the expectations of the user. Complexity is when innovation does not require new users to develop new skills and understandings towards using such technologies. Triability has to do with the extent to which new technology can be experimented on by users and lastly, observability is the potential of the user of new technology or innovation to see the outcome of such innovations. The Diffusion of Innovation has been applied and experimented on different technology applications to explain the extent to which such technologies will be adopted (Wu & Chiu, 2015; Zhu, Kraemer, & Xu, 2006).

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RESEARCH MODEL

The research model to be investigated in this study is depicted in Figure 1. Perceived usefulness, perceived ease of use, perceived service quality, social influence, trust in the internet, internet self-efficacy, relative advantage, compatibility, and complexity are presumed to have a direct effect on the continuance intention to use WECHAT mobile payment services. Social influence and perceived ease of use are also expected to influence perceived service quality. In addition, internet self-efficacy is presumed to have a positive effect on the perceived ease of use, relative advantage, compatibility, and complexity.

Figure 1. Research model

RESEARCH HYPOTHESES DEVELOPMENT

Perceived Usefulness (PU)

The usefulness of new technologies has the potential to influence the extent to which individuals will be attracted to use such technologies. Perceived usefulness is considered one of the major determinants of the intention to use (Davis, 1989). According to Davis (1989), perceived usefulness is the extent to which the user is of the firm conviction that the use of a particular technology can improve his or her work performance. Hence it can be said that if the consumer perceives mobile payment apps to be usefulness they will then will be attracted to use such mobile payment app technologies. It has been demonstrated that perceived usefulness has a direct impact on the intention to use (José Liébana-Cabanillas,

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Sánchez-Fernández, & Muñoz-Leiva, 2014; Lee et al., 2017; Sánchez-Prieto, Olmos-Migueláñez, & García-Peñalvo, 2017). Consequently, H1 was proposed.

H1: Perceived usefulness has a positive influence on the continued intention to use WECHAT mobile payment.

Perceived Ease of Use (PEOU)

Perceived ease of use is also the main predictor of the intention to use in the Technology Acceptance Model (TAM) (Davis, 1989). It has to do with consumers understanding that the use of technology will be free of challenges or difficulties. If the use of new technology is considered by consumers to be of less effort, they will surely be drawn to use such technologies. Perceived ease of use has been validated to have a positive impact on the intention to use (Lee et al., 2017; Richard & Mandari, 2018). Also, the way a consumer perceives a technology to be free of challenges or less stressful to use can have a direct impact on the extent to which the service quality emanating from such technology will be perceived by the consumer. Hence, H2 and H3 were accordingly proposed.

H2: Perceived ease of use has a positive influence on the continued intention to use WECHAT mobile payment.
H3: Perceived ease of use has a positive influence on the perceived service quality of WECHAT mobile payment.

Perceived Service Quality (PSQ)

Service quality is considered as the consumer's anticipation of particular service and it is the difference between what the consumer expects and the actual service received (Grönroos, 1981; Parasuraman, Zeithaml, & Berry, 1985). It is also seen as the delivery of service of the excellent standard to meet the demand and expectation of consumers (Parasuraman et al., 1985). The extent of service received which matches the expectations of consumers have the capacity to influence the purchase intentions of would-be consumers positively or negatively. Studies have shown that service quality has positive impact on the decision of consumers to engage in repurchase and also the intention to use as well as the continuance intention (Chuang & Chiu, 2017; Gera, Mittal, Batra, & Prasad, 2017; Shi et al., 2018; M. Yang, Shao, Liu, & Liu, 2017). Consequently, H4 was proposed.

H4: Perceived service quality has a positive influence on the continued intention to use WECHAT mobile payment.

Social Influence (SI)

Social influence is considered as the extent to which a person's behavior, attitudes/actions or emotions change based on what others think or do and feel (Dolinski, Nawrat, & Rudak, 2001). Social influence in terms of comments, opinions, and emotions from relatives or persons of importance in society can affect the uptake or use of a particular related technology application such as mobile payment apps either positively or negatively. Not only do these comments or opinions affect the intention to use but

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can also determine the service quality of such technologies. Social influence has been shown to have a direct impact on the willingness to purchase and intention to use (Almaimouni, Houghton, & Sandhu, 2014; Chin, Wafa, & Ooi, 2009; Razak, Bakar, & Abdullah, 2017). H5 and H6 were therefore proposed.

H5: Social influence has a positive influence on the continued intention to use WECHAT mobile payment.
H6: Social influence has a positive influence on the perceived service quality of WECHAT mobile payment.

Trust in the Internet (TI)

Trust is fundamental to human existence and interaction or engagement in any transactions. In this era of internet technology, a consumer's decision to trust is based on the assessment of risk which is explicit or implicit (Cerf, 2010). In situations where trust is low, it will be easier for the consumer to trust and if the risk is high, the consumer tendency to trust is expectantly low (Cerf, 2010). According to Quelch and Klein (1996), trust is an important element which can stimulate the decision of consumers to purchase over the internet technology. It has been demonstrated that trust in the internet has an impact on the willingness of consumers to patronize online stores and consumer purchase intention (Che, Cheung, & Thadani, 2017; Hallikainen & Laukkanen, 2018; Jarvenpaa, Tractinsky, & Vitale, 2000). Consequently, H7 was proposed.

H7: Trust in the internet has a positive influence on the continued intention to use WECHAT mobile payment.

Internet Self-Efficacy (ISE)

Internet self-efficacy is the consumer/ customer understandings or perceptions about their potential capabilities to use related internet technologies (Tsai, Chuang, Liang, & Tsai, 2011). It measures the confident levels of consumers' ability use and operates an internet application such as WECHAT mobile payment app (Purushothaman, 2017). The potential of would-be consumers to interact with and operate new Internet-related applications is definitely requires for the successful adoption of such technologies in terms of the consumer intention to use, relative advantage, perceive ease of use and the compatibility. Internet self-efficacy as shown by previous studies has an influence on the intention to use and perceived ease of use (Isaac, Abdullah, Ramayah, & Mutahar, 2017; Sharif & Raza, 2017). The following hypotheses (H8, H9, H10, H11, and H12) were therefore proposed.

H8: Internet self-efficacy has a positive influence on the continued intention to use WECHAT mobile payment.
H9: Internet self-efficacy has a positive influence on the perceived ease of use of WECHAT mobile payment.
H10: Internet self-efficacy has a positive influence on the relative advantage of WECHAT mobile payment.
H11: Internet self-efficacy has a positive influence on the compatibility of WECHAT mobile payment.
H12: Internet self-efficacy has a positive influence on the complexity of WECHAT mobile payment.

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Relative Advantage (RA)

Relative advantage is of the major construct in the Diffusion of Innovation (DOI) Theory developed by Rogers (1995). Relative advantage has to do with the extent to which innovative technology is considered by users as superior/better as per the experiences of such users of that particular technology (Rogers, 1995). According to Rogers (1995), the greater the perceived relative advantage of a particular technology (innovation), the more likely such technologies will be adopted by would-be consumers. Since relative advantage is based on the perception and experiences with particular technological innovation, then it sounds it says that if they encounter good experiences then their understanding of such technology will be greater and vice visa which may have a positive or negative effect on the extent of adoption of such technologies. This can be related to the WECHAT mobile payment technology. Studies have shown that relative advantage has an effect on the intention to use (Carter & Campbell, 2011; Sin et al., 2016). H13 was hence proposed.

H13: Relative Advantage has a positive influence on the continued intention to use mobile payment.

Compatibility

Compatibility is also one of the variables in the Diffusion of Innovation (DOI) Theory propounded by Rogers (1995). Compatibility is considered as the extent to which a particular innovation technology is perceived or understanding of being consistent with the past experiences, values, and expectations of would-be consumers/adopters (Rogers, 1995). A new technology which the consumer considers incompatible with their beliefs, norms, values, and practices will be hard to adapt and hence will suffer diffusion challenges among the potential consumers but an innovation that is compatible will diffuse quickly (Rogers, 1995). This compatibility or incompatibility of new technology innovation can either have a positive or negative effect on the adoption and diffusion of new technologies like WECHAT mobile payment apps. Compatibility of innovation has been validated to have a direct effect on the intention to use (Carter & Bélanger, 2005). H14 was therefore proposed.

H14: Compatibility has a positive influence on the continued intention to use WECHAT mobile payment.

Complexity

Complexity is the extent to which a particular innovation is considered by users as difficult to comprehend and adopt (Rogers, 1995). Technology innovations that are easy to comprehend and understand will lead to faster adoption and diffusion as compared to innovations that are hard to comprehend (Rogers, 1995). In the EC platform, mobile payment systems which are less complex in terms of use to complete an online purchase will be adopted more as compare to apps that are complex. Hence, H15 was proposed.

H15: Complexity has a positive influence on the continued intention to use WECHAT mobile payment.

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Research Methodology

The data for the conduct of this study was acquired through a self-administered questionnaire instrument to student population within the university community in Harbin Institute of Technology, China. The variable items were carefully selected after a thorough literature review was conducted. Perceived useless and perceived ease of use were adapted from (Alalwan, Dwivedi, Rana, & Williams, 2016; Davis, 1989; Moridis, Terzis, Economides, Karlovasitou, & Karabatakis, 2018; Venkatesh et al., 2003), perceived service quality, social influence and trust in the internet were adapted from (Jiang, Jun, & Yang, 2016; Nor & Pearson, 2015; Schnall, Higgins, Brown, Carballo-Dieguez, & Bakken, 2015; Sharma & Lijuan, 2015), internet self-efficacy, relative advantage, compatibility, and complexity were also adopted from (H. Akhter, 2014; Ozturk, Bilgihan, Nusair, & Okumus, 2016; Ramanathan, Ramanathan, & Karpuzcu, 2016; Sin et al., 2016). The questionnaire instrument was made up of two components. The first part was made up of demographic information about the respondents and the second part was about variables to be investigated in this study. The instruments were pretested and piloted to ensure that any misunderstanding that potential respondents may have in answering some of the questions were removed or reduced. The questionnaire was first prepared in English and translated into the Chinese Language for maximum comprehension of the expected respondents who are Chinese students. The questionnaire items used in this study is attached as Appendix 1. The items in the questionnaire were between using the Likert scale of measurement ranging from 1= Strongly Disagree (SD) to 5= Strongly Agree (SA). 20 undergraduate students were recruited to administer the research questionnaires which lasted for about a month between September and October 2017. The targeted population size was 1000 university students but after the administering of the instruments, only 896 of the instruments was duly returned which accounted for 89.6%. During the screening and checking of the returned questionnaire instruments, it was discovered that 102 of them were not fully completed and so they were discarded, leaving only 794 of instrument fully completed. The 794 instruments were found to be suitable (79.4), hence were captured and used for the data analysis. The Technology Acceptance Model (TAM) and Diffusion of Innovation theory were used as the theoretical framework for this study. The SPSS was used to capture and analyze the data.

RESULTS AND DATA ANALYSIS

Demographic Statistics

The demographic statistics of the respondents who participated in this study are shown in Table 1. The gender statistics of the respondents who took part in this study indicated that the majority were female (51.9%). Majority of the respondents were between the ages of 18-25 which represented 84.8%. Again, the majority of the respondents were undergraduates which account for 46.7%.

Average money spent a month shopping online

The average amount of money spent by the respondents to shop online is shown in Table 2. The majority of respondents spent between 100 to 500RMB per month on purchasing of items online (online shopping).

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Table 1. Demographic statistics

Item		Frequency	Percentage (%)
Gender	Male	382	48.1
	female	412	51.9
	Total	794	100
Age Distribution	18-25	674	84.8
	26+	120	15.1
	Total	794	100
Education	Undergraduates	371	46.7
	Masters	250	31.5
	PhD	173	21.8
	Total	794	100

Table 2. Average money spent

Item	Frequency	Percentage (%)
100-500 RMB	407	51.3
501-1000 RMB	213	26.8
1001+ RMB	174	21.9
Total	794	100

RELIABILITY ANALYSIS

The results of the reliability analysis conducted are shown in Table 3. Computation of the factor analysis was first conducted to determine the loadings of each question item. Question items whose loadings were below the values of 0.50 were not included in the computation of the Cronbach alpha. For instance, under the Compatibility variable, the item such as Campart_5 (0.425) was deleted because it has low values of 0.50. Also under the Complexity variable, the item Complex_5 (0.451) was also removed because of the same reason. The 48 items generated an alpha value of 0.827 which could be considered as good and acceptable Cronbach value and hence the data used for the analysis can be said to be reliable and consistent. The detailed analysis, as well as the computation of the factors and cronbach alpha, composite reliability, and average variance extracted, is shown in Table 3.

Correlation Analysis

The results of the correlation analysis conducted are shown in Table 4. It can be observed that perceived usefulness correlated positively and significant with perceived ease of use (PEOU) ($r = 0.351$, $p < 0.1$), perceived service quality (PSQ) ($r = 0.244$, $p < 0.01$), Social influence (SI) ($r = 0.093$, $p < 0.1$), internet self-efficacy (ISE) ($r = 0.135$, $p < 0.01$), Relative Advantage (RA) ($r = 0.152$. $p < 0.1$), Compatibility (CPT) ($r = 0.100$, $p < 0.1$), Complexity (CP) ($r = 0.114$, $p < 0.1$) and the continuous intention to use (CIU) ($r = 0.095$, $p < 0.1$). Furthermore perceived ease of use also correlated positively and significant

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with PSQ ($r = 0.360$, $p < 0.01$), SI ($r = 0.191$, $p < 0.01$), TI ($r = 0.080$, $p < 0.01$), ISE ($r = 0.184$, $p < 0.01$), RA ($r = 0.166$, $p < 0.01$) and CIU ($r = 0.242$, $p < 0.01$). Also perceived service quality correlated positively and significantly with SI ($r = 0.377$, $p < 0.01$), TI ($r = 0.112$, $p < 0.01$), ISE ($r = 0.234$, $p < 0.01$), RA ($r = 0.291$, $p < 0.01$), CPT ($r = 0.115$, $p < 0.01$) and CIU ($r = 0.229$, $p < 0.01$).

Table 3. Reliability analysisRap

Variables	Number/Factor Analysis	Cronbach Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Perceived Usefulness (PU)	**5**	5		
PU1 PU2 PU3 PU4 PU5	0.746 0.785 0.779 0.644 0.940	0.743	0.792	0.702
Perceived Ease of Use (PEOU)	**5**	5		
PEOU1 PEOU2 PEOU3 PEOU4 PEOU5	0.540 0.828 0.873 0.854 0.722	0.819	0.801	0.755
Perceived Service Quality (PSQ)	**5**	5		
PSQ 1 PSQ 2 PSQ 3 PSQ 4 PSQ 5	0.631 0.707 0.737 0.809 0.702	0.779	0.736	0.712
Social Influence (SI)	**5**	5		
SI 1 SI 2 SI 3 SI 4 SI 5	0.608 0.728 0.619 0.736 0.767	0.723	0.779	0.721
Trust in the Internet (TI)	**5**	5		
TI 1 TI 2 TI 3 TI 4 TI 5	0.916 0.842 0.935 0.909 0.536	0.885	0.799	0.0746
Internet Self-efficacy (ISE)	**5**	5		
ISE 1 ISE 2 ISE 3 ISE 4 ISE 5	0.597 0.645 0.694 0.632 0.508	0.790	0.752	0.709
Relative Advantage (RA)	**5**	5		
RA1 RA2 RA3 RA4 RA5	0.691 0.723 0.548 0.618 0.661	0.778	0.769	0.715

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Table 3. Continued

Variables	Number/Factor Analysis	Cronbach Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Compatibility (COMPAT)	**5**	4		
COMPAT1 COMPAT2 COMPAT3 COMPAT4 COMPAT5	0.613 0.716 0.769 0.684 0.425*	0.773	0.753	0.738
Complexity (COMPLEX)	**5**	4		
COMPLEX1 COMPLEX2 COMPLEX3 COMPLEX4 COMPLEX5	0.597 0..755 0.770 0.642 0.451*	0.770	0.750	0.706
Continuance Intention to Use (CIU)	**5**	5		
CIU1 CIU2 CIU3 CIU4 CIU5	0.714 0.743 0.719 0.704 0.649	0.783	0.826	0.740
Joint Variables	**48**	0.827		

Table 4. Results of correlation analysis

Items	PU	PEOU	PSQ	SI	TI	ISE	RA	CPT	CP	CIU
1. PU	**1**									
2. PEOU	0.351**	**1**								
3. PSQ	0.244**	0.360**	**1**							
4. SI	0.093**	0.191**	0.377**	**1**						
5. TI	0.018	0.080*	0.112**	-0.026	**1**					
6. ISE	0.135**	0.184**	0.234**	0.505**	-0.061	**1**				
7. RA	0.152**	0.166**	0.291**	0.330**	0.004	0.322**	**1**			
8. CPT	0.100**	0.068	0.115**	0.179**	0.004	0.210**	0.273**	**1**		
9.CP	0.114**	0.015	0.006	0.104**	-0.136**	0.135**	0.084*	0.123**	**1**	
10. CIU	0.095**	0.242**	0.229**	0.114**	0.031	0.072*	0.110**	0.094**	0.118**	**1**
Mean	3.8365	3.617	3.705	3.777	3.446	3.756	3.733	3.8070	3.830	3.757
ST. Dev.	0.60258	0.8065	0.620	0.717	0.767	0.616	0.662	0.743	0.683	0.639

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

In addition, social influence was positively correlated and significant with ISE ($r = 0.505$, $p < 0.01$), RA ($r = 0.330$, $p < 0.01$), CPT ($r = 0.179$, $p < 0.01$), CP ($r = 0.104$, $p < 0.01$) and CIU ($r = 0.114$, $p < 0.01$). Trust in the internet correlated negatively with CP but was significant ($r = -0.136$, $p < 0.01$).

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However Internet self-efficacy correlated positively and significant with RA ($r = 0.322$, $p < 0.01$), CPT ($r = 0.210$, $p < 0.01$), CP ($r = 0.135$, $p < 0.01$) and CIU ($r = 0.072$ $p < 0.05$). Again, RA correlated positively and significant with CPT ($r = 0.273$, $p < 0.01$), CP ($r = 0.084$, $p < 0.01$) and CIU ($r = 0.110$, $p < 0.01$). CPT also correlated positively and significant with CP ($r = 0.123$, $p < 0.01$) and CIU ($r = 0.094$, $p < 0.01$). Finally complexity correlated positively and significantly with CIU ($r = 0.118$, $p < .01$).

Testing of Research Hypotheses

A simple regression analysis was conducted to test the research hypothesis. The results of the research hypothesis tested are shown in Table 5. As shown in Table 5, perceived usefulness was significant in predicting the continuous intention to use WECHAT mobile payment ($\beta = 0.95$, $p < 0.05$). Hence H1 was supported and accepted. Perceived ease of use was also significant in determining both the continuous intention to use WECHAT payment app. ($\beta = 0.242$, $p < 0.05$) and the perceived service quality ($\beta = 360$, $p < 0.05$). H2 and H3 were also supported. Perceived service quality was also a significant predictor of the continuous intention to use WECHAT mobile payment. ($\beta = 0.229$, $p < 0.05$). H4 therefore supported. Social influence also found to be a significant determinant of both the continuous intention to use WECHAT mobile payment. ($\beta = 0.111$, $p < 0.05$) and the perceived service quality ($\beta = 0.377$, $p < 0.05$). Consequently, H5 and H6 were statistically supported and hence accepted. Trust in the internet was however not significant in predicting the continuous intention to use WECHAT mobile payments ($\beta = 0.31$, $p > 0.05$). H7 was hence not supported.

Table 5. Results of research hypotheses tested

Hypotheses	Path	r2	β	t	sig.	Supported
H1	PU→CIU	0.119	0.095	2.696	0.007	YES
H2	PEOU→CIU	0.159	0.242	7.021	0.000	YES
H3	PEOU→PSQ	0.230	0.360	10.859	0.000	YES
H4	PSQ→CIU	0.152	0.229	6.615	0.000	YES
H5	SI→CIU	0.113	0.114	3.225	0.001	YES
H6	SI→PSQ	0.245	0.377	11.460	0.000	YES
H7	TI→CIU	0.088	0.031	0.878	0.380	**NO**
H8	ISE→CIU	0.117	0.072	2.026	0.043	YES
H9	ISE→PEOU	0.134	0.184	5.256	0.000	YES
H10	ISE→RA	0.204	0.322	9.570	0.000	YES
H11	ISE→COMPAT	0.144	0.210	6.054	0.000	YES
H12	ISE→COMPLEX	0.165	0.135	3.839	0.000	YES
H13	RA→CIU	0.215	0.110	3.116	0.002	YES
H14	COMPART→CIU	0.197	0.094	2.652	0.008	YES
H15	COMPLEX→CIU	0.297	0.118	3.335	0.001	YES

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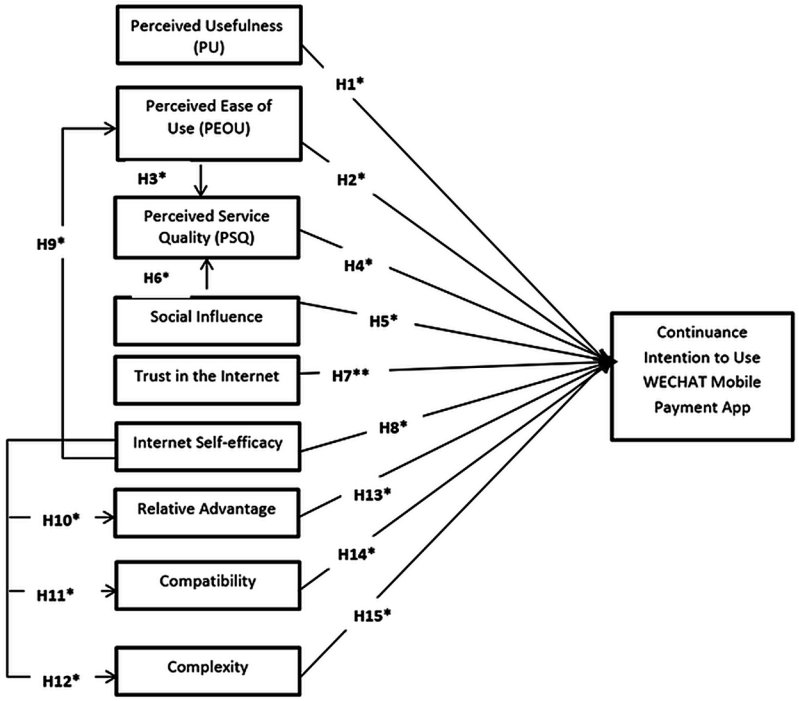
In addition, internet self-efficacy was significant in predicting the following variables: continuous intention to use WECHAT mobile payment ($\beta = 0.72$, $p < .05$), perceived ease of use ($\beta = 0.184$, $p < .05$), relative advantage ($\beta = 0.322$, $p < .05$), compatibility ($\beta = .210$, $p < .05$) and complexity ($\beta = 0.135$, $p < 0.05$). Hence, H8, H9, H10, H11 and H12 were all supported and accepted. Also, relative advantage was a significant determinant of the continuous intention to use WECHAT mobile payment. ($\beta = 0.110$, $p < 0.05$). H13 was therefore supported. Compatibility ($\beta = 0.094$, $p < 0.05$) and complexity ($\beta = .118$, $p < 0.05$) were both respectively significant predictor of the continuous intention to use WECHAT mobile payment. Consequently, H14 and H15 were supported and therefore accepted.

The significant path of the research model tested is shown in Figure 2.

Figure 2. Significance path model (. sig.; **. not sig.)*



DISCUSSION

China is the home to some of the largest internet users and active online shoppers in the world. This has provided a strong basis for the explosive development of the e-commerce market over the years. This Innovative technology as a result of this e-commerce boom has prompted the development of mobile payment technologies which enables the consumer to purchase goods and services without necessarily carrying hard cash. The mobile payment technology has consumed the daily life of the Chinese and has become the core aspect of the Chinese routine. This paper, therefore, explored the predictors of the continuance intention to use WECHAT mobile payment by Chinese users. The results demonstrated that perceived usefulness and perceived ease of use which is the core constructs in the TAM model were both

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found to be a significant predictor of the continuance intention to use WECHAT mobile payment. This finding is consistent with studies that have shown that both perceived usefulness and perceived ease of use are positive determinants of the intention to use (Kim, Mirusmonov, & Lee, 2010; Shankar & Datta, 2018; Unnikrishnan & Jagannathan, 2017). The findings on PU and PEOU are inconsistent with studies which indicted the insignificant impact of these factors on the intention to use (Piriyakul et al., 2015). In addition, this study revealed that perceived ease of use was a positive predictor of the perceived service quality of mobile payment applications. Also perceived service quality was demonstrated to have a significant impact on the continuance intention of users to use WECHAT mobile payment. The significant impact of the perceived service quality on the continuance intention to use is in agreement with studies that have indicated that the quality of mobile payments applications increased both user experience and expectations which also positively affected the purchase intentions and intention use (Ramadan & Aita, 2018; Singh, Grover, & Kar, 2017).

Furthermore, the results indicated that social influence was positively significant determinates of both the continuance intention to use and the perceived service quality of WECHAT mobile payment. The findings on the social influence impact on the continuance intention to use are corroborated by other similar results which show that positive impact of social influence on the intention to use (Bhimasta & Suprapto, 2018; Chen, 2018). On the other hand, the positive impact social influence on the perceived service quality seems to be a unique addition to the literature since it has not been explored in other studies as far as the literature is concerned. Interestingly the results showed that trust in the internet was not a significant predictor of the continuance intention to use WECHAT mobile payment. This finding is a departure from and does not support studies which suggested that trust in the internet has a positive impact on the intention to use (Carter, Weerakkody, Phillips, & Dwivedi, 2016; Cho, Kwon, & Lee, 2007). However, internet self-efficacy was found to be significant determinants of both the continuance intention to use WECHAT mobile payment and perceived ease of use of mobile payment apps. The findings on the positive impact of internet self-efficacy are consistent with studies which demonstrated that internet self-efficacy has an influence on the intention to use (Al-Haderi, 2013; Ma & Liu, 2005), but however inconsistent with the findings which showed that it does not have an impact on the intention to use (Faqih, 2013). The result on the significant impact of internet self-efficacy on the perceived ease of use corroborates the studies which demonstrated that internet self-efficacy has a positive effect CT on the perceived ease of use (Isaac et al., 2017).

In addition, internet self-efficacy was shown to be positive predictors of relative advantage, compatibility, and complexity. The significant impact of internet self-efficacy on the relative advantage, compatibility, and complexity of mobile payment apps also appears to be the distinct contribution of this current study as far as the literature is concerned. Also, relative advantage, compatibility, and complexity were all determined to have a positive influence on the continuance intention to adopt WECHAT mobile payment. The findings on the positive impact of relative advantage on the continuance intention to use are consistent with studies that found the same effect of relative advantage on the intention to use (Arvidsson, 2014; Yunus, 2014). Again, the positive impact of the compatibility of mobile payment apps on the continuance intention to use is consistent and supports studies which showed the significant impact of compatibility on the intention to use (Al-Jabri & Sohail, 2012). The finding on this is also not in line with studies which have demonstrated otherwise, that compatibility does not impact on the intention to use (Yunus, 2014). Lastly, the finding on the significant impact of complexity on the continuance intention to use is not consistent with other findings which have suggested that complexity does not have an

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effect on adoption (Al-Jabri & Sohail, 2012). But consistent with studies which have demonstrated that complexity has an effect on the intention to use (Choudrie, Alfalah, & Spencer, 2017).

CONCLUSION

This study integrated the Technology Acceptance Model and the Diffusion of Innovation Theory to explain the predictors of the continuance intention to use WECHAT mobile payment services from the Chinese users' perspective. The results have demonstrated that all the predictors of the continuation intention to use WECHAT mobile payment were statistically supported except in the context of trust in the internet which was found not be significant in determining the intention to use. Factors such as perceived usefulness, perceived ease of use, perceived service quality, social influence, internet self-efficacy, relative advantage, compatibility, and complexity were all positive determinants of the continuance intention to use WECHAT mobile payment. In addition, perceived ease of use of mobile payment apps and social influence were both significant predictors of perceived service quality. Also, it was revealed that internet self-efficacy had a positive impact on perceived ease of use, relative advantage, compatibility and complexity of WECHAT mobile payment.

These findings have implication for the continued adoption and use of mobile payment such as WECHAT payment which was the focus of this current study. These are some of the practical implications:

- Perceived ease of use and complexity of mobile payment apps in terms of its design should be given maximum attention by developers of these mobile payment apps since this study has shown that it has the potential to positively influence the consumer to use such apps.
- Again, users of mobile payment apps need to be convinced that use of mobile payment apps will be more useful towards enhancing his or her online shopping experience and that it is relative advantageous as compared to other forms of shopping such as from the physical store, since with this in mind it can drive users to continuously use mobile payment apps.
- The service quality of mobile payments such as WECHAT payment should be paramount interest to developers and vendors since the extent of quality service offered can have a positive effect or negative effect on the adoption of mobile payment. Timely feedback on a transaction payment which has gone bad and reliable attention to challenges consumers may have in using the mobile payment apps can impact on their decision to use mobile payment.
- In this global village where information spreads so fast due to the availability of social networks, the extent of recommendations from peers, friends, family and important elements of society (through social influence) either positive or negative arising from a user interaction with a mobile payment can affect the decision of new users as well as old users to use mobile payment services.
- The extent of internet self-efficacy of consumers and compatibility of mobile payment services to the daily routine of the consumer should be of great concern to mobile apps developers and vendors. This is because this study has demonstrated that both internet self-efficacy and compatibility are drivers of the continued intention to use mobile payment apps.

The results arising from the combination of the TAM and DOI has contributed to enriching the mobile payment literature with respect to WECHAT users in China. The specific contributions of this current study are: First, demonstrated the positive impact of perceived ease of use of mobile payment

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apps on the perceived service quality of mobile payment services. Secondly, it provided empirical data supporting the significant impact of social influence on the perceived service quality of mobile payment services. Thirdly, demonstrated that internet self-efficacy has a direct effect on the relative advantage, compatibility, and complexity of mobile payment.

LIMITATION AND FUTURE RESEARCH

The first limitation is that no single study can fully explore all the factors determining the intention to use mobile payment services hence future studies will attempt to explore the impact of national culture on the adoption of mobile payment services. Secondly, the interpretation and generalization of the results of this current study should be done cautiously since the sample is just about 794 of students' population. Thirdly, the procedure and methodology applied in the study could be used in the context of another study but the findings may not necessarily reflect the findings of this study.

REFERENCES

Akhter, H., S. (. (2014). Privacy concern and online transactions: The impact of internet self-efficacy and internet involvement. *Journal of Consumer Marketing*, *31*(2), 118–125. doi:10.1108/JCM-06-2013-0606

Al-Haderi, S. M. S. (2013). The effect of self-efficacy in the acceptance of information technology in the public sector. *International Journal of Business and Social Science*, *4*(9).

Al-Jabri, I. M., & Sohail, M. S. (2012). Mobile banking adoption: Application of diffusion of innovation theory. *Journal of Electronic Commerce Research*, *13*(4), 379–391.

Alalwan, A. A., Dwivedi, Y. K., Rana, N. P., & Williams, M. D. (2016). Consumer adoption of mobile banking in Jordan: Examining the role of usefulness, ease of use, perceived risk and self-efficacy. *Journal of Enterprise Information Management*, *29*(1), 118–139. doi:10.1108/JEIM-04-2015-0035

Almaimouni, A., Houghton, L., & Sandhu, K. (2014). Impact of Social Influence on Entrepreneurs to Use e-Commerce in Saudi Arabia.

Alraja, M. N., & Aref, M. (2015). Customer acceptance of e-commerce: Integrating perceived risk with TAM. *International Journal of Applied Business and Economic Research*, *13*(2), 913–921.

Arvidsson, N. (2014). Consumer attitudes on mobile payment services–results from a proof of concept test. *International Journal of Bank Marketing*, *32*(2), 150–170. doi:10.1108/IJBM-05-2013-0048

Awa, H. O., Ojiabo, O. U., & Emecheta, B. C. (2015). Integrating TAM, TPB and TOE frameworks and expanding their characteristic constructs for e-commerce adoption by SMEs. *Journal of Science & Technology Policy Management*, *6*(1), 76–94. doi:10.1108/JSTPM-04-2014-0012

Bailey, A. A., Pentina, I., Mishra, A. S., & Ben Mimoun, M. S. (2017). Mobile payments adoption by US consumers: An extended TAM. *International Journal of Retail & Distribution Management*, *45*(6), 626–640. doi:10.1108/IJRDM-08-2016-0144

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Bhimasta, R. A., & Suprapto, B. (2018). What Drives Young Indonesian's Intention to Use Mobile Payment? A Case of T-Cash. *Advanced Science Letters*, *24*(7), 4802–4805. doi:10.1166/asl.2018.11204

Carter, L., & Bélanger, F. (2005). The utilization of e-government services: Citizen trust, innovation and acceptance factors. *Information Systems Journal*, *15*(1), 5–25. doi:10.1111/j.1365-2575.2005.00183.x

Carter, L., & Campbell, R. (2011). The impact of trust and relative advantage on internet voting diffusion. *Journal of Theoretical and Applied Electronic Commerce Research*, *6*(3), 28–42. doi:10.4067/S0718-18762011000300004

Carter, L., Weerakkody, V., Phillips, B., & Dwivedi, Y. K. (2016). Citizen adoption of e-government services: Exploring citizen perceptions of online services in the United States and United Kingdom. *Information Systems Management*, *33*(2), 124–140. doi:10.1080/10580530.2016.1155948

Cerf, V. G. (2010). Trust and the Internet. *IEEE Internet Computing*, *14*(5), 95–95. doi:10.1109/MIC.2010.125

Che, J. W., Cheung, C. M., & Thadani, D. R. (2017, January). Consumer purchase decision in Instagram stores: The role of consumer trust. *Proceedings of the 50th Hawaii International Conference on System Sciences*. Academic Press.

Chen, Y.-F., & Lan, Y.-C. (2018). An empirical study of the factors affecting mobile shopping in Taiwan. In Mobile Commerce: Concepts, Methodologies, Tools, and Applications (pp. 1329-1340). Hershey, PA: IGI Global.

Chen, Y.-Q. (2018). Explore the Behavioral Intention and Actual Use of Mobile Payment in Healthcare: A Research Based on UTAUT.

Chin, A. J., Wafa, S. A. W. S. K., & Ooi, A.-Y. (2009). The effect of internet trust and social influence towards willingness to purchase online in Labuan, Malaysia. *International Business Research*, *2*(2), 72. doi:10.5539/ibr.v2n2p72

Cho, D.-Y., Kwon, H. J., & Lee, H.-Y. (2007). Analysis of trust in internet and mobile commerce adoption. *Paper presented at the 40th Annual Hawaii International Conference on System Sciences HICSS 2007*. IEEE Press. 10.1109/HICSS.2007.76

Choudrie, J., Alfalah, A., & Spencer, N. (2017). Older Adults Adoption, Use and Diffusion of E-Government Services in Saudi Arabia, Hail City: A Quantitative Study.

Chuang, L.-W., & Chiu, S.-P. (2017). Analysis on Consumer's Repurchase Intention of Online Shopping. *Paper presented at the 2017 International Conference on Green Informatics (ICGI)*. Academic Press. 10.1109/ICGI.2017.49

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Quarterly*, *13*(3), 319–340. doi:10.2307/249008

Diniz, E., Porto de Albuquerque, J., & Cernev, A. (2011). Mobile Money and Payment: a literature review based on academic and practitioner-oriented publications (2001-2011). *Proceedings of SIG GlobDev, Fourth Annual Workshop*. Academic Press.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Dolinski, D., Nawrat, M., & Rudak, I. (2001). Dialogue involvement as a social influence technique. *Personality and Social Psychology Bulletin*, *27*(11), 1395–1406. doi:10.1177/01461672012711001

Faqih, K. M. (2013). Exploring the influence of perceived risk and internet self-efficacy on consumer online shopping intentions: Perspective of technology acceptance model. *International Management Review*, *9*(1), 67–77.

Gamble, C. (2018). Exploring EFL University Students' Acceptance of E-learning Using TAM. *Kwansei Gakuin University Humanities Review*, *22*, 23–37.

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *Management Information Systems Quarterly*, *27*(1), 51–90. doi:10.2307/30036519

Gera, R., Mittal, S., Batra, D. K., & Prasad, B. (2017). Evaluating the effects of service quality, customer satisfaction, and service value on behavioral intentions with life insurance customers in India. *International Journal of Service Science, Management, Engineering, and Technology*, *8*(3), 1–20. doi:10.4018/IJSSMET.2017070101

Ghani, M. A., Rahi, S., Yasin, N. M., & Alnaser, F. M. (2017). Adoption of Internet Banking: Extending the Role of Technology Acceptance Model (TAM) with E-Customer Service and Customer Satisfaction. *World Applied Sciences Journal*, *35*(9), 1918–1929.

Grönroos, C. (1981). Internal marketing–an integral part of marketing theory. *Marketing of services, 236*, 238.

Hallikainen, H., & Laukkanen, T. (2018). National culture and consumer trust in e-commerce. *International Journal of Information Management*, *38*(1), 97–106. doi:10.1016/j.ijinfomgt.2017.07.002

Isaac, O., Abdullah, Z., Ramayah, T., & Mutahar, A. M. (2017). Internet usage within government institutions in Yemen: An extended technology acceptance model (TAM) with internet self-efficacy and performance impact. *Science International*, *29*(4), 737–747.

Jarvenpaa, S. L., Tractinsky, N., & Vitale, M. (2000). Consumer trust in an Internet store. *Information Technology Management*, *1*(1-2), 45–71. doi:10.1023/A:1019104520776

Jiang, L., Jun, M., & Yang, Z. (2016). Customer-perceived value and loyalty: How do key service quality dimensions matter in the context of B2C e-commerce? *Service Business*, *10*(2), 301–317. doi:10.100711628-015-0269-y

José Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2014). Role of gender on acceptance of mobile payment. *Industrial Management & Data Systems*, *114*(2), 220–240. doi:10.1108/IMDS-03-2013-0137

Kanchanopast, S. (2014). The factors influencing successful implementation of e-commerce within SMEs businesses. *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering, 8*.

Kim, C., Mirusmonov, M., & Lee, I. (2010). An empirical examination of factors influencing the intention to use mobile payment. *Computers in Human Behavior*, *26*(3), 310–322. doi:10.1016/j.chb.2009.10.013

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Lai, P. (2017). The literature review of technology adoption models and theories for the novelty technology. *JISTEM-Journal of Information Systems and Technology Management*, *14*(1), 21–38.

Lee, C. R., Tam, K. Y., Lim, J. Y., Seow, P. Y., Lee, V. P. S., Faris, N. A. M., & Haris, H. M. (2017). Consumer intention to use smartphone for mobile shopping. In Handbook of Research on Leveraging Consumer Psychology for Effective Customer Engagement (pp. 221–233). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-0746-8.ch014

Ma, Q., & Liu, L. (2005). The role of Internet self-efficacy in the acceptance of web-based electronic medical records. *Journal of Organizational and End User Computing*, *17*(1), 38–57. doi:10.4018/joeuc.2005010103

Mensah, I. K., Vera, P., & Mi, J. (2018). Factors Determining the Use of E-Government Services: An Empirical Study on Russian Students in China. *International Journal of E-Adoption*, *10*(2), 1–19. doi:10.4018/IJEA.2018070101

Moridis, C. N., Terzis, V., Economides, A. A., Karlovasitou, A., & Karabatakis, V. E. (2018). Using EEG Frontal Asymmetry to Predict IT User's Perceptions Regarding Usefulness, Ease of Use and Playfulness. *Applied Psychophysiology and Biofeedback*, *43*(1), 1–11. doi:10.100710484-017-9379-8 PMID:28871504

Nor, K. M., & Pearson, J. M. (2015). The influence of trust on internet banking acceptance. *Journal of Internet Banking and Commerce*.

Ozturk, A. B., Bilgihan, A., Nusair, K., & Okumus, F. (2016). What keeps the mobile hotel booking users loyal? Investigating the roles of self-efficacy, compatibility, perceived ease of use, and perceived convenience. *International Journal of Information Management*, *36*(6), 1350–1359. doi:10.1016/j.ijinfomgt.2016.04.005

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, *49*(4), 41–50. doi:10.1177/002224298504900403

Piriyakul, M., Piriyakul, R., Chuachareon, O., Boonyoung, M., Piriyakul, P., & Piriyakul, I. (2015). Effects of Trust, Satisfaction and Factors Corresponding to TAM on Intention to Reuse Internet Business Transaction. *International Review of Management and Business Research*, *4*, 872–890.

Purushothaman, A. (2017). Applying Blooms Digital Taxonomy to Address Creativity and Second Order Digital Divide in Internet Skills. In Handbook of Research on Creative Problem-Solving Skill Development in Higher Education (pp. 450–470). Hershey, PA: IGI global.

Quelch, J. A., & Klein, L. R. (1996). The Internet and international marketing. *MIT Sloan Management Review*, *37*(3), 60.

Ramadan, R., & Aita, J. (2018). A model of mobile payment usage among Arab consumers. *International Journal of Bank Marketing*, *36*(7), 1213–1234. doi:10.1108/IJBM-05-2017-0080

Ramanathan, R., Ramanathan, U., & Karpuzcu, T. (2016). Impact of e-commerce in B2B physical distribution: diffusion of innovations perspective. In *Encyclopedia of E-Commerce Development, Implementation, and Management* (pp. 2256–2270). Hershey, PA: IGI Global.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Ray, J. (2011). Using Effective E-Commerce Strategies to Improve Organizational Performance. *SSRN Electronic Journal.*

Razak, F. Z. B. A., Bakar, A. A., & Abdullah, W. S. W. (2017). How perceived effort expectancy and social influence affects the continuance of intention to use e-government. A study of a Malaysian government service. *Electronic Government, an International Journal, 13*(1), 69-80.

Richard, E., & Mandari, E. (2018). Factors influencing usage of mobile banking services: the case of Ilala District in Tanzania. *ORSEA Journal, 7*(1).

Rogers, E. (1995). Diffusion of Innovations. New York: Free Press.

Samar, S., Ghani, M., & Alnaser, F. (2017). Predicting customer's intentions to use internet banking: The role of technology acceptance model (TAM) in e-banking. *Management Science Letters*, *7*(11), 513–524.

Sánchez-Prieto, J. C., Olmos-Migueláñez, S., & García-Peñalvo, F. J. (2017). MLearning and pre-service teachers: An assessment of the behavioral intention using an expanded TAM model. *Computers in Human Behavior*, *72*, 644–654. doi:10.1016/j.chb.2016.09.061

Schnall, R., Higgins, T., Brown, W., Carballo-Dieguez, A., & Bakken, S. (2015). Trust, perceived risk, perceived ease of use and perceived usefulness as factors related to mHealth technology use. *Studies in Health Technology and Informatics*, *216*, 467. PMID:26262094

Shankar, A., & Datta, B. (2018). Factors Affecting Mobile Payment Adoption Intention: An Indian Perspective. *Global Business Review, 19*(3 suppl.), S72-S89.

Sharif, A., & Raza, S. A. (2017). The influence of hedonic motivation, self-efficacy, trust and habit on adoption of internet banking: A case of developing country. *International Journal of Electronic Customer Relationship Management*, *11*(1), 1–22. doi:10.1504/IJECRM.2017.086750

Sharma, G., & Lijuan, W. (2015). The effects of online service quality of e-commerce Websites on user satisfaction. *The Electronic Library*, *33*(3), 468–485. doi:10.1108/EL-10-2013-0193

Shi, S., Mu, R., Lin, L., Chen, Y., Kou, G., & Chen, X.-J. (2018). The impact of perceived online service quality on swift guanxi: Implications for customer repurchase intention. *Internet Research*, *28*(2), 432–455. doi:10.1108/IntR-12-2016-0389

Shin, D.-H. (2010). Modeling the interaction of users and mobile payment system: Conceptual framework. *International Journal of Human-Computer Interaction*, *26*(10), 917–940. doi:10.1080/10447318.2010.502098

Sin, K. Y., Osman, A., Salahuddin, S. N., Abdullah, S., Lim, Y. J., & Sim, C. L. (2016). Relative advantage and competitive pressure towards implementation of e-commerce: Overview of small and medium enterprises (SMEs). *Procedia Economics and Finance*, *35*, 434–443. doi:10.1016/S2212-5671(16)00054-X

Singh, B. P., Grover, P., & Kar, A. K. (2017). Quality in Mobile Payment Service in India. *Paper presented at the Conference on e-Business, e-Services and e-Society*. Academic Press. 10.1007/978-3-319-68557-1_17

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Surendran, P. (2012). Technology acceptance model: A survey of literature. *International Journal of Business and Social Research*, *2*(4), 175–178.

Susanto, T. D., Diani, M. M., & Hafidz, I. (2017). User Acceptance of e-Government Citizen Report System (a Case Study of City113 App). *Procedia Computer Science*, *124*, 560–568. doi:10.1016/j.procs.2017.12.190

Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research*, *6*(2), 144–176. doi:10.1287/isre.6.2.144

Thomas, S., & Jose, P. V. (2015). Recent Trends in E-Commerce. *International Research Journal of Engineering and Technology, 2*(6).

Tsai, C.-C., Chuang, S.-C., Liang, J.-C., & Tsai, M.-J. (2011). Self-efficacy in Internet-based learning environments: A literature review. *Journal of Educational Technology & Society*, *14*(4).

Unnikrishnan, R., & Jagannathan, L. (2017). Adoption of Mobile Payment Services in Bangalore Urban-A Structural Equation Modelling based Approach. *Journal of Contemporary Research in Management*, *12*(4).

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *Management Information Systems Quarterly*, *27*(3), 425–478. doi:10.2307/30036540

Wu, L., & Chiu, M.-L. (2015). Organizational applications of IT innovation and firm's competitive performance: A resource-based view and the innovation diffusion approach. *Journal of Engineering and Technology Management*, *35*, 25–44. doi:10.1016/j.jengtecman.2014.09.002

Yang, K., & Forney, J. C. (2013). The moderating role of consumer technology anxiety in mobile shopping adoption: Differential effects of facilitating conditions and social influences. *Journal of Electronic Commerce Research*, *14*(4), 334.

Yang, M., Shao, Z., Liu, Q., & Liu, C. (2017). Understanding the quality factors that influence the continuance intention of students toward participation in MOOCs. *Educational Technology Research and Development*, *65*(5), 1195–1214. doi:10.100711423-017-9513-6

Yunus, M. (2014). Diffusion of innovation, consumer attitudes and intentions to use mobile banking. *Paper presented at the Information and Knowledge Management*. Academic Press.

Zhao, Y., Xue, Y.-R., Jin, Y.-F., Li, J.-W., & He, Y. (2016). The Study of Influencing Factors of Mobile E-commerce Software Use Intention-based on TAM and TRA. *International Journal of Grid and Distributed Computing*, *9*(8), 261–274. doi:10.14257/ijgdc.2016.9.8.23

Zhou, T. (2013). An empirical examination of continuance intention of mobile payment services. *Decision Support Systems*, *54*(2), 1085–1091. doi:10.1016/j.dss.2012.10.034

Zhu, K., Kraemer, K. L., & Xu, S. (2006). The process of innovation assimilation by firms in different countries: A technology diffusion perspective on e-business. *Management Science*, *52*(10), 1557–1576. doi:10.1287/mnsc.1050.0487

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APPENDIX: RESEARCH QUESTIONNAIRE ITEMS

Perceived Usefulness (PU)

PU1: shopping and paying online through WECHAT is useful to me
PU2: Online shopping would make it easier for me to shop more quickly.
PU3: Using mobile WECHAT payment provides a better option for me to access services than the traditional means.
PU4: There is the timely delivery of goods and service after payment through WECHAT
PU5: Overall, I find the mobile payment (WECHAT) to be useful to access quality services from online retailers.

Perceived Ease of Use (PEU)

PEU1: It is easy for me to navigate through WECHAT mobile payment app website to shop and pay.
PEU2: It will take a short time for me to become skillful at shopping online.
PEU3: WECHAT mobile payment app and interfaces are easier to use
PEU4: It is easier to complete the payment processes on WECHAT mobile payment app
PEU 5: Overall, I find it easy to enter personal and payment WECHAT mobile payment app.

Perceived Service quality (PSQ)

PSQ1: service provided through WECHAT mobile payment is reliable and dependable
PSQ2: Access to WECHAT mobile payment service is fast and convenient.
PSQ3: Use of WECHAT mobile payment app is accurate and saves time
PSQ 4: Service accessed through WECHAT mobile payment apps portal/website meets my expectations of services required.
PSQ5: Overall, the service quality of service accessed through WECHAT mobile payment is good.

Social Influence (SI)

SI1: Family usage of WECHAT mobile payment app would also influence me to shop online.
SI2: Suggestions from my friends to use WEHCAT mobile payment apps would attract me to use it
SI3: A bad experience from my friends' use of WECHAT mobile payment app would discourage me from using it
SI4: If a person whose opinions that I value recommends WECHAT mobile payment app I will try it
SI5: Overall, suggestions from my friends and family would influence me to use WECHAT payment app.

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Trust in the Internet (TI)

TI1: Data security for me is a concern to engage in WECHAT mobile payment
TI2: I am not comfortable to give my personal information on WECHAT mobile payment apps portals/ website while accessing public service
TI3: I trust WECHAT payment app website to protect my personal information while accessing e-government services.
TI4: I believe WECHAT mobile payment portal/website is trustworthy
TI5: Overall, I have high confidence that mobile payment website/portal is trustworthy

Internet Self-efficacy (ISE)

ISE1: I will need special IT/computer skills to enable me to shop and complete payment WECHAT
ISE5: I will be able to troubleshoot a problem when it occurs while using WECHAT mobile payment app.
ISE 3: I have many years of experience in using the internet.
ISE 4: It will be easy for me to get assistance/support if I need help shopping online using WECHAT payment app
ISE5: Overall, I think I have the right internet skills to shop and pay online through WECHAT payment app

Relative Advantage (RA)

RA-1 WECHAT mobile payment app a convenient way to shop and pay online
RA-2 WECHAT mobile payment app allows me to shop efficiently
RA-3 WECHAT mobile payment app prevents long queues
RA-4 WECHAT payment app is a complement to cash
RA-5 WECHAT payment app useful in managing my finances

Compatibility (C)

C-1 WECHAT payment apps fit well with my lifestyle to shop online
C-2 I like to try new technology
C-3 WECHAT mobile payment app fits into my working style
C-4 I like to adopt new mobile payment innovation
C-5 Overall, WECHAT mobile payment app is compatible with my lifestyle

Complexity (Com)

CO-1 WECHAT mobile payment app require lots of efforts
CO-2 WECHAT mobile payment app require good technical skills
CO-3 WECHAT mobile payment app can be frustrating at times
CO-4 WECHAT mobile payment app is easy to use
CO-5 WECHAT mobile payment app is not that complex to use

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Continuance Intention to Use (CIU)

CIU1: I would use WECHAT mobile payment app for my different online transactions and access to all my shopping services needed.
CIU2: Using WECHAT mobile payment to access services while shopping online is nothing I would do
CIU3: I will continue recommend to others to use WECHAT mobile payment app
CIU4: I will use WECHAT mobile payment app as a tool to enjoy quality services through online shopping
CIU5: Overall, I will continue to use WECHAT mobile payment app services

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Chapter 46
Enhancing Online Repurchase Intention via Application of Big Data Analytics in E-Commerce

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ABSTRACT

Based on the empirical research, this chapter investigated the impact of big data-based techniques typically used in big-data driven E-commerce such as information search, recommendation system, dynamic pricing, and personalisation on the online repurchase intention in Malaysia. This study also investigated the mediating effect on customer satisfaction. Therefore this study utilised the quantitative research method with an explanatory study to predict the link between dependent and independent variables. Additionally, the snowball sample method was used to select a sample size of 318 working adults in Klang Valley. Next, a self-administered online questionnaire was used to collect the necessary data. The IB, SPSS 22 software was then used to assess the reliability and normality of the variables at the first stage. Next, the Confirmatory Factor Analysis and Structural Equation Modelling were examined via IBM SSS AMOS 22. The findings showed that the big data analytic factors like information search, recommendation system, dynamic pricing, and personalisation had a positive significant impact on customers' repurchase intention. Nonetheless, the mediation effect of customer satisfaction on information search, recommendation system, and dynamic pricing did not encourage the repurchase intention. Then, this chapter discussed the managerial implication, limitations, and future research scope. Finally, this study suggested strategies to enhance online repurchase intention via application of big-data analytics in E-commerce.

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INTRODUCTION

In 2019, the global retail E-commerce sales amounted to US$ 3.53 trillion and the E-retail revenues are expected to further increase to US$ 6.54 trillion in 2022. Online shopping is one of the world's most common online operations however, the utilisation differs based on a specific area (Statista, 2019). In a joint study by Google-TNS (2018), Southeast Asia's internet economy is slated to worth more than US$240 billion by 2025, which is US$40 billion more than what was first projected in 2018. Additionally, by 2025, E-commerce is predicted to worth US$102 billion, which would make up more than 40 per cent of the total worth of the internet economy in the region. Malaysia is an attractive market for E-commerce in Southeast Asia because of its dynamic economy and developed infrastructure for digital technologies. Malaysia has ~ 25.84 million active internet users and the population has extremely high rates of mobile phone penetration. Malaysia has a total of 32.25 million people and 25 million of them are social media users, 40.24 million have mobile subscriptions, and 24 million of the population use social media on their mobile devices. Consumers spent an average of US$125 on online shopping in 2018 and the figure is expected to more than triple to US$390 in 2025 (Asian Post, 2019).

Although the E-commerce industry in Malaysia is relatively strong, it still faces obstacles to adopt the latest trends or tools in technology, lacks digital marketing skills, and lacks the market-access knowledge, and the regulations in cross-border E-commerce (Safie, Dastane, and Ma'arif, 2019). Besides that, Malaysian consumers still perceive various factors as risks in their online purchasing behaviour (Tham, Dastane, Johari, and Ismail, 2019). As E-commerce steps into a new competitive era, online shopping vendors need to stand out from others and present it well to become the market leader in the domain of online retail. Competition among these companies has become more aggressive, so it is imperative for businesses to identify the factors that enhance online consumer intention to repurchase (Hamza V. K, 2014).

Electronic marketing is a significant revolution in the era of globalisation (Bala M, 2018). Maximum business organisations have been running with technological change over the past decade. Big Data is a technology that enables large data sets to be unstructured and captured almost in real-time, and to be stored, processed, and combined in large quantities of different types of data from different sources (Brünink, 2016). Big data analytics methods are helpful for the large quantity of information that comes from heterogeneous sources of data such as textbooks, audio, video, social media, general data, and artificial intelligence (Villarejo R, 2019). According to (Chen, 2008; Haba and Dastane, 2018) it is still a challenge for companies to examine the factors that affect consumer repurchase intention in an online environment. Additionally, with the existence of the internet, online consumers have more access to data and a broad range of products and services As such, an information search is imperative for online shopping sites to provide reliable and accurate information (L. G. Pee, 2018). Furthermore, (Yan, 2018) found that the recommendation system provided consumers with the most suitable data and more pleasant shopping experiences. Besides that, (Alireza, 2019) identified a technique to personalise the features of online shopping according to the personality of the consumer, which may encourage repurchase intention. Therefore, it is highly significant to explore and completely comprehend the shift, which is presently taking place in the domain of internet shopping. Hence, a study should be conducted to examine Big Data analytics enables businesses to predict repurchase intention and enable them to concentrate on strategically focused online shopping activities, and (Merve, 2015; S.Vijayarani, 2016), improve customer satisfaction, and repurchase intention.

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Numerous scholars had focussed on the connection between the mediating effects of customer satisfaction and the various factors and repurchase intention (Qureshi, 2009; Alshurideh, 2012; Quoc T P, 2018). Customer satisfaction is seen as a key differentiator in a competitive marketplace where businesses compete for customers. Therefore, customer satisfaction is the key element of business strategy. It is seen within the company as a key performance indicator (Christopher, 2014; Dewa, 2018; Asyraf, 2019). Extensive studies had shown that online shopping is influenced by buying intentions (Chao, 2011; Fatemeh, 2016; Pasharibu, 2018). Therefore, when behaviour is repeated and becomes habitual, an automated cognitive process is considered in which a habit is exercised (Khare, 2005). Some scholars said that a weak online shopping habit results from the apprehensions that consumers have when doing business on the web, especially with unfamiliar merchants (Anderson, 2003). Therefore, the customers' online shopping habits and repurchase intentions improved when the merchants and dealers had successfully satisfied their customers. However, the mediating effect of customer satisfaction is yet to be explored based on the big data analytic factors and repurchase intention.

Studies had investigated the impact of big data analytics on the factors of consumer behaviour (see. Le and Liaw, 2017; Lo and Harvey, 2012). Nevertheless, zero studies were done on the impact of big data analytics on customer repurchase intention mediated by customer satisfaction in Malaysia. Therefore, the current study will fill the existing vacuum of understanding of the subject matter. Hence, this study determined the effect of big data analytics on the online consumer repurchase intention in Malaysia. Furthermore, the present research also examined the mediating effect of customer satisfaction based on big data analytic factors such as information search, recommendation system, dynamic pricing, and personalisation and repurchase intention on online shopping. The subsequent objectives are considered crucial in the context of the Malaysian E-commerce industry: (a) to inspect the impact of information search on repurchase intention, (b) to inspect the impact of recommendation system on repurchase intention, (c) to investigate the impact of dynamic pricing on repurchase intention, (d) to inspect the impact dynamic pricing on repurchase intention, (e) to examine the impact of personalisation on repurchase intention, and (f) to inspect the impact of mediating effect of customer satisfaction based on the big data analytic factors and repurchase intention. Hence, this research identified and critically evaluated the impact of information search; recommendation system, dynamic pricing, and personalisation as part and parcel of the independent variables to study their impact on the online repurchase intention mediated by customer satisfaction.

LITERATURE REVIEW

Review of Key Literature

Big Data Analytics

The term big data refers to information that cannot be processed or analysed using traditional tools or processes. (Chris et al., 2012). Hapler and Krishnan (2013) stated that many organisations have started using big data solutions because they deal with specific business problems that require big data to be solved. Besides that, the data economy also produces a wide and constant stream of data that is monitored and analysed using advanced technologies and techniques to provide new insights that are necessary for better decision-making and improved business performance. (Luen, 2015) Therefore, big-data plays an

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important role in online repurchase intention. (Pavithra B, 2016). Big data is a dataset capable of being captured, communicated, aggregated, stored, and analysed (Thi and Shu, 2017). Additionally, big data increases its velocity by exceeding the old computing methods. It analyses the involved data volumes and mines information, and calculations n big computational amounts. (Muhammad, 2018).

Big Data Analytics (BDA) refers to "quantitative fact-based' analysis, which aids the process of decision-making (Davenport, 2006). BDA generates value via transparency, discovery, variability exposure, and performance improvement (Manyika, 2011). E-commerce companies are one of the BDA adopters 'fastest groups because they need to remain on top of their game (Koirala, 2012). Big data analytics is where advanced analytical techniques are applied to big data sets. Therefore, based on the large data samples, analytics reveal and leverage changes in business (Nada, 2014) Multiple studies had found a sufficient knowledge of customer service via the Big Data Analytics methods and systems to better help the needs and expectations of the customers. Besides that, decision support plays an important role in the management of customer relations. Therefore, predictive analytics will help manage relationships in the business environment in the future. Many tools are used with big data technologies that provide better standards of customer-relationship management skills. Big data analytics help deliver faster value to the customer (Romika, 2015; Tomas, 2017; Li Q. C., 2017). (Akter, 2016) categorised BDA'S business value as E-commerce companies' transactional, informational and strategic benefits. As a result, Big data analytics help companies generate consumer-centered insights to improve business operations (Avinash B.M., 2017). Big data analytics enables companies to quickly access and analyse multiple data sources, improve decision-making, develop tailor-made services that meet consumer needs, and better assess lending activities to minimise losses (Jiwat, 2017).

Information Search

The internet has become a powerful tool for information search and E-commerce (March L, 2001). Consumers frequently choose their brands and products via the internet The internet gives customers the authority to search for significant information and buy their desired products (Moon, 2004). Moon (2004) further stated that online shopping is, therefore, highly effective in comparison to traditional marketing channels. Besides that, customers can also search for information and seek appropriate options for their product selection (Fiona, 2005). Therefore, information-search is the first phase of the customer purchase process. Hence, Adeline (2006) asserted that information-search is a significant state because potential customers receive advertising messages that may influence their choices and decision-making abilities. (Farhang, 2012) said that data-search is a process, which assists clients to make choices in the online shopping platform. Data-search is an excellent tool to help online shoppers discover the appropriate products or the necessary services Therefore, it is crucial for potential customers to be able to browse for information before decision-making. As such the online retailers need to enhance data support and offer a comprehensive list of product data and use the inner search engines to enhance the efficacy of data-search (Mittal, 2013). Evidently, E-commerce increases the availability of information exponentially, provides customers access to product-service knowledge, possesses a better quality, and is faster than before (Fawzy, 2018).

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Personalisation

Personalisation focuses on fulfilling a special requirement. It can be directed towards people (customers or employees) as well as the organisational roles in companies such as purchasing agents (Petra, 2004). Christoph (2010) claimed that there is a close relationship between personalisation and the recommended items by the online portal. Moreover, (Narongsak, 2011) defined website personalisation as any action that adapts the information or services provided by a website to the needs of a particular user or a set of users. Researchers view customer personalisation as segments of the market with notable differences. For example, market segmentation is not based on the needs identified for online applications. According to (Allyson, 2013; Radu, 2015; Agarwal, 2015) web personalisation generates tailor-made website information and presentation layouts by identifying the user's implicit or explicit needs. The industry has implemented multiple customised systems such as Amazon's recommender systems, eBay and other E-commerce websites, or gmail.com and outlook's customization tools, in practice (Darshana, 2016). Personalisation defines the numerous differences among individuals. Various characteristics of personalisation and styles of decision-making communicate with an online store (Alireza, 2019).

Recommendation System

The recommendation system is an important area of application (Timothy, 2002). (Chi, 2011) had established a personalised E-commerce recommendation system model based on multi-agent technology and introduced the principle, and algorithm of the key agent to the model. Web-based recommendation systems are convenient for users because users do not need to provide user rating data explicitly in comparison to the traditional collaborative filtering technique (Yang, 2012). A recommendation scheme is a technique used in E-commerce that can collect products and create suggestions for clients. It can enhance the capacity to sell websites for E-commerce, transform tourists to clients, and boost customer loyalty (Chen, 2014). An online recommendation system involves using information technology and customer information to tailor Ee-commerce interactions between a business and an individual customer (Seth, 2015). The recommendation system guesses the shopping preferences of the customer according to the features of the products the customer bought in the past and then recommends comparable products to him or her. Furthermore, (Ankush, 2017) suggests that 'personalised recommendation is generally applied to online shopping websites to provide recommendations to their users. The recommendation system uses collaborative filtering techniques that have been successful in providing recommendations. Recommendation systems usually include cooperative content-based filtering and other methods for data mining, such as decision trees, association rules, and semantic methods (Yan, 2018).

Dynamic Pricing

Dynamic pricing is the free adjustment of the price of the products based on the supply and demand, even at the individual level of the transaction (Wim, 2014). Dynamic pricing adjusts the prices of identical goods online to match customers' willingness to pay (Robert M., 2001). The increased capacity of online retailers to learn about their customers ' shopping behaviour has risen concerns of dynamic pricing, a practice where a vendor sets prices based on the readiness of the buyer to pay (Oliver, 2011) . Therefore, when there is a change in demand or in other parameters, dynamic pricing, which is merely a price change, could be helpful to determine the suitable price. Besides that, dynamic pricing comprises

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of measurable demand, client sensitivity, and other factors (Başak, 2013). According to (Rainer, 2016) dynamic pricing strategy maximises expected long-term discounted profits. Every seller wants to set the selling price of their products to increase their revenue (Anusha, 2017). Strategic consumers expect that a future discount may find a current purchase less attractive in response to dynamic pricing. As a result, a dynamic pricing strategy that ignores strategic customer behaviour can prove to be suboptimal (Chaitanya, 2018).

Customer Satisfaction

According to (Kotler and Keller, 2009) customer satisfaction is the outcome of experiences during different buying phases: a need for something, collecting data about it, assessing buying options, making real buying choices and post-purchasing behaviour. Similarly, (Syed, 2010) defined customer satisfaction as the ultimate result of meeting the expectations of a consumer based on product and service performance. Moreover, customer satisfaction is one of the crucial factors in the research of consumer behaviour in both traditional and online business environments. Customer satisfaction is generally viewed in different behavioural contexts because of the comparison between consumer expectations and experience and therefore, customer satisfaction is achieved when the final delivery meets or exceeds the expectations of the customer (Izyan, 2014). In their study, (Sathiya, 2016) found that online shoppers' satisfaction was related to their recent purchase area of residence, age, gender, occupancy, and cost. Furthermore, in an online environment, customer satisfaction is one of the key factors leading to increased customer retention and the long-term growth of online stores (Urvashi, 2017). Most customers are very satisfied with the price of the product, followed by the discount offered, and the time taken for the product to be purchased online (V. Mathan and R. Velmurugan, 2017; Nebojša, 2019) .

Repurchase Intention

Repurchase intention can be defined as the willingness of an individual to make another purchase from the same company based on his/her past experiences (Hellier, 2003). (Lin, 2014) stated that repurchase intention is when a repeated behaviour becomes habitual as a result of the automated cognitive process. Customers with distinctive personalities may react differently to similar benefits, therefore, resulting in the differences in their perceived value, which may ultimately exhibit different repurchase intentions (Fang, 2016). Moreover, (Jobo, 2016) claimed that repurchase intention involves the general experience of the clients to-date, their satisfaction with the products or services, and the ability to retain the customers' satisfaction to encourage their intention to buyback.

Moreover, (Sahe, 2016) defined repurchase intention as repurchasing the purchase from a specific vendor via the online stores. Additionally, online shopping platforms face more difficulties in comparison to an off-line context because of the absence of face-to-face interactions with the distributors, unreliable internet configuration data, distrust, low switching costs, uncertainty, and spreads fast via word-of-mouth. (Donni, Dastane, Haba and Selvaraj, 2018). Nevertheless, the intention to buy off-line cannot completely embody the spirit of internet shopping (Chou, 2016). The innovation of consumer service and product quality will affect the repurchase intention (Yang, 2017). Furthermore, (Quoc T P, 2018) revealed that the intention to purchase back is one of the most significant marketing behavioural objectives that ensure customers are prepared to purchase at the same online store or seller again.

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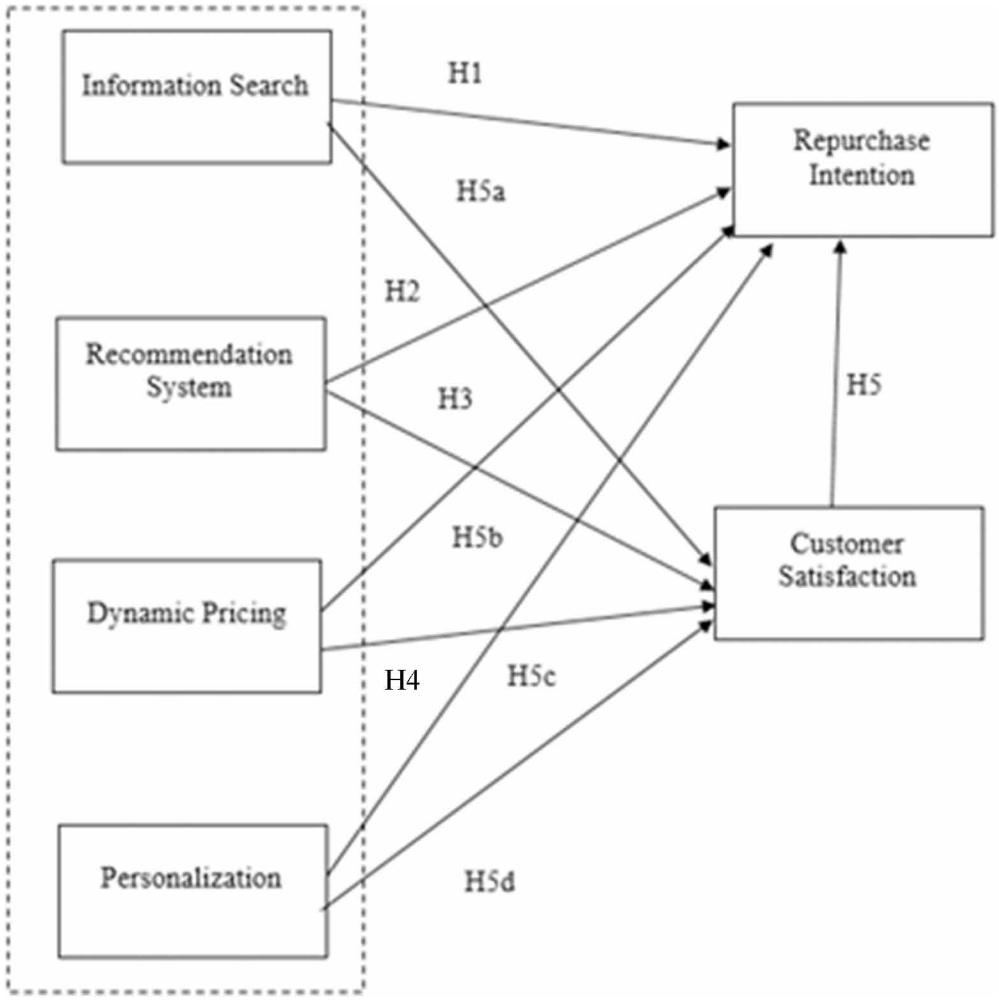
Correspondingly, (Xin K L, 2018) also highlighted that boosting the customers' repurchase intention is the key strategy to generate higher profits for the online vendor. Many previous studies reported the impact of Big Data analytics to business values and business challenges (Akter, 2016; Barton and Court, 2012). However, insufficient research had been done on customers' views to examine how customers react to the application of Big Data Analytics on the online repurchase intention. Thus, the research on customers' online repurchase intention based on the application of Big Data analytics is becoming an advanced trend in the marketing strategy (Le and Liaw, 2017). Additionally, the mediation effect of customer satisfaction based on the Big Data Analytics factors and repurchase intention was limitedly researched too.

Figure 1. Conceptual Framework



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Conceptual Framework and Hypotheses Development

A study by Prudon (2015) showed that the variables such as the comfort of access, the convenience of search, the convenience of assessment, the comfort of the transaction, and comfort of ownership / post-purchase were significant variables that contributed to the customer's perceived value and intention of repurchase. However, (Maria, 2012) stated that the effect on online website design and product variation satisfaction was not significant but it had a direct impact on e-shoppers' loyalty. Data privacy and data security are an inevitable issue in the Big Data age (Kalina, 2017). Moreover, (L. G. Pee, 2018) indicated that the moderating effects showed that website usability signalised that information remained significant even for low-risk shopping customers and for experienced online shoppers. (Quoc T P, 2018) revealed that data search was more convenient with a user-friendly interface website, which intended to assist clients to move readily, incorporate search instruments, and compare products to assist clients to discover the product that best suits their requirements. This was significant to contribute to the factors that boost clients' desire to repurchase (Haba and Dastane, 2019). The proposed framework contains four key factors of big data analytics and the combination of these four are unique and contributed to the field of literature.

H1: There is a positive and significant impact of information search on repurchase intention.

The recommended online shopping system focuses on electronic retail-specific characteristics and requirements. This research used a hybrid model, which supported the dynamic recommendations, eliminated the problems that the underlying techniques had when they were used alone (Prassas, 2001). (Jiang, 2010) and (Chen, 2012) stated that comments and recommendations affected clients' online shopping experience, online shopping satisfaction, and their intention to shop online. Nevertheless, Shahab (2012) found that there was a need to put in extra effort to overcome the shortcomings of the existing techniques of the recommendation system. According to (Thi and Shu, 2017) the recommendation system enabled consumers to readily identify and match their preferences and interests, and therefore it improved customers' desires and behaviour. Furthermore, from the client's perspective, customers want to be more satisfied with the recommendation system to enhance their purchase and decision making so that the products fulfil their own preferences. Therefore, Poonam (2018) conducted research on the moderating effects of product attributes and consumer reviews on the effectiveness of the e-commerce site's collaborative filtering recommendation system. Besides that, it impacted the sales volume and the diversity of several different recommend algorithms, commonly used in e-commerce and online services. Therefore, complete and precise information must be given to ensure customers can assess the product correctly. This helps ease the assessment. It is also necessary to provide the capacity to sort and compare products between distinct stalls by cost. Social media is increasingly influencing daily purchasing choices (Vahid, 2018).

H2: There is a positive and significant impact of the recommendation system on repurchase intention

Dynamic pricing involves using historical data such as previous purchases, clickstream, cookies, business resource planning systems to set an item's prices dynamically or offer customised discounts (Uyoyo, 2014; Anusha, 2017). Although the evolving internet-based technologies provide e-commerce companies with transformative advantages (e.g. real-time client service, dynamic pricing, tailored offers

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or improved interaction), BDA can further enhance these effects by allowing informed choices based on critical ideas (Akter, 2016). Moreover, (Avinash B.M., 2017) examined major Big Data applications: customisation, dynamic pricing, customer service, customer behaviour prediction, visibility of the supply chain, and fraud management. Furthermore, (Thi and Shu, 2017; Vijay, 2018) revealed that dynamic pricing had significantly improved customer service to greatly satisfy the customers. However, the recommendation system was the most influential factor, followed by information search, and finally dynamic pricing. Furthermore, (Lily, 2017) stated that price perception did not influence customer satisfaction however, it influenced the customer repurchase intention as a result of the satisfaction with the e-service quality. According to (Aypar, 2018) examined price sensitivity on the intention to repurchase based on the customers' personalities and characteristics. Therefore Aypar (2018) investigated the extent to which personality or characteristics affect price sensitivity.

H3: There is a positive and significant impact of dynamic pricing on repurchase intention.

There are three significant factors that affect the comfort of website data: website type and data range, website design and website attractiveness, and personalisation of the website. Website personalisation enables companies to attract more clients to their website. This sort of client appeal is one of the most efficient marketing techniques of a company (Farhang, 2012). The online sales profiling essential offers user information and purchase choices, that help the marketing team to concentrate on client needs, products, services, and expectations. Therefore if a visitor matches a profile, a custom content personalisation will be provided. This offers an extremely appropriate, engaging, and improved user experience leading to a substantial rise in conversion and income levels (Radu, 2015). However, (Christoph, 2010) revealed that the set of articles collected was not sufficiently large to assume a constant interest in the area of personalisation. Hence, Big data analytics enables personalisation- based service or products to be provided to customers (Avinash B.M., 2017). This personalisation can streamline the decision-making process and boost satisfaction. This research introduced a technique to customise the characteristics of an online store according to the users ' personalities. These equations are then used to customise the features of the shops to improve customer satisfaction and convince them to make bigger purchases (Jaewon, 2017).

H4: There is a positive and significant impact of personalisation on repurchase intention.

(Mohsan, 2011) found that customer satisfaction was positively correlated to the repurchase intention and was adversely correlated to the customers' plans to switch. (Fadilah, 2017; Xin K L, 2018) revealed that confirmation was the most powerful determinant, which enhanced the customers' intention to repurchase via online shopping sites. Therefore, online retailers should be informative and should provide valuable information at the same time, as this can reduce information search time. Additionally, the information provided must match the customers' needs to increase the effectiveness of the information. Online retailers should provide up-to-date, accurate, useful, and comprehensive information on their websites to ensure that the needs of customers are met and therefore, satisfied (Julianti, 2014; Izyan, 2014). Furthermore, the perceived expectation of performance and satisfaction also had a significant impact on the online shopping experience and on the repurchase intention in Malaysia. As more Malaysians are exposed to e-commerce, it is expected that e-commerce players will take advantage of the evaluation report and improve their websites to provide consumers with the level of satisfaction that guarantees repeated visits, and therefore, increase revenue (Fawzy, 2018). However, (Lily, 2017) examined the impact of e-service

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quality and experiential marketing via client satisfaction since the mediation variable had no impact on the intention to purchase back. Moreover, (V. Mathan, 2017) conducted a study to identify the level of customer satisfaction pertaining to online shopping to identify the factors that encourage their satisfaction. Therefore, the empirical evaluation of the obtained equations showed that the proposed method of personalisation improved customer satisfaction (Darshana, 2016; Muhammad, 2018; Alireza, 2019). The outcomes of the study showed that customer satisfaction was associated with marital status and the number of problems faced by the. Furthermore, (Quoc T P, 2018; Alif, 2018) the outcomes also indicated that the performance expectancy affected online shopping customer satisfaction. On the other hand, cost savings, perceived ease of use, the security of service, and expected performance influenced customer repurchase intention.

H5: There is a positive and significant impact of customer satisfaction on the repurchase intention.
H5a: Customer satisfaction mediates the relationship between information search and repurchase intention.
H5b: Customer satisfaction mediates the relationship between recommendation system and repurchase intention.
H5c: Customer satisfaction mediates the relationship between dynamic pricing and repurchase intention.
H5d: Customer satisfaction mediates the relationship between personalisation and repurchase intention.

RESEARCH METHODOLOGY

This research was carried out based on the positivist and deductive approach in the epistemological position. Additionally, an explanatory design was applied to predict the connection between the dependent variables (Repurchase Intention and Customer Satisfaction) and the independent variables (Information Search, Recommendation System, Dynamic Pricing & Personalization) via the process of hypothesis testing. Besides that, a qualitative method was also implemented with a structured survey questionnaire.

According to (TheEDGEmarkets, 2018) Malaysia has 15.3 million web shoppers (50% of Malaysia's population). This was irrationally huge sample size for research because 10% of the total population in which a sample size of 15,300 was too big and too expensive, required a lot of effort, and was time-consuming to be examined. Therefore, the present study embraced Bartlett's (2001) formula where the rule of thumb is t-value=1.96 and alpha level=0.5 for more than 150 sample sizes when the lower target of populations is involved. Therefore, the targeted group of population in this study was made up of Malaysian internet shoppers who were 18 years and above (Stated by Direct Sales Act 1993 as the legal age to join) regardless of their gender and race. Finally, this study obtained a total of 318 questionnaires that were suitable as a sampling population. Next, a self-administered, structured questionnaire was used online to collect the necessary data. The snowball sampling method was used to obtain the appropriate information from the present internet users in Klang Valley to avoid financial constraints and ensure time-efficiency Additionally, this study used the Google survey form via electronic delivery and the survey information was stored. This was a convenient method since the questionnaire was easily accessible online and in real-time. This was convenient for the respondents of this study. Participants needed to completely comprehend the objectives of the present study while the study was conducted with strict confidentiality. The survey questions were develop based on the previous research carried out by other researchers.

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A set of identical issues with close-ended questions and scale-response questions were given to the participants. Next, the questionnaire was divided into two segments. Section A examined the private and background data linked to the online shopping sector of the participants. This section included participants' demographic information such as race, age, gender, education, earnings, marital status, frequency of online shopping, and favourite website. Section B focused on participants' views based on the factors of online shopping recognised in Malaysia. This study adopted the Rating scale questions, which allowed the respondents to assess online shopping issues based on the provided variable, which was flexible to develop the questionnaire. The issues in the study were based on six factors such as information search (IS), dynamic pricing (DP), recommendation system (RS), personalisation (P), customer satisfaction (CS), and repurchase intention (RI). The questionnaire instruments used in this study were based on the 7-point Likert scale, which ranged from *Very Strongly Agree* to *Very Strongly Disagree*, followed by *Neither Agree nor Disagree* in between to determine the attitude of the respondents with regards to the current subject matter. (Creswell, 2014).

The rule-of-five sample selection method (36 items multiply with 5) was adopted for the sample size in this study, which consisted of at least 180 samples that were suitable as a sample population (HT Chong, 2014). Additionally, the questionnaires were doubly distributed to the various internet shoppers in Klang Valley. Finally, a total of 318 questionnaires were obtained and were used in this study as a suitable sampling population Post-data collection, different methods of statistical data analysis that were consumed to identify the connection between variables via the Social Science Statistical Package (SPSS). In this study, the data analysis scheme included descriptive analysis and accuracy analysis statistics, analysing normality, testing reliability, and validity using SPSS software 22. The confirmatory factor analysis (CFA) and variance assessments were acquired in the subsequent phase. To identify the general suitability of the assessment model, the Structural Equation Model (SEM) was created using AMOS 22 to evaluate internal consistency.

RESULTS AND DISCUSSION

Demographic Analysis

The present study had distributed a total of 350 questionnaires to a group of working adults in Malaysia. Based on the given questionnaires about 91% (318 out of 350) of the data was obtained successfully. Out of the 318 respondents, 58.5% were males and 41.5% were females. This revealed a gender balance in the present research. About 38.7% of the respondents aged between 31 and 40. Additionally, the majority of online shoppers were Chinese (72%). About 80.2% of the respondents visited online shopping platforms and purchased products or services monthly. Besides that, 69.2% of the respondents who had online shopping experience were married and 37.1% of them were married with kids. Based on the obtained questionnaires, the respondents from two major groups of monthly income favoured online shopping. For example, 31.8% of the respondents have a monthly cash income of RM5,001-10,000 whereas 30.5% of them have a monthly cash income of RM10,000. These groups of people have the financial freedom to spend shopping online. Next, 80.2% of the respondents shop online monthly About 40.9% of the respondents chose *Lazada* as their number one online shopping platform whereas 33.6% favoured *Shoppe.* These platforms match with the i-price top 10 online shopping sites in Malaysia (iprice, 2019).

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Table 1. Reliability Analysis

Variable	No. of Items	Cronbach's Alpha	Assessment
Overall	30	.929	Excellent
Information Search (IS)	5	.966	Excellent
Recommendation System (RS)	5	.911	Excellent
Dynamic Pricing (DP)	5	.908	Excellent
Personalization (P)	5	.876	Good
Customer Satisfaction (CS)	5	.886	Good
Repurchase Intention (RI)	5	.907	Excellent

Reliability Analysis

Table 1 shows Cronbach's Alpha reliability test result for all six variables. The results revealed that 4 out of 6 outcomes ranged between 0.908 and 0.9066. This represented excellent scores that were highly reliable and dependable and considered valid for the present research. Such results were therefore, up to par with the rule of thumb, alpha > 0.9 (Davis, 1989). Nevertheless, Personalisation (P) indicated an alpha value of 0.876 whereas Customer Satisfaction (CS) exhibited a value of 0.886. It demonstrated great reliability and internal consistency, which reflected our scale from the general Cronbach alpha scoring observation of 0.929 out of the overall 30 item factors.

Normality Analysis

The Normality Test compared the outcomes of the sample with the normal distribution of outcomes, and with the same mean and standard deviation, which revealed that the null hypothesis was normal test distribution (Ghasemi, 2012). The skewness of the normality test measured the symmetry of the data distribution whereas the kurtosis measured the flatness and skewness of the data distribution. In accordance with Hair et al., (2010) the kurtosis and skewing values should ideally be between -1 and +1. Nonetheless, both values were between the range of -2 and +2 (George and Maller, 2010) in this present study. However, the overall data verification was still considered to be a normal univariate distribution.

Table 2 shows the normality test lead for all variables/constructions in this study. The results revealed that the general information with normal distribution fell within the range of -2 + 2 in the acceptable range. According to (Hair et al, 2010) if the skewness and kurtosis of a normality test possess a value between -2 + 2 it is considered close to normal and good as a rule of thumb. This is because when the values of skewness that fall outside this range indicate a substantial skewed distribution. Additionally, the kurtosis statistic in this research revealed a satisfying overall normal distribution except for 7 of the following variables: IS3, IS5, DP2, CS1, CS5, PR2, and PR3 that fell outside of the normal range score, which is between >-2 and > +2. Although the score was not within the kurtosis' excellent rule of thumb in relation to a few factors, it was still acceptable because all the variables had skewed the symmetry of the distribution. (Ahuja, 2010). Therefore, in this study, it was necessary to view the collected data as part and parcel of a normal distribution.

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Table 2. Normality Analysis

	N	Min	Max	Mean	Std. Deviation	Skewness		Kurtosis	
						Statistic	Std. Error	Statistic	Std. Error
IS1	318	1	7	5.33	1.322	-1.169	.137	1.744	.273
IS2	318	1	7	5.23	1.288	-.884	.137	1.313	.273
IS3	318	1	7	5.55	1.267	-1.393	.137	2.927	.273
IS4	318	1	7	5.45	1.430	-.884	.137	.703	.273
IS5	318	1	7	5.61	1.202	-1.222	.137	2.653	.273
RS1	318	1	7	5.45	1.163	-.954	.137	1.731	.273
RS2	318	1	7	5.35	1.233	-.913	.137	1.512	.273
RS3	318	1	7	5.19	1.203	-.631	.137	1.112	.273
RS4	318	1	7	4.93	1.302	-.582	.137	.822	.273
RS5	318	1	7	5.32	1.155	-.767	.137	1.604	.273
DP1	318	1	7	5.42	1.483	-1.218	.137	1.429	.273
DP2	318	1	7	5.70	1.252	-1.236	.137	2.227	.273
DP3	318	1	7	5.30	1.257	-.589	.137	.424	.273
DP4	318	1	7	5.37	1.308	-1.002	.137	1.591	.273
DP5	318	1	7	5.40	1.325	-1.059	.137	1.592	.273
P1	318	1	7	4.82	1.462	-.753	.137	.426	.273
P2	318	1	7	4.96	1.377	-.788	.137	.863	.273
P3	318	1	7	4.80	1.323	-.701	.137	.938	.273
P4	318	1	7	4.55	1.553	-.433	.137	-.323	.273
P5	318	1	7	4.45	1.525	-.429	.137	-.212	.273
CS1	318	1	7	5.30	1.099	-.778	.137	2.215	.273
CS2	318	1	7	5.15	1.144	-.617	.137	1.705	.273
CS3	318	1	7	5.17	1.140	-.614	.137	1.564	.273
CS4	318	1	7	5.08	1.121	-.492	.137	1.268	.273
CS5	318	1	7	5.09	1.131	-.674	.137	1.673	.273
PR1	318	1	7	5.34	1.056	-.697	.137	2.065	.273
PR2	318	1	7	5.21	1.090	-.847	.137	2.590	.273
PR3	318	1	7	5.25	1.112	-.815	.137	2.409	.273
PR4	318	1	7	5.19	1.093	-.833	.137	2.061	.273
PR5	318	1	7	5.12	1.139	-.726	.137	1.533	.273
IS	318	1	7	5.4327	1.12013	-1.120	.137	2.378	.273
RS	318	1	7	5.2459	1.03639	-.895	.137	2.490	.273
DP	318	1	7	5.4371	1.08468	-.986	.137	2.074	.273
P	318	1	7	4.7157	1.20239	-.432	.137	.331	.273
CS	318	1	7	5.1585	.96240	-.737	.137	2.960	.273
RI	318	1	7	5.2214	.96907	-.876	.137	2.938	.273

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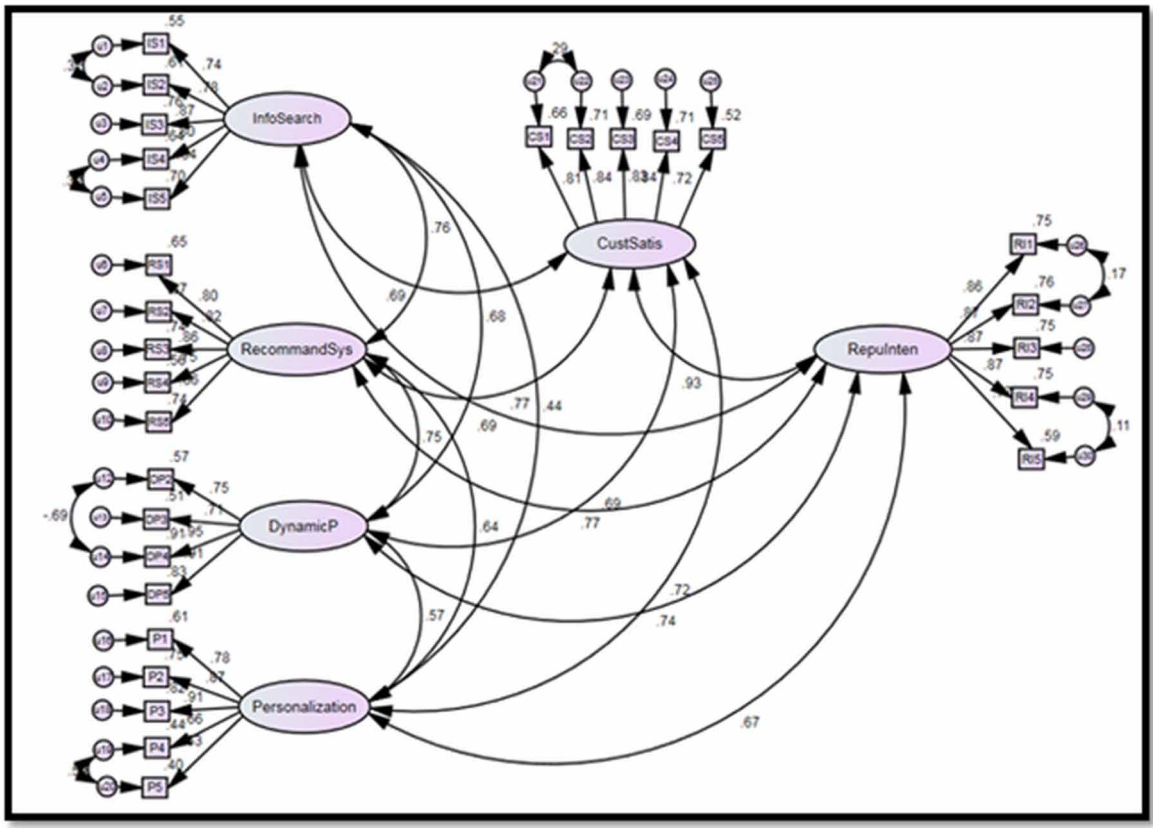
Figure 2. Confirmatory Factor Analysis



Confirmatory Factor Analysis

The overview of CFA results is shown in Table 2. The CFA outcome showed that the model of this study was justified to be an acceptable and healthy fit model, which was within the acceptance phase of all the values. The chi-square showed a statistically significant value of 0.00 outcome for the general model of suitable assessment in the present study (Müller, 2008). The RMSEA result with a value of 0.079, which was less than 0.008 showed that the mode of this study was good (Hooper, 2008). There was an increase to 0.915 in the Comparative Fix Index (CFI) and the Incremental Fit Index post-modification because the statistical range was between 0.0 and 1.0 with a value close to 1.0 that suggested an excellent fit. (Hair, 2006). The enhanced CFI value was justified based on the rule of thumb for the CFI value > 0.90 and was accepted as a healthy fit (Prudon, 2015). The Chisq / DF was also up to 2,980 and the value was < 3.0, in which it was in the appropriate range (John, 2009). This research proceeded to validate the hypothesis pertaining to the CFA's dimension of the model of fit to analyse the impact of the outcome when the big data analytic factors were applied to examine online shopping consumers' satisfaction and repurchase intention in Malaysia.

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Divergent validity

The factor loadings were employed to validate different measurements to confirm the reliability of the data from the Cronbach's alpha.

Table 3. Summary of CFA Result

Indices Category	Index	Level of Acceptance	CFA Result	Decision
Absolute Fit	Chisq	P < 0.05	0.000	Acceptable
	RMSEA	£ 0.08	0.079	Acceptable
Incremental Fit	CFI	>0.90	0.915	Acceptable
	IFI	>0.90	0.915	Acceptable
	TLI	>0.90	0.915	Acceptable
Parsimony Fit	Chisq/Df	<3.0	2.980	Acceptable

Discriminant Validity

Discriminant validity is the extent to which a construct is truly distinct from other constructs, thus high discriminant validity proves that a construct is unique and captures a specific phenomenon that other measures fail to (MacQueen, 1967). CFA provides two common ways of assessing discriminant validity. Firstly, the correlation between any two constructs and secondly based on the comparison of AVE. However, the most popular test is the correlation between two constructs and therefore this research made use of it.

Diagonal elements are made up of construct variance and the values that exist above the diagonals are squared correlations. Quintessentially, it is relatively similar to specifying the fact that the items that make up the two constructs could just as well make up a single construct. If the two-construct model fit is significantly different from that of the one-construct model, then the discriminant validity is supported despite the high correlation value of 0.9. Therefore, the data satisfied the discriminant validity samples because only the Purchase Intention and Brand Image had grappled with multi-collinearity problems of the correlation, which surpassed 0.85. Nevertheless, the rest showed good correlations. In brief, the construct validity, divergent validity, and discriminant validity with the support of a strong work of literature demonstrated that the model was suitable to take on the SEM (path analysis).

Structural Equation Modelling

The first SEM validation was without mediation effect, which removed the customer satisfaction factor and the validity of the structural model interactions and their respective theoretical hypotheses. The following results Chisq/DF = 3.105, a significant value which was above 3.0. This showed that the model was a good fit model (Hooper, 2008). The Comparative Fit Index (CFI) value for this study was at 0.935 and the IFI value was 0.935. These outcomes depicted a good fit model since the value was above 0.90 (Hair Et al, 2014). Moreover, the TLI value was 0.924 and above 0.90 and the RMSEA was 0.075. The RMSEA value was more than 0.08, which was an acceptable range (Hair et al, 2010) as shown in Table 4.

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Table 4. Divergent Validity Result

	Information Search (IS)	Recommendation System (RS)	Dynamic Pricing (DP)	Personalization (P)	Customer Satisfaction (CS)	Repurchase Intention (RI)
IS1	.740					
IS2	.784					
IS3	.870					
IS4	.800					
IS5	.835					
RS1		.803				
RS2		.816				
RS3		.860				
RS4		.750				
RS5		.859				
DP2			.752			
DP3			.712			
DP4			.954			
DP5			.910			
P1				.782		
P2				.868		
P3				.906		
P4				.660		
P5				.631		
CS1					.812	
CS2					.843	
CS3					.829	
CS4					.844	
CS5					.723	
RI1						.865
RI2						.871
RI3						.865
RI4						.868
RI5						.770
Reliability	0.966	.911	.908	.876	.886	.907

The modified SEM validity model with the mediation effect was considered to be in the acceptable range of a suitable fit with relevant results of the model-fit shown in Table 5. The following CMIN / DF value was < 3.00, the RMSEA value was < 0.080; and the IFI, TLI, and CFI value were > 0.90, which showed an appropriate model fit. (Hooper, 2008). The exam results of the report were Chisq / DF (2.980), CFI (0.915), IFI (0.915), TLI (0.902), and RMSEA (0.079). These results indicated a strong balance of the model with the empirical evidence of the validity (Hair, 2007). The path analysis comparison is given in the following section of hypotheses testing.

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Table 5. Discriminant Validity Result

	Recommendation System (RS)	Dynamic Pricing (DP)	Personalisation (P)	Customer Satisfaction (CS)	Repurchase Intention (RI)
Information Search (IS)	.756	.678	.438	.685	.695
Recommendation System (RS)		.749	.641	.769	.775
Dynamic Pricing (DP)			.570	.688	.739
Personalization (P)				.722	.673
Customer Satisfaction (CS)					.769

Comparison of Factor Loading

The other SME validity measurement was based on a factor generated from the calculated model (Harney, O., Hogan & Broome, 2012). The table below revealed that the loading from the measurements model and structural models were compared and were close to each and other. Therefore, this model was ascertained to be a good fit. The structural model was valeted via the path analysis. Therefore, the table below shows the relationship between the measurements and the structural model. This relationship was significant and close to each other. Therefore, it indicated that this was a good model fit, which denoted the significance of path analysis.

Figure 3. Structural Equation Modelling without Mediation Effect

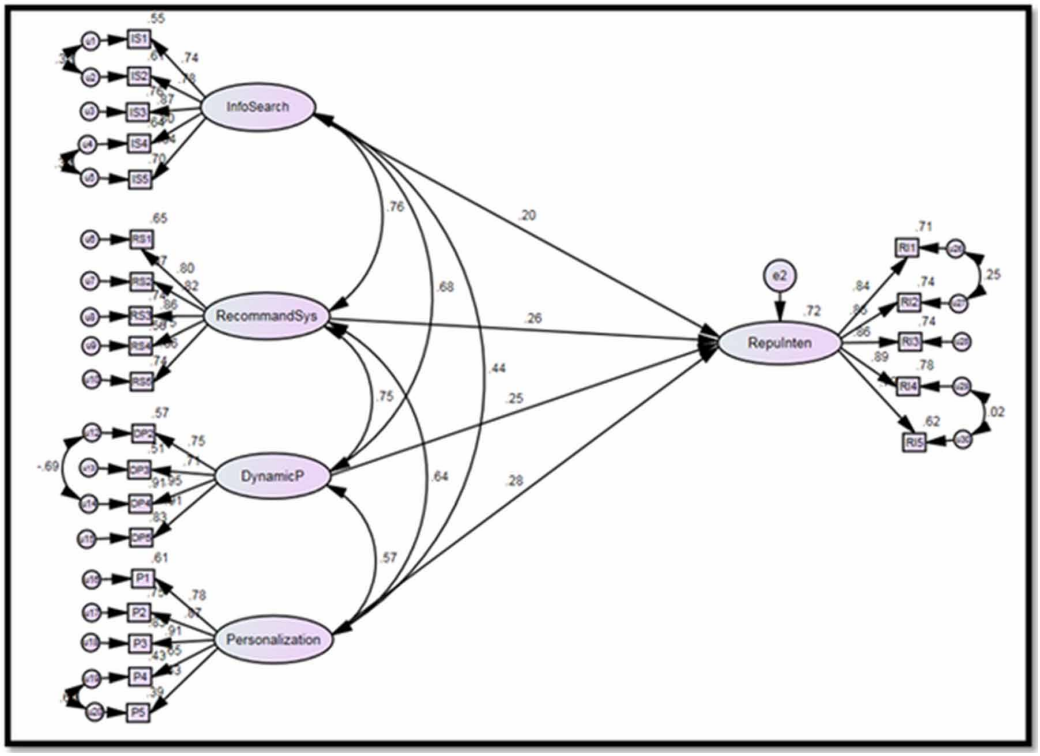

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Table 6. Equivalent Fit for SEM Models without Mediation Effect

	Chisq/Df	IFI	TLI	CFI	RMSEA
Rule of Thumb	<3.00	>0.900	>0.900	>0.900	<0.08
SEM Structural Model (SM)	2.771	0.935	0.924	0.935	0.075
Decision	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

Figure 4. Structural Equation Modelling with mediation Effect

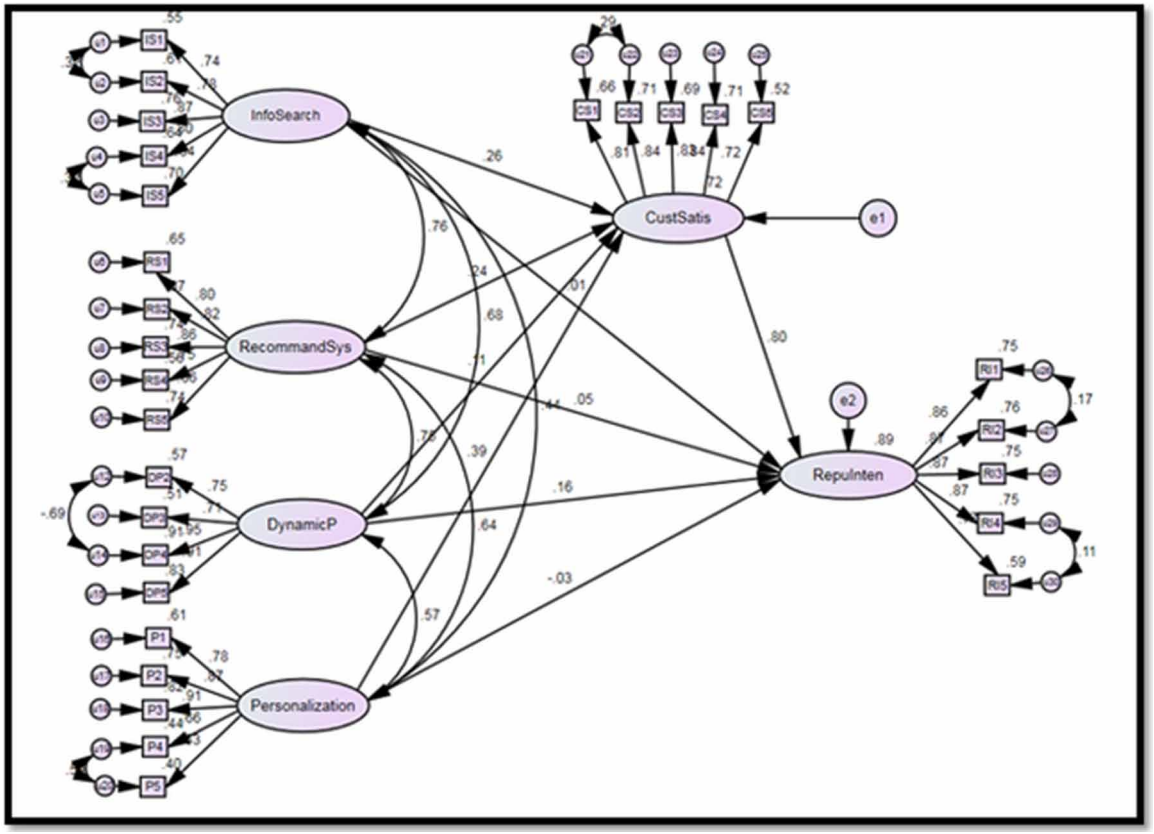

Table 7. Equivalent Fit for Modified SEM Model with Mediation Effect

	Chisq/Df	IFI	TLI	CFI	RMSEA
Rule of Thumb	<3.00	>0.900	>0.900	>0.900	<0.08
SEM Model	2.980	0.915	0.902	0.915	0.079
Decision	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

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Table 8 shows and demonstrates the loading factor of the measurement model and the SEM model. The data proved that both models were similar with just a minimum differentiation from the EV and PI constructs. Evidently, the model was justified to be a good model fit. In Amos statistic, the estimated column measured the correlation strength of the research exogenous construct, and the value of correlation was always between -1 and +1. This value of correlation was above 0.85, which depicted a multicollinearity problem between two exogenous constructs. Therefore, the research correlation analysis showed that all the research variables were correlated with no multi-collinearity problems, between the exogenous constructs. Thus, this comparison just reinforced the model fit not to deter it but to undertake the path analysis.

Table 8. Comparison of Factor Loadings

Construct	Indicator	CFA (From CFA output)	SEM (from SEM output)
Information Search (IS)	IS1	.740	.740
	IS2	.784	.784
	IS3	.870	.870
	IS4	.800	.800
	IS5	.835	.835
Recommendation System (RS)	RS1	.803	.803
	RS2	.816	.816
	RS3	.860	.860
	RS4	.750	.750
	RS5	.859	.859
Dynamic Pricing (DP)	DP2	.752	.752
	DP3	.712	.712
	DP4	.954	.954
	DP5	.910	.910
Personalization (P)	P1	.782	.782
	P2	.868	.868
	P3	.906	.906
	P4	.660	.660
	P5	.631	.631
Customer Satisfaction (CS)	CS1	.812	.812
	CS2	.843	.843
	CS3	.829	.829
	CS4	.844	.844
	CS5	.723	.723
Repurchase Intention (RI)	RI1	.865	.865
	RI2	.871	.871
	RI3	.865	.865
	RI4	.868	.868
	RI5	.770	.770

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Table 9. Summary of Hypothesis Test result without Mediation Effects

	Dependent Variable	Independent Variables	Estimate β	p	Result	Hypothesis Decision
H1	Repurchase Intention	Information Search	.190	***	Significant	Accepted
H2	Repurchase Intention	Recommendation System	.231	0.002	Significant	Accepted
H3	Repurchase Intention	Dynamic Pricing	.183	***	Significant	Accepted
H4	Repurchase Intention	Personalization	.269	***	Significant	Accepted

Table 10. Summary of Hypothesis Test result with Mediation Effects

	Dependent Variable	Independent Variables	Estimate β	p	Result	Hypothesis Decision
H5	Repurchase Intention	Customer Satisfaction	.816	***	Significant	Accepted
H5a	Customer Satisfaction	Information Search	.228	***	Significant	Rejected
H5b	Customer Satisfaction	Recommendation System	.218	0.05	Not Significant	Rejected
H5c	Customer Satisfaction	Dynamic Pricing	.079	0.087	Not Significant	Rejected
H5d	Customer Satisfaction	Personalization	.364	***	Significant	Accepted

*p<.10, **p<.05 ***p<.01

Summary of Hypothesis Testing

The path coefficients of the hypothesis were H1 ($\beta = 0.190$ $p < 0.01$) and H2 ($\beta = 0.231$, $p < 0.01$), H3 ($\beta = 0.183$, $p < 0.01$), H4 ($\beta = 0.269$, $p<0.01$), H5 ($\beta = 0.816$, $p <0.01$) and H5d ($\beta = 0.364$, $p < 0.01$). On the contrary, H5a was rejected as a result of indirect effect (0.26 X 0.80) > direct effect of (0.22). At the same time, H5b, and H5c were rejected with a hypothetical test on the P-values that were greater than 0.05 (Cramer & Howitt, 2004). The information gathered proved to be practical and valid based on a series of tests such as normality, reliability, validity, the suitability of the CFA and SEM model, and the information testing, which led to a suitable range. Therefore, results showed a favourable and substantial impact ($\beta = 0.816$, $P < 0.01$) on the mediating effect of customer satisfaction between personalisation and repurchase intention. However, the results of the hypothesis revealed zero customer satisfaction mediation effect pertaining to information search, recommendation system, and dynamic pricing on the repurchase intention, with a non-significant value higher than 0.05. The big data analytic factors like information search, recommendation system, dynamic pricing and personalisation had a significant and direct impact on repurchase intention with a significant level lower than 0.01. Results showed that the proposed hypothesis H5, customer satisfaction had a significant and direct impact on repurchase intention. Therefore, customer satisfaction was a mediating variable in the relationship between H5d, personalisation, and repurchase intention. The information search, recommendation system, and dynamic pricing did not depend on the effects of customer satisfaction and their intention to repurchase. The type of mediation here is called as "partial mediation" since the direct effect was still significant after the mediator entered the model (Radzi, 2017).

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DISCUSSION

This section discusses the impact of selected aplications of big-data analytics on repurchase intention. Discussion is mentioned for each of the big-data analytics factor viz. information search, dynamic prizing, recommendation systems and persionalization. The results revealed that the information search influenced consumers' intention to repurchase in the Malaysian online shopping industry. This supported the outcomes delineated by (Andrew, 2014; Adeline, 2006), which indicated that information search and online shopping website usability had a positive relationship with consumers' intention to repurchase. Moreover, if the online shopping website provides the necessary search information, it may change online shoppers' purchasing decisions (Pee, 2018). Hence to enhance the repurchase intention, this parameter will play a key role. The findings also showed that the system of recommendations had a positive impact on the consumers' repurchase intention. Previous works of literature and empirical studies (Yan, 2018; Ankush, 2017; Zhang, 2016) had validated the system of recommendation as one of the critical factors, which had positively and significantly affected online shopping customers' satisfaction and repurchase intention. Previous studies and empirical research (Vijay, 2018; Chaitanya, 2018; Shin, 2017) had acknowledged that dynamic pricing was a critical factor, which had a positive impact on online shopping repurchase intention. A subject that has gained imperative attention in recent years is dynamic pricing with competitive product pricing. It will therefore, be feasible to set the correct price for the various customer profiles to improve complete utility. As a result, one needs to gather all the required information about their purchasing, their sensitivity to certain variables, and what they are looking for in the industry to understand the customer.

It is tricky to recommend a strategy on dynamic pricing because it has a direct impact on the bottomline. It is crucial to consider aspects related to competitor pricing, differential pricing, situational pricing, etc. E-commerce is known for offering affordable deals, discounts, coupons, etc. and dynamic pricing should include these considerations too. The outcomes of this research showed that personalisation did not have a significant and positive impact on repurchase intention. Additionally, online shopping website advertisements that are relevant to customer preference will trigger the customer's need for repurchase intention (Chou, 2016). Furthermore, an online shopping email notification about product promotion will trigger the customers' intention to repurchase if the customers are satisfied with the online retailer (Thi and Shu, 2017; Chong, 2012). Personalisation can be done vis-a-vis interface, information listing, booking procedure, and various tips. There is a specific scope to develop the sequence of the stages based on the aspects of personalisation. Online commerce companies are recommended to identify personalised choices of the customers based on the past purchase records or a survey and design the personalisation strategy accordingly.

Earlier works of literature and empirical studies (Yusepaldo, 2018; Xin K L, 2018; Wajeeha, 2018) had corroborated that customer satisfaction had imperatively and positively mediated the repurchase intention and other factors in online shopping. Additionally, previous studies and empirical review stated that information search played a vital role in influencing online shoppers' satisfaction (Nebojša, 2019; Davis, 1989; Gupta, 2013). Radu's (2015) study supported that customer satisfaction on personalisation had a positive mediation effect on the intention repurchase. Based on our outcomes, some characteristics in the online stores were clearly more favoured by certain groups of users. These findings helped understand the decision-making styles of the customers and made it more feasible to customise an online store's user interface to better meet the expectations of the user. The application of huge data analytics provided positive customer satisfaction with a personalised online shopping interface and notification. However,

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the finding revealed that factors such as information search, dynamic pricing, and the recommendation system did not have the mediation effect of customer satisfaction on the repurchase intention. Therefore, an online shopping company need not focus on the mediation effect of customer satisfaction on the information search, dynamic pricing, and the recommendation system to enhance repurchase intention.

CONCLUSION

This study had contributed a valuable amount of information pertaining to the four big data analytic factors such as information search, recommendation system, dynamic pricing, and personalisation and their impacts on repurchase intention. Besides that, this research also intended to examine the mediation effect of customer satisfaction among the big data analytic factors and repurchase intention. The findings concluded that the four big data analytic factors had directly encouraged the customers' repurchase intention and their overall satisfaction suggesting companies can enhance repurchase intention via application of these big-data analytic techniques. Personalisation had a secondary impact and significance on the mediation effect of customer satisfaction and repurchase intention. Therefore, the online shopping company needs to consider the importance of personalisation in customer satisfaction to boost their intention to repurchase. However, information search, a recommendation system and dynamic pricing will not have customer satisfaction mediation effect on the repurchase intention in the Malaysian online shopping industry.

Theoretical Contribution

There have been several studies on the impact of applied big-data analytics on consumer choice, consumer behaviour and purchase intention in the context of E-commerce (see. Le and Liaw, 2017; Lo and Harvey, 2012). The existing literature identify factors affecting online repurchase intention as website attributes, discounts, usability factors (see. Dastane, Goi and Rabbanee, 2020; Tham et al. 2019). However, the literature is scant when it comes to confirming the factors related to applied big data analytics and its impact on online repurchase intention. Besides, there is no specific measurement model and the structural model is developed by combining factors of big data analytics. Additionally, the mediation effect of customer satisfaction based on the Big Data Analytics elements and repurchase intention was limitedly researched too. Nevertheless, zero studies were done on the impact of big data analytics on customer repurchase intention mediated by customer satisfaction in Malaysia. Therefore, the current study fills the existing vacuum of understanding of the subject matter. This study determined the effect of big data analytics on the online consumer repurchase intention in Malaysia. Furthermore, the present research also examined the mediating effect of customer satisfaction based on big data analytic factors such as information search, recommendation system, dynamic pricing, and personalisation and repurchase intention on online shopping. The current study offers a structural model of big-data analytic factors, customer satisfaction and online repurchase intention.

Managerial Contribution

The managerial contribution and recommendations to enhance the repurchase intention based on the application of big data analytic is discussed in this section. To imrpove consumers' repurchase intention,

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it is recommended that, E-commerce business include functions such as 'search' and 'sort' to facilitate an easy search as well as filter the information as required by the user. In general, E-commerce websites come with a list of hundreds of products, services, packages, etc., but not necessarily, every user is looking for such a massive range of information. If the online portal provides the platform for users to obtain the information that they are looking for, it can ultimately be reflected in the added value and positively attract repurchases from the same users. Even if most of the big players provide these facilities, various innovative ways can be adopted to facilitate the easy search to stand apart from the competitors. Online shopping websites can recommend substitute goods for the products that the customer intends to buy. This will therefore, simulate customers' repurchase intention if the customers have a good online shopping experience (Chen, 2012). Furthermore, online shopping website can recommend complimentary comments for the products that the customers want to buy (Celik, 2016). Thus, the online shopping website is recommended to develop an excellent system to provide the appropriate product and service recommendations. Such recommendations can be based on consumers' past purchases or from the customisation point of view. This can enhance users' intention to repurchase via the online shopping industry. Subsequently the recommendations on the mediation effect of customer satisfaction within huge data analytic factors such as information search, recommendation system, dynamic pricing, and personalisation on the intention to repurchase online. Firstly, the online shopping platform should ensure a convenient browsing system and a use-through product and service with an equivalent number of experiences from different devices. Secondly, online shopping platforms should set up a push notification on the latest sales and promotion, and create a wish list, which functions effectively with a click of a keypad. Thirdly, the online shopping platform should give customers exclusive notifications on discounts and promotions. Fourthly, the online shopping platform should allow customers to filter for the specific price that customers look for. Lastly, online shopping platforms should provide frequent shoppers access to exclusive events, rewards, and gifts with purchase.

Limitations

Nevertheless, the study had several limitations. This study was conducted for general online shopping and did not focus on a specific industry such as apparel or electronics. The majority of the respondents are Malaysian Chinese, and so generalizing these results for entire Malaysia will have some limitations. Instead of snowball sampling, if stratified or quota sampling is used, then appropriate representation of Malaysian population can be obtained in the sample. Besides that, the sample was not diverse because the majority of the respondents were Chinese. The study used limited big-data analytic factors. This study further recognised that the respondents were the Malaysians, which ultimately limited the scope of the study. However, the outcomes of this study were worthy and applicable to the developing ASEAN region. Lastly, online repurchase intention is affected by several other factors and enhancing the same depends not just only on the application of big-data analytics. The current study limits on the discussion of how factors of application of big data impact online repurchase intention and may help in enhancing the same to some extent, however, one should not conclude that these are the only factors contributing to increase in online repurchase intention.

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Future Research

Nonetheless, future studies may focus on the concept of cross-culture and make comparisons between a wide range of countries or continents. Secondly, the present study used the user's response as a dependent variable. Even though the users' view is frequently used as a surrogate measure of behaviour, it does not accurately predict the actual buying situation. Thus, the results found in the present study should be understood and practiced with caution. Nevertheless, similar future studies should measure to fit in actual online shopping behaviour such as information search, real recorded ordering, and purchase amount as a dependent variable. Thirdly, the longitudinal approach is recommended for future research to explore other impacts of applying big-data analytics and capture the change of customers' responses. In the future, the study can be extended to a specific sector. Such validation will provide distinct findings in distinct sectors and further determine the model's effectiveness. Besides that, future research can enhance the number of factors and use other variables in the study that have been shown to influence customer satisfaction and their buy-back intent to understand the unusual satisfaction of other contributors and the level of intention to buy-back.

REFERENCES

Adeline, C. P. (2006). E-Commerce: A Study on Online Shopping in Malaysia. *J. Soc. Sci.*, *13*(3), 231–242.

Agarwal, V. (2015). A Study on the use of personalized Features in Online travel Shopping Websites. *International Journal of Advanced Media and Communincation*, *5*(11), 1045–1067.

Ahmad,, F. B. A. (2019). Factors Influencing Big Data & Analytics (BD&A) Learning Intentions with Transformational Leadership as Moderator Variable: Malaysian SME Perspective. *International Journal of Management and Human Science*, *3*(1), 10–20.

Ahmad, G. (2015). Big Data Driven E-Commerce Arhitechure BIg Data Driven E-commerce Architecture. *International Journal of Economics. Commerce and Management*, *3*(5), 940–948.

Ahuja, R. (2010). *Research Methodology.* New Delhi: A Rawat Publication.

Akter, S. F. (2016). *Big Data Analytics in ECommerce:A Systematic Review and Agenda for Future Research*. Electronic Markets-The International Journal.

Alif, M. G. (2018). *The Factors Affecting Customer Satisfaction, Loyalty, and Word of Mouth Towards Online Shopping for Millennial Generation in Jakarta*. Charistian Haposan Pargaribuan.

Alireza, K. (2019). Personality-Based Personalization of Online Store Features Using Genetic Programming: Analysis and Experiment. *Journal of Theoretical and Applied Electronic Commerce Research*, *14*(1), 16–29.

Allyson, V. (2013). A Case Study Utilizing Online Personalization to Engage Students in Information Literacy Instruction. *Spring, 1*(1), 24-36.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Alshurideh, M. (2012). The Effect of Customer Satisfaction upon Customer Retention in the Jordanian Mobile Market: An Empirical Investigation. *European Journal of Economics, Finance and Administrative Sciences,* (47), 69-78.

Altman, A. (1980). Abortion and Indigent. *Journal of Social Philosophy*, *11*(1), 5–9. doi:10.1111/j.1467-9833.1980.tb00608.x PMID:11655611

Anderson, R., & Srinivasan, S. S. (2003). E-satisfaction and e-loyalty: A contingency. *Psychology and Marketing*, *32*(3), 123–138. doi:10.1002/mar.10063

André, B. (2005). Simulation Study on Fit Indexes in CFA Based on Data With Slightly Distorted Simple Structure. *Structural Equation Modeling*, *12*(1), 41–75. doi:10.120715328007sem1201_3

Andrew, O. L. (2014). *Factors Influencing Consumers Repurchase Intention of Groupon*. Faculty Of Accountancy And Management Deparment Of International Business.

Ankush, S. (2017). Dynamic Recommendation System Using Enhanced K-means Clustering Algorithm for E-commerce. *International Journal of Advanced Research in Computer Science*, *8*(5), 159–163.

Anshari, M. N.-M. (2018). Customer Relationship Management and Big Data Enabled: Personalization & Customization of Services. *Applied Computing and Informatics*, 1-17.

Anshari & Syamimi, A. L. (2016). Customer relationship management with big data enabled in banking sector. *Journal of Scientific Research and Development*, *3*(4).

Anshari. (2009). CRM initiatives of banking sector in Saudi. *Int J Comput Internet Manag,* 56.

Anusha. (2017). Dynamic Price Optimization for the Future of E-Commerce. *International Journal of Advanced Research in Computer and Communication Engineering, 6*(4), 879-883.

Asyraf, A. (2019). Assessing the effects of service quality on customer satisfaction. *Management Science Letters*, *9*, 13–24.

Avinash, B.M., A. B. (2017). Big Data Analytics for E-Commerce – Its Impact on Value Creation. *International Journal of Advanced Research in Computer and Communication Engineering*, *6*(12), 181–188.

Aypar, U. (2018). Impact of price sensitivity on repurchase intention in terms of personality features. *International Journal of Economic and Administrative Studies*, 515-532.

Ayushi, S. (2017). Understanding Jordanian Consumer's Online Purchase Intentions: Integrating Trust to the UTAUT2 Framework. *International Journal of Applied Engineering Research*, *12*(20), 10258–10268.

Bala, M. (2018). A Critical Review of Digital Marketing. *International Journal of Management. IT & Engineering*, *8*(10), 321–341.

Bartlett, J. K. (2001). Organizational Research:Determining Appropriate sample size in survey research. *Information Technology, Learning and Performance Journal*, *19*(1), 43–50.

Başak, D. (2013). Revenue Management in E-Commerce: A Case Study. *Proceedings of the International MultiConference of Engineers and Computer Scientists*.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Bashir, R. (2015). Effects of online shopping trends on consumer-buying behavior: An empirical study of Pakistan. *Journal of Management Research*, *2*(2).

Belanche & Flavián, C. (2012). Integrating trust and personal values into the Technology Acceptance Model: The case of e-goverment services adoption. *Cuadernos de Economía y Dirección de la*, *15*(4), 192–204.

BigCommerce. (2018). *2018 Omnichannel Buying Report*. Retrieved from https://grow.bigcommerce.com/rs/695-JJT-333/images/report-2018-omnichannel-buying.pdf

Brünink, L. (2016). *Cross-Functional Big Data Integration: Applying the Utaut Model* (Master's thesis). University of Twente.

Burns, A. a. (2005). Marketing research. Upper Saddle River, NJ: Pearson.Prentice-Hall.

Celik, H. (2016). Customer online sCustomer onlie shopping anxiety within the unified theory of acceptance and use technology (UTAUT) framework. *Asia Pacific Journal of Marketing and Logistics*, *28*(2), 278–307. doi:10.1108/APJML-05-2015-0077

Chaitanya, B. (2018). Opportunistic Returns and Dynamic Pricing: Empirical Evidence from Online Retailing in Emerging Markets. Academic Press.

Chandra, N. (2016). *Malaysia's National eCommerce Strategic Roadmap Report.* Academic Press.

Chang, H.-J. M.-N., Eckman, M., & Yan, R.-N. (2011). Application of the Stimulus-Organism-Response model to the retail environment: The role of hedonic motivation in impulse buying behavior. *International Review of Retail, Distribution and Consumer Research*, *21*(3), 233–251. doi:10.1080/09593969.2011.578798

Chao, W. (2011). An Integrated Model For Customer Online Repurchase Intention. *Journal of Computer Information Systems*, *52*(1), 14–24.

Chayapa, K. (2011). Online Shopper Behavior: Influences of Online Shopping Decision. *Asian Journal of Business Research*, *1*(2), 66–75.

Chen, H. (2012). The Impact of Comments and Recommendation System on Online Shopper Buying Behaviour. *Journal of Networks*, *7*(2), 345–351. doi:10.4304/jnw.7.2.345-350

Chen, J. (2014). Commodity Recommendation System of E-commerce Based on Classification Users. *Applied Mechanics and Materials*, *556*(562), 6689–6692. doi:10.4028/www.scientific.net/AMM.556-562.6689

Chen, Y.-F. (2008). Herd behavior in purchasing books online. *Computers in Human Behavior*, *24*(5), 1977–1992. doi:10.1016/j.chb.2007.08.004

Chen, Y.-S.-K. L.-M., Lin, C.-K., & Chuang, H.-M. (2016). Closing the Skill Gap of Cloud CRM Application Services in Cloud Computing for Evaluating Big Data Solutions. *Internation Journal of Geo-information*, *5*(227), 1–20. doi:10.3390/ijgi5120227

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Chen, Y. Y., Huang, H.-L., Hsu, Y.-C., Tseng, H.-C., & Lee, Y.-C. (2010). Confirmation of Expectations and Satisfaction with the Internet Shopping: The Role of Internet Self-efficacy. *Computer and Information Science*, *3*(3), 14–23. doi:10.5539/cis.v3n3p14

Chi, N. (2011). Multi-Agent Based Recommendation System in E-commerce. *Contemporary Logistics*, *2*, 35–39. doi:10.5503/J.CL.2011.02.006

Chong. (2014, August). Factors Affecting Online Shopping of Purchasing Apparels Among Young Adults . *Faculity of Accountancy and Management*.

Chong, A. Y., Chan, F. T. S., & Ooi, K.-B. (2012). Predicting consumer decisions to adopt mobile commerce: Cross country empirical examination between China and Malaysia. *Decision Support Systems*, *53*(1), 34–43. doi:10.1016/j.dss.2011.12.001

Chou, S.-W., & Hsu, C.-S. (2016). Understanding online repurchase intention: Social exchange theory and shopping habit. *Information Systems and e-Business Management*, *45*(1), 14–19. doi:10.100710257-015-0272-9

Chris, E. (2012). Understanding Big Data Analytics for Enterprise Class Hadoop and Streaming Data (Vol. 1). New York: The McGraw-Hill Companies.

Christoph, A. (2010). Personalization Research In E-Commerce- A State Art Review (2000-2008). *Journal of Electronic Commerce Research*, *11*(4), 326–341.

Christopher, J. (2014). *Identifying the factors of Customer Satisfaction in an E-Commerce venture in India*. Symbiosis Institute Of Operations Management.

Chuttur, M. (2000). Overview of the technology acceptance model: Origins, developments and future directions. *Work Pap*, *17*(4), 517–525.

Cortina, J. (1993). What is coefficient alpha? An examination of theory and applications. *The Journal of Applied Psychology*, *78*(1), 98–104. doi:10.1037/0021-9010.78.1.98

Cramer & Howitt, D. L. (2004). The SAGE Dictionary of Statistics: A Practical Resource for Students in Social Sciences. London: SAGE Publications Ltd.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

Cristina, S. (2015). Big Data, the perfect instrument to study today's consumer behavior. *Database Systems Journal*, *6*(3), 28–32.

Crobach, L. (1951). Coefficient alpha and the internal strucutre of tests. *Psychometrika*, *16*(3), 297–334. doi:10.1007/BF02310555

Darshana, D. (2016). A Study of Personalization Effect on User's Satisfaction with E-Commerce Websites. *Journal of Management Research*, *6*(2), 51–64.

Dastane, O., Goi, C. L., & Rabbanee, F. (2020). A Synthesis of Constructs for the Modelling of Consumers' Perception of Value on Mobile-Commerce (M-VAL). *Journal of Retailing and Consumer Services*, *55*(4).

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Davenport, T. (2006). Competing on Analytics. *Harvard Business*, *84*, 98–107. PMID:16447373

David, N. L. (2015). What's. In *A Word? Retinking Facet Heading in a Discovery Services*. Information Technology and Library.

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *Management Information Systems Quarterly*, *13*(3), 319–340. doi:10.2307/249008

Deloitte Touche Tohmatsu Limited. (2019). *Global powers of retailing 2019*. Delloite.

Demangeot, C. (2007). Conceptualising consumer behaviour in online shopping environmnts. *International Journal of Retail & Distribution Management*, *35*(2), 178–195.

Dennis, L. J. (2009). Reporting Practices in Confirmatory Factor Analysis: An Overview and Some Recommendations. *American Psychological Association, 14*(1), 6-23.

Dewa, P. W. (2018). The Effect of Service Quality on Customer Satisfaction, Positive Word of Mouth and Corporate Image. *IOSR Journal of Business and Management*, *20*(7), 28–33.

Dina, F. S. (2016). The Evolution of Data Mining Techniques to Big Data Analytics: An Extensive Study with Application to Renewable Energy Data Analytics. *Asian Journal of Applied Sciences*, *4*(3), 1996–3343.

DManju, K. (2014). Data Analysis of Students Marks with Descriptive Statistics. *International Journal on Recent and Innovation Trends in Computing and Communication*, *2*(5), 1188–1190.

Donni, R., Dastane, O., Haba, H. F., & Selvaraj, K. (2018). Consumer Perception Factors for Fashion M-Commerce and its Impact on Loyalty among Working Adults. *Business and Economic Review*, *8*(2), 168–192. doi:10.5296/ber.v8i2.13044

Duncan and Hauser. (1972). *The Study of Population:An Inventory and Apprasial*. University of Chicage Press.

Durrhiem, K. (2004). *Research in Practice*. Research Design.

Edward, S.-T. W. (2014). Consumer Characteristics, Social Influence, And System Factors On Online Group-Buying Repurchase Intention. *Journal of Electronic Commerce Research*, *15*(2), 120–134.

Elling, S. (2007). Website Evaluation Questionnaire: Development of a Research-Based Tool for Evaluating Informational Websites. *International Conference on Electronic Government*, 293-304. 10.1007/978-3-540-74444-3_25

Ellis, C. (2009). Ethics in Research. *Journal of Nepal Health Research Council*, *7*(14).

Export. (2018). *Malaysia - eCommerce*. Retrieved July 19, 2018, from https://www.export.gov/apex/article2?id=Malaysia-E-Commerce

Fadilah, S. (2017). Customer Satisfaction and Repurchase Intention in Online Social Network (OSN) Shopping Experience. *International Business Management*, *11*(12), 2119–2129.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Fang, J. (2016). Consumer Heterogeneity, Precieved Value and Repurchase Decision Makring In Onle Shopping: The Role of Genederm Agem abd Shopping Motives. *Journal of Electronic Commerce Research*, *17*(2), 116–133.

Farhang, S. (2012). The Impact of Website Information Convenience On E-commerce Success Of Companies. *Procedia: Social and Behavioral Sciences*, *57*, 381–387. doi:10.1016/j.sbspro.2012.09.1201

Fatemeh, T. (2016). Moderating effects of online shopping experience on customer satisfaction and repurchase intentions. *International Academic Institute for Science and Technology*, *3*(4), 21–27.

Fawzy, M. (2018). E- Commerce Adoption and An Analysis of the Popular E- Commerce Business Sites in Malaysia. *Journal of Internet Banking and Commerce*, *23*(1), 1–10.

Fiona, F.-H. N. (2005). Information Search Patterns in E-Commerce Product Comparison Services. *SIGHCI 2005 Proceedings*, 3.

Gao, L. (2014). *Customers' online group buying decision-making in emerging market*. Academic Press.

George & Mallery. (2003). SPSS for Windows step by step: A simple guide and reference. Allyn & Bacon.

George and Maller. (2010). *SPSS for Windows Step by Step: A Simple Guide and Reference, 17.0 update* (10th ed.). Pearson.

Ghasemi, A. S., & Zahediasl, S. (2012). Normality Tests for Statistical Analysis: A Guide for Non-Statisticians. *International Journal of Endocrinology and Metabolism*, *10*(2), 486–489. doi:10.5812/ijem.3505 PMID:23843808

Grace, I. P. (2018). Young Adult Malaysian Consumers' Intention to Shop via Mobile Shopping Apps. *Asian Journal of Business Research*, *8*(1), 18–39.

Gupta, A. R. (2013). Online Shopping: A Shining Future. *International Journal of Techno-Management Research*, *1*(1), 2321–3744.

Haba, H. F., & Dastane, O. (2018). An Empirical Investigation on Taxi Hailing Mobile App Adoption: A Structural Equation Modelling. *Business Management and Strategy, 9*(2).

Haba, H. F., & Dastane, O. (2019). Massive Open Online Courses (MOOCs)–Understanding Online Learners' Preferences and Experiences. *International Journal of Learning*, *Teaching and Educational Research*, *18*(8), 227–242.

Hair, a. (2006). Multivariate data analysis (6th ed.). Uppersaddle River: Pearson Prentice Hall.

Hair. (2010). Multivariate data analysis (6th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Hair, J. W. (2014). Multivariate Data Analysis. Essex: Pearson Edication Limited.

Hair, J. F. (2007). *Research Methods for Business*. John Wiley & Sons.

Hamza, V. K. (2014). A Study on Online Shopping Experience and Customer Satisfaction. *Advances In Management*, *7*(5), 38–44.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hapler& Krishnan. (2013). *TDWI Big Data Maturity Model Guide Interpreting Your Assessment Score*. Retrieved from https://atlasti.com/quantitative-vs-qualitative-research/

Hasina, M. (2011). Customers Satisfaction on Online Shopping in Malaysia. *International Journal of Business and Management*, *6*(10), 162–171.

Hasnan, B. (2019). E-SERVQUAL and Its Impact on the Performance of Islamic Banks in Malaysia from the Customer's Perspective. *Journal of Asian Finance*, *Economics and Business*, *6*(1), 169–175.

Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative studies. *Evidence-Based Nursing*, *18*(3), 66–70. doi:10.1136/eb-2015-102129 PMID:25979629

Hellier. (2003). Customer Repurchase Intention: AGeneral Structural Equation Model. *European Journal of Marketing, 37*(12), 1762-1800.

Hooper, D. (2008). Structural Equation Modelling: Guidelines for Determining Model Fit. *Electronic Journal of Business Research Methods*, *6*(1), 53–60.

Hox, J. J. (1999). An Introduction to Structural Equation Modeling1. *Family Science Review*, *11*, 354–373.

Hsieh, J.-Y., & Liao, P.-W. (2011). Antecedents and Moderators of Online Shopping Behavior in Undergraduate Students. *Social Behavior and Personality*, *39*(9), 1271–1280. doi:10.2224bp.2011.39.9.1271

IIker, E. K. (2017). Sampling and Sampling Methods. *Biometrics & Biostatistics International Journal*, *5*(6), 1–3. PMID:28111614

Ilieva, G., Yankova, T., & Klisarova, S. (2015). Big data based system model of electronic commerce. *Trakia Journal of Sciences*, *13*(1, Suppl.1), 407–413. doi:10.15547/tjs.2015.s.01.070

Iluno, E. C. (2017). The Impact of e-Commerce on Customer Satisfaction: A Case Study of Kaduna State Metropolis in Nigeria. *International Journal of Advanced Studies in Economics and Public Sector Management*, *5*(3), 11–18.

Im, H., & Ha, S. (2011). An exploration of the cognitive-affective model of satisfaction in a shopping context: A test of competing models. *Service Industries Journal*, *31*(13), 2273–2288. doi:10.1080/02642069.2010.504983

Indrawati & Kusumoaji. (2015). The Use of Modified Theory Of Acceptance aand use of Technology To Predict Prospective Users Intention in Adopting TV Streaming. *Proceedings of the 5th International Conference on Computing and Informatics*.

iprice. (2019). *The Map of E-commerce in Malaysia*. Retrieved from https://iprice.my/insights/mapofecommerce/en/

Irem, E. E. (2011). Online Group Buying: What Is There For The Consumers? *Procedia: Social and Behavioral Sciences*, *24*, 308–316. doi:10.1016/j.sbspro.2011.09.138

Izyan, H. b. (2014). Factors Influencing Customer Satisfaction and E-loyalty:Online Shopping Environment among the Young Adults. *Management Dynamics in the Knowledge Economy*, *2*(3), 462–471.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Jaewon, C. (2017). Examining the effects of personalized app recommender systems on purchase intention: a self and social-interaction perspective. *Journal of Electronic Commerce Research*, *18*(1), 73–103.

Jiang, Y., Shang, J., & Liu, Y. (2010). Maximinzing customer satisfaction through an online recommendation system: A novel associative classification model. *Decision Support Systems*, *48*(3), 470–479. doi:10.1016/j.dss.2009.06.006

Jiwat, R. H. (2017). Examing Impacts of Big Data Analytics on Consumer Finance: A Case of China. *International Journal of Managing Information Technology*, *9*(3), 13–22. doi:10.5121/ijmit.2017.9302

Jobo, D. (2016). South African generation-X online shopper satisfaction and their repurchase intentions. *Investment Management and Financial Innovations*, *13*(3), 371–382. doi:10.21511/imfi.13(3-2).2016.09

John, W. C. (2009). *Research Design* (2nd ed.).

Johnston, M. (2014). Secondary Data Analysis:A Method of which the Time Has Come. *Qualitative and Quantitative Methods in Libraires*, *3*, 619–626.

Julianti, S. (2014). Online shopping perception among malaysian professionals. *African Journal of Business Management*, *5*(3), 2837–2846.

Kalia, P. (2014). Importance of Website Quality in Online Shopping. *Proceedings of the Ist International Conference on Issues and Perspectives in Brand Management*.

Kalina, T. B. (2017). *Applying TAM to Study Online Shopping Adoption Among Youth in the Republic of Macedonia*. Venice: *Management International Conference*.

Kamran, S. (2013). Heuristics for Sample Size Determination in Multivariate Statistical Techniques. *World Applied Sciences Journal*, *27*(2), 285–287.

Khalifa, V. L., & Liu, V. (2007). Online consumer retention: Contingent effects of online shopping habit and online shopping experience. *European Journal of Information Systems*, *16*(6), 780–792. doi:10.1057/palgrave.ejis.3000711

Khare, A. a. (2005). Habit regimes in consumption. *Advances in Consumer Research. Association for Consumer Research (U. S.)*, *16*(6), 780–792.

Kline, P. (2000). *The handbook of psychological testing* (2nd ed.). Routledge.

Koirala. (2012). *What is Big Data Analytics and its Application in E-Commerce?* Retrieved from www.venturecity.com

Kotler, P. (2000). *Marketing Management* (10th ed.). Prentice-Hall, Inc.

Kotler & Keller. (2009). Marketing Management (13th ed.). Pearson Education Ltd.

KPMG. (2019). *Global Consumer & Retail change the rules of document please contact Dev KPMG International Global Table of contents*. Retrieved from https://assets.kpmg/content/dam/kpmg/xx/pdf/2019/02/global-retail-trends-2019-web.pdf

Kromrey, J. (1993). Research News and Comment: Ethics and Data Analysis. *The Journal of Educational Research*, *22*(4).

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Lavrakas, P. (2008). *Encyclopedia of Survey Reasearch Methods*. SAGE Publications. doi:10.4135/9781412963947

Lawrence, T. D. (1997). On the Meaning and Use of Kurtosis. *American Psychological Association. Inc.*, *2*(3), 292–307.

Le, T., & Liaw, S. Y. (2017). Effects of pros and cons of applying big data analytics to consumers' responses in an E-commerce context. *Sustainability*, *9*(5), 798. doi:10.3390u9050798

Leonine, B. (2016, September 25). *Cross-Functional Big Data Intergration: Applying The UTAUT Model*. Academic Press.

Lerzan, A. (2012). The Satisfaction, Repurchase Intention and Shareholder Value Linkage: A Longitudinal Examination of Fixed and Firm-Specific Effects. *International Conference on Economic Modeling*.

Li, Q. C., J. X. (2017). The Impact of Big Data Analytics on Customers Online Behaviour. *Proceedings of the International MultiConference of Engineers and Computer Scientists*.

Liang, X. (2019). The Effects of Online Shopping Context Cues on Consumers' Purchase Intention for Cross-Border E-Commerce Sustainability. *Sustainability*, *11*(2777), 1–24.

Lily, S. (2017). What Effects Repurchase Intention of Online Shopping. *International Business Research*, *10*(12), 113–123. doi:10.5539/ibr.v10n12p113

Lim, Y.-M.-S. Y.-C. (2011). The Effectiveness of Online Advertising in Purchase Decision: Liking, Recall and Click. *Australian Journal of Basic and Applied Sciences*, *5*(9), 1517–1524.

Lin, C., & Lekhawipat, W. (2014). Factors affecting online repurchase intention. *Industrial Management & Data Systems*, *114*(4), 597–611. doi:10.1108/IMDS-10-2013-0432

Liping, A. (2016). Study on the Factors of Online Shopping Intention for Fresh for Fresh. *2nd Information Technology and Mechatronics Engineering Conference (ITOEC 2016)*.

Liu, C. H. (2015). A Conceptual Framework of Analytical CRM in Big Data Age. *International Journal of Advanced Computer Science and Applications*, *6*(6), 194–152. doi:10.14569/IJACSA.2015.060620

Liu, W., & Ji, R. (2018). Examining the Role of Online Reviews in Chinese Online Group Buying Context: The Moderating Effect of Promotional Marketing. *Social Sciences*, *7*(141), 1–17. doi:10.3390ocsci7080141

Lo, H. Y., & Harvey, N. (2012). Effects of shopping addiction on consumer decision-making: Web-based studies in real time. *Journal of Behavioral Addictions*, *1*(4), 162–170. doi:10.1556/JBA.1.2012.006 PMID:26165603

Loke, S.-P. (2011). Service Quality and Customer Satisfaction in a Telecommunication Service Provider. *2011 International Conference on Financial Management and Economics*, *11*, 24-30.

Louis, C. L. (2009). Research Methods in Education. *Australian Educational Researcher*, *36*(2), 147–155.

Luen, W. K. (2015). Are Malaysian companies ready for the big data economy? A business intelligence model approach. *Proceedings of the International Conference on Accounting Studies (ICAS)*.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Manyika, J. C. (2011). *Big data: The next frontier for innovation,competition, and productivity.* Academic Press.

March, L. R. (2001). Modeling on-line search behavior using alternative output structures. *Proceedings of the Human Factors and Ergonomics Society*.

Maria, D. D. (2012). The Antecedents of Online Customer Satisfaction and Customer Loyalty. *The Business &Management Review*, *13*(1), 37–47.

Marshall, F. (2012). Competition-Based Dynamic Pricing in Online Retailing: A Methodology Validated with Field Experiments. *The Wall Street Journal*.

Mathan, V., K. a. (2017). Customer Satisfaction Towards Online Shopping in Coimbatore District. *International Journal of Pure and Applied Mathematics*, *117*(15), 41–49.

Mathan, V., & Velmurugan, R. (2017). Customer Satisfaction Towards Online Shopping in Coimbatore District. *International Journal of Pure and Applied Mathematics*, *117*(15), 41–49.

MDec. (2016). *National ECommerce Strategic Roadmap*. Retrieved Oct 13, 2016, from https://mdec.my/digital-innovation-ecosystem/ecommerce/nesr

Mehrabian & Russell. (1974). An approach to environmental psychology. The MIT Press.

Merve, T. B. (2015). Big Data Analytic For Marketing Revolution. *Journal of Media Critiques*, 163-171.

Michael, K. (2019). Big Data Management Canvas: A Reference Model for Value Creation from Data. *Big Data and Cognitive Computing, 3*(19), 1-18.

Mittal, A. (2013). E-commerce: It's Impact on consumer Behavior. *Global Journal of Management and Business Studies.*, *3*(2), 131–138.

Mohamed Khalifa, V. L. (2007). Online consumer retention: Contingent effects of online shopping habit and online shopping experience. *European Journal of Information Systems*, *16*(6), 780–792. doi:10.1057/palgrave.ejis.3000711

Mohd Fawzy. (2018). E-commerce adoption and an analysis of the popular e-commerce business sites in Malaysia. *Journal of Internet Banking and Commerce*, *23*(1), 1–11.

Mohsan, F. M. (2011). Impact of Customer Satisfaction on Customer Loyalty and Intentions to Switch: Evidence from Banking Sector of Pakistan. *International Journal of Business and Social Science*, *2*(16), 264–270.

Mohsen, T. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, *2*, 53–55. doi:10.5116/ijme.4dfb.8dfd PMID:28029643

Moon, B.-J. (2004). Consumer adoption of the internet as an information search and product purchase channel: Some research hypotheses. *International Journal of Internet Marketing and Advertising*, *1*(1), 104–116. doi:10.1504/IJIMA.2004.003692

Muhammad, A. M. (2018). *Customer Relationship Management and Big Data Enabled: Personalization*. Applied Computing and Informatics.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Müller, H. (2008). Evaluating the Fit of Structural Equation Models: Tests of Significance and Descriptive Goodness-of-Fit Measures. *Methods of Psychological Research Online*, *8*(2), 28–74.

Myung, J. K. (2014). Factors Affecting Online Tourism Group Buying and the Moderating Role of Loyalty. *Journal of Travel Research*, *53*(3), 380–394. doi:10.1177/0047287513497837

Nada, E. A. (2014). *Big Data Analytics: A Literature Review Paper.* Springer International Publishing Switzerland.

Naeimeh, E. (2013). An Effective Model for Evaluating Website Quality Considering Customer Satisfaction and Loyalty: Evidence of Airline Websites. *IJCSI International Journal of Computer Science Issues*, *10*(2), 109–118.

Naresh, K. M. (2012). An integrated framework for identifying the items in measurement scales. *International Journal of Market Research*, *54*(6), 835–862. doi:10.2501/IJMR-54-6-835-862

Narongsak. (2011). Enhancing Online Performance through Website content and personalization. *Journal of Computer Information Systems*.

Nebojša, V. (2019). The Influence of Online Shopping Determinants on Customer Satisfaction in the Serbian Market. *Journal of Theoretical and Applied Electronic Commerce Research*, *14*(2), 70–89.

Nematia, B. (2012). Empirical research on the quality of SERQUAL-based web services. *Management Science Letters*, *2*, 727–734.

NST. (2017). *Consumers recall less-than-pleasurable online shopping experience*. Retrieved from https://www.nst.com.my/news/exclusive/2017/06/245496/consumers-recall-less-pleasurable-online-shopping-experience

NST. (2019). *Striking a balance with big data*. Retrieved from https://www.nst.com.my/opinion/letters/2019/02/460607/striking-balance-big-data

Nurhazirah, H. (2017). *Customer Satisfaction on e-SERVQUAL in Islamic Online*. Advances in Business Research International Journal.

Olbrich, R. H., & Holsing, C. (2012). Modeling consumer purchasing behavior in social shopping communities with clickstream data. *International Journal of Electronic Commerce*, *16*(2), 15–40. doi:10.2753/JEC1086-4415160202

Oliver, B. (2018). Service quality and its effect on customer satisfaction and in online-banking, a quantitative study. *International Business & marketing and Bank & Finance*.

Oliver, H. (2011). Price Discrimination in E-Commerce? An Examination of Dynamic Pricing in Name-Your-Own-Price Markets. *Management Information Systems Quarterly*, *35*(1).

Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *JMR, Journal of Marketing Research*, *17*(4), 460–469. doi:10.1177/002224378001700405

Parasuraman. (1998). SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing, 64*(1), 12-40.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Pasharibu, Y. (2018). The Effect of Online Customer Experience towards Repurchase Intention. *International Journal of Supply Chain Management*, *7*(5), 2050–7399.

Pāvels, G. (2017). Data Analytics in CRM Processes: A Literature Review. *Information Technology and Management Science*, *20*, 103–108.

Pavithra, B. (2016). The Study of Big Data Analytics in E-Commerce. *International Journal of Advanced Research in Computer and Communication Engineering*, *5*, 126–131.

Pee, L. G., Jiang, J., & Klein, G. (2018). Signaling Effect of Website Usability on Repurchase Intention. *International Journal of Information Management*, *39*, 228–241. doi:10.1016/j.ijinfomgt.2017.12.010

Peter, P. (2015). Confirmatory factor analysis as a tool in research using questionnaires: A critique1. *Comprehensive Psychology*, *4*(10).

Peter, S. (2014). *How can the analytics on Big Data affect the buying trends of customers in the retail industry?* Sheffield Hallam University.

Petra, S. (2004). Personalization of E-Commerce Applications in SMEs: Conclusion from an Empirical Study in Switzerland. *Journal of Electronic Commerce in Organizations*, *2*(3), 21–39. doi:10.4018/jeco.2004070102

Pilot, D. &. (1999). *Nursing research:principles and methods.* Phildephia: JB Lippincott Company.

Poonam, C., Aditya, M., & Dhiraj, L. (2017). Role of big data in retail customer-centric marketing. *National Journal of Multidisciplinary Research and Developemnt*, *2*(3), 484–488.

Poonam, S. (2018). Recommendation System in Sales – An Online Shopping/Suggesting Friend. *International Journal of Computer & Mathematical Sciences*, *7*(2), 2347–8527.

Prashar Vijay & Parsad. (2017). Antecedents to online shopping: Factors influencing the selection of web portal. *International Journal of E-Business Research*, *11*(1), 35–55.

Prassas, G. (2001). A Recommender System for Online Shopping Based on Past Customer Behaviour. *14th Bled Electronic Commerce Conference*.

Pratminingsih, S. A. (2013). Factors Influencing Customer Loyalty Toward Online Shopping. *International Journal of Trade*, *Economics and Finance*, *4*(3), 104–109.

Prudon, P. (2015). Confirmatory factor analysis as a tool in research using questionnaires: A critique. *Comprehensive Psychology*, *4*(10), 1–20. doi:10.2466/03.CP.4.10

Quoc, T P, T. P. (2018). Relationship between Convenience, Perceived Value, and Repurchase Intention in Online Shopping in Vietnam. *Sustainability*, *10*(156), 1–14.

Qureshi, I. F., Fang, Y., Ramsey, E., McCole, P., Ibbotson, P., & Compeau, D. (2009). Understanding online customer repurchasing intention and the mediating role of trust – an empirical investigation in two developed countries. *European Journal of Information Systems*, *18*(3), 205–222. doi:10.1057/ejis.2009.15

Radka, B. (2018). Technology Acceptance As A Determinant of Online Grocery Shopping Adoption. *Acta universitats Agriculurae ET Silviculturae Medndeliane Brusnensis, 66*(76), 737-748.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Radu, L. (2015). Personalization in E-commerce using profiles similarity. *Economic Sciences*, *8*(57), 275–282.

Radzi, C. W. (2017). Family Food Security and Children's Environment:A Comprehensive Analysis with Structural Equation Modeling. *Sustainability*, *9*(1220), 1–19.

Rahman, M. S. (2017). The Advantages and Disadvantages of Using Qualitative and Quantitative Approaches and Methods in Language "Testing and Assessment" Research: A Literature Review. *Journal of Education and Learning*, *6*(1), 102–112. doi:10.5539/jel.v6n1p102

Rainer, S. (2016). How To Survive Dynamic Pricing Competition in E-commerce. *RecSys 2016 Poster Proceedings*.

Rashed, A. K. (2013). Customer Satisfaction in Online Shopping: A study into the reasons for motivations and inhibitions. *IOSR Journal of Business and Management*, *11*(6), 13–20. doi:10.9790/487X-1161320

Rima, F. (2015). The Technology Acceptance Model E-Commerce Extension: A Conceptual Framework. *Procedia Economics and Finance*, *26*, 1000–1006. doi:10.1016/S2212-5671(15)00922-3

Robert M., W. (2001). Online Dynamic Pricing: Efficiency, Equity and the Future of E-commerce. *Virginal Journal of Law and Technology, 16*(2).

Romika, Y. M. (2015). Usage of Big Data Analytics for Customer Relationship Management. *International Journal of Advanced Research in Computer Science*, *6*(2).

Sahe, I. (2016). Mediating Role of Customer Value between Innovative Self Service Technology (ISST) Factors and Online Repurchase Intention. *Journal of Internet Banking and Commerce*, *21*(2).

Saranya, K. (2016). Data Mining with Big Data Analytics. *International Research Journal of Latest Trends in Engineering and Technology*, *3*(2), 287–293.

Sathiya, B. a. (2016). Satisfaction on Online Shopping A Study with Special Reference to Pollachi Taluk. *International Journal of Multidisciplinary Research and Modern Education*, *2*(1), 90–94.

Schlaegel, C. (2015). Understanding individuals' initial and continued use of online auction marketplaces. *Management Research Review*, *38*(8), 855–907. doi:10.1108/MRR-09-2013-0210

Seetharaman, A., Niranjan, I., Tandon, V., & Saravanan, A. (2016). Impact of big data on the retail industry. *Corporate Ownership & Control*, *14*(1), 506–519. doi:10.22495/cocv14i1c3p11

Segars, A. H., & Grover, V. (1993). Re-examining perceived ease of use and usefulness: A confirmatory factor analysis. *Management Information Systems Quarterly*, *17*(4), 9–37. doi:10.2307/249590

Sergio, O.-R. a. (2016). Social customer relationship management: Taking advantage of Web 2.0 and Big Data technologies. *Springer Open*, *5*(1462), 1–17.

Seth, S. L. (2015). Online Recommendation Systems in a B2C E-Commerce Context: A Review and Future Directions. *Journal of the Association for Information Systems*, *16*(2), 72–107. doi:10.17705/1jais.00389

Shahab, S. S. (2012). Product Recommendation Techniques for Ecommerce -past, present and future. *International Journal of Advanced Research in Computer Engineering & Technology*, *1*(9), 2278–1323.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Shekhar, S. (2017). The Effect Of Shopping Platform And Product Type On Antecents Of Online Consumer Behavior-A Proposed Framework. *Journal of Internet Banking and Commerce*, *22*(8).

Shi, X., & Liao, Z. (2017). Online consumer review and group-buying participation: The mediating effects of consumer beliefs. *Telematics and Informatics*, *34*(5), 605–617. doi:10.1016/j.tele.2016.12.001

Shin, D. (2017). *Adaptive Algorithms for Ordinal Optimization and Dynamic Pricing in E-commerce.* ProQuest.

Shone, P. J. (2015). *Introduction to Quantitative Research Methods*. Graduate School, The University of Hong Kong.

Simoff, S. B. (2008). *Visual Data Mining Theory, Techniques and Tools for Visual Analytics*. Springer. doi:10.1007/978-3-540-71080-6

Statista. (2019). *Retial e-commerce dales worldwide from 2014 to 2023*. Retrieved from https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/

Stephanie, Z. (2000). Data Collection Instrument and Procedure for Systematic Reviews in the Guide to Community Preventive Services. *American Journal of Preventive Medicine*, *18*(1), 44–47. doi:10.1016/S0749-3797(99)00122-1 PMID:10806979

Stephen, R. (2017). Advantages and Disadvantages of Using Internet-Based Survey Methods in Aviation-Related Research. *Journal of Aviation Technology and Engineering*, *7*(1), 58–65.

Streiner, D. L. (2003). Starting at the Beginning: An Introduction to Coefficient Alpha and Internal Consistency. *Journal of Personality Assessment*, *80*(1), 99–103. doi:10.1207/S15327752JPA8001_18 PMID:12584072

Suoniemi, S. (2014). *BIg DAta-driven MARKeting for better competitiveness*. Academic Press.

Syed, S. A. (2010). What factors influence online brand trust:evidence from online tickets buyers in Malaysia. *Journal of Theoretical and Applied Electronic Commerce Research*, *5*(3), 1–12.

Taherdoost, H. (2016). Sampling Methods in Research Methodology; How to Choose a Sampling Technique for Research. *International Journal of Academic Research in Management*, *5*(2), 18–27. doi:10.2139srn.3205035

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, *2*, 53–55. doi:10.5116/ijme.4dfb.8dfd PMID:28029643

Tham, K. W., Dastane, O., Johari, Z., & Ismail, N. B. (n.d.). Perceived Risk Factors Affecting Consumers' Online Shopping Behaviour. *The Journal of Asian Finance, Economics and Business, 6*(4), 249-260.

The Intactone. (2018). *BRM/U2 Topic 6 Methods of Data Collection-Primary and secondary sources*. Retrieved from https://theintactone.com/2018/02/27/br-u2-topic-6-methods-of-data-collection-primary-and-secondary-sources/

TheEDGEmarkets. (2018). *My Say: Asia's online shoppers still aren't getting what they want*. Retrieved December 22, 2018, from https://www.theedgemarkets.com/article/my-say-asias-online-shoppers-still-arent-getting-what-they-want

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Thi & Shu. (2017). Effects of Pros and Cons of Applying Big Data Analytics to Consumers' Responses in an E-Commerce Context. *Sustainability*, *9*(798), 1–19.

Thian,, V. S. (2017). The Confirmatory Factor Analysis (CFA) of Preschool. *International Journal of Academic Research in Business and Social Sciences*, *7*(6), 221–231.

Tieng, C. H. (2014). *Factors Affecting Online Shopping of Purchasing Apparels Among Young Adults*. Academic Press.

Timothy, K. S. (2002). An integrated framework for recommendation system in e-commerce. *Industrial Management & Data Systems*, *102*(8), 417–431. doi:10.1108/02635570210445853

Ting, P.-J. L., Chen, S.-L., Chen, H., & Fang, W.-C. (2017). Using Big Data and Text Analytics to Understand How Customer Experiences Posted on Yelp.com Impact the Hospitality Industry. *Contemporary Management Research*, *13*(2), 107–130. doi:10.7903/cmr.17730

Tomas, R. (2017). Business Intelligence for Big Data Analytics. *International Journal of Computer Applications Technology and Research*, *6*(1), 1–8. doi:10.7753/IJCATR0601.1001

Trochim & Donnelly. (2006). *Research Methods: The Essential Knowledge Base* (1st ed.). Cengage Learning.

Tseng, S.-M. (2016). A study on Consumer Evaluations of Continued Group-Buying Intentions. *International Journal of Innovative Science*, *Engineering & Technology*, *4*(6), 2348–7968.

Urvashi, T. (2017). Analyzing customer satisfaction: Users perspective towards online shopping. *Nankai Business Review International*, *8*(3), 266–288. doi:10.1108/NBRI-04-2016-0012

Uyoyo, E. (2014). Big Data Analytics and its Application in E-Commerce. *Proceedings E-Commerce Technologies*.

Vaghela, P. (2014). A study on consumer perception towards online shopping. *International Journal of Marketing and Technology*, *4*(12), 200–210.

Vahid, M. R. (2018). A new model for customer purchase intention in e-commerce recommendation agents. *Journal of International Studies*, *11*(4), 237–253. doi:10.14254/2071-8330.2018/11-4/17

Varsha, A. (2015). A Study on the user of Personalized Features in Online Travel Shopping Webistes. *Internation Journal of Management Research & Review*, *5*(11), 1045–1067.

Venkatesh, V., Morris, Davis, & Davis. (2003). User Acceptance of Information Tehcnology: Toward A Unified View. *Management Information Systems Quarterly*, *27*(3), 425–478. doi:10.2307/30036540

Vijay, V. (2018). Factors Influencing Consumer Behavior and Prospective Purchase Decisions in a Dynamic Pricing Environment—An Exploratory Factor Analysis Approach. *Social Sciences*, *7*(153), 1–14.

Vijayarani, S. (2016). Research in Big Data -An Overview. *Informatics Engineering, an International Journal, 4*(3), 1-20.

Villarejo, R, P.-S. (2019). Acceptance and use of big data techniques in services companies. *Journal of Retailing and Consumer Services*, 52.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Vitor & Habib. (2017). Big data analytics: Does organizational factor matters impact technology acceptance? *Journal of Big Data*, *4*(21), 1–28.

Vladimer, B. K. (2018). Text Mining in Organizational Research. *Organizational Research Methods*, *21*(3), 733–765. doi:10.1177/1094428117722619 PMID:29881248

Wajeeha, A. (2018). Influencing Factor of Brand Perception on Consumers on repurchase intention: An Examination of Online Apparel Shopping. *Journal of Contemporary Management Issues*, *23*(2), 87–101.

Wan, W. S., Dastane, O., Satar, M., Safie, N., & Ma'Arif, M. Y. (2019). What WeChat Can Learn From WhatsApp? Customer Value Proposition Development for Mobile Social Networking (MSN) Apps: A Case Study Approach. *Journal of Theoretical and Applied Information Technology*, *97*(4), 1091–1117.

Wang, S., Li, J., & Zhao, D. (2017). Understanding the intention to use medical big data processing technique from the perspective of medical data analyst. *Information Discovery and Delivery*, *454*(4), 194–201. doi:10.1108/IDD-03-2017-0017

Webstrategies. (2019). *How Much Should You Budget For Marketing In 2019?* Retrieved from https://www.webstrategiesinc.com/blog/how-much-budget-for-online-marketing-in-2014

Williams, B., Onsman, A., & Brown, T. (2010). Exploratory factor analysis: A five-step guide for novices. *Journal of Emergency Primary Health Care*, *8*(3). Advance online publication. doi:10.33151/ajp.8.3.93

Wim, d. (2014). Dynamic Pricing as a Service for E-Commerce Applications. *20th Twente Student Conference on IT*.

Wu, J. H. (2016). Falling in Love with Online Shopping Carnival on. *ICIS*, 26-29.

Wu, W.-Y., & Chang, M.-L. (2007). The Role of Risk Attitudue on Online shopping: Experience, Customer Satsifaction and Repurchase Intention. *Social Behavior and Personality*, *35*(4), 453–468. doi:10.2224bp.2007.35.4.453

Xin, K L, J. L. (2018). Facotrs Influencing Repurchase Intention in Online Shopping Context: The Mediating Role of Satisfaction. *Journal of Applied Structural Equation Modeling*, *2*(1), 29–43.

Yan, G. (2018). Mobile e-Commerce Recommendation System Based on Multi-Source Information Fusion for Sustainable e-Business. *Sustainability*, *10*(147), 1–13.

Yang, F.-H. (2017). A Study of The Relationshops Among Perceived Service Innovation, Flow Experience and Repuchase Intention ION. *The International Journal of Organizational Innovation*, *10*(2), 13–30.

Yang, Z., & Xia, K. W. (2012). A Recommendation System Framework Based on Web Mining. *Applied Mechanics and Materials*, *151*, 576–582. doi:10.4028/www.scientific.net/AMM.151.576

Yun, Z.-S. L., & Good, L. K. (2007). Developing customer loyalty from e-tail store image attributes. *Journal Managing Service Quality*, *1*(17), 4–22. doi:10.1108/09604520710720647

Yusepaldo, P. (2018). The Effect of Online Customer Experience towards Repurchase Intention. *Int. J Sup. Chain. Mgt*, *7*(5), 548–558.

Zait, A. (2011). Methods For Testing Discriminant. *Management & Marketing*, *6*(2), 217–226.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Zeithhaml & Malhotra. (2005). E-S-QUAL: A Multiple-Item Scale for Assessing Electronic Service Quality. *Journal of Service Research*, *7*(3).

Zhang, Y. S.-L.-N.-L., Guo, S.-L., Han, L.-N., & Li, T.-L. (2016). Application and Exploration of Big Data Mining in Clinical Medicine. *Chinese Medical Journal*, *129*(6), 731–739. doi:10.4103/0366-6999.178019 PMID:26960378

Zhang, Z., Xu, G., & Zhang, P. (2016). Research on E-Commerce Platform-Based Personalized Recommendation Algorithm. *Applied Computational Intelligence and Soft Computing*, *2016*, 1–7. doi:10.1155/2016/5160460

Zhu, G. (2014). The Study of Impact of "Big Data" to Purchasing Intention. *International Journal of Business and Social Science*, *5*(10), 91–96.

Zilong, F., & Pengju, L. (2014). The Mechanism of 'Big Data' Impact on Consumer Behavior. *Americal Journal of Industrial and Business Management,* (4), 45-50.

Zinbarg. (2006). Estimating generaizability to a universe of indicators that all have an attribute in common: A comparison of estimators for alpha. *Applied Psychological Measurement, 30*, 121-144.

KEY TERMS AND DEFINITIONS

Applied Big Data Analytics: Applied big-data analytics is an application or integration of big data analytics in business operations with the intent of continues tapping and processing of big data to ensure identification of trends in order to assist better, faster and accurate management decision making.

Big Data: Big data is a combination of structured and unstructured data which is abundant in quantity, variety as well as the rate at which it gets generated resulting in a complex data set which cannot be stored, managed and processed by conventional statistical tools.

Big Data Analytics: Big data analytics is the use of advanced techniques to analyze, process and examine big data to uncover hidden patterns, trends and relations in order to assist management decision making.

Big-Data-Driven E-Commerce: Big-data-driven e-commerce is an e-commerce business which, through applied big data analytics, peek into its past trends, performance, and growth to improve customer satisfaction, increase revenue, gain new customers, and streamline its operations.

Online Repurchase Intention: Consumers' intent to purchase a product or avail a service repeatedly from the same e-tailer it termed as online repurchase intention.

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Chapter 47
The Role of Reputation on Trust and Loyalty: A Cross-Cultural Analysis of Tablet E-Tailing

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ABSTRACT

The purpose of this article is to empirically examine the role of online retailer's website reputation on tablet commerce and to compare the trust arbitration between reputation and loyalty in two cultures - Finland and Nigeria. Data was collected from Finland and Nigeria, using purposive and snowball sampling methods. This article uses Structural Equation Modelling and mediation analysis. The results reveal that the reputation of online retailer's website is not a direct determinant of loyalty for online shopping while trust colligates with ease of use. The effect of an online retailer's website reputation is stronger in Nigeria than in Finland and trust is a strong predictor of ease of use in Finland than Nigeria. Furthermore, trust fully mediates the effect of reputation on loyalty in Finland and partially mediates the effect of reputation and loyalty in Nigeria. The implication of the result on existing and future managers were discussed with future direction.

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1. INTRODUCTION

Tablet, a content consumption device emerged with a surge adoption to substitute laptops, complement smartphones and play an additional supplementary role in mobile commerce globally (Lee, Lee and Chan-Olmsted 2017). Conversion of consumers to online shoppers is one of the tactics of online retailers to engage customers and drive more sales while shoppers are on their websites. To have a consistent conversion of online visitor to a potentially loyal customer, there is a need to know the trait and cultural differences of online shoppers with a tablet. Chen, (2013) study reveals how culture impact tablet sharing across individualistic and collectivistic culture based on domestication approach and discovered ages, locations, and situations as the key themes that drive how people interact with a tablet. The speed of the change in the mobile technology industry is creating an opportunity for online retailers to use trendy computer devices to track customer's changing purchasing behaviour and to enhance online retailer's strategy and business model. Advanced technology like the tablet is impacting mobile commerce lifecycle from pre-purchase, purchase to post-purchase activities, thus, and making m-commerce a scalable business (Shankar, Kleijnen, Ramanathan, Rizley, Holland, and Morrissey, 2016).

Tablet commerce is now an offshoot of m-commerce, and it is "any transaction completed on a tablet device in which a payment is rendered through the device either through a retailer's website, through a proprietary 'app', or through some swipe device attached to a tablet" (Forrester 2011, pp.15). There is a limitation to this definition, and the conceptualization of tablet commerce is still at its formative stage. This study defines a tablet device in the context of m-commerce as a multitasking device that emerged to substitute the obsolete technology, complement existing mobile device and supplement the m-commerce strategy of an online retailer.

To the best of our knowledge, studies are scarce on cross-cultural contexts in the domain of tablet research, however, extant studies only cover cross-national study within developed countries (Jin, Park and Kim (2008). Other related studies are the impact of a tablet on human behavior with ethnography for communities - interpretive research method (Burford and Park 2014). Also studied is tablet use prediction – focusing on the gratification of tablet use with telephone survey (Leung and Zhang 2016) and impact of a tablet on digital commerce with experiment (Xu et al. 2016). Lee, Lee, and Chan-Olmsted (2017) also evaluated tablet diffusion with secondary data set; tablet apps with structural equation modeling - SEM (Kim and Kim 2016); tablet usage in the context of underdeveloped primary schools with Chi-square test and correlation (Pruet, Ang, and Farzin, 2016); impact of m-business with mixed-method approach (Picoto, Bélanger and Palma-dos-Reis 2014). All these studies emphasized the importance and challenges of a tablet as a medium of online shopping engagement between the online retailer and the consumers.

From the foregoing, this study seeks to answer the following research questions: 1) How does trust arbitrate between the reputation of e-tailer's website and loyalty of tablet users for online shopping? 2) How does trust colligates with online shopping easiness? 3) How does cross-cultural difference affect tablet commerce? This study makes key contributions to marketing and mobile commerce literature by developing a conceptual framework, linking the relationships between e-tailer's website reputation, trust and ease of use to predict loyalty in a cross-cultural context. The rest of the study is organised in the following ways: section 1 introduced the study. In section 2, the study discusses the theoretical background and hypothesis development. Section 3 deals with research design and methodology while in section 4, we treat the data analysis and results. The study concludes in section 5 with the discussion and implications.

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2. LITERATURE REVIEW

One of the most significant facts regarding e-commerce disruption in recent years is how a tablet is growing faster and challenging the use of existing mobile devices like a smartphone. The integration of tablet devices into online retailing business is diffusing steadily (Shankar et al. 2016), and it is becoming easier for the online retailer to engage online shopper with gamification and mobile marketing techniques such as mobile advertisement and promotions. Tablet usage is growing, and its application and relevance to m-commerce have attracted the online retailer's reputable website, trust, and ease of use as a premise for online customer's loyalty. A reputable website is a bridge between the online retailer and online consumer but can this reputable website stand alone to impact loyalty? This m-commerce study postulates that reputable website despite its efficacy is not sufficient on its own to influence customer repeated purchase and loyalty. Extant studies see the aesthetic and ergonomic website as a means of assessment of online retailer by the online consumer (Kim and Lennon 2013, Ye et al. 2014, Oyibo, Ali and Vassileva 2016; Toufaily and Pons 2017).

There is a link between e-tailing website and factors like trust, ease of use and loyalty but the understanding of their meeting point need more insight. Despite the importance of trust and vast research area, its application to mobile commerce still needs more clarity (Yoon and Occeña 2015). Since many risks associated with online shopping and the online shoppers are being careful not to lose their valuables, trust becomes an essential component of consideration for the online retailer when targeting tablet users (Moriuchi and Takahashi 2016). Engaging with a cumbersome website is a time wastage process, and the online consumers are scared to shop on a static website that is not interactive. Ease of use construct by Davis (1989) encourages easiness, and when applied to online shopping, an easy to use website will facilitate easy checkout and prevent consumer drop out at the point of sales conversion. Due to the gap in the research stream of cross-cultural studies in the developed and the developing nations (Oyibo, Ali and Vassileva 2016), this study aims to fill the gap by choosing one notable country in Europe that is renown in technologies and internet penetration and another country in Africa that is growing in technologies and internet penetration (Grewal, Bart, Spann, and Zubcsek, 2016; Oyibo et al. 2016). To determine what makes a country developed and developing, the authors used the postulation of the United Nations on Human Development Index (HDI). This metrics is a composition of life expectancy, education, and national income. Finland (developed country) rates 0.88 and ranks 24 globally while Nigeria (developing country) rates 0.51 and ranks 152. The threshold of this ranking is 0.8 (UNDP 2015).

2.1. The Role of Culture on Tablet E-Tailing

Collectivist and individualistic cultures have different characteristics. While interdependence and group cohesion are the dominant social traits in a collectivistic culture, independent lifestyle, self, personal goal setting, and attainment are the fabrics of an individualistic culture (Hofstede 1980; Hofstede and Bond 1988; Gudykunst, Ting-Toomey and Chua1988; Hofstede et al. 2010; Hofstede 2014). From the consumer behavioural perspective, these cultural traits also influence purchase decisions. Accordingly, Kacen and Lee (2002) contend that the inherent independent lifestyle of the individualistic cultures exposes them to the hedonic gratification of desires. To the collectivistic culture, the individual's allegiance to group subjects them to emotional control and moderation. Interestingly, several studies have also examined cultural differences in user preferences for the characteristics of websites design (Marcus and Gould, 2000; Sun, 2001; Cyr, Bonanni, Bowes, and Ilsever, (2005); Al Badi and Mayhew, 2004; Al-Badi, 2009).

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Specifically, Marcus and Gould (2000) submit that websites oriented in individualistic cultures tend to emphasize personal achievement, materialism/consumerism, and prominence usually given to youth and action. Conversely, they argue that websites rooted in collectivistic cultures tend to explicate such values as experience, leadership, age, status, tradition, and history. In corroborating this, it is reported that the Finnish desired websites with fewer colors and lowest visual complexity but Nigerians prefer a website that is rich in content and aesthetically pleasing (Lab in the Wild, 2014; Raji, Mahmud, Tap and Abubakar (2014). However, it is important to point out that marketers aiming for the global audience should integrate dynamic website features that meet the need of each culture based on individualistic and collectivistic traits (Würtz 2005). Besides cultural factors, some studies have examined additional supplier-consumer centric variables that fundamentally influence cross-cultural purchase decision such as reputation, loyalty, trust, and ease of use.

2.2. Reputation

Reputation is how the customers estimate the worth of an organization regarding product quality and services. The unfamiliar online vendor needs to go an extra mile to assure its various customers of its legitimacy and trustworthiness (Pennington, Wilcox and Grover 2003). Abd-El-Salam, Shawky and El-Nahas (2013) and Sarstedt, Wilczynski, and Melewar (2013) established that a reputable organization differentiates itself in profit maximization, market share, customer acquisition and retention. Jin et al. (2008) empirically contend that a company's website influences its reputation and also an antecedent of consumer trust. Dijkmans, Kerkhof, and Beukeboom, (2015) argue that reputation of m-commerce is a predictor of trust and base their argument on how significant the perceptual experience of customers on corporate reputation influence their loyalty. Similarly, in Chang (2013) reputation was the strongest predictor of trust though however not a direct linkage of loyalty. This contrasts an earlier result which establishes a reputation as a direct linkage of loyalty (Selnes, 1993). In a related study, Xiong and Liu (2003), examined how community-based reputations aid evaluation of trustworthiness in e-commerce and recommends a reputation-based system that is adaptable to a different scenario and gave examples of eBay, Amazon, and Yahoo among others as e-commerce sites that have reputation management systems. Culturally, the perception of a reputation as a virtue varies between the individualistic and collectivistic cultures. Accordingly, due to low trust and high respect in the collectivistic cultures, the external frame of respect is valorised (Park and Kim, 2008), implying that reputation, which is a critical embodiment of the external frame of reference is coveted as a virtue. In business relationships, companies in the collectivistic cultures engage in strategic manoeuvres to maintain reputable status in the market. A reputable website is a necessary tool in online shopping, and it is a strong determinant of sales conversion. Aesthetic e-tailing website with easy navigation, privacy and security assurance will be more attractive to the online consumer. Establishing a dynamic website may be cumbersome but it is worth any investment that online retailer might give. Online shoppers are always looking for an optimized website that can meet their goals and objectives. Following this, we thus argue that:

H1: Reputable e-tailer's website will positively influence the loyalty of the consumers to use a tablet for online shopping.

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2.3. Trust as an Antecedent of Customer Loyalty

The interdisciplinary studies of trust (Salo and Karjaluoto 2007) and its different definition call for closer examination despite its vital interest to build a relationship (McKnight and Norman 2001, Pennington et al. 2003, Gefen, Karahanna and Straub 2003). A trusted m-commerce website builds confidence and gives assurance to the online consumer to carry out their online shopping without fear of losing information such as their credit card and other vital information to the wrong hands (Ribbink, Van Riel, Liljander, and Streukens, 2004). Trust creates an interpersonal situation when the m-commerce consumer trusts the online vendor and becomes institutional when the consumer trusts the website they are using for online shopping (McKnight and Norman 2001, Pennington et al. 2003). Due to lack of human interaction in online shopping platform, it takes time to build a trusted website. The rigour of building it will contribute to influence online consumers' decisions (Gefen, et al. 2003; Nilashi, Ibrahim, Mirabi, Ebrahimi, and Zare, 2015; Kim et al. 2016). Trust is a major component of e-commerce and it has the potential to raise the customer's high expectations of gratifying exchange relationships between the m-commerce vendor and the online shoppers with a tablet (Xiong and Liu 2003; Pennington et al, 2003). Trust is a determinant of a consistent loyalty of online consumers. Nilashi et al. (2015) classified trust into low, moderate and high trust emphasizing the degree of trust based on other variables like gender. The cultural element of trust is an influencer (Doney, Cannon and Mullen 1998; Jin et al. 2008). Jin, et al. (2008) examined customer loyalty and trust on a cross-cultural basis. They found that individualistic cultures are high trust societies, thus loyalty formation is more difficult than in collectivistic cultures. Trust is a critical path to building a long-lasting relationship between the online retailer and online consumer (Nilashi et al. 2015; Lee et al. 2015). Lin and Wang (2006) found that trust positively predicted loyalty and a direct linkage to loyalty.

Customer loyalty in m-commerce is gaining popularity (Lin and Wang 2006). Anderson and Srinivasan (2003, p.125) defined loyalty "as the customer's favourable attitude toward an electronic business resulting in repeat buying behaviour". A customer that repeated purchase is a target of conversion to loyalty by the online retailer, and the customer loyalty is paramount in online retailing because it tends to pay back in long-term with profits (Ribbink et al. 2004). Unlike conventional brick and mortar store, loyalty programmes adopted in m-commerce should play a complementary role to a reputable website. Customer loyalty is one of the pillars that holds mobile business and it is important for m-commerce merchant and vendor to have a proper understanding of how loyalty evolves because loyalty is germane to m-commerce success (Anderson and Srinivasan 2003, Lin and Wang 2006). Chaudhuri and Holbrook (2001) posit that commitment on the part of the online retailer will facilitate an easy repeat purchase intention while Orel and Kara (2014) saw checkout service (SCS) as a positive influence on loyalty. In examining loyalty on an e-commerce platform, Srinivasan, Anderson, and Ponnavolu (2002) posit that customization, contact, interactivity, cultivation, care, community, choice and convenience constitute critical antecedents to e-loyalty. However, few years later, Harris and Goode (2004) contend that trust occupies a pivotal role as an antecedent of e-loyalty which was valorised by Martínez and del Bosque (2013) by arguing that trust positively mediates as an antecedent of loyalty in the hospitality services thus very critical on the online customer to make a repeat purchase. Accordingly, this study argues that trust intermediates between reputation and loyalty through the following hypothesis:

H2: Reputation of e-tailer's website will positively influence the loyalty of the consumers through trust.

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H3: Consumer loyalty to use a tablet for online shopping increases when there is perceived trusty e-tailer's website.

2.4. Ease of Use

Ease of use is one of the constructs of the technology acceptance model (Davis, 1989), and it was a predictor of intention of the user to adopt a technology. Ease of use depicts the perception of a technology user that the new technology will be less complicated. Many researchers have adopted and adapted the construct of ease of use in their studies. For example, Kucukusta, Law, Besbes, and Legohérel, (2015) use perceived usefulness and ease of use to test the intention of the tourist to purchase online. Agrebi and Jallais (2015) used ease of use as a predictor of intention to use a smartphone for online purchase but was not significant. Contrary to the result of Agrebi and Jallais (2015), Ozturk, Bilgihan, Nusair, and Okumus, (2016) found the ease of use to be significant as a direct linkage with loyalty just as an earlier study (Gefen, et al. 2003) found the ease of use predicted trust. The postulation of trust predicting ease of use is consistent with the study of McCloskey (2006). This antecedent indicates that the lack of trust elements on m-commerce website such as privacy and security will create tension for an m-commerce website user. To ensure a tension-free online shopping experience tablet e-tailers should put some safety and confidentiality checks in place to protect their valuables and earn the trust of the consumers. Thus, we argue that:

H4: Perceived trusted e-tailer's website with a tablet is positively associated with ease of use.

3. RESEARCH DESIGN AND METHOD

3.1. Sampling and Data Collection

Our most important target population for this study is the tablet owners and tablet users in Finland and Nigeria. In the study, the tablet owners are those that have any brand of tablet in their possession, and the tablet users are those that have a tablet in their possession or borrow it to carry out an online transaction. As a collectivistic culture, borrowing an item including electronics such as a tablet is common place, however, such practices may be rare in an individualistic culture like Finland. Bezzina and Saunders (2015) accentuate sampling and we used purposive and snowball sampling to recruit the participants of our survey. Snowball sampling was utilised in Nigeria being a communal country while purposive sampling technique was employed in Finland being an individualistic culture. First, we targeted opinion leaders and those that are influential. Second, we explained the focus of our study to them and sought their assistance for the data collection. Third, we worked with the opinion leaders directly to get feedback on the data collection and finally get 383 and 167 self-administered questionnaires distributed through them (see Table 2). In total, we got 800 responses, but because our targets are the owners and the users of the tablet, we screened the responses to 550 in both countries. In line with Dai and Palvi, (2009) and Chen, Zhang, and Lee, (2013), data collection took place in university campuses in both countries. The Millennials dominate the campus environment. They constitute 61.1% and 82.8% of the total samples, and they used mobile devices more than the older generations. We are motivated to use the campus respondents because of their hankering for technology (Persaud and Azhar 2012). The participants of the

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survey males in Finland and Nigeria are 46.71%/59.5% while the females are 53.29%/40.5%. Among the participants, the lower income earners are higher in Nigeria with 74.7% as against 22.8% in Finland. The bachelor degree holders were the highest participants in Nigeria with 64.8% and high school/diploma holders in Finland with 42.5%. The participants of the survey have one time or the other search for the information or buy goods online with their tablet.

A 51-item questionnaire designed with 22 items related to demographic and general questions targeting the respondents' bio-data, livelihood, exposure to online shopping and education background information. Additionally, the authors inculcate 29-item sequel to the tablet users' shopping experience and disposition to mobile commerce. The tablet users' perception was measured using a seven-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = neutral, 5 = slightly agree, 6 = agree, 7 = strongly agree). The scale used to measure website reputation was based on Li (2014), while the study adopted scales from Lin and Wang (2006) for trust and loyalty. The scale for ease of use was based on Davis (1989). The items used to measure each construct are listed in Table 3. Table 1 shows the demographics in Finland and Nigeria.

4. DATA ANALYSIS AND RESULTS

To ascertain the reliability and validity of measurement of items used in this study we took the following steps. First, we measured the scales' reliability (Cronbach's alpha) with 0.7 as the threshold value with SPSS 22.0. All the items align with the Cronbach's alpha threshold. A confirmatory factor analysis was performed to test the convergent and divergent validity of the scales. Second, we advanced scale reliability based on the indicators extracted from the confirmatory analysis using composite reliability (CR) and average variance extracted (AVE) with the rule of thumb of 0.7 and 0.5. All items reached the stipulated threshold except loyalty construct with marginal average variance extracted (AVE) in both countries. Third, we tested the research hypotheses reviewed in the extant literature using structural equation model (SEM) with Mplus version 7.4. Fourth, we conducted mediation analysis (see Table 6 and Figure 2 for details. We tested several models to ensure model fit for the study. Once we conclude on the validity of the model modification, the result reflects in a graphic as a behavioral model that reveals the trust arbitration of reputation and loyalty (Table 3).

We examined the squared multiple correlations for a structural equation with Mplus software to test the hypotheses. The result of the analysis shows the correlation of reputation and trust H2: (β = 0.66/0.92). Trust correlate with loyalty H3: (β = 0.45/0.43), and ease of use H4: (β = 1.00/0.78). H1 was not supported but H2 – H4 fully supported. Reputation was a strong predictor of trust in Nigeria while trust explained the ease of use better in Finland. The way trust arbitrates between reputation and loyalty is consistent with the study of Jin et al. 2008 (see Figure 1 and Table 5 for details). Table 4 shows the SEM result for two countries.

The mediation analysis was computed as (P12 x P22 = 0.83/0.76 x 0.47/0.55) for indirect effect and P3 + (P12 x P23) = 0.39/0.42 + (0.83/0.76 x 0.47/0.55) = 0.15/0.23 + 0.39/0.42 = 0.54/0.65 for total effect as suggested by Hair Jr, Hult, Ringle and Sarstedt (2016). The result established mediation effects between reputation and loyalty through trust in the two countries and the total effect of the mediation is stronger in Nigeria than Finland (see Figure 2 and Table 6 for details).

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Table 1. Finland and Nigeria sample demographics

Items	FINLAND		NIGERIA	
	Number	Percentage	Number	Percentage
Sex				
Male	78	46.71%	228	59.5%
Female	89	53.29%	155	40.5%
Total	167	100%	383	100%
Age Bracket				
<25	102	61.1%	317	82.8%
25-34	51	28.1%	49	12.8%
35-44	9	5.4%	14	3.7%
45-54	4	2.4%	-	-
55-64	3	1.8%	2	0.4%
65	2	1.2%	1	0.3%
Total	167	100%	383	100%
Income				
Less than €700/Less than 140,000	38	22.8%	286	74.7%
€700 - €1,499/140,000 - 298,000	55	32.9%	29	7.6%
€1,500 - €1,999/340,000 - 497,000	4	2.4%	8	3.4%
€2,000 - €2,499/230,000 - 398,000	34	20.4%	13	2.0%
€2,500 - €2,999/450,000 - 597,000	4	2.4%	10	2.6%
€3,000 - €3,499/598,000 - 697,000	2	1.2%	5	1.3%
€3,500 or more/7000,000 or more	30	18.0%	32	8.4%
Total	167	100%	383	100%
Education				
Bachelor Degree	67	40.1%	248	64.8%
High School/Diploma	71	42.5%	95	24.9%
Master's Degree	26	15.6%	21	5.5%
NCE	-	-	1	0.2%
PhD	3	1.8%	11	2.8%
No Formal Education	-	-	7	1.8%
Total	167	100%	383	100%

6. DISCUSSION AND IMPLICATIONS

The objective of our study was to examine trust arbitration between reputation and loyalty in a cross-cultural context of tablet users for online shopping. To achieve this objective, four hypotheses were tested for which one was rejected and three accepted. Our study harmonizes ease of use from Technology Acceptance Model (TAM) with reputation, trust to predict the loyalty of online shoppers with a tablet. While considering the relationship between the reputation of the website and the customer trust of e-

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commerce websites, the perceived trust and perceived ease of use of e-commerce websites with a tablet can lead to gratification and then influence customer loyalty towards an m-commerce website across the borders. Additionally, the study integrates international cultural differences to ascertain the perimeter of collectivist and individualistic cultures thus offering critical theoretical insights.

Table 2. The latent variables used for the study

Constructs and Measurement Items
Website Reputation (Li 2014)
This m-commerce vendor is well known
This m-commerce vendor has a good reputation
This m-commerce vendor has a reputation for being honest
This m-commerce vendor has a reputation for caring about its customers
This m-commerce vendor has a reputation for being able to meet its obligations towards the customers
This m-commerce vendor has a reputation for being consistent
This m-commerce vendor has a reputation for fulfilling its promises
Trust (Lin and Wang 2006)
This m-commerce website is trustworthy
This m-commerce website keeps promises and commitments
This m-commerce website keeps my best interests in mind
This m-commerce website meets my expectations
Ease of Use Davis (1989)
This m-commerce website is easy to use
It is easy to become skillful at using this m-commerce website
Learning to operate this m-commerce website is easy
This m-commerce website is flexible to interact with
My interaction with this m-commerce website is clear and understandable
Loyalty (Lin and Wang 2006)
My preference for this m-commerce website would not willingly change
It would be difficult to change my beliefs about this m-commerce website
Even if close friends recommended another m-commerce website, my preference for this m-commerce website would not change
I will buy from this m-commerce website the next time I purchase the above-mentioned product/service

*Note: Items of the constructs adopted from the previous studies and amended for the sake of this study.

6.1. Theoretical Implications

Our study makes the following theoretical contributions: first, as expected, reputation-loyalty (H1) and reputation-trust (H2) links were stronger for Nigeria than in the Finland. This finding supports earlier studies that in collectivistic cultures which are markedly high uncertainty, high context and low trust, the external frame of reference (in this case reputation) is given high recognition (Heine, 2003; Jin, Park, and Kim, 2008). Additionally, technologically savvy Finnish users may prefer a website more sophisticated than the Nigerian user who is not so technologically advanced. Thus, for the Nigerian user, what leads to a website reputation may not necessarily be the sophistication of the website but its perception in the social sphere through interactions with relations and friends. Second, collectivistic cultures such as Nigeria are more tolerant and less demanding thus prone to trust easily as compared to individualistic cultures. This argument is further corroborated by the trust-loyalty (H3) which indicates a stronger link for the Finnish user than Nigeria. According to Jin, et al. (2008), individualistic societies are high trust societies, thus, loyalty formation is more difficult compared to collectivistic societies. Third, Finland is a country of high technology, thus revealing the impact of ease of use in the context of tablet usage. The

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Finns technology versatility is a plus while Nigerians are just rising to the challenge. On the trust-ease of use link (H4), this result reflects online shopping reality. For instance, there are a lot of aesthetic and well-optimised websites that lack sales conversion due to kibosh online shopping checkout. The fear of insecurity is one of the reasons responsible for this act. The strong link between trust and ease of use is an indication of tension free online shopping when the online shopping environment is conducive. In sum, with these results, our study is the first, to the best of our knowledge, to examine tablet e-tailing in the context of a cross-cultural comparison between Finland and Nigeria, thus, extending prior studies in this area. Also, the novelty of our study is underpinned by extending the e-loyalty literature by using trust as an antecedent in the tablet e-tailing context, thus, opening a research gap that could incorporate other e-loyalty antecedents to the tablet e-tailing body of research.

Table 3. Correlation among constructs

	Factor Loading (Finland/Nigeria)				CR	AVE
CA (α)	.935/.896	.932/.850	.736/.715	.891/.853		
Reputation					.880/.884	.650/.662
Rep1	.750/.598					
Rep2	.807/.676					
Rep3	.950/.867					
Rep4	.860/.956					
Rep5	.872/.742					
Ease of Use					.857/.852	.609/.591
Ease1		.688/.614				
Ease2		.947/.504				
Ease3		.939/.846				
Ease5		.781/.894				
Loyalty					.744/.729	.497/.475
Loyal1			.703/.550			
Loyal2			.780/.912			
Loyal3			.623/.410			
Trust					.859/.820	.753/.696
Trust1				.846/.521		
Trust2				.720/.907		

*VALIDITY

Convergent Validity: the AVE for Loyalty is marginal in the two countries.

Table 4. SEM result for two countries

Model (CFA)	X^2	df	P-Value	RMSEA	CFI	TLI	SRMR	CMIN/DF	Akaike (AIC)	Bayesian (BIC)
Finland	140.248	60	0.000	0.089	0.941	0.924	0.060	2.34	6239.086	6376.278
Nigeria	154.130	60	0.000	0.064	0.961	0.950	0.039	2.57	16122.489	16296.203

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Figure 1. Conceptual framework and hypotheses (Model A)

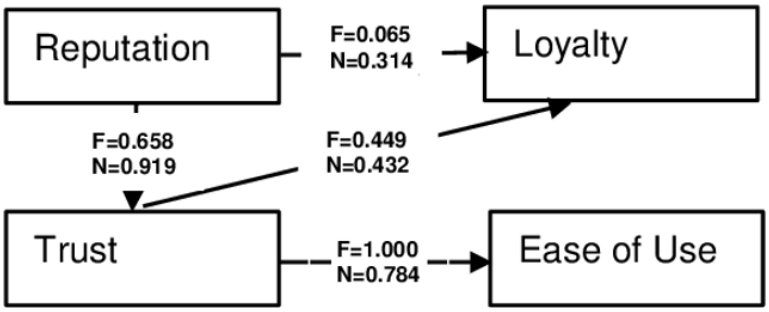

Figure 2. The effect of reputation on loyalty is fully and partially mediated by trust (Finland and Nigeria) P < 0.01

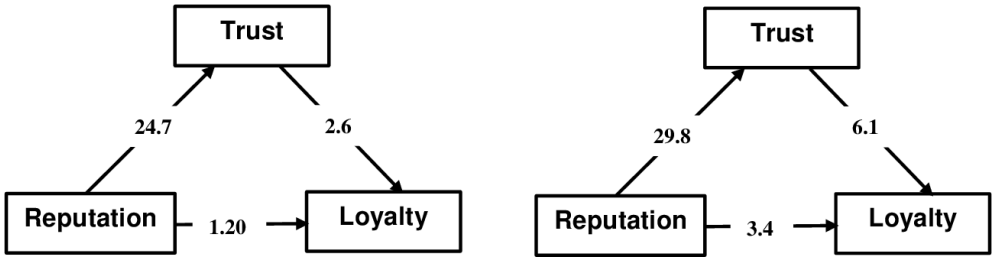

Table 5. Tested hypotheses

Hypothesis	Path	FINLAND/ NIGERIA Beta	z-Value	Hypothesis Confirmed
H1	Reputation → Loyalty	0.06/0.31	0.52/1.53	No
H2	Reputation → Trust	0.66/0.92	12.79/41.32	Yes
H3	Trust → Loyalty	0.45/0.43	3.69/2.10	Yes
H4	Trust → Ease of Use	1.00/0.78	54.65/26.93	Yes

Table 6. Standardized direct, indirect and total effects in Model B

Model (Finland/Nigeria)	Path	Direct Effect	Indirect Effect	Total Effect
B	Reputation → Loyalty	0.43/0.52	0.15/0.23	0.54/0.65
	Reputation → Trust	0.83/0.76	-	-
	Trust → Loyalty	0.47/0.55	-	-
	A*B	-	-	0.39/0.42

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6.2. Managerial Implications

This study has some managerial implications for tablet commerce stakeholders. First, companies that are planning to extend their business to a new market through foreign market entry modes most especially, a Foreign Direct Investment (FDI) can minimize their entry barriers by harnessing the framework proposed in this study. This will help the managers to understand the cultural differences between developed and the developing nations regarding the impact of reputation, trust, and ease of use as an antecedent of building a loyal customer. Second, our results inform the managers that trust is bi-directional and the expectation from the both sides, the trustee and the beneficiary are the strong brand with value-added products, stupendous services, supportive after sales relationship and superior competitive advantage. This insight illuminates the merchants and the vendors to pay attention to the centrality of trust culture in relation to the merchant reputation and the customer loyalty of tablet users as they develop their customer´s loyalty strategy. Third, the understanding of the cultural difference between developed and the developing countries will boost the company's initiative to improvise an effective communication to reach customers outside their business boundary and strengthen the interaction of business relationship. This development will reduce and reverse anticipated business cultural shock and promote sharing culture across the borders.

6.3. Limitations and Future Research

In comparison with past studies, this study has some limitations which unlock insight for future research directions. We only limit our study to tablet usage and not a comparison between emerging mobile devices like smartphone and wearable for online shopping. However, our study focuses on the impact of the tablet for online shopping across developed and developing cultures. Future studies can work on this limitation and use the moderating effect of online shopping experience and age on the findings of this study. Finally, future study can also consider other established antecedents of loyalty such as satisfaction, value, service quality and price and how they influence customer loyalty in the context of tablet e-tailing.

REFERENCES

Abd-El-Salam, E. M., Shawky, A. Y., & El-Nahas, T. (2013). The impact of corporate image and reputation on service quality, customer satisfaction and customer loyalty: Testing the mediating role. Case analysis in an international service company. *Journal of Business and Retail Management Research*, *8*(1).

Agrebi, S., & Jallais, J. (2015). Explain the intention to use smartphones for mobile shopping. *Journal of Retailing and Consumer Services*, *22*, 16–23. doi:10.1016/j.jretconser.2014.09.003

Al-Badi, A. (2009). Designing usable localised websites: Differences between Western and Arab cultures. *IBIMA business review, 2*(2), 9-19.

Anderson, R. E., & Srinivasan, S. S. (2003). E-satisfaction and e-loyalty: A contingency framework. *Psychology and Marketing*, *20*(2), 123–138. doi:10.1002/mar.10063

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Bezzina, F., & Saunders, M. N. (2015). The pervasiveness and implications of statistical misconceptions among academics with a special interest in business research methods. *Leading Issues in Leading Issues in Business and Management Research*, *2*(2), 127.

Burford, S., & Park, S. (2014). The impact of mobile tablet devices on human information behaviour. *The Journal of Documentation*, *70*(4), 622–639. doi:10.1108/JD-09-2012-0123

Chang, K. C. (2013). How reputation creates loyalty in the restaurant sector. *International Journal of Contemporary Hospitality Management*, *25*(4), 536–557. doi:10.1108/09596111311322916

Chaudhuri, A., & Holbrook, M. B. (2001). The chain of effects from brand trust and brand affect to brand performance: The role of brand loyalty. *Journal of Marketing*, *65*(2), 81–93. doi:10.1509/jmkg.65.2.81.18255

Chen, J. Q., Zhang, R., & Lee, J. (2013). A cross-culture empirical study of M-commerce privacy concerns. *Journal of Internet Commerce*, *12*(4), 348–364. doi:10.1080/15332861.2013.865388

Chen, Y. F. (2013). How We Share: A Cross-Cultural Comparison of Tablet Adoption and Usage Between the United States and Taiwan. *Intercultural Communication Studies*, *22*(2).

Cyr, D., Bonanni, C., Bowes, J., & Ilsever, J. (2005). Beyond trust: Web site design preferences across cultures. *Journal of Global Information Management*, *13*(4), 25–54. doi:10.4018/jgim.2005100102

Dai, H., & Palvi, P. C. (2009). Mobile commerce adoption in China and the United States: A cross-cultural study. *ACM SIGMIS Database*, *40*(4), 43–61. doi:10.1145/1644953.1644958

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Quarterly*, *13*(3), 319–340. doi:10.2307/249008

Dijkmans, C., Kerkhof, P., & Beukeboom, C. J. (2015). A stage to engage: Social media use and corporate reputation. *Tourism Management*, *47*, 58–67. doi:10.1016/j.tourman.2014.09.005

Doney, P. M., Cannon, J. P., & Mullen, M. R. (1998). Understanding the influence of national culture on the development of trust. *Academy of Management Review*, *23*(3), 601–620.

Forrester. (2011). Why Tablet Commerce May Trump Mobile Commerce.

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *Management Information Systems Quarterly*, *27*(1), 51–90.

Grewal, D., Bart, Y., Spann, M., & Zubcsek, P. P. (2016). Mobile advertising: A framework and research agenda. *Journal of Interactive Marketing*, *34*, 3–14. doi:10.1016/j.intmar.2016.03.003

Gudykunst, W. B., Ting-Toomey, S., & Chua, E. G. (Ed.) (1988). Intercultural Communication Theory, Interpersonal Communication. Beverly Hills: Sage.

Hair, J. F. Jr, Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications.

Harris, L. C., & Goode, M. M. (2004). The four levels of loyalty and the pivotal role of trust: A study of online service dynamics. *Journal of Retailing*, *80*(2), 139–158. doi:10.1016/j.jretai.2004.04.002

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Heine, S. J. (2003). An exploration of cultural variation in self-enhancing and self-improving motivations. *Nebraska Symposium on Motivation*, *49*, 101–128. PMID:14569672

Hofstede, G. (2014). The Hofstede centre. Retrieved 27.6.2016 from https://geert-hofstede.com/finland.html

Hofstede, G., & Bond, M. H. (1988). The Confucius connection: From cultural roots to economic growth. *Organizational Dynamics*, *16*(4), 5–21. doi:10.1016/0090-2616(88)90009-5

Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). Cultures and organizations. Retrieved 03.12.2016 from http://cn.cnstudiodev.com/uploads/document_attachment/attachment/101/why_tablet_commerce_may_soon_trump_mobile.pdf

Hofstede, G. H. (1980). Culture's consequences: International differences in work related.

Jin, B., Yong Park, J., & Kim, J. (2008). Cross-cultural examination of the relationships among firm reputation, e-satisfaction, e-trust, and e-loyalty. *International Marketing Review*, *25*(3), 324–337. doi:10.1108/02651330810877243

Kacen, J. J., & Lee, J. A. (2002). The influence of culture on consumer impulsive buying behavior. *Journal of Consumer Psychology*, *12*(2), 163–176. doi:10.1207/S15327663JCP1202_08

Kim, D. J., Yim, M. S., Sugumaran, V., & Rao, H. R. (2016). Web assurance seal services, trust and consumers' concerns: An investigation of e-commerce transaction intentions across two nations. *European Journal of Information Systems*, *25*(3), 252–273. doi:10.1057/ejis.2015.16

Kim, J., & Kim, J. (2016). An extended technology acceptance model in behavioral intention toward hotel tablet apps with moderating effects of gender and age. *International Journal of Contemporary Hospitality Management*, *28*(8), 1535–1553. doi:10.1108/IJCHM-06-2015-0289

Kim, J., & Lennon, S. J. (2013). Effects of reputation and website quality on online consumers' emotion, perceived risk and purchase intention: Based on the stimulus-organism-response model. *Journal of Research in Interactive Marketing*, *7*(1), 33–56. doi:10.1108/17505931311316734

Kucukusta, D., Law, R., Besbes, A., & Legohérel, P. (2015). Re-examining perceived usefulness and ease of use in online booking: The case of Hong Kong online users. *International Journal of Contemporary Hospitality Management*, *27*(2), 185–198. doi:10.1108/IJCHM-09-2013-0413

Lab in the Wild. (2014). Website Preferences Around the World. [Online]. Retrieved December 3, 2016 from http://labinthewild.tumblr.com/post/80185104511/website-preferences-around-the-world

Lee, D., Moon, J., Kim, Y. J., & Mun, Y. Y. (2015). Antecedents and consequences of mobile phone usability: Linking simplicity and interactivity to satisfaction, trust, and brand loyalty. *Information & Management*, *52*(3), 295–304. doi:10.1016/j.im.2014.12.001

Lee, S., Lee, S., & Chan-Olmsted, S. (2017). An empirical analysis of tablet PC diffusion. *Telematics and Informatics*, *34*(2), 518–527. doi:10.1016/j.tele.2016.09.007

Lee, Y., Kim, J., Lee, I., & Kim, H. (2002). A cross-cultural study on the value structure of mobile internet usage: Comparison between Korea and Japan. *Journal of Electronic Commerce Research*, *3*(4), 227–239.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Leung, L., & Zhang, R. (2016). Predicting tablet use: A study of gratifications-sought, leisure boredom, and multitasking. *Telematics and Informatics*, *33*(2), 331–341. doi:10.1016/j.tele.2015.08.013

Li, Y. (2014). The impact of disposition to privacy, website reputation and website familiarity on information privacy concerns. *Decision Support Systems*, *57*, 343–354. doi:10.1016/j.dss.2013.09.018

Marcus, A., & Gould, E. W. (2000). Crosscurrents: Cultural dimensions and global Web user-interface design. *Interaction*, *7*(4), 32–46. doi:10.1145/345190.345238

Martínez, P., & del Bosque, I. R. (2013). CSR and customer loyalty: The roles of trust, customer identification with the company and satisfaction. *International Journal of Hospitality Management*, *35*, 89–99. doi:10.1016/j.ijhm.2013.05.009

McCloskey, D. W. (2006). The importance of ease of use, usefulness, and trust to online consumers: An examination of the technology acceptance model with older consumers. *Journal of Organizational and End User Computing*, *18*(3), 47–65. doi:10.4018/joeuc.2006070103

Moriuchi, E., & Takahashi, I. (2016). Satisfaction trust and loyalty of repeat online consumer within the Japanese online supermarket trade. *Australasian Marketing Journal*, *24*(2), 146–156. doi:10.1016/j.ausmj.2016.02.006

Nilashi, M., Ibrahim, O., Mirabi, V. R., Ebrahimi, L., & Zare, M. (2015). The role of Security, Design and Content factors on customer trust in mobile commerce. *Journal of Retailing and Consumer Services*, *26*, 57–69. doi:10.1016/j.jretconser.2015.05.002

Orel, F. D., & Kara, A. (2014). Supermarket self-checkout service quality, customer satisfaction, and loyalty: Empirical evidence from an emerging market. *Journal of Retailing and Consumer Services*, *21*(2), 118–129. doi:10.1016/j.jretconser.2013.07.002

Oyibo, K., Ali, Y. S., & Vassileva, J. (2016, April). An Empirical Analysis of the Perception of Mobile Website Interfaces and the Influence of Culture. In PPT@ PERSUASIVE (pp. 44-56).

Ozturk, A. B., Bilgihan, A., Nusair, K., & Okumus, F. (2016). What keeps the mobile hotel booking users loyal? Investigating the roles of self-efficacy, compatibility, perceived ease of use, and perceived convenience. *International Journal of Information Management*, *36*(6), 1350–1359. doi:10.1016/j.ijinfomgt.2016.04.005

Pennington, R., Wilcox, H. D., & Grover, V. (2003). The role of system trust in business-to-consumer transactions. *Journal of Management Information Systems*, *20*(3), 197–226. doi:10.1080/07421222.2003.11045777

Persaud, A., & Azhar, I. (2012). Innovative mobile marketing via smartphones: Are consumers ready? *Marketing Intelligence & Planning*, *30*(4), 418–443. doi:10.1108/02634501211231883

Picoto, W. N., Bélanger, F., & Palma-dos-Reis, A. (2014). An organizational perspective on m-business: Usage factors and value determination. *European Journal of Information Systems*, *23*(5), 571–592. doi:10.1057/ejis.2014.15

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Pruet, P., Ang, C. S., & Farzin, D. (2016). Understanding tablet computer usage among primary school students in underdeveloped areas: Students' technology experience, learning styles and attitudes. *Computers in Human Behavior*, *55*, 1131–1144. doi:10.1016/j.chb.2014.09.063

Raji, S. O., Mahmud, M., Tap, A. O., & Abubakar, A. (2014, June). Usability evaluation of hospital websites in Nigeria: What affects end users' preferences? In *Proceedings of the International Conference on Human-Computer Interaction* (pp. 430-434). Springer, Cham. 10.1007/978-3-319-07854-0_75

Ribbink, D., Van Riel, A. C., Liljander, V., & Streukens, S. (2004). Comfort your online customer: Quality, trust and loyalty on the internet. *Managing Service Quality: An International Journal*, *14*(6), 446–456. doi:10.1108/09604520410569784

Salo, J., & Karjaluoto, H. (2007). A conceptual model of trust in the online environment. *Online Information Review*, *31*(5), 604–621. doi:10.1108/14684520710832324

Sarstedt, M., Wilczynski, P., & Melewar, T. C. (2013). Measuring reputation in global markets—A comparison of reputation measures' convergent and criterion validities. *Journal of World Business*, *48*(3), 329–339. doi:10.1016/j.jwb.2012.07.017

Selnes, F. (1993). An examination of the effect of product performance on brand reputation, satisfaction and loyalty. *European Journal of Marketing*, *27*(9), 19–35. doi:10.1108/03090569310043179

Shankar, V., Kleijnen, M., Ramanathan, S., Rizley, R., Holland, S., & Morrissey, S. (2016). Mobile shopper marketing: Key issues, current insights, and future research avenues. *Journal of Interactive Marketing*, *34*, 37–48. doi:10.1016/j.intmar.2016.03.002

Srinivasan, S. S., Anderson, R., & Ponnavolu, K. (2002). Customer loyalty in e-commerce: An exploration of its antecedents and consequences. *Journal of Retailing*, *78*(1), 41–50. doi:10.1016/S0022-4359(01)00065-3

Sun, H. (2001, October). Building a culturally-competent corporate web site: an exploratory study of cultural markers in multilingual web design. In *Proceedings of the 19th annual international conference on Computer documentation* (pp. 95-102). ACM. 10.1145/501516.501536

UNDP. (2015). Human Development Report 2015. Work for Human Development. Retrieved 29.10.2016 from http://hdr.undp.org/sites/default/files/2015_human_development_report.pdf

Würtz, E. (2005). Intercultural communication on Web sites: A cross-cultural analysis of Web sites from high-context cultures and low-context cultures. *Journal of Computer-Mediated Communication*, *11*(1), 274–299. doi:10.1111/j.1083-6101.2006.tb00313.x

Xiong, L., & Liu, L. (2003, June). A reputation-based trust model for peer-to-peer e-commerce communities. In *Proceedings of the IEEE International Conference on E-Commerce CEC '03* (pp. 275-284). IEEE. 10.1109/COEC.2003.1210262

Yoon, H. S., & Occeña, L. G. (2015). Influencing factors of trust in consumer-to-consumer electronic commerce with gender and age. *International Journal of Information Management*, *35*(3), 352–363. doi:10.1016/j.ijinfomgt.2015.02.003

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Chapter 48
Clustering E-Shoppers on the Basis of Shopping Values and Web Characteristics

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ABSTRACT

This article describes how the exponential growth of e-commerce in India and the presence of many national and multinational e-retailers has set the trend for the major overhaul of the online industry. Most of the e-retailers have failed to differentiate themselves from the competitors. This has resulted in their failure to attract and retain the right set of consumers for their respective businesses. The present paper is aimed at identifying and developing the typology of online shoppers based on importance given by them to shopping values and web portal features. The data collected was analysed using factor, cluster and correspondence analyses. The article identifies four types of online shoppers – 'Information Seekers,' 'Utility Seekers,' 'Value Seekers' and 'Core Shoppers.' Each of these four segments display significant differences and this information can be strategically used by web retailers in targeting their markets effectively.

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INTRODUCTION

An online market place is an entity where information regarding product or service is provided by a third-party seller followed by the execution by the operator of the market place. Commonly known as electronic commerce websites, these provide a convenient option for vendors to sell products or services without having a physical store. Electronic commerce (or e-commerce) has been defined as commercial transactions that occur between buyer and sellers over the internet while enabling new economic and business practices. The rapid emergence and acceptance of e-commerce has changed the structure and environment of businesses conducted in today's world. With the current GDP of India constituting at over US $2.48 trillion, and growing steadily at 7.49%, the Indian economy is pegged to be the fastest growing economy in the world (Economy Watch, 2017). With such high growth, online market places are expected to increase in number. Online retailing in India is estimated to grow from US $30 billion in 2016 to reach US $100 billion by the end of 2020 (IBEF, 2017). Positing several reasons for the rapid emergence of online market places in India, Gehrt (2012) attributed the rise of the Indian economy, purchasing power parity, large number of college students, and growth in telecom sector coupled with higher internet penetration in the country as major influencers. Ravichandran (2009) observed that the economic crisis of 2008 forced more people to compare prices with different retailers giving prominence to the online market places. In India, there exists a plethora of online market places, like Flipkart, Amazon, Snapdeal, Paytm, etc. Flipkart leads the pack with 44% market share, followed by Amazon at approximately 31% and Snapdeal 14% (Economic Times, 2017).

The exponential growth of e-commerce in India, coupled with vastness of the market, motivated the researchers to identify various online shoppers' segments on the basis of pertinent shopping values and web characteristics that have influence on the website selection. It has been anticipated that India would be in the top 10 e-commerce destinations in the world, but the online firms are posed with plenty of challenges (Vyas & Gupta, 2017). Despite the exponential growth of online retailing in India, not much research has been undertaken to understand and identify the online shopper segments in India (Gehrt et al., 2012). In the preliminary study, Gehrt et al. (2012) observed the presence of three segments: 'value singularity,' 'quality at any price' and 'reputation/recreation' on the basis of key shopping orientation themes and web site dimensions. A study by Pandey et al. (2015) on online shopping lifestyles in India identified three shopping segments, 'mature traditionalists,' 'offer enthusiasts' and 'technology mavericks,' and it concluded that internet self-inefficacy impacts mature buyers. It also observed that the offer-seeking shoppers, comprising mostly of students from lower age group, do not enjoy the convenience of online shopping. The major limitation of this study was the usage of parameters defined for American lifestyles in Indian context.

Studies have also been undertaken to identify consumers and firms' preferences in using internet marketing channels (e.g. Khatwani & Srivastava, 2015; Khatwani & Srivastava, 2017). A study in the Indian context by Prashar et al. (2017a) has noted that nearly sixty-four percent of variance in web satisfaction is explained by motivations based on shopping values and website characteristics. These motivations form an important dimension for online shoppers and can be used as basis for segmenting the shoppers. However, the earlier studies have not segmented shoppers on the basis of these motivations. Hence, the present paper is pioneer in classifying online shoppers as per their attitude towards shopping values and site features. It further explored the association, if any, between income groups and the identified segments using correspondence analysis. The paper is sequenced in the following manner. The next section details the research background and incorporates extensive review of literature. This is followed

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by discussion on research methodology that includes the process of data collection. Data analyses using factor, cluster and correspondence analysis is available thereafter. The final section contains discussion of findings, implications and limitations of the study.

RESEARCH BACKGROUND

Online Market Segmentation

Segmentation is the procedure of categorizing and dividing individuals into homogeneous groups that have related features and/or display similar behavior, which would help marketers in developing strategies for fulfilling the segment's precise needs (Blackwell et al., 2001). Similar to the process of segmenting offline shoppers, many of the web related elements like portal's response time, transaction time, shopper convenience etc., have been used to categorize e-shoppers (Pandey et al., 2015). Nevertheless, it has been observed that shoppers' opinion about convenience differs across groups (Kaufman-Scarborough & Lindquist, 2002). Few of the consumers evidently prefer to buy in offline stores, whereas many others feel that switching between online and offline mode is highly convenient. The extant literature has many studies that have attempted to examine the underlying similarity among shoppers and segment them in homogeneous groups (e.g. Aljukhadar & Senecal, 2011; Bhatnagar & Ghose, 2004; Ganesh et al., 2010; Pandey et al., 2015; Prashar et al., 2016; Soopramanien & Robertson, 2007; Ye et al., 2011). These studies have used internet usage patterns, internet self-efficacy, perceived benefits, perceived risks, website selection factors, lifestyle differences, etc. But none of the earlier studies have attempted to segment the online shoppers on the basis of motives they seek with respect to shopping values and website characteristics. To fill this gap, the present study attempts to segment online shoppers based on their perception towards these predictor elements.

Shopping Values

Several researches have noted that both hedonic and utilitarian values are responsible for determining the consumption pattern (e.g., Babin et al., 1994; Sorce et al., 2005; Sebastianelli et al., 2008; Kim & Eastin 2011). Hedonic values have become an integral part of the buying process. First acknowledged by Holbrook and Hirschman during the study on sensory stimulation and pleasure in the buying process, hedonic shopping value (HSV) depicts the amount of entertainment and emotions one derives from shopping and can be specified by the augmented arousal, participation, perceived freedom, distraction, fantasy, and sensitive aspects of any shopping experience (Babin et al., 1994; Sorce et al., 2005). Hedonic consumption is characterised by fantasies, feeling and fun (Holbrook & Hirschman, 1982). On the other hand, utilitarian consumption takes place when a shopping tour is able to achieve a certain need, and reflects a certain, reasoning, and non-emotional outcome (Babin et al., 1994). As consumers' demands have changed over time, frameworks used in capturing of shopping experiences have also shifted. Fiore and Kim (2007) proposed a shopping experience framework based on stimulus-organism-response in accordance with the shift. In their study on characteristics of retail stores that have differential impact on shopping values, Ottar et al. (2011) concluded that utilitarian shopping value is positively associated with merchandise collection and physical characteristics of the store. The researchers also observed the

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negative impact of store features on hedonic shopping values, and salespersons interactions was negatively related to utilitarian shopping values.

Lim (2014) examined the impact of online flow (i.e. arrangement of elements in a website) on hedonic and utilitarian shopping. The authors posited that arousal, challenge, telepresence, and time distortion have been linked to hedonism, whereas control, importance, interactivity (speed) and skill have been linked with utilitarianism. Also, in a promotional context, hedonic premiums are preferred over utilitarian premiums, with any other characteristics of premium being the same (Palazon & Delgado-Ballester, 2013). When affective or cognitive reactions are incited, an inclination towards hedonic or utilitarian is more likely to arise.

Hedonic online shoppers tend to look for special experiences taking into account their capacity to upgrade the joy and amusement of online shopping (Wolfinbarger & Gilly, 2001; To et al., 2007; Prashar et al., 2017a). In comparison, utilitarian online shoppers concentrate on the practical functions for the online encounters, like product quality, price, ease of use, and other shopping related elements (Sorce et al., 2005, Vijay et al., 2017a, Vijay et al., 2017b). Studies on online shopping have found that shopping inspirations like hedonic and utilitarian quality can influence shoppers' states of mind about online shopping (e.g., Childers et al., 2002; Chiou & Ting, 2011). Ajzen (1991) stated that attitude while shopping also contains a reasoning factor. Spangenberg et al. (1997) suggested that hedonic worth was experienced on cognitive levels, while the utilitarian part is ruled by the cognitive component.

Yuksel (2007) demonstrated that utilitarian shopping esteem impacts shoppers' practices, in spite of the fact that the impact is weaker than that of hedonic value. According to Kim et al. (2014), buyers' individual contrasts in their online shopping encounters impact their apparent shopping worth and shopping cost with regards to online shopping.

Web Informativeness, Effectiveness and Entertainment

Usability is an important requirement for effectiveness and success of online shopping websites. Besides facilitating and achieving customer satisfaction and increases reliability, it also helps in better and easier navigation through the website (Mario et al., 2007). Enrique et al. (2008) posited that pre-purchase online information influences future shopping intentions directly and positively. Richard et al. (2010) showed that enjoyment or pleasure from a web portal can be an important dimension of online shopping experience. Buyers with positive information and convenience attitudes towards e-commerce had higher online purchase intention (Patricia, 2006). Similarly, Gao et al. (2014) posited that there are three components related to web atmospherics – informativeness, effectiveness and entertainment, that influence shoppers' intention to purchase a product and satisfaction received in the process. Using a website, whether a consumer perceives it to be challenging or not depends on the level of information correctness, significance, appropriateness, comprehensiveness, and convenience. A study by Vijay et al. (2017b) also noted positive and significant influence of these three factors on shoppers' satisfaction. Kim et al. (2009) observed a positive effect of product presentation on shoppers' emotional and cognitive states.

Thus, we can conclude that factors influencing shopping can be either intrinsic or extrinsic in nature. Hedonic and utilitarian values that are intrinsic in nature indicate the reasons of pleasure, being at ease and deriving utility, whereas web atmospherics, which is extrinsic in nature, is associated with characteristics of the shopping website.

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RESEARCH METHODOLOGY

The study was carried out in two stages. The first stage encompassed examining of the present work on online market segmentation and various factors that influence online shopper's behaviour. After going through the literature and keeping the objective of the study in focus, five different constructs that were associated with shopping values and web portal features, were identified. The construct 'shopping value' had two elements – hedonic and utilitarian shopping value, whereas, the construct for 'web portal characteristics' consisted of web entertainment, web informativeness, and effectiveness of information content. On the whole, twenty items for the five factors were identified. These twenty items were converted into statements and were incorporated in a questionnaire, which was used for data collection. To ensure the validity of the items, all these statements were taken from earlier validated studies. A seven point 'Disagree-Agree' Likert scale was used for measuring responses, where 1 represented "Strongly disagree," and 7 represented "Strongly agree." Before proceeding with data collection, the survey instrument was pilot tested with thirty-five students pursuing their doctoral degree in Management. Requisite changes were made as per the suggestions and the scale was found to give valid and reliable output.

The second stage of the research consisted of collecting data using the instrument, which also had questions about respondents' age, gender, marital status, education level, occupation, family's monthly income, and frequency of visiting online retailer per month. The present study used a cross sectional design with the idea that the sample units represent the population. The Indian online shoppers of eighteen years and above age were eligible for participation in the research. The sampling extent was defined as those shoppers who had at least bought three times in the last six months from any of the online stores. The data was collected from three major Indian cities of Delhi, Mumbai and Bengaluru. A total of 410 respondents participated and filled the survey. After eliminating the erroneously/incompletely filled questionnaires, the researchers were left with 319 data points that were used for data analysis.

DATA ANALYSIS AND INTERPRETATION

Three techniques were used for data analysis. Initially, the data was subjected to exploratory factor analysis. This was undertaken to ratify the existing factor structure. The second stage involved cluster analysis to segment the shoppers into homogenous groups. Finally, correspondence analysis was used to identify association between income levels and segment of shoppers.

Factor Analysis

The twenty items were subjected to exploratory factor analysis for confirming the factor structure. Five factors were recognized and this solution explained 72% of the total variance. The value of Bartlett's test of Sphericity (=3837.880) and sampling adequacy, as explained by KMO test (=.909), confirmed the suitability for factor analysis. Cronbach alpha values for the five factors were found to be greater than 0.65. Hence, the scales used for the study can be considered as reliable. These five factors were related to hopping values and website characteristics. As shown in Table 1, factors were named according to items comprising each of them. These factors are – 'web entertainment,' comprising five items that pivoted around fun and excitement; 'web informativeness' with four items related to informativeness and resourcefulness; 'effectiveness of information content' having four variables focusing on accuracy;

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'hedonic shopping values' with four elements related to pleasure of shopping; and finally, 'utilitarian shopping values' with focus on usefulness and utility in the process of buying goods:

- **Web Entertainment (WE):** This set of variables explaining 41.44% of the net variance, comprised of five items – fun, excitement and entertainment while browsing the website, and imaginativeness and attractiveness of the website. Since all these factors revolve around the entertainment derived from browsing the website, and hence is termed as web entertainment;
- **Web Informativeness (WI):** Explaining 11.18% of the net variance, this factor consists of the four variables: informativeness, resourcefulness, usefulness, and knowledgeability of the website. These items contribute to the information available on the preferred shopping website, therefore titled as web informativeness;
- **Effectiveness of Information Content (EIC):** Items in this factor focussed on the effectiveness of information available on the web portal which is used by online shoppers. The items were: accuracy, recentness, completeness and relevance of information on the website. This factor explained 7.37% of the total variance;
- **Hedonic Shopping Values (HSV):** Items in this factor explain hedonistic values associated with online shopping. With focus on pleasure derived from the shopping experience, the factor comprised of four items: excitement of online shopping, enjoyment during online shopping, enjoyment during online shopping as compared to other activities, and desire to continue shopping. 6.38% of the net variance was explained by this factor;
- **Utilitarian Shopping Values (USV):** The fifth factor comprised of three items: searching for only the required items, buying the needed items and sense of accomplishment on a shopping trip. These items relate to utility of online shopping and this factor explained 5.64% of the total variance.

Cluster Analysis

Cluster Analysis is a technique that can be used to group respondents, such that each of the groups are as homogenous as possible within, and at the same time, as heterogeneous as possible with respect to the other groups (Hair et al., 2010). Factor scores were identified for each of the respondents based on the five factors that characterise the shopping values and website characteristics.

Hierarchical cluster analysis, using Ward's method, was conducted, followed by k-means analysis. K-means clustering technique requires the researcher to specify the number of clusters needed in the solution. The dendogram obtained from hierarchical clustering suggested that could be four clusters in the dataset. Analysis was continued using the non-hierarchical clustering technique (k-means clustering), where the solution (number of clusters) obtained earlier is taken as the input (k), to obtain the final cluster solution. As the hierarchical technique has shown four clusters, clustering was conducted for obtaining four-clustered solution.

The respondents were segmented using Non-hierarchical (k-means) cluster analysis, on the basis of the five factors that have been identified. After examining the output of various levels of clusters and the distances between them, a four-cluster model was concluded, because of clear interpretability of the solution. F value for each cluster indicates that there is a significant difference among all the clusters on all five factors (Lockshin et al., 1997; Orth et al., 2004).

Table 2 shows the solution of cluster analysis. Similarly, Figure 1 represents the clusters formed.

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Table 1. Factor analysis

Items	Factor Loading (n = 319)	Cronbach Alpha (α)	% Variance
Factor 1 - Web Entertainment			
Fun derived from browsing the website	0.70	0.90	41.44%
Excitement while browsing the website	0.80		
Imaginativeness of the website	0.72		
Entertainment during browsing of website	0.85		
Attractiveness of the website	0.79		
Factor 2 - Web Informativeness			
Informativeness of the website	0.70	0.88	11.18%
Resourcefulness of the website	0.83		
Usefulness of the website	0.73		
Knowledgeability of the website	0.79		
Factor 3 - Effectiveness of Information Content			
Accuracy of information on the website	0.74	0.88	7.37%
Recentness of information on the website	0.84		
Completeness of information on the website	0.82		
Relevance of information on the website	0.73		
Factor 4 - Hedonic Shopping Values			
Excitement of online shopping	0.66	0.82	6.38%
Enjoyment during online shopping	0.80		
Enjoyment during online shopping as compared to other activities	0.82		
Desire to continue shopping	0.70		
Factor 5 - Utilitarian Shopping Values			
Search for only the required items	0.81	0.68	5.64%
Buying the needed items	0.64		
Sense of accomplishment on shopping trip	0.73		

The demographic description (gender, age, marital status, education level, occupation, family income per month) and frequency of visiting websites per month of the various segments under consideration is shown in Table 3.

Interpretation and Description of Cluster Segments

The segments arrived through clustering were explained based on the centroid value of the five factors. A positive value of the centroid shows the significance of the nature of the cluster, whereas a zero value determines that the position is neutral. A negative value of the centroid shows that the factor is not of significance to the respondents within each of the cluster. Following is the description of the clusters.

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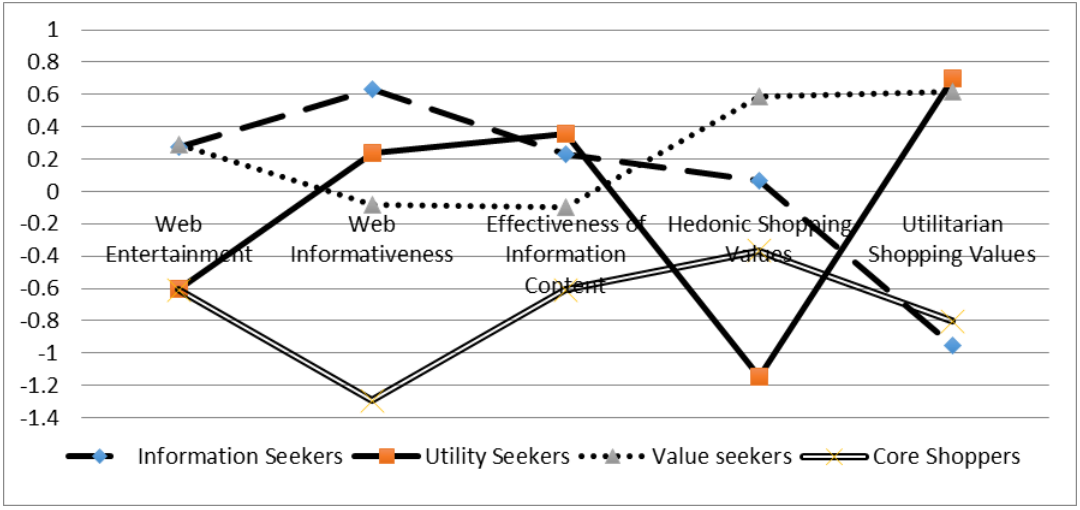
Table 2. Non-hierarchical cluster analysis

Website Characteristics and Shopping Values	Cluster Means				F-Value	P <
	Cluster 1	Cluster 2	Cluster 3	Cluster 4		
	Information Seekers	Utility Seekers	Value seekers	Core Shoppers		
Web Entertainment	0.27794	-0.60223	0.28960	-0.61088	21.998	0.000
Web Informativeness	0.62871	0.23558	-0.08175	-1.29354	58.762	0.000
Effectiveness of Information Content	0.22859	0.35482	-0.10050	-0.60835	10.830	0.000
Hedonic Shopping Values	0.06415	-1.14508	0.58969	-0.36547	68.879	0.000
Utilitarian Shopping Values	-0.95117	0.70183	0.61893	-0.80318	148.218	0.000
Cluster Size	88	57	129	45		
Number of respondents (%)	28%	18%	40%	14%		

Figure 1. Profile of clusters



Information Seekers

With 28% of the total respondents, the first cluster has positive centroid on four out the five factors. These factors are – web informativeness (0.62871), web entertainment (0.27794), effectiveness of information content (0.22859) and hedonic shopping values (0.06415). Thus, all the three information related factors had positive centroid values, while hedonic shopping value had the weakest centroid value. Utilitarian shopping value posted a negative centroid in this cluster. Accordingly, informativeness, resourcefulness, usefulness and knowledgeability of information available on e-commerce sites play a very important role for such users. Dominated by males (71.6%), two-third respondents in this clusters reported more than six visits per month.

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Table 3. Cluster composition

		Full Sample	Information Seekers	Utility Seekers	Value Seekers	Core Shoppers
			Cluster 1	Cluster 2	Cluster 3	Cluster 4
Gender	Male	64.9%	71.6%	70.2%	65.9%	42.2%
	Female	35.1%	28.4%	29.8%	34.1%	57.8%
Age (years)	Under 21	2.5%	4.5%	1.8%	1.6%	2.2%
	21-30	89.7%	92.0%	91.2%	88.4%	86.7%
	30-40	7.2%	2.3%	7.0%	9.3%	11.1%
	40-50	0.3%	--	--	0.80%	--
	Above 50	0.3%	1.1%	--	--	--
Marital Status	Unmarried	88.1%	92.0%	94.7%	85.3%	80.0%
	Married	11.9%	8.0%	5.3%	14.7%	20.0%
Education Level	Schooling	0.6%	--	--	1.6%	--
	Graduation	40.1%	51.1%	40.4%	31.8%	42.2%
	Post-graduation	52.4%	44.3%	52.6%	57.4%	53.3%
	Professional qualification	6.9%	4.5%	7.0%	9.3%	4.4%
Occupation	Student	69.0%	77.3%	70.2%	64.3%	64.4%
	Service	23.8%	18.2%	21.1%	25.6%	33.3%
	Self-employed	4.1%	3.4%	7.0%	3.9%	2.2%
	Homemaker	1.3%	--	--	3.1%	--
	Others	1.9%	1.1%	1.8%	3.1%	--
Family income per month (INR)	< 10000	3.1%	2.3%	3.5%	3.3%	4.4%
	10,001 - 25,000	10.4%	15.9%	5.3%	10.3%	6.7%
	25,001 - 40,000	24.3%	20.5%	29.8%	22.7%	28.9%
	> 40,000	62.2%	61.4%	61.4%	63.6%	60.0%
Frequency of visiting website per month	1 time	14.7%	11.4%	22.8%	5.0%	40.0%
	2 - 5 times	58.3%	52.3%	64.9%	62.0%	51.1%
	6 - 10 times	15.0%	14.8%	8.8%	21.0%	6.7%
	> 10 times	11.9%	21.6%	3.5%	11.6%	2.2%

Utility Seekers

The second cluster has positive centroid on utilitarian shopping values which had the highest value of 0.70183, followed by effectiveness of information content (0.35482), and web informativeness (0.23558). Consisting of 18% of the sample, these shoppers give importance to the utility derived from shopping online. The sense of accomplishment derived from online shopping as well as the shopping for the exact needed items play an important role for such buyers. The cluster has highest percentage of unmarried people and eighty-seven percent of the cluster members visited online sites less than five sites.

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Value Seekers

Two-fifth of the respondents belong to this cluster. It has positive centroid values for both the shopping values - utilitarian (0.61893) and hedonic (0.58969), and web entertainment (0.28960). Thus, these shoppers seek satisfaction from both these values and are less persuaded by the information content. E-shoppers draw fun, enjoyment and excitement in accomplishing the desired goals of the shopping trip. More than two-third of these respondents had post-graduation and other professional qualifications.

Core Shoppers

This market segment has negative centroid values on all the five factors indicating indifference to predictors of web portal selection. Consisting of least number of respondents (14%), this segment may be considered as 'zone of indifference.' For marketers, it would be difficult to attract using marketing stimuli extending hedonic or utilitarian shopping values and aligning information characteristics with this segment. Forty percent of the respondents reported that they visit e-commerce portals only once a month. It may be presumed that these shoppers may enjoy shopping offline through brick and mortar stores as against online shopping. Fifty-seven percent of the respondents in this cluster were females.

Correspondence Analysis

Identifying and profiling homogenous segments of shoppers is a necessary condition for developing appropriate strategies, but it may not be a sufficient condition. Cluster analysis must be accompanied with further analysis to develop pertinent strategies. The present study has used correspondence analysis to develop insights about the segments that have been identified. This technique is used to analyze and establish relationship between objects and/or variables, which are plotted on a same map on the basis of their association (Hair et al. 2010). In the present case, correspondence analysis has been used to determine a relationship between the four clusters generated and monthly family income. Figure 2 shows the corresponding association between four clusters and income levels.

The first two dimensions explained approximately 75% of the total variance. Dimension 1, explaining around 50% of the variance, is defined between 'information seekers' at one extreme and 'utility seekers' cluster at the other. This dimension represents the level of need for online shopping. Similarly, the 'value seeker' cluster at one extreme and 'core shoppers' at the other extreme describe dimension 2, which explains 25% of the variance.

The closer a cluster is to the income level on the graph, the stronger is the perceived identification of that income level with that cluster. Figure 2 shows that shoppers from the income group less than INR 10000 are located close to segment of utility seekers. Low income respondents are usually focused on seeking the products on the web portals that they exactly need and refrain from buying anything that is not needed. Hence, ability to buy the desired products on the web portal provides them with sense of accomplishment. On the other hand, shoppers in the income level of INR 10001-25000 are in the information seekers' segment. These shoppers are frequent visitors of online web portals and are likely to seek new information about various products and offers.

Shoppers with the income group INR 25001-40000 are close to cluster of core shoppers and were found to be less inclined towards any feature of website or any shopping value. Since, more than ninety percent of these shoppers visit web portals with a frequency lesser than other segments, it is assumed

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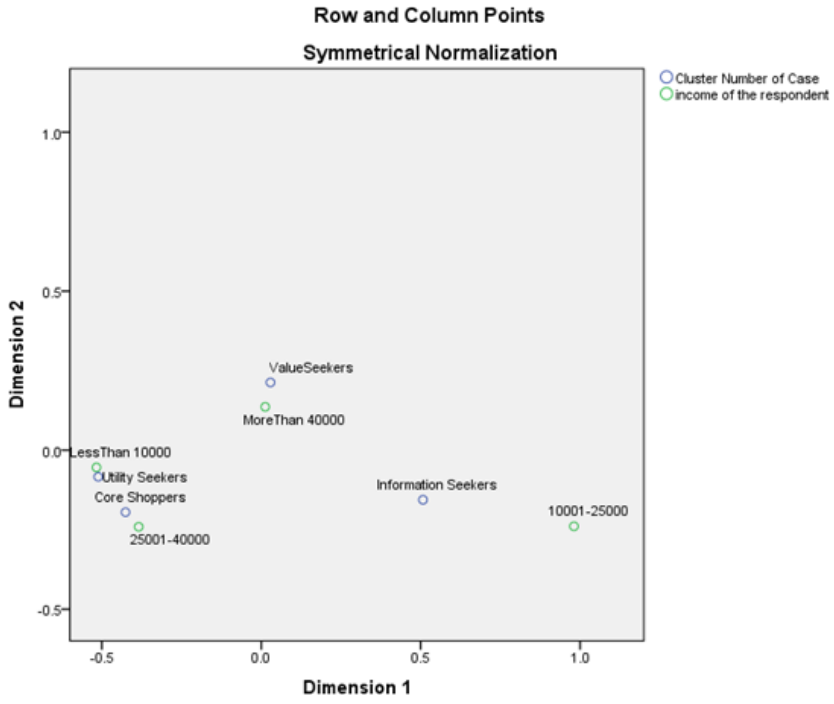
that this segment shall prefer offline formats of retail. Finally, the respondents in the highest income group had affinity to be the value seekers. Not only they value usefulness and pertinence of information on web portals, but they also drive fun, pleasure, excitement and enjoyment while shopping and comparing products online.

Figure 2. Correspondence analysis



DISCUSSION

On the basis of predictors of online shopping values and website characteristics, the present study has identified and profiled four significantly diverse clusters – information seekers, utility seekers, value seekers, and core shoppers. Also, with the help of correspondence analysis, it was observed that the four segments were found to be associated with different income groups. The findings of the paper support the idea of using internet as a tool (Vila et al., 2018) for clustering shoppers' based on their shopping motivations.

The characteristic traits of 'value seekers' are similar to the category of discerning shoppers, as has been named and profiled by an earlier study by Jayawardhena et al. (2007), which has grouped shoppers into five different segments - active shoppers, price sensitives, discerning shoppers, brand loyal and convenience oriented. Another study, Mathew (2016) has observed that the online users in India can be segmented into three categories on the basis of attitude – those who comprehend the benefits of online shopping; those who prefer offline mode of shopping; and those who are afraid of shopping online. The second category of users from Mathew's study can be related to 'core shoppers' of the present study who do not frequently visit e-commerce portals and thus might prefer offline shopping. Similarly, the cluster

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of 'core shoppers' identified in this paper was similar to the cluster of 'indifferent shoppers' identified in a recent study by Prashar et al. (2017b).

Reference this research, it is extremely important for online retailers, marketers and web developers to select a specific shoppers' segment(s) that they propose to target. Based upon these, appropriate marketing strategies must be created. From the distinctiveness of the segments arrived, it is observed that different shopping values and web characteristics influence different groups of online shoppers. Some of the shoppers undertake e-shopping owing to its convenience and utility, while many others rely on e-commerce for searching information about products and offers. Similarly, some segments use online shopping as means to derive pleasure and fun, while other segments are not interested in it.

Information seekers are the ones who are attracted to web portals that provide/display reliable information about products/services, and are not interested much into entertainment provided by online shopping. Portals targeting this group can centre their web elements around the theme 'reliability and ease of searching items.' Ensuring accurate images, product specifications and ease of searching the informational cues shall help portals attract such segment and gain loyalty of the same. Students form a large component of the utility seekers, as they focus aggressively on gaining value from online shopping. Portals targeting this segment must focus on offering utilitarian value to such shoppers either by increasing utility of portals or by decreasing prices by offering promotional discounts. Web portals with vast option of products to choose from shall attract such shoppers and help them in closing their shopping trip in one instance.

Value seekers get excited by the monetary and functional benefits of online shopping as well as by the fun they derive while browsing through online portals. They can be targeted with portals which are fun to browse and navigate, and stock the latest gadgets and trendiest items offered at heavy discounts. Enhancing user experience and features like embedded videos, three-dimensional view of items, chat mechanisms and interactivity with and among customers will help attract more users and increased patronization of the segment. Core shoppers generally do not get influenced by either the shopping factors or the web factors. Traditional (offline) retailers must target this segment as these shoppers would prefer shopping offline than online. The retailers can position their stores as the one that provides an 'experience,' which cannot be offered by online portals and offer a different value proposition to consumers. Alternatively, online retailers may enter into brick and mortar format too, albeit on limited basis. This will cater to the needs of such shoppers of experiencing in-person the products and getting solicited by sales personnel at such stores.

CONCLUSION AND MANAGERIAL RECOMMENDATIONS

The results of this study posit the existence of at least three segments of online shoppers on the basis of varied shopping values and characteristics of the web portals. Fourth segment named 'core shoppers' emerged to be in 'zone of indifference,' as the antecedent factors did not show a positive association. It is clearly visible that online shoppers' attitude differs across the four segments. These segments should be catered to with appropriate marketing strategies. This study is of great significance for online retailers and marketers as the online buyers' market has been segmented using two most critical predictors – shopping values (hedonic and utilitarian) and website characteristics (informativeness, effectiveness and entertainment). Unlike this, earlier studies have used factors like internet usage patterns, internet self-efficacy, perceived benefits, perceived risks, website selection factors, lifestyle differences.

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For new e-retailers, the study results can aid in identifying market segments. Marketers can use the segments identified to position their web portals and decide on the marketing strategies accordingly. Illustratively, the e-retailer targeting the first segment of 'information seekers,' must create its brand position around informativeness quotient of web portals. The value proposition must be focussed to provide resourceful, useful and informative details regarding products, offers and desired functional aspects of the website. Effectiveness of information content and entertainment components form support factors for the cluster, and due attention should be given to attractiveness, excitement, accuracy and completeness defining web elements in the portal. The market player seeking to target the segment that has largest number of online buyers must focus on 'value seekers,' which had forty percent of the survey respondents. In this case, e-retailers should attempt to satiate both utilitarian and hedonic shopping values of online shoppers. Buyers' in this segment place lot of emphasis on utilitarian shopping values and achieve a sense of satisfaction by accomplishing the task of shopping their required products through the online shopping portal. Hence, marketers would have to focus on providing hassle-free experience and emphasize on meeting the customer's exact requirements. Brand positioning around quick and convenient shopping experience through superior search mechanisms and easy checkouts must be cemented. Besides utility, these shoppers also want a sense of fun, enjoyment, etc., through the e-shopping experience. E-retailers should incorporate the elements related to hedonism while providing utility through e-portals. Hence, ensuring a good blend of both utilitarian and hedonic values in their websites forms the key strategy for such marketers. To cater to the segment of utility seekers, e-retailers must provide elements that help shoppers derive utility while shopping online. As these shoppers usually seek and buy the required (planned) items only, such marketers must provide suitable navigation system within the site. The navigability must ensure proper data sorting capabilities of the website, leading to ease and convenience of locating, comparing and carting the products. Appropriate and simple categorization of the products is essential requirement for this. These shoppers are usually indifferent to fun and entertainment cues embedded in the online sites. Promotional messages for this segment must focus on the utility aspect of the websites.

The smallest segment identified in this study has been named as 'core shoppers,' who primarily do not have affinity for online shopping. Dominated by female shoppers, the members of this segment presumably enjoy physical shopping as against the virtual online shopping. They are unattached to all the predictive elements of a web portal. Since, the consumers of this cluster display unique attitude, e-retailers must attract those using non-conventional marketing techniques. Online retailers must provide such shoppers with the choice of hybrid shopping experience – encompassing the experience of online as well as traditional offline shopping. Finally, considering the results of corresponding analysis, it is imperative for the retailers to create multiple and exclusive web portals, should they seek to cater to economically diverse segments. In the long run, efforts may be made to graduate shoppers from utility seekers cluster to the segments of information seeker and value seeker.

LIMITATIONS AND FUTURE SCOPE

Like any other cross-sectional study, this research also has few limitations. Understanding of such limitations may build the basis for future research. The data was collected from Indian online shoppers, which is one of the largest growing markets in the world. Hence, any generalization for online shoppers in entirety is constrained. With the ease of access to internet, larger sections from other age groups would

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also shop online. Therefore, further studies must incorporate data from other demographic segments also. This study being cross-sectional in nature, time factor could have dynamically changed the nature of response. Moreover, the design of preferred website and the choice of website itself is dynamic in nature. Hence a longitudinal study could be conducted to examine the inference of such factors. Future studies can be carried out using experimental design to further validate the findings. This will help in eliminating the possibility of errors owing to self-response bias. Future studies can also focus on looking at the advertising on social media to see if any of the consumers are being influenced to shop online in one platform over another would also be interesting. Studies can cluster shoppers based on the promotions they are being attracted to on various online media.

REFERENCES

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Processes*, *50*(2), 179–211. doi:10.1016/0749-5978(91)90020-T

Aljukhadar, M., & Senecal, S. (2011). Segmenting the online consumer market. *Marketing Intelligence & Planning*, *29*(4), 421–435. doi:10.1108/02634501111138572

Babin, B. J., Darden, W. R., & Griffin, M. (1994). Work and/or fun: Measuring hedonic and utilitarian shopping value. *The Journal of Consumer Research*, *20*(4), 644–656. doi:10.1086/209376

Bhatnagar, A., & Ghose, S. (2004). Segmenting consumers based on the benefits and risks of Internet shopping. *Journal of Business Research*, *57*(12), 1352–1360. doi:10.1016/S0148-2963(03)00067-5

Blackwell, R. D., Miniard, P. W., & Engel, J. F. (2001). *Consumer behavior* (9th ed.). Mason, OH: South-Western Thomas Learning.

Childers, T. L., Carr, C. L., Peck, J., & Carson, S. (2002). Hedonic and utilitarian motivations for online retail shopping behavior. *Journal of Retailing*, *77*(4), 511–535. doi:10.1016/S0022-4359(01)00056-2

Chiou, J. S., & Ting, C. C. (2011). Will you spend more money and time on internet shopping when the product and situation are right? *Computers in Human Behavior*, *27*(1), 203–208. doi:10.1016/j.chb.2010.07.037

Economic Times. (2017). Flipkart is still the king of Indian e-commerce market. Retrieved May 30, 2017 from http://economictimes.indiatimes.com/industry/services/flipkart-is-still-the-king-of-indian-e-commerce-market-heres-why/at-first/slideshow/58400452.cms

Economy Watch. (2017). Economic Statistics and Indicators. Retrieved June 15, 2017 from http://www.economywatch.com/economic-statistics/year/2017/

Fiore, A. M., & Kim, J. (2007). An integrative framework capturing experiential and utilitarian shopping experience. *International Journal of Retail & Distribution Management*, *35*(6), 421–442. doi:10.1108/09590550710750313

Ganesh, J., Reynolds, K. E., Luckett, M., & Pomirleanu, N. (2010). Online shopper motivations, and e-store attributes: An examination of online patronage behavior and shopper typologies. *Journal of Retailing*, *86*(1), 106–115. doi:10.1016/j.jretai.2010.01.003

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Gao, L., & Bai, X. (2014). Online consumer behaviour and its relationship to website atmospheric induced flow: Insights into online travel agencies in China. *Journal of Retailing and Consumer Services*, *21*(4), 653–665. doi:10.1016/j.jretconser.2014.01.001

Gehrt, K. C., Rajan, M. N., Shainesh, G., Czerwinski, D., & O'Brien, M. (2012). Emergence of online shopping in India: Shopping orientation segments. *International Journal of Retail & Distribution Management*, *40*(10), 742–758. doi:10.1108/09590551211263164

Hair, J. F. Jr, Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th ed.). New Jersey: Prentice-Hall Inc.

Holbrook, M. B., & Hirschman, E. C. (1982). The experiential aspects of consumption: Consumer fantasies, feelings, and fun. *The Journal of Consumer Research*, *9*(2), 132–140. doi:10.1086/208906

IBEF. (2017). Retail Industry in India. From June 25, 2017 from https://www.ibef.org/industry/retail-india.aspx

Jayawardhena, C., Tiu Wright, L., & Dennis, C. (2007). Consumers online: Intentions, orientations and segmentation. *International Journal of Retail & Distribution Management*, *35*(6), 515–526. doi:10.1108/09590550710750377

Kaufman-Scarborough, C., & Lindquist, J. D. (2002). E-shopping in a multiple channel environment. *Journal of Consumer Marketing*, *19*(4), 333–350. doi:10.1108/07363760210433645

Khatwani, G., & Srivastava, P. R. (2015). Identifying Organization Preferences of Internet Marketing Channels using Hybrid Fuzzy MCDM Theories. *Journal of Electronic Commerce in Organizations*, *13*(4), 26–54. doi:10.4018/JECO.2015100102

Khatwani, G., & Srivastava, P. R. (2017). Modeling Gender based Customer Preferences of Information Search Channels. *Journal of Global Information Management*, *25*(2), 52–67. doi:10.4018/JGIM.2017040104

Kim, J. H., Kim, M., & Lennon, S. J. (2009). Effects of web site atmospherics on consumer responses: Music and product presentation. *Direct Marketing: An International Journal*, *3*(1), 4–19. doi:10.1108/17505930910945705

Kim, S., & Eastin, M. S. (2011). Hedonic tendencies and the online consumer: An investigation of the online shopping process. *Journal of Internet Commerce*, *10*(1), 68–90. doi:10.1080/15332861.2011.558458

Kim, Y. K., Lee, M. Y., & Park, S. H. (2014). Shopping value orientation: Conceptualization and measurement. *Journal of Business Research*, *67*(1), 2884–2890. doi:10.1016/j.jbusres.2012.06.006

Lim, W. M. (2014). Understanding the influence of online flow elements on hedonic and utilitarian online shopping experiences: A case of online group buying. *Journal of Information Systems*, *28*(2), 287–306. doi:10.2308/isys-50773

Lockshin, L. S., Spawton, A. L., & Macintosh, G. (1997). Using product, brand and purchasing involvement for retail segmentation. *Journal of Retailing and Consumer Services*, *4*(3), 171–183. doi:10.1016/S0969-6989(96)00048-3

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Mathew, P. M. (2016). Attitude segmentation of Indian online buyers. *Journal of Enterprise Information Management*, *29*(3), 359–373. doi:10.1108/JEIM-08-2014-0078

Orth, U. R., McDaniel, M., Shellhammer, T., & Lopetcharat, K. (2004). Promoting brand benefits: The role of consumer psychographics and lifestyle. *Journal of Consumer Marketing*, *21*(2), 97–108. doi:10.1108/07363760410525669

Ottar, O. S., & Skallerud, K. (2011). Retail attributes' differential effects on utilitarian versus hedonic shopping value. *Journal of Consumer Marketing*, *28*(7), 532–539. doi:10.1108/07363761111181527

Palazon, M., & Delgado-Ballester, E. (2013). Hedonic or utilitarian premiums: Does it matter? *European Journal of Marketing*, *47*(8), 1256–1275. doi:10.1108/03090561311324318

Pandey, S., Chawla, D., & Venkatesh, U. (2015). Online shopper segmentation based on lifestyles: An exploratory study in India. *Journal of Internet Commerce*, *14*(1), 21–41. doi:10.1080/15332861.2015.1006516

Prashar, S., Sai Vijay, T., & Parsad, C. (2016). Segmenting online shoppers: A study of consumers' web portal selection motivations for e-shopping. *Asian Academy of Management Journal*, *21*(1), 27–46.

Prashar, S., Sai Vijay, T., & Parsad, C. (2017a). Effects of Online Shopping Values and Website Cues on Purchase Behaviour: A Study Using S–O–R Framework. *Vikalpa*, *42*(1). doi:10.1177/0256090916686681

Prashar, S., Sai Vijay, T., Singh, H., & Parsad, C. (2017b). Typology of Indian e-buyers: Clustering on the basis of online shopping motives. *World Review of Science, Technology and Sustainable Development*, *13*(1), 3–17. doi:10.1504/WRSTSD.2017.083697

Sebastianelli, R., Tamimi, N., & Rajan, M. (2008). Perceived quality of online shopping: Does gender make a difference? *Journal of Internet Commerce*, *7*(4), 445–469. doi:10.1080/15332860802507164

Soopramanien, D. G., & Robertson, A. (2007). Adoption and usage of online shopping: An empirical analysis of the characteristics of "buyers" "browsers" and "non-internet shoppers". *Journal of Retailing and Consumer Services*, *14*(1), 73–82. doi:10.1016/j.jretconser.2006.04.002

Sorce, P., Perotti, V., & Widrick, S. (2005). Attitude and age differences in online buying. *International Journal of Retail & Distribution Management*, *33*(2), 122–132. doi:10.1108/09590550510581458

Spangenberg, E. R., Voss, K. E., & Crowley, A. E. (1997). *Measuring the hedonic and utilitarian dimensions of attitude: A generally applicable scale* (Vol. 24). NA-Advances in Consumer Research.

To, P. L., Liao, C., & Lin, T. H. (2007). Shopping motivations on Internet: A study based on utilitarian and hedonic value. *Technovation*, *27*(12), 774–787. doi:10.1016/j.technovation.2007.01.001

Vijay, T. S., Prashar, S., & Parsad, C. (2017a). Role of Shopping Values and Web Atmospherics in E-Satisfaction and Repurchase Intention. *Journal of Internet Commerce*, *16*(1), 32–52. doi:10.1080/15332861.2016.1261544

Vijay, T. S., Prashar, S., & Parsad, C. (2017b). Online Shoppers' Satisfaction: The Impact of Shopping Values, Website Factors and Trust. *International Journal of Strategic Decision Sciences*, *8*(2), 52–69. doi:10.4018/IJSDS.2017040104

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Vila, T. D., Vila, N. A., González, E. A., & Brea, J. A. F. (2018). The Role of the Internet as a Tool to Search for Tourist Information. *Journal of Global Information Management*, *26*(1), 58–84. doi:10.4018/JGIM.2018010104

Vyas, A., & Gupta, S. (2017). Challenges Assessment for the E-Commerce Industry in India: A Review (With Special Reference to Flipkart V/S Snapdeal). *Journal of Global Information Management*, *25*(4), 16–31. doi:10.4018/JGIM.2017100102

Wolfinbarger, M., & Gilly, M. C. (2001). Shopping online for freedom, control, and fun. *California Management Review*, *43*(2), 34–55. doi:10.2307/41166074

Ye, Q., Li, G., & Gu, B. (2011). A cross-cultural validation of the web usage-related lifestyle scale: An empirical investigation in China. *Electronic Commerce Research and Applications*, *10*(3), 304–312. doi:10.1016/j.elerap.2010.11.001

Yuksel, A. (2007). Tourist shopping habitat: Effects on emotions, shopping value and behaviours. *Tourism Management*, *28*(1), 58–69. doi:10.1016/j.tourman.2005.07.017

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Chapter 49
Adoption of Online Subscription Beauty Boxes: A Behavioural Reasoning Theory (BRT) Perspective

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ABSTRACT

This article examines the contextual 'reasons for' and 'reasons against' the adoption of beauty box subscription-based online services (BxSOS) in a developing country like India using the behavioral reasoning theory (BRT). This study surveys the female consumers in India to understand the adoption of BxSOS using the unique model of behavioral reasoning theory (BRT). After data collection, the analysis was done using the PLS-SEM technique. The 'reasons for' BxSOS adoption are convenience, ubiquitous, hedonic shopping motivation, social influence and price consciousness and the 'reasons against' are traditional barrier, relative advantage, choice/variety and perceived risk. It is also found that value of "openness to change" significantly influences the 'reasons for' adoption and attitude towards BxSOS whereas it has no impact on the 'reasons against' adoption of BxSOS. This cross-sectional study was conducted with target respondents as female consumers in the Indian context and future research can be conducted in other countries with different cultures and both the genders to generalize the results.

INTRODUCTION

In India, consumers are accustomed to a newspaper or milk subscription on a monthly or yearly basis. These services are savored by the Indian consumers. The similar subscription concept is deployed in the e-commerce sector which is becoming popular in India. There are many online subscription boxes available nowadays, which include beauty products, snacks, jewelry, kid's toys and the monthly sanitary requirements for females. These subscription-based online services (SOS) leverage the e-commerce business model to deliver a customized box of merchandise to the consumer's home on a weekly/

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monthly/quarterly/bi-annual basis by charging a subscription fee (Woo, & Ramkumar, 2018). This idea was originally conceptualized in the USA by Birchbox owners - Hayley Barna and Katia Beauchamp, who graduated from Harvard (Griffith, 2015). This subscription-based business model is conducive for the manufacturers to promote their products to the end consumers by providing lower price samples to them. This is a unique and innovative concept emerging in India. BxSOS include the beauty products which are subscribed on a monthly basis and mostly packaged in a colorful bag wrapped with decorative stickers, ribbons and provide the subscriber a sense of luxury and surprise (Chao, 2016; Vanhamme & Dick, 2003).

The research conducted by the Associated Chambers of Commerce & Industry of India (ASSOCHAM) and Majestic Market Research Support Services India Ltd. (MRSS) mention that the market size of the Indian beauty cosmetic and grooming industry is expected to be USD 35 billion by 2035 and current market size is USD 6.5 billion (PTI, 2017). BxSOS business is a subset of cosmetics and grooming industry and BxSoS companies are experiencing a growth of 10-15 percent new subscribers every month in India (Shirodkar, 2017).

There are many subscription-based online beauty and lifestyle boxes in India like Fab-bag, My Envy Box, MSM box, The Nature's Co Beauty Wish Box, Gia Bath & Body Box and Sugar Box. These boxes range from Rs. 300 to Rs. 1000 monthly subscription fees. These online beauty and lifestyle boxes are popular among the young generation in India (Shirodkar, 2017). It is observed that female consumers in the age group of 25-45, having average education and residing in the urban areas are subscribers of these beauty and lifestyle boxes (Shirodkar, 2017). Consumer market research found that females are the major consumers and more involved in buying beauty products online as well as in stores (O'Cass, 2000). There are many challenges faced by BxSOS companies in Asia like the market is niche and customers have an expectation of free samples (Tay, 2016). In Asian countries like Singapore, China, Korea, Taiwan and now in India, BxSOS business is flooded with competitors as there exists a huge market potential for beauty box companies in Asia (Tay, 2016).

In this paper, the behavioural reasoning theory, which is a novel consumer behaviour model, was used to study the antecedents of consumer's adoption of BxSOS in the context of a developing country like India. There exists only one prior study in the context of a developed economy, discussing the fashion and beauty SOS adoption by American consumers (Woo, & Ramkumar, 2018). The extant literature mainly focuses on factors for adoption of online shopping (Ho & Chen, 2014; Cheema et al., 2013; Kim et al., 2014; Chen & Teng, 2013; Celik, 2016; Pascual-Miguel, Agudo-Peregrina and Chaparro-Peláez, 2015). However, there are few studies which explain the resistance to adoption of online shopping (Lian & Yen, 2014; Rahman, Khan, & Iqbal, 2018). The unique feature of this study is that it highlights both the context-specific factors 'for' adoption and resistance factors of BxSOS in a single framework.

BxSOS is a nascent concept in the context of a developing country like India. There is no study in India and other developing countries to examine the adoption of BxSOS. The success of such a novel concept ultimately lies in its acceptance among the consumers. Hence it is important to study the adoption of these BxSOS among the female consumers in a country like India. This exploratory study was conducted to understand the adoption factors and bottlenecks of online subscription beauty boxes. Hence the following research question is formed.

RQ: What are the adoption factors and barriers to the BxSOS using the BRT model.

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LITERATURE REVIEW

Underpinning Theories and Models of Adoption Behaviour

The adoption of BxSOS can be studied using the Technology acceptance model (Davis, 1989); Unified theory of acceptance and use of technology (Venkatesh et al., 2003); Theory of reasoned action (Fishbein & Ajzen, 1975), theory of planned behavior (Ajzen, 1991) and UTAUT 2 (Venkatesh et al., 2012). The BxSOS is considered an innovation in e-commerce which can be also studied with the Diffusion of Innovation Theory (Rogers E. M., 1995). These models mainly focus on the adoption factors and there is no study discussing BxSOS adoption using the above models. There exist a number of prior studies which explain the adoption of online shopping using - TAM (Ho & Chen, 2014; Chen & Teng, 2013); IDT (Gong et al., 2012); UTAUT (Pavlou, 2003; Celik, 2016); UTAUT2 (Pascual-Miguel, Agudo-Peregrina, and Chaparro-Peláez, 2015) and UTAUT & IRT (Lian & Yen, 2014).

The vital predictors of adoption of online shopping are 'perceived ease of use' and 'perceived usefulness' (Ho & Chen, 2014; Hernandez, Jimenez, & Martin, 2009), Social Influence (Ho & Chen, 2014; Venkatesh et al., 2003; Weisberg et al., 2011), Hedonic Motivation (Davis, Lang, & San Diego, 2014; Hsu, Chuan-Chuan Lin, & Chiang, 2013), choice and variety (Srinivasan, Anderson, & Ponnavolu, 2002), Convenience (Khare et al., 2012; Wang et al., 2008), Trust (Ho and Chen, 2014; Jiang, & Jones, 2014) and Enjoyment (Kim et al., 2013; Hsu et al., 2012; Chen and Teng, 2013).

Innovation Resistance Theory

The above technology adoption models and innovation diffusion models focused on the predictors of adoption of technology and there was less importance given to the resistance to innovation by the consumers. There are some studies that highlighted the negative factors (Ram, 1987; Kleijnen, Lee & Wetzels, 2009). Innovation resistance theory proposed the factors responsible for the resistance to the innovation by the consumers (Ram, 1987). An innovation or change develops a conflict between innovation and tradition which leads to a barrier or resistance to the innovation (Ram & Sheth, 1989). As per (Ram & Sheth, 1989), there are two aspects of a barrier- psychological and functional. Functional include value, usage, and risk barrier whereas psychological has an image and traditional barriers. As per (Lian & Yen, 2014), in online shopping, younger and older adults have value barrier, whereas older adults have more barriers like traditional barrier and risk barrier. The extant studies found that privacy and security concerns (Wu and Wang, 2005; Thakur and Srivastava, 2013), perceived risk (Kim and Peterson, 2017; Lamberton and Stephen, 2016) and consumer anxiety (Celik, 2016) negatively influence the adoption of online shopping. The relative advantage and perceived risk are barriers to online shopping behavior of consumers (Corbitt et al., 2003; Chang, & Chen, 2008; Gupta, & Arora, 2017b).

Behavioral Reasoning Theory

There are prior studies that discuss the online shopping adoption determinants and barrier determinants; however, there is no study which examines both of these factors in a single framework. The factors for adoption and barriers to adoption are not necessarily logically opposite to each other as mentioned in the social psychology studies (Westaby et al., 2010). The single framework, which is BRT - Behavioral Reasoning Theory (Westaby, 2005b) can be used to examine the relative influence of adoption and resis-

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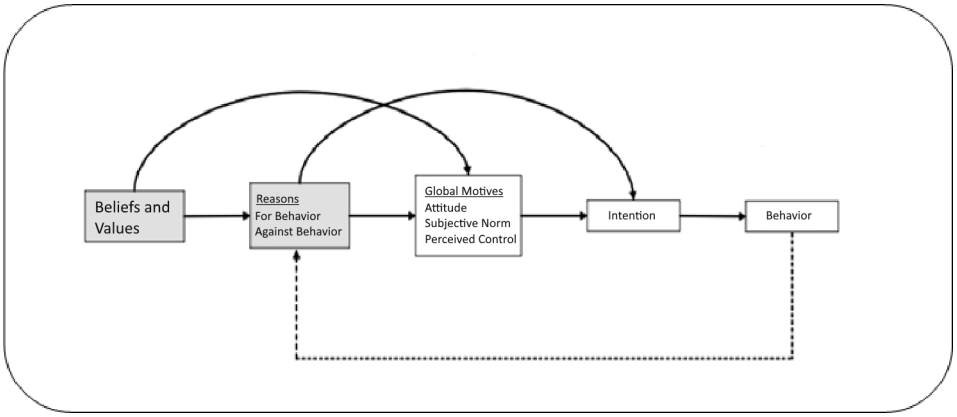
tance factors. The reason theory (Westaby & Fishbein, 1996) and decision-making theory (Pennington and Hastie, 1988) are in line with these; however, BRT pointed out that context-specific reasons serve as important linkages between people's belief, intention, behavior and global motives (Westaby, 2005b). As suggested by Westaby (2005b), Reasons means "specific subjective factors people use to explain their anticipated behavior and can be conceptualized as anticipated reasons, concurrent reasons and post hoc reasons". Reasons are conceptually different from beliefs. In BRT, (Westaby, 2005b) there are two facets considered - 'reasons for' and 'reasons against' to carry out a particular behavior. These reasons are framed clearly and considered as cost/benefit, facilitator /constraints and pros /cons (Westaby, 2005a). The BRT Model is as shown in Figure 1.

Figure 1. Behavioral reasoning theory (Westaby, 2005b)



The BRT is used to study the innovation adoption in some of the extant studies (Claudy et al., 2015; Chatzidakis and Lee, 2013; Claudy, Peterson and O'Driscoll, 2013). These studies justify the single framework of BRT which can be used to study the determinants of adoption and its barriers. The BRT discusses the consumer's reasons which influence the consumer's cognitive process of adoption of the innovation (Gupta, & Arora, 2017a). The study on mobile shopping by (Gupta, & Arora, 2017a) found that 'reasons for' are price saving, choice/variety and convenience, whereas 'reasons against' are self-efficacy, consumer anxiety and relative advantage. The study on mobile banking mentions that 'reasons for' adoption such as convenience and ubiquitous were adopted from extant BRT studies and traditional barrier is an important 'reason against' (Gupta, &Arora, 2017b).

RESEARCH OBJECTIVES

This study highlights the adoption of BxSOS and it has the following objectives:

1. To develop a theoretical model utilizing the Behavioral reasoning theory to understand the adoption of BxSOS;
2. To empirically validate the theoretical framework.

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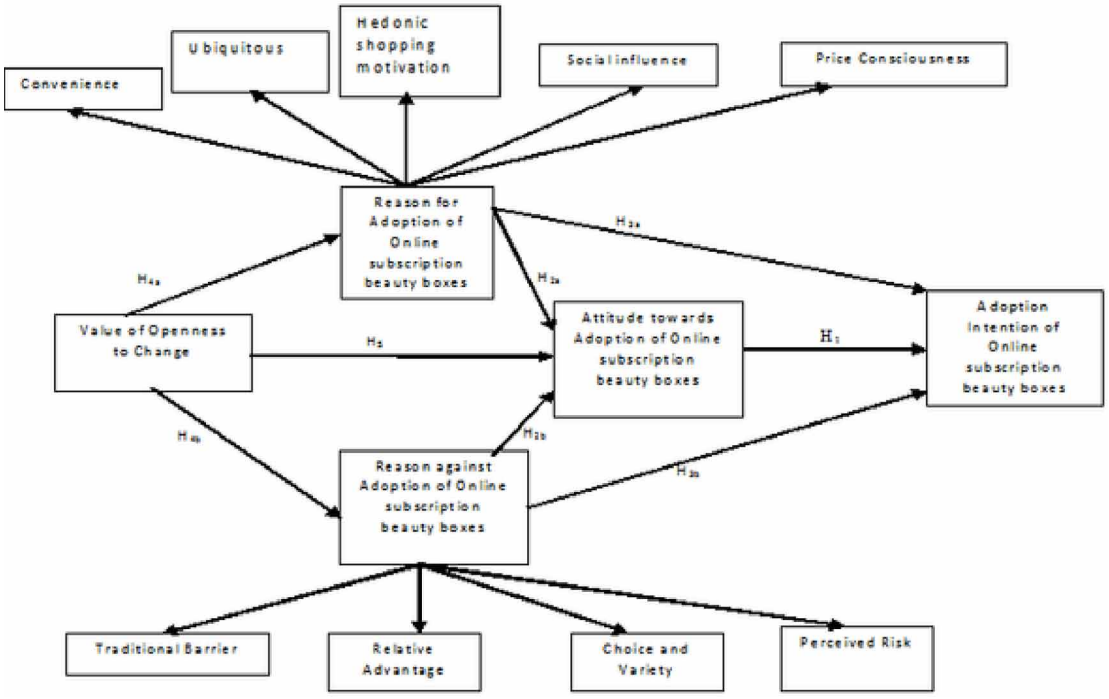
THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

The conceptual framework is provided in Figure 2. The BRT theory discusses that behavior can be predicted by the intentions of the consumers. As per BRT (Westaby, 2005b), global motives (attitude) influence the intention of the consumers, reasons ('for' and 'against') influence attitude and reasons also predict the intention. These reasons 'for' and 'against' are influenced by the values and beliefs of the consumer. The hypotheses are explained in the following sections.

Figure 2. Conceptual framework



Attitudes and Adoption Intentions

As per Eagly and Chaiken (1993), attitude means, "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor". The extant literature mentioned that attitude influences the behavior (Davis 1989; Fishbein and Ajzen, 1975; Westaby, 2005; Mansour et al., 2016). The earlier studies confirmed that attitude influences the behavioral intention in the context of mobile banking (Gupta, & Arora, 2017b), Mobile shopping (Wu and Wang, 2005; Gupta, & Arora, 2017a) and innovation adoption (Claudy, Garcia, & O'Driscoll, 2015). The BxSOS is an innovation in the e-commerce space, so the following hypothesis is considered:

H_1: Consumers' attitudes towards online subscription of beauty boxes positively influence their adoption intentions.

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Reasons and Attitudes

BRT has a distinctive aspect as it discusses the context-specific reasons predicting the attitude towards the certain behavior and intentions (Westaby, 2005b). As per BRT (Westaby, 2005b), Reasons mean "The specific subjective factors people use to explain their anticipated behavior" and serve as an important predictor of global motives (i.e. attitudes) and intentions". The reasons have two dimensions are per BRT a) Reason for b) Reason Against. The belief and reasons are differentiated in terms of temporal orientation in memory (Westaby, 2005b). The implication of this is that a consumer might have a belief about the outcome of adapting to an innovation, but might not result in adoption (Claudy et al., 2015). In the context of mobile shopping, beliefs would reflect people's opinion about m-banking in general, whereas reasons for/against adoption would constitute specific factors that may influence adoption. (Gupta, & Arora, 2017a; Westaby, 2005b) argue that reasons demonstrate incremental predictive validity as compared to the traditional belief concept. As per (Claudy et al., 2015), though consumers have a favorable belief in adoption still they might resist adoption due to 'reasons against' a particular behavior. Hence it is hypothesized that:

H_{2a}: Consumers' 'reason for' online subscription of beauty boxes will positively influence their attitude towards BxSOS adoption.

H_{2b}: Consumers' 'reason against' online subscription of beauty boxes will negatively influence their attitude towards BxSOS adoption.

Reasons and Intentions

As per (Westaby, 2005b) consumers are more comfortable when they have enough reasons to defend or justify their expected actions. BRT explains that reasons influence the behavioral intention of the individual (Westaby, 2005). BRT mentions that reasons contribute to the behavioral intention of the individual. The extant literature on technology adoption mentioned that context-specific factors influence the adoption intentions which include the adoption models such as the UTAUT (Venkatesh et al., 2003) and TAM (Davis, 1989). Intentions are strong predictors of consumer behavior (Ajzen, 1991). With reference to the BRT theory, it is necessary to study the reasons affecting the adoption of BxSOS, so following hypotheses were formed:

H_{3a}: Consumers' 'reason for' online subscription of beauty boxes will positively influence their intention towards BxSOS adoption.

H_{3b}: Consumers' 'reason against' online subscription of beauty boxes will negatively influence their intention towards BxSOS adoption.

Values and Reasons

Openness to change relates to a value which motivates individuals to pursue their own emotional and intellectual interest in uncertain directions (Schwartz, 1992). As per Raajpoot and Sharma, (2006) people who are ready for openness to change value accept the changes and adoption of new products (Wang et al., 2008). The BxSOS is an innovative concept and a new service/product in the market; hence open-

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ness to change value can be applied to this research. The construct for "Openness to change" values is adopted from earlier research (Claudy et al., 2015; Gupta, & Arora, 2017a; Wang et al., 2008).

The expectancy-value theory mentions that the belief an individual holds about the expected outcome and its outcome value affect the process of motivation (Vroom, 1964; Fishbein & Ajzen, 1975). The theory of Explained behavior (Pennington and Hastie, 1988) and BRT (Westaby, 2005b) proposed that values affect the reasoning of adoption. In previous innovation studies, it was found that consumers are expected to adopt new innovations when they feel that it is compatible with their personal values (Claudy et al., 2013). With reference to mobile shopping, it was found that value can have an effect on consumer adoption decision (Gupta, & Arora, 2017a):

H_{4a}: Consumers' values will (positively / negatively) influence their 'reason for' online subscription of beauty boxes.

H_{4b}: Consumers' values will (positively /negatively) influence their 'reason against' online subscription of beauty boxes.

Values and Attitudes

Values and beliefs can have a direct impact on attitude as sometimes reasons may not be fully activated, so consumers may depend upon heuristics motives (Kahneman et al., 1982; Westaby, 2005b). The earlier studies on consumer behavior discuss the importance of value in the purchase decision of the consumer (Kahle et al., 1986; Shareef, Kumar, & Kumar, 2008). The reasoning for adoption is not expected to occur in isolation; however, its deep-rooted values influence the adoption of innovation (Westaby 2005, p. 102). It is found that values positively affect the attitude (Gupta, & Arora, 2017). With this, the hypothesis is postulated as:

H_5: Consumers' values will (positively/negatively) influence their attitude towards online subscription of beauty boxes.

In total, the Behavioral reasoning theory serves as an interesting theoretical framework providing a better explanatory power to study the adoption of BxSOS. This framework facilitates the study of the adoption of BxSOS by studying value, attitude, 'reason for' and 'reason against' in a single framework.

Reasons Extraction and Measures

Online shopping is common in India; however, BxSOS is an emerging concept in India. It will be interesting to understand the 'reason for' and 'reason against' adoption of BxSOS. The target consumers of beauty boxes are females in the urban areas (Shirodkar, 2017), so this study designed and tested the hypotheses by surveying the female consumers. It was observed that females tend to shop more online than males (Li et al., 1999). The female consumers who had an online shopping experience were considered for this study. The researcher ensured that female consumers who had already subscribed to BxSOS were not considered for the survey as this study aims to understand the behavioral intention to adopt BxSOS.

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Reason Extraction

This study aims to understand the 'reason for' and 'reason against' adoption of BxSOS. To elicit the context-specific 'reason for' and 'reason against' adoption of BxSOS, qualitative research was conducted. This method was considered with reference to previous BRT studies (Westaby, 2005b; Claudy and Peterson, 2014; Claudy et al., 2013, 2015; Westaby et al., 2010; Gupta, & Arora, 2017a). These reasons were discussed with five subject matter experts and subsequently finalized. After this, 30 face-to-face semi-structured interviews were conducted with female consumers who buy beauty products online. The researcher ensured that these female consumers had not purchased BxSOS, but were aware of the BxSOS concept. For these semi-structured interviews, the participants were provided with a list of statements "The reasons why I will subscribe to BxSOS." The reasons listed were: - Convenience – BxSOS is convenient to my need; Ubiquitous – I can subscribe it anytime and anywhere; Hedonic shopping motivation – it is fun-filled and enjoyable experience; Social influence – My friends and colleagues subscribed to it, and Price consciousness – It is fairly priced. The participants were requested to point out on a four-point scale, the extent to which each of the statement could be the 'reason for' adoption of subscription-based beauty boxes. The calibration of the scale was performed by following Westaby (2005b) and Oh and Teo (2010), with 0 = "not a reason," 1 = "a somewhat influential reason," 2 = "influential reason" and 3 = "very influential reason". Using the procedures similar to Richins and Dawson (1992), the researcher transcribed the interviews and elicited the most frequently mentioned reasons. Based on this, the five 'reasons for' adoption of BxSOS were identified as - Convenience, Ubiquitous, Hedonic shopping motivation, Social influence and Price consciousness. It was found that the following reasons - Convenience (mean= 2.89, sd =0.90), Ubiquitous (mean=2.71, sd =0.88), Hedonic shopping motivation (mean=2.59, sd =0.84), social influence (mean=2.45, sd =0.82) and price consciousness (mean=2.36, sd =0.78) were the 'reasons for' adoption.

The same procedure was used to find out 'reason against' adoption of BxSOS. For these semi-structured interviews, the participants were provided with a list of reasons prefaced with the statement – Reason Why I will not subscribe to online beauty boxes. The 'reasons against' listed were Traditional Barrier - I like purchasing beauty products from retail shops; Choice and Variety – BxSOS has limited choice and variety of beauty products; Perceived Risk – It is risky as it will deliver beauty products below my expectation; Relative Advantage - I don't find any reason to subscribe BxSOS. Participants were asked to indicate, on a four-point scale (0-3), the extent to which each of the statement could be the 'reason against' adoption of online subscription of beauty boxes. The calibration of the scale was performed following Westaby (2005b) and Oh and Teo (2010), with 0 for "not a reason," 1 for "a somewhat influential reason," 2 for "influential reason" and 3 for "very influential reason." With these, four 'reasons against' adoption of subscription of beauty boxes were identified as - Traditional barrier, Choice & Variety, Perceived risk and Relative advantage. It was found that following 'reasons against' adoption were - Traditional barrier (mean=2.69, sd =0.84), Choice / Variety (mean=2.42, sd =0.72), Perceived risk (mean=2.36, sd =0.78) and Relative Advantage (mean=2.16, sd =0.69).

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Table 1. Operationalization of constructs

Main Construct:	Type		Indicator/item	Reference
Reasons for				
Convenience	Reflective	CN1	Online subscription beauty boxes are convenient to my beauty needs.	Claudy et al., 2015; Westaby, 2005b; Westaby et al., 2010; Gupta, & Arora, 2017a
		CN2	Online subscription beauty boxes save time and effort of purchasing beauty products.	
		CN3	Online subscription beauty boxes are the simplest way of buying my beauty products.	
Ubiquitous	Reflective	UQ1	Online subscription beauty boxes help to know new beauty products in the market.	Claudy et al., 2015; Westaby, 2005b; Westaby et al., 2010; Gupta, & Arora, 2017a
		UQ2	Online subscription beauty boxes keep me updated about beauty products all the time.	
		UQ3	Online subscription of beauty boxes can be done anywhere in the city.	
Hedonic Shopping Motives	Reflective	HS1	I feel the online subscription of beauty boxes is an exciting idea.	Khare, & Rakesh, 2011; Davis, Lang, & San Diego, 2014
		HS2	Online subscription of beauty boxes is a fun-filled enjoyable experience.	
		HS3	I like the surprise element associated with the online subscription of beauty box.	
Social Influence	Reflective	SF1	People who influence my behavior think that I should use online subscription beauty boxes.	Venkatesh et al., 2003
		SF2	I would shop online subscription beauty boxes because of the proportion of my friends, who also do the same.	
		SF3	People who are important to me think that I should purchase online subscription beauty boxes.	
Price Consciousness	Reflective	PS1	I am willing to purchase online subscription beauty boxes as they are fairly priced.	Alford, & Biswas, 2002
		PS2	I would always shop an online subscription box which is priced lower.	
		PS3	The money saved by finding lower prices of online subscription of beauty boxes is usually worth the time and effort.	
Reasons against				
Tradition barrier	Reflective	TB1	I enjoy purchasing beauty products from the retail shop as it is nice to do so.	Claudy et al., 2015; Westaby, 2005b; Westaby et al., 2010; Gupta, & Arora, 2017a
		TB2	I only purchase my beauty products from the retail shop as per my choice.	
		TB3	I am happy with my current way of purchasing beauty products from the retail shop.	
Choice / Variety	Reflective	CV1	Online subscription beauty boxes do not provide a “one-stop shop” for my beauty shopping	Srinivasan, Anderson, & Ponnavolu, 2002
		CV2	Online subscription beauty boxes do not satisfy the majority of my beauty needs.	
		CV3	The choice of the products in online subscription beauty boxes is limited.	
		CV4	Online subscription of beauty boxes do not have a wide selection of products to choose from.	

continues on following page

Table 1. Continued

Main Construct:	Type		Indicator/item	Reference
Relative advantage	Reflective	RA1	Online subscription of beauty boxes is not easier than buying beauty product by other means.	Claudy et al., 2015; Westaby, 2005b; Westaby et al., 2010; Gupta & Arora, 2017
		RA2	Online subscription of beauty boxes takes more time and efforts and does not provide all kinds of beauty products.	
		RA3	Online subscription beauty boxes are not more valuable to me than other ways of purchase of beauty product.	
Perceived Risk	Reflective	PR1	I feel that the online subscription of beauty boxes is risky because the beauty boxes delivered may fail to meet my expectations.	Corbitt et al., 2003; Gupta & Arora, 2017
		PR2	I believe that online subscription of beauty boxes is risky as it may delivery inferior beauty products	
		PR3	I feel online subscription of beauty boxes is risky as it may lead to the financial loss due to advance payment of subscription	
		PR4	I believe that online subscription beauty boxes may not deliver products which will fit as per my personal beauty needs.	
Value of openness to change	Reflective	VO1	I every time look for new things to do and surprises.	Claudy et al., 2015; Wang et al., 2008
		VO2	I like to experience new things.	
		VO3	I am open to new experiences.	
Attitude	Reflective	AT1	Generally speaking, Online subscription of beauty boxes is a great idea.	Claudy et al., 2015; Wang et al., 2008; Gupta, & Arora, 2017
		AT2	Online subscription of beauty boxes offers a lot of benefits.	
		AT3	Online subscription of beauty boxes in the near future will add a lot of value.	
Adoption Intention	Reflective	AD1	I will use online subscription beauty boxes	Fishbein & Ajzen 1975; Gupta, & Arora, 2017a
		AD2	I can see myself using online subscription beauty boxes	
		AD3	I intend to use online subscription beauty boxes	

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Measures

The measures of this study were adopted from the extant literature of BRT (Westaby, 2005b; Westaby et al., 2010; Claudy et al., 2015; Gupta, A., & Arora, N., 2017a) and demonstrated in Table 1. All the constructs were measured on a five-point Likert scale (1 = "strongly disagree" and 5 = "strongly agree"). With reference to the previous research (Fishbein and Ajzen, 1975; Gupta, & Arora, 2017a), the adoption intention and attitude are measured.

RESEARCH METHODOLOGY

Research Instrument Design

This study used the research instrument from the earlier studies conducted with reference to behavioral reasoning theory (BRT) (Westaby, 2005b) to understand the adoption of BxSOS. This study mainly adopted the scales from the previous studies (Claudy et al., 2015; Westaby, 2005b, Westaby et al., 2010, Wang et al., 2008; Gupta, & Arora, 2017a) regarding the BRT model. As per Fornell and Larcker, 1981, it is imperative to establish the validity of the constructs and reliability of the scale, so this study verified the scale for each of the above constructs.

SAMPLING AND DATA COLLECTION

Pilot Study

Before the data collection process, to establish face validity, five subject matter experts were identified and exposed to the overall scope and objectives of the study. After incorporating the suggestion and feedback regarding the suitability of all constructs, the questionnaire for the pilot test was finalized. To measure the constructs operationalized in this study, a five-point Likert scale was used. To assess the research instrument's validity and reliability a pilot test was conducted. The researcher carried out a pilot test (N=155) among the female respondents in malls, beauty parlors and public places. The target female respondents selected for this study were consumers who were shopping beauty products online and the researcher ensured that the respondents had not purchased BxSOS; however, they were aware of BxSOS. After data collection, the data was analyzed using PLS-SEM. The main data collection was carried out after satisfactory results were obtained in the pilot test. To evaluate the reliability and internal consistency of the data, Cronbach alpha was used (Nunnally, 1978).

The operationalized constructs used in this study are as shown in Table 1.

Primary Data Collection

The PLS path modeling technique has the benefit that it is not affected by small sample size. To ascertain the adequate sample size required for this study, the thumb rule (Gefen et al., 2000) was considered. For assessing the required sample size, ten times the number of items of the biggest construct in the research model was used (Construct- 'Reasons for' with 15 items). Hence, the required sample size for

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this study is 150 respondents. The primary data collection was done using a structured questionnaire, which was administered to the respondents. The female respondents were considered for this study as most of the BxSOS subscribers were females as per the beauty box company's marketers. The target female respondents selected for this study were consumers who were shopping beauty products online and the researcher ensured that the respondents had not purchased BxSOS; however, they were aware of BxSOS. The convenience sampling method was deployed for this study in Mumbai and Pune city along with its suburbs for a period of three months from August to October 2017. These female consumers were surveyed in retail shopping malls, beauty product outlets, cosmetic shops and beauty parlors by requesting them to fill up the questionnaire or requested to respond to the questionnaire in person. The target respondents chosen for this study were appropriate as these respondents were females having average education, who reside in the urban areas, possess sizable disposable income and had not subscribed to BxSOS; but, were aware of BxSOS. The total female consumers surveyed for this study were 1690 out of which 654 responses were overall found fit for analysis. The demographic details are provided in Table 2.

Non-Response Bias

In survey methods, non-response bias is considered a serious concern, as it limits the generalization of the findings (Michie and Marteau, 1999). Hence, it needs to be addressed by the researchers (Lewis et al., 2013). Hence, appropriate steps were taken by the researcher to ensure that non-response is not an issue for this study. This was done by dividing the data into two data sets (early respondents vs. late respondents) by performing the wave analysis. The comparison of the early and late wave responses was done to test for non-response bias (Amstrong and Overtons, 1977). The t-test analysis showed no significant differences (p=0.41) between the early wave (374) and late wave (280) groups, indicating that non-response bias does not affect this study. Finally, 654 responses were found fit for analysis in all respects.

The demographic profile of the respondents is shown in Table 2.

Table 2. Respondent demographic profile (N=654)

Demographic	Characteristics	Frequency	Percentage
Age	21-30	239	37
	31-40	238	36
	41-50	149	23
	51 and above	28	4
Education	Diploma	98	15
	Graduate Degree	257	39
	Post Graduate/ Masters	299	46
Shopping of beauty products online (not subscribed to BxSOS)	Less Than 3 months	62	10
	3 to 6 months	201	31
	6 to 12 months	258	39
	More than year	133	20

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Data Analysis

Common Method Bias

Survey-based method for data collection was used to test the research hypothesis in this work. When the response data is collected from multiple sources, it may suffer from the risk of the presence of common method bias (Mackenzie and Podsakoff, 2012; Podsakoff et al. 2003; Podsakoff and Organ, 1986). The researcher conducted the single factor Harman test (Podsakoff and Organ, 1986) to examine the occurrence of common method bias in this work. On performing the analysis of the research framework, the results from this test show that 18.79 percent of the variance is explained by a single factor which is less than 50%. This proves that common method bias is not a concern in this research.

With reference to the above criteria, there is sufficient evidence of validity and reliability in the measures of this study.

PLS-SEM

As the PLS-SEM path modeling technique has the capability to represent the latent variable constructs in this work, it is used to test the conceptual research framework and assess the causal relationship between the indicators and latent constructs (Gudergan et al., 2008). When the objective of the research is to extend the existing theory (Hair et al., 2011), PLS-SEM is preferred over maximum likelihood (MLE) as it is a flexible technique to model the research constructs (Henseler, 2010). So, the SmartPLS software (Ringle et al., 2005) was used for data analysis.

Measurement Model

The multi-item reflective constructs in the hypothesized framework were used to calculate the measurement properties in the final measurement model. The indicator's factor loadings were more than 0.5 (Hair et al, 2006). The reliability of the measure was established as the Cronbach alpha for all the constructs were more than 0.7. This shows the high internal consistency of all the research constructs used (Nunnally, 1978).

The outer item loadings and composite reliability (CR) was checked to evaluate the reflective measurement items. To check the convergent validity, the average variance extracted (AVE) was calculated. The outer loadings for all the items were more than the minimum threshold value of 0.6 and all the research constructs show high levels of internal consistency/ reliability shown by the CR values as displayed in Table 3. The convergent validity for all the constructs is confirmed as the AVE values are more than the minimum threshold value of 0.5 (Hair et al., 2006).

The outer loadings for all the items were more than the minimum threshold value of 0.6 and all the research constructs show high levels of internal consistency/ reliability shown by the Composite Reliability (CR) values as displayed in Table 3. The convergent validity for all the constructs is confirmed as the AVE values are more than the minimum threshold value of 0.5 (Hair et al, 2006).

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Table 3. Construct validity

Second Order Construct	First Order Construct	Item	Outer Loading	AVE	Composite Reliability	Cronbach Alpha
Reason for	Convenience	CN1	0.814	0.722	0.864	0.806
		CN2	0.873			
		CN3	0.757			
	Ubiquitous	UQ1	0.890	0.786	0.877	0.818
		UQ2	0.871			
		UQ3	0.881			
	Hedonic Shopping Motives	HS1	0.807	0.730	0.832	0.796
		HS2	0.873			
		HS3	0.870			
	Social Influence	SI1	0.879	0.796	0.894	0.827
		SI2	0.880			
		SI3	0.814			
	Price Consciousness	PS1	0.876	0.778	0.882	0.784
		PS2	0.869			
		PS3	0.828			
Reason Against	Traditional Barrier	TB1	0.897	0.742	0.848	0.792
		TB2	0.844			
		TB3	0.853			
	Choice/Variety	CV1	0.804	0.804	0.902	0.856
		CV2	0.823			
		CV3	0.847			
	Relative Advantage	RA1	0.863	0.756	0.826	0.789
		RA2	0.870			
		RA3	0.863			
	Perceived Risk	PR1	0.861	0.788	0.872	0.804
		PR2	0.846			
		PR3	0.866			
		PR4	0.888			
	Value of Openness to Change	VO1	0.894	0.748	0.857	0.794
		VO2	0.875			
		VO3	0.871			
	Attitude	AT1	0.871	0.804	0.898	0.831
		AT2	0.890			
		AT3	0.872			
	Adoption Intention	AD1	0.881	0.788	0.904	0.849
		AD2	0.892			
		AD3	0.877			

a. Average variance extracted (AVE)=(summation of the square of the factor loadings)/{(summation of the square of the factor loadings)+(Summation of the error variance)}
b. Composite reliability (CR)=(Square of the summation of the factor loadings)/{(square of the summation of the factor loadings)+(Square of the summation of the error variance)}

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The assessment of the discriminant validity of the research constructs was done using the Fornell and Larcker (1981) criterion. The discriminant validity of the constructs is verified by the off-diagonal values in Table 4 which shows the correlation between the latent constructs. The comparison of the construct inter-correlations with average variance extracted (AVE) was done to prove the discriminant validity as shown in Table 4. Discriminant validity was ascertained as the shared variance values were less than the corresponding AVE (Fornell & Larcker, 1981). Hence discriminant validity between the research constructs were verified.

Table 4. Discriminant validity (Fornell-Larcker criteria)

Research Construct	AD	AT	RF: CN	RF: UQ	RF: HS	RF: SF	RF: PS	RA: TB	RA: CH	RA: RA	RA: PR	VO
AD	**0.887**											
AT	0.582	**0.896**										
RF:CN	0.518	0.456	**0.849**									
RF:UQ	0.434	0.456	0.446	**0.886**								
RF:HS	0.345	0.324	0.338	0.494	**0.854**							
RF: SF	0.336	0.294	0.134	0.108	0.388	**0.892**						
RF: PS	0.234	0.274	0.146	0.116	0.118	0.129	**0.882**					
RA: TB	-0.184	-0.182	0.134	0.098	0.128	0.282	0.248	**0.861**				
RA: CV	-0.122	-0.166	0.106	0.088	0.106	0.108	0.228	0.522	**0.896**			
RA: RA	-0.134	-0.174	0.094	0.076	0.098	0.086	0.098	0.262	0.486	**0.869**		
RA:PR	-0.128	-0.168	0.088	0.068	0.096	0.084	0.096	0.188	0.428	0.418	**0.887**	
VO	0.274	0.254	0.152	0.156	0.242	0.262	0.226	-0.096	-0.078	-0.086	-0.078	**0.864**

Structural Model

After the evaluation of the measurement model, it was found to be reliable and valid. Hence the path analysis was carried out to assess the structural model relationships among the constructs using PLS-SEM (Figure 3) by calculating the path coefficients and its significance as shown in Table 5. The designated second order constructs were tested by the researcher using the repeated indicators approach (Lohmüller, 1988). For valuing the higher order constructs (Wilson and Henseler, 2007), the popular approach using the hierarchal the component model (Chin et al., 2003) was carried out by the author. It implies the hypothesized relationships between the various research constructs, the assessment of the level of R^2 values and predictive relevance Q^2 (Table 6).

RESULTS

The R^2 values of and the predictive relevance Q^2 of the endogenous latent constructs- attitude towards adoption, 'reasons for' adoption, 'reasons against' adoption and adoption intention of online subscription beauty boxes are as shown in Table 6.

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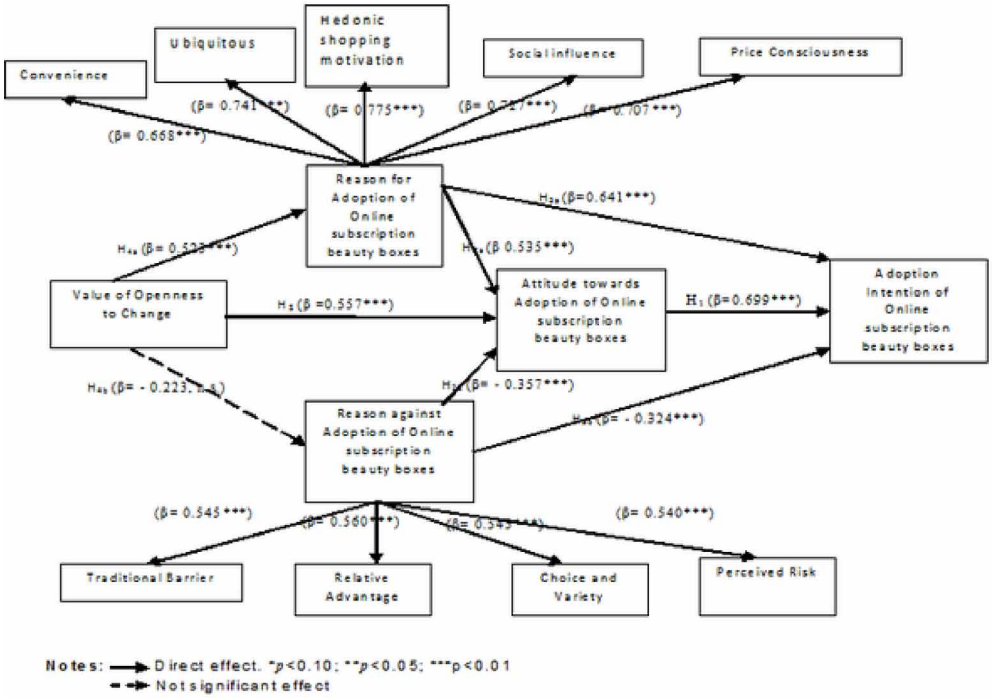
Figure 3. Results of PLS-SEM model



The results reveal that reasons are context specific and are salient predictors of adoption of online subscription beauty boxes. The attitude significantly influences the adoption intention towards the online subscription of beauty boxes (H_1: β=0.699, $p < 0.01$). It confirms that consumer's attitude towards BxSOS has an influence on adoption intention towards BxSOS. It was found that 'reasons for' adoption has a positive effect on attitude of consumers (H_{2a}: β=0.535, $p < 0.01$) and also on adoption intention (H_{3a}: β=0.641, $p < 0.01$). It confirms that 'reason for' adoption positively affect the attitude and adoption intention of female consumers towards the adoption of BxSOS.

The 'reason against' adoption negatively affects the adoption intention (H_{3b}: β= -0.324, $p<0.01$) and attitude (H_{2b}: β= -0.357, $p < 0.01$) towards adoption of BxSOS. With reference to the above, the 'reason for' adoption of BxSOS has more influence on attitude and adoption intention than 'reason against' adoption.

Openness to change influences the 'reason for' adoption (H_{4a}: β=0.523, $p < 0.01$) and does not influence 'reasons against' adoption (H_{4b}: β= − 0.223, not significant). As the female consumers are open to change, they are ready to experiment with the new beauty products and free gifts of beauty products in the subscription boxes, so it does not affect the 'reason against'. Value of openness to change influences the attitude (H_5: β=0.557, $p < 0.01$) towards the BxSOS. Female consumers have openness to change which affects the 'reason for' adoption and forms a positive attitude towards the adoption of BxSoS.

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Table 5. Structural relationships and results of hypothesis testing

Hypothesis	Path	Path Coefficient	Standard Error	T Statistics	Decision
First Order					
H1	Attitude → adoption intention	0.699	0.069	3.358***	Supported
H2a	Reasons for adoption→ attitude	0.535	0.058	3.729***	Supported
H2b	Reasons against adoption→ attitude	-0.357	0.048	3.447***	Supported
H3a	Reasons for adoption→ adoption intention	0.641	0.056	3.897***	Supported
H3b	Reasons against adoption→ adoption intention	-0.324	0.067	2.885***	Supported
H4a	Values→ reasons for adoption	0.523	0.054	7.614***	Supported
H4b	Values →reasons against adoption	-0.223	0.062	1.446	Not Supported
H5	Values→ attitude	0.557	0.052	3.422***	Supported
Second Order					
	Reasons for adoption→ convenience	0.668	0.044	9.015***	Supported
	Reasons for adoption→ ubiquitous	0.741	0.056	7.357***	Supported
	Reasons for adoption→ Hedonic Motivation	0.775	0.044	8.083***	Supported
	Reasons for adoption→ Social Influence	0.727	0.046	7.294***	Supported
	Reason for adoption → Price Consciousness	0.707	0.042	9.829***	Supported
	Reasons against adoption→ Traditional Barrier	0.565	0.051	3.446***	Supported
	Reasons against adoption→ Choice and Variety	0.545	0.059	3.127***	Supported
	Reasons against adoption→ Relative advantage	0.560	0.055	2.651***	Supported
	Reasons against adoption→ Perceived Risk	0.540	0.057	2.885***	Supported

a. t-values for two-tailed test: ***t-value 2.58 (sig. level = 1%), **1.96 (sig. level = 5%) and *t-tvalue 1.65 (sig. level = 10%), (Hair et al. 2011)

Table 6. Results of R^2 and predictive relevance Q^2

Endogenous Latent Constructs	R^2	Q^2
Attitude towards the adoption of online subscription beauty boxes	0.764	0.486
Adoption intention towards online subscription beauty boxes	0.646	0.322
Reasons for the adoption of online subscription beauty boxes	0.734	0.448
Reasons against adoption of online subscription beauty boxes	0.644	0.308

a. Assessment of predictive relevance (Q^2); Value Effect Size; 0.02 Small; 0.15 Medium; 0.35 Large

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All second order constructs of reasoning are significant. It is found that Convenience (β =0.668, $p < 0.01$), Ubiquitous (β =0.741, $p < 0.01$), Hedonic Shopping Motivation (β =0.775, $p < 0.01$), Social Influence (β =0.727, $p < 0.01$) and Price Consciousness (β =0.707, $p < 0.01$) are the 'reasons for' adoption of BxSOS. It is found that ordering online subscription boxes is easy as it can be ordered from anywhere & anytime, so convenience and ubiquitous are 'reasons for' adoption of online subscription beauty boxes. The female consumers enjoy surprise branded products every month in the beauty boxes which are new in the market, so hedonic shopping motivation is an important factor for adoption. Generally, females discuss and recommend the beauty products to their peers and since the online subscription is a nascent concept in India, so social influence is also an important factor for adoption. Working females have sufficient amount of money at their disposal. Online subscription box contains one core beauty product, which itself costs higher than the subscription value along with the other testers in the beauty box, so it is affordable to the female consumers. Hence, Price consciousness is also one of the important factors for adoption of BxSOS.

It is found that the Traditional barrier (β =0.565, $p < 0.01$), Choice and Variety (β =0.545, $p < 0.01$), Relative Advantage (β =0.560, $p < 0.01$) and Perceived Risk (β =0.540, $p < 0.01$) are 'reason against' adoption of online subscription beauty boxes. The traditional barrier exists, as females also prefer to go to beauty product retail shops and try the beauty products before actual purchase. For example- Lipstick color shades ordered online may substantially differ as compared to the actual expectation. Online beauty boxes have a limited choice and variety, as each beauty box has only one core beauty product of consumer's choice along with other sample surprise product testers. On the contrary, other cosmetic beauty product websites and retail shops provide a wide variety of beauty products and choices. Females have a perceived risk, as they are skeptical about the quality of the beauty product sample testers, which could affect their skin and are concerned whether it would fit their personal beauty needs and match with their expectations.

DISCUSSION AND IMPLICATIONS

This study contributes to the current literature on Behavioral reasoning theory by examining the contextual 'reasons for' and 'reasons against' adoption of BxSOS. There exists a study focusing only on the adoption factors of fashion and beauty SOS (Woo, & Ramkumar, 2018) and no study discusses the resistance and adoption factors of BxSOS in a single framework in the context of a developing country like India. This study mainly highlights the 'reasons for' and 'reasons against' adoption using BRT in the context of BxSOS which makes the study novel. This study uniquely contributes to the literature on consumer behavior in BxSOS and SOS.

The findings of this study show the context-specific 'reasons for' adoption such as - convenience, ubiquitous, hedonic shopping motivation, social influence and price consciousness. As per the path coefficient of the reasoning construct, Hedonic shopping motivation (β=0.77), is one of the most influencing reasons for the adoption of BxSOS. Female consumers having average education possess sizable disposable income, which they can invest in self-grooming and subscription boxes add the element of surprise and suspense, so they are attracted towards online subscription of beauty boxes. They are also mainly influenced by their peers for subscribing to the beauty boxes.

The 'reasons against' adoption of BxSOS are traditional barrier, choice/variety, relative advantage and perceived risk. 'Choice and Variety' which emerged as 'reason against' in this study, contradicts the

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mobile shopping study, as it is the 'reason for' the adoption of mobile shopping (Gupta, Gupta, Arora, & Arora, 2017). BxSOS like Fab-bag provide one beauty product in the beauty box for the subscription amount and other products are small quantity trial testers, so female consumers consider it as a limitation in terms of choice/variety during the selection of the beauty product. Also, there are exclusive online websites for beauty products like Nykaa, Purple and Apalva offering personalized beauty products of their choice. This study provides valuable insights to the marketers of BxSOS.

Some of the female consumers still believe in testing the beauty products in person and purchasing it from a retail store, as they are beauty conscious and some of them have sensitive skin and allergic reactions to the chemicals in beauty products which act as a traditional barrier. The marketers can improve the 'reasons for' and critically concentrate on the 'reason against' adoption of BxSOS. This study uniquely highlights the female consumers of a developing country like India regarding their buying behavior of BxSOS. This study makes an important contribution by finding out that Indian female consumers in urban cities are ready to experiment and accept new concepts like BxSOS; however, they prefer variety and choice in beauty boxes. This study also contributes to BRT by adding new reason against adoption – "variety and choice" in the context of BxSOS. This is because, in every subscription box, consumers get one or two products with limited choice options and remaining are trial samples of beauty products. Indian female consumers are persuaded by social influence and beauty is one of the important topics of discussion among females, so consumer delight needs to be maintained by BxSOS. This study suggests the managers formulate strategies, so as to provide more choice/variety of products in the beauty box for the female consumers to choose at the time of subscription to attract and retain more consumers. The marketing managers should also study the marketing strategies adopted by the online fashion and beauty product websites to continuously upgrade their offerings in terms of personalization of beauty products, competitive pricing of the beauty boxes and promotional offers specifically curated for the consumers.

This research makes a unique contribution by applying the BRT theory to study the adoption of BxSOS in a developing country like India, by considering only female consumers. In India, women's employment is increasing and hence decision-making power in terms of buying is also improving among females. The BxSOS is a new concept; still, female consumers are ready to experiment and enjoy adopting it. This finding is in sharp contrast to the orthodox Indian culture which bears a long glowing heritage, where personal cosmetic grooming skills and beauty care are passed as a lineage from mother to daughter since generations as part of the tradition.

This study highlights the distinctive adoption factors in the context of BxSOS, which will help the marketers and managers to work further upon these factors to formulate suitable marketing strategies. This study also finds that value (openness to change) does not affect the 'reason against', as females are more open to experimenting with new beauty products. This study uniquely contributes to the innovation diffusion theory by studying a new concept of BxSOS adoption by female consumers in India.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

There are many studies on online shopping in India (Kim and Peterson, 2017; Lamberton and Stephen, 2016; Ho & Chen, 2014; Kim et al., 2014; Kim et al., 2014; Thakur and Srivastava; Jiang, & Jones, 2014); however, no study exists on the online subscription of beauty boxes in India. Although this is the first study to understand the consumer behavior regarding BxSOS in a developing country such as India, this study has several limitations, as the findings of the survey reported are only for the female

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consumer segment in India. In the future, further studies can be conducted to understand the actual usage of BxSOS in addition to the behavioral intention using the Behavioral reasoning theory. The 'reasons for' and 'reasons against' adoption can differ across various cultures, so it can be further studied in other countries and cultural contexts with various demographic variables- age, gender and income group on a comparative basis. Future studies can be conducted to provide the comparative analysis of adoption of BxSOS in developing countries and developed countries, which will provide more valuable insights. There are other subscription boxes like Bakebox - baked goodies boxes, Flintobox - Toy boxes of kids for child development and the Gourmet box - Gourmet food & ingredients box which can be studied using the BRT theory. The moderating effect of experience with technology and demographic factors can be studied further. Despite the limitations, this study provides valuable insights to academic scholars and marketers to develop strategies to market BxSOS.

CONCLUSION

This study discusses the 'reasons for' and 'reasons against' adoption of BxSOS in a developing country like India. The context-specific 'reasons for' adoption of BxSOS are - convenience, ubiquitous, hedonic shopping motivation, social influence and price consciousness and 'reasons against' are Traditional barrier, Choice and Variety, Relative Advantage and Perceived Risk. This study contributes to the existing literature on female consumer behavior using BRT. This study provides vital insights to the marketers by understanding the 'reasons for' and 'reasons against' adoption of BxSOS to help them formulate suitable strategies.

REFERENCES

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. doi:10.1016/0749-5978(91)90020-T

Alford, B. L., & Biswas, A. (2002). The effects of discount level, price consciousness and sale proneness on consumers' price perception and behavioral intention. *Journal of Business Research*, *55*(9), 775–783. doi:10.1016/S0148-2963(00)00214-9

Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *JMR, Journal of Marketing Research*, *14*(3), 396–402. doi:10.2307/3150783

Celik, H. (2016). Customer online shopping anxiety within the Unified Theory of Acceptance and Use Technology (UTAUT) framework. *Asia Pacific Journal of Marketing and Logistics*, *28*(2), 278–307. doi:10.1108/APJML-05-2015-0077

Chao, L. (2016, May). With Subscription Beauty Boxes, Rules of E-Commerce Don't Apply 2016. *Wall Street Journal*. Retrieved from https://www.wsj.com/articles/with-subscription-beauty-boxes-rules-of-e-commerce-dont-apply-1463502962

Chatzidakis, A., & Lee, M. S. (2013). Anti-consumption as the study of reasons against. *Journal of Macromarketing*, *33*(3), 190–203. doi:10.1177/0276146712462892

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Cheema, U., Rizwan, M., Jalal, R., Durrani, F., & Sohail, N. (2013). The trend of online shopping in the 21st century: Impact of enjoyment in TAM Model. *Asian Journal of Empirical Research*, *3*(2), 131–141.

Chen, M. Y., & Teng, C. I. (2013). A comprehensive model of the effects of online store image on purchase intention in an e-commerce environment. *Electronic Commerce Research*, *13*(1), 1–23. doi:10.100710660-013-9104-5

Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A Partial Least Squares Latent Variable Modeling Approach for Measuring Interaction effects: Results from a Monte Carlo Simulation Study and an Electronic - Mail Emotion/ Adoption Study. *Information Systems Research*, *14*(2), 189–217. doi:10.1287/isre.14.2.189.16018

Claudy, M. C., Garcia, R., & O'Driscoll, A. (2015). Consumer resistance to innovation—a behavioral reasoning perspective. *Journal of the Academy of Marketing Science*, *43*(4), 528–544. doi:10.100711747-014-0399-0

Claudy, M. C., Peterson, M., & O'Driscoll, A. (2013). Understanding the attitude-behavior gap for renewable energy systems using behavioral reasoning theory. *Journal of Macromarketing*, *33*(4), 273–287. doi:10.1177/0276146713481605

Corbitt, B. J., Thanasankit, T., & Yi, H. (2003). Trust and e-commerce: A study of consumer perceptions. *Electronic Commerce Research and Applications*, *2*(3), 203–215. doi:10.1016/S1567-4223(03)00024-3

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Quarterly*, *13*(3), 319–340. doi:10.2307/249008

Davis, R., Lang, B., & San Diego, J. (2014). How gender affects the relationship between hedonic shopping motivation and purchase intentions? *Journal of Consumer Behaviour*, *13*(1), 18–30. doi:10.1002/cb.1450

Eagly, A. H., & Chaiken, S. (1993). *The Psychology of Attitudes*. Fort Worth, TX: Harcourt Brace Jovanovich College Publishers.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *JMR, Journal of Marketing Research*, *18*(1), 39–50. doi:10.2307/3151312

Gefen, D., Straub, D., & Boudreau, M. C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the Association for Information Systems*, *4*(1), 7.

Gong, W., Maddox, L. M., & Stump, R. L. (2012). Attitudes toward online shopping: a comparison of online consumers in China and the US. *International Journal of e-business development*.

Griffith, E. (2015), Birchbox co-CEO Hayley Barna steps down. *Fortune*. Retrieved July 23, 2017, from http://fortune.com/2015/08/11/birchbox-ceo-hayley-barna/

Gudergan, S. P., Ringle, C. M., Wende, S., & Will, A. (2008). Confirmatory tetrad analysis in PLS path modeling. *Journal of Business Research*, *61*(12), 1238–1249. doi:10.1016/j.jbusres.2008.01.012

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Gupta, A., & Arora, N. (2017a). Understanding the determinants and barriers of mobile shopping adoption using behavioral reasoning theory. *Journal of Retailing and Consumer Services*, *36*, 1–7. doi:10.1016/j.jretconser.2016.12.012

Gupta, A., & Arora, N. (2017b). Consumer adoption of m-banking: A behavioral reasoning theory perspective. *International Journal of Bank Marketing*, *35*(4), 733–747. doi:10.1108/IJBM-11-2016-0162

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Upper Saddle River, NJ: Pearson-Prentice Hall.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139–152. doi:10.2753/MTP1069-6679190202

Henseler, J. (2010). On the convergence of the partial least squares path modeling algorithm. *Computational Statistics*, *25*(1), 107–120. doi:10.100700180-009-0164-x

Hernandez, B., Jimenez, J., & José Martín, M. (2009). Adoption vs acceptance of e-commerce: Two different decisions. *European Journal of Marketing*, *43*(9/10), 1232–1245. doi:10.1108/03090560910976465

Ho, T. H. L., & Chen, Y. (2014). Vietnamese consumers' intention to use online shopping: The role of trust. *International Journal of Business and Management*, *9*(5), 145.

Hsin Chang, H., & Wen Chen, S. (2008). The impact of online store environment cues on purchase intention: Trust and perceived risk as a mediator. *Online Information Review*, *32*(6), 818–841. doi:10.1108/14684520810923953

Hsu, C. L., Chuan-Chuan Lin, J., & Chiang, H. S. (2013). The effects of blogger recommendations on customers' online shopping intentions. *Internet Research*, *23*(1), 69–88. doi:10.1108/10662241311295782

India Times. (2017). Indian cosmetics industry to touch $35 billion by 2035: Survey. Retrieved from https://economictimes.indiatimes.com/industry/cons-products/fashion-/-cosmetics-/-jewellery/indian-cosmetics-industry-to-touch-35-billion-by-2035-survey/articleshow/61338171.cms

Jiang, P., & Jones, D. B. (2014). An exploratory study of factors affecting consumer international online shopping behavior. *International Journal of E-Business Research*, *10*(2), 45–60. doi:10.4018/ijebr.2014040103

Kahle, L. R. (1986). The nine nations of North America and the value basis of geographic segmentation. *Journal of Marketing*, *50*(2), 37–47. doi:10.2307/1251598

Kahneman, D., & Tversky, A. (1982). The psychology of preferences. *Scientific American*, *246*(1), 160–173. doi:10.1038cientificamerican0182-160

Khare, A., Khare, A., & Singh, S. (2012). Attracting shoppers to shop online—Challenges and opportunities for the Indian retail sector. *Journal of Internet Commerce*, *11*(2), 161–185. doi:10.1080/15332861.2012.689570

Khare, A., & Rakesh, S. (2011). Antecedents of online shopping behavior in India: An examination. *Journal of Internet Commerce*, *10*(4), 227–244. doi:10.1080/15332861.2011.622691

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Kim, Y., & Peterson, R. A. (2017). A Meta-analysis of Online Trust Relationships in E-commerce. *Journal of Interactive Marketing*, *38*, 44–54. doi:10.1016/j.intmar.2017.01.001

Kim, Y. J., Han, S. M., & Lee, E. (2014). The role of trust in online shopping malls: Different types of trust and how they affect consumer intention. *International Journal of Electronic Commerce Studies*, *4*(2), 355–358111112. doi:10.7903/ijecs.1127

Kleijnen, M., Lee, N., & Wetzels, M. (2009). An exploration of consumer resistance to innovation and its antecedents. *Journal of Economic Psychology*, *30*(3), 344–357. doi:10.1016/j.joep.2009.02.004

Lamberton, C., & Stephen, A. T. (2016). A thematic exploration of digital, social media, and mobile marketing: Research evolution from 2000 to 2015 and an agenda for future inquiry. *Journal of Marketing*, *80*(6), 146–172. doi:10.1509/jm.15.0415

Lewis, E. F., Hardy, M., & Snaith, B. (2013). An analysis of survey reporting in the imaging professions: Is the issue of non-response bias being adequately addressed? *Radiography*, *19*(3), 240–245. doi:10.1016/j.radi.2013.02.003

Li, H., Kuo, C., & Rusell, M. G. (1999). The impact of perceived channel utilities, shopping orientations, and demographics on the consumer's online buying behavior. *Journal of Computer-Mediated Communication*, *5*(2).

Lian, J. W., & Yen, D. C. (2014). Online shopping drivers and barriers for older adults: Age and gender differences. *Computers in Human Behavior*, *37*, 133–143. doi:10.1016/j.chb.2014.04.028

Lohmüller, J. B. (1988). The PLS Program system: Latent variables path analysis with partial least squares estimation. *Multivariate Behavioral Research*, *23*(1), 125–127. doi:10.120715327906mbr2301_7 PMID:26782261

MacKenzie, S. B., & Podsakoff, P. M. (2012). Common method bias in marketing: Causes, mechanisms, and procedural remedies. *Journal of Retailing*, *88*(4), 542–555. doi:10.1016/j.jretai.2012.08.001

Mansour, I. H. F., Eljelly, A. M., & Abdullah, A. M. (2016). Consumers' attitude towards e-banking services in Islamic banks: The case of Sudan. *Review of International Business and Strategy*, *26*(2), 244–260. doi:10.1108/RIBS-02-2014-0024

Michie, S., & Marteau, T. (1999). Non-response bias in prospective studies of patients and healthcare professionals. *International Journal of Social Research Methodology*, *2*(3), 203–212. doi:10.1080/136455799295014

Nunnally, J. C. (1978). Psychometric theory (2nd ed.). Hillsdale, NJ: McGraw-Hill.

O'Cass, A. (2000). An assessment of consumers product, purchase decision, advertising and consumption involvement in fashion clothing. *Journal of Economic Psychology*, *21*(5), 545–576. doi:10.1016/S0167-4870(00)00018-0

Oh, L. B., & Teo, H. H. (2010). Consumer value co-creation in a hybrid commerce service-delivery system. *International Journal of Electronic Commerce*, *14*(3), 35–62. doi:10.2753/JEC1086-4415140303

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Pascual-Miguel, F. J., Agudo-Peregrina, Á. F., & Chaparro-Peláez, J. (2015). Influences of gender and product type on online purchasing. *Journal of Business Research*, *68*(7), 1550–1556. doi:10.1016/j.jbusres.2015.01.050

Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, *7*(3), 101–134. doi:10.1080/10864415.2003.11044275

Pennington, N., & Hastie, R. (1988). Explanation-based decision making: Effects of memory structure on the judgment. *Journal of Experimental Psychology. Learning, Memory, and Cognition*, *14*(3), 521–533. doi:10.1037/0278-7393.14.3.521

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, *88*(5), 879–903. doi:10.1037/0021-9010.88.5.879 PMID:14516251

Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management*, *12*(4), 531–544. doi:10.1177/014920638601200408

Raajpoot, N. A., & Sharma, A. (2006). Perceptions of incompatibility in customer-to-customer interactions: Examining individual-level differences. *Journal of Services Marketing*, *20*(5), 324–332. doi:10.1108/08876040610679936

Rahman, S. U., Khan, M. A., & Iqbal, N. (2018). Motivations and barriers to purchasing online: Understanding consumer responses. *South Asian Journal of Business Studies*.

Ram, S. (1987). *A model of innovation resistance*. ACR North American Advances.

Ram, S., & Sheth, J. N. (1989). Consumer resistance to innovations: The marketing problem and its solutions. *Journal of Consumer Marketing*, *6*(2), 5–14. doi:10.1108/EUM0000000002542

Richins, M. L., & Dawson, S. (1992). A consumer values orientation for materialism and its measurement: Scale development and validation. *The Journal of Consumer Research*, *19*(3), 303–316. doi:10.1086/209304

Ringle, C. M., Wende, S., & Will, A. (2005). Smart-PLS 2.0 (beta). Retrieved from http://www.smartpls.de

Rogers Everett, M. (1995). *Diffusion of innovations*. New York.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In Advances in experimental social psychology. Academic Press. doi:10.1016/S0065-2601(08)60281-6

Shareef, M. A., Kumar, U., & Kumar, V. (2008). Role of different electronic-commerce (EC) quality factors on purchase decision: A developing country perspective. *Journal of Electronic Commerce Research*, *9*(2), 92.

Shirodkar, S. (2017). With the overseas subscription box business growing exponentially, is India ready? *Exchange4media*. Retrieved from http://www.exchange4media.com/marketing/with-the-overseas-subscription-box-business-growing-exponentially-is-india-ready_67768

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Srinivasan, S. S., Anderson, R., & Ponnavolu, K. (2002). Customer loyalty in e-commerce: An exploration of its antecedents and consequences. *Journal of Retailing*, *78*(1), 41–50. doi:10.1016/S0022-4359(01)00065-3

Tay, D. (2016). In Singapore, subscription boxes are neither dead nor alive. *Techinasia*. Retrieved from https://www.techinasia.com/singapore-subscription-boxes-dead-alive

Thakur, R., & Srivastava, M. (2013). Customer usage intention of mobile commerce in India: An empirical study. *Journal of Indian Business Research*, *5*(1), 52–72. doi:10.1108/17554191311303385

Van Slyke, C., Comunale, C. L., & Belanger, F. (2002). Gender differences in perceptions of web-based shopping. *Communications of the ACM*, *45*(8), 82–86. doi:10.1145/545151.545155

Vanhamme, J., & Snelders, D. (2003). *What if you surprise your customers... Will they be more satisfied? Findings from a pilot experiment*. ACR North American Advances.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *Management Information Systems Quarterly*, *27*(3), 425–478. doi:10.2307/30036540

Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *Management Information Systems Quarterly*, 157-178.

Vroom, V. H. (1964). *Work and motivation*. New York: Wiley.

Wang, G., Dou, W., & Zhou, N. (2008). Consumption attitudes and adoption of new consumer products: A contingency approach. *European Journal of Marketing*, *42*(1/2), 238–254. doi:10.1108/03090560810840998

Weisberg, J., Te'eni, D., & Arman, L. (2011). Past purchase and intention to purchase in e-commerce: The mediation of social presence and trust. *Internet Research*, *21*(1), 82–96. doi:10.1108/10662241111104893

Westaby, J. D. (2005a). Comparing attribute importance and reason methods for understanding behavior: An application to internet job searching. *Applied Psychology*, *54*(4), 568–583. doi:10.1111/j.1464-0597.2005.00231.x

Westaby, J. D. (2005b). Behavioral reasoning theory: Identifying new linkages underlying intentions and behavior. *Organizational Behavior and Human Decision Processes*, *98*(2), 97–120. doi:10.1016/j.obhdp.2005.07.003

Westaby, J. D., & Fishbein, M. (1996). Factors underlying behavioral choice: Testing a new reasons theory approach. *Journal of Applied Social Psychology*, *26*(15), 1307–1323. doi:10.1111/j.1559-1816.1996.tb00072.x

Westaby, J. D., Probst, T. M., & Lee, B. C. (2010). Leadership decision-making: A behavioral reasoning theory analysis. *The Leadership Quarterly*, *21*(3), 481–495. doi:10.1016/j.leaqua.2010.03.011

Wilson, B., & Henseler, J. (2007). Modeling reflective higher-order constructs using three approaches with PLS path modeling: A Monte Carlo comparison. In *Australian and New Zealand Marketing Academic Conference* (pp. 791-800).

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Woo, H., & Ramkumar, B. (2018). Who seeks a surprise box? Predictors of consumers' use of fashion and beauty subscription-based online services (SOS). *Journal of Retailing and Consumer Services*, *41*, 121–130. doi:10.1016/j.jretconser.2017.11.011

Wu, J. H., & Wang, S. C. (2005). What drives mobile commerce?: An empirical evaluation of the revised technology acceptance model. *Information & Management*, *42*(5), 719–729. doi:10.1016/j.im.2004.07.001

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Chapter 50
Understanding Vietnamese Consumer Intention to Use Online Retailer Websites:
Application of the Extended Technology Acceptance Model

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ABSTRACT

This study examines the applicability of an extended technology acceptance model (TAM) that incorporates trust, perceived risk, and self-enhancement as antecedents to the TAM constructs. Data collected from 299 Vietnamese online consumers, through a self-administered survey, were entered into a structural equation model using AMOS 23 to establish causality. The results partially confirm the applicability of TAM to the online shopping intentions of Vietnamese consumer, though contrary to expectations, perceived ease of use does not predict behavioral intentions. Trust and self-enchantment fit well with the TAM; the inclusion of perceived risk as an antecedent is questionable. The findings offer new opportunities for explaining TAM theory in light of Schwartz's value dimensions. This article thus concludes with a discussion of the research contributions and implications.

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INTRODUCTION

With a basis in the theory of reasoned action (TRA; Ajzen & Fishbein, 1980), the technology acceptance model (TAM) proposed by Davis (1989) is one of the most prevalent behavioral models applied to explain users' technology acceptance (Venkatesh & Davis, 2000). The TAM offers a robust, parsimonious, dominant, and simple model for explaining human behavior in action, especially in e-shopping or e-commerce environments (Davis, 1989). Despite its parsimoniousness though, researchers question the universality of the TAM, especially in cultures marked by high power distance, low uncertainty avoidance, and high collectivism (McCoy, Galletta, & King, 2007). Venkatesh (2000) also cites the TAM's parsimony as a critical limitation of the theory. Noting this limitation, as well as the simplicity and robustness of the TAM theory, scholars have attempted to add variables from related theories to capture other key determinants that might influence consumers' purchasing intentions (Tong, 2010), such as perceived risk (Featherman & Pavlou, 2003; Pavlou, 2003) and trust (Gefen, 2004; Gefen, Karahanna, & Straub, 2003). Pavlou (2003) notes the increasing incorporation of both trust and perceived risk in the TAM, though as people grow more accustomed to e-commerce, they may perceive fewer risks (Ko, Jung, Kim, & Shim, 2004). Online retailing has continued to grow exponentially, such that the 1.66 billion global digital buyers in 2016 are expected to increase to 2.14 billion by 2021 (Rosengren, Lange, Hernant, & Blom, 2018). Furthermore, trust and perceived risk appear pertinent for millennial consumers, who tend to be risk-takers and thus perceive less risk than previous generations (Aruna & Anitha, 2015). To test these ideas, we conduct this research in Vietnam, where a large portion of the population is young (median age is about 29 years), and urbanization is accelerating. Furthermore, Vietnam is an emerging country, located in a strategic political and economic position in Southeast Asia, attracting many multinational companies in the world to invest and do business. Vietnam has a population of 100 million people, high economic growth rate, good Internet infrastructure covering 60% of its population, and 72% of its population uses smartphones, so e-commerce characterized by interactions between businesses' websites and customers is expected to significantly grow in the coming time. (Bui et al., 2020). Thus, a reassessment of whether perceived risk and trust should be included in the TAM, conducted in this southeast Asian country, is pertinent and justified, and it may assist in generalizing prior findings to similar, rapidly developing countries.

We also focus on Vietnam because more than half of its population uses the Internet as of 2017. Forsythe, Liu, Shannon, and Gardner (2006) reveal that more frequent shoppers who spend more money on online shopping perceive more significant benefits and less risk of Internet shopping. As Easley and Madden (2000) argue, we believe that researchers should be skeptical of results until they have been successfully replicated. By testing the applicability of the TAM in a non-Western, collectivist country, we seek to address several of these research gaps. According to Hofstede's website, Vietnam scored 70 on power distance, 80 on collectivism, 30 on uncertainty avoidance, and 40 on masculinity. Therefore, we test the applicability of the TAM to Vietnamese consumers' online shopping intentions, while we also consider whether it is appropriate to include perceived trust and risk as antecedents of TAM constructs in this developing Southeast Asian country.

According to Schwartz et al. (2012, p. 664), values are "trans-situational goals, varying in importance, that serve as guiding principles in the life of a person or group." They likely influence consumer behavior (Piscicelli, Cooper, & Fisher, 2015), in that values can be instrumental for behavioral intentions or affect behaviors through surrogate variables, such as attitude (Ramayah, Lee, & Mohamad, 2010). Schwartz's (2012) value taxonomy describes ten basic values divided into four higher-order categories: openness to

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change, conservation, self-enhancement, and self-transcendence. Bridges and Florsheim (2008) also cite utilitarian and hedonic online shopping goals as guides of consumer behavior. By definition, hedonism refers to fun and playfulness and reflects the experiential side of shopping; utilitarianism reflects a conception of task relation and rationality, often described in terms used to evaluate work performance (e.g., success, accomplishment) (Scarpi, 2012). According to Kostelijk (2016), the achievement and power dimensions of the Schwartz value taxonomy relate to utilitarian value propositions; they are elements of the self-enhancement category. Thus we predict that self-enhancement might serve as an antecedent of consumer purchase intentions. Unfortunately, little research has sought to include Schwartz's values in TAM theory. With this study, we investigate the extent to which self-enhancement values (achievement, power, and hedonism) predict online purchase intentions among Vietnamese consumers, with trust, included as a possible mediating variable. A person (or group) in any culture may have a different value orientation than the broader culture, so similar to McCarty and Shrum (2000), we use individual consumers as the unit of analysis, rather than the culture. Furthermore, regardless of geographical location, we assume the universality of self-enhancement considerations (Sedikides, Gaertner, & Vevea, 2005).

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Testing the Core TAM

The theoretical basis for this study is the well-known technology adoption model, famous for its predictive power, which makes it applicable across various situations (Venkatesh, 2000). To derive the research model for this study, we started with the TAM. According to Davis (1989), TAM theory postulates that perceived usefulness and perceived ease of use are critical determinants of a person's behavioral intentions to use a technology; perceived usefulness (PU) is "the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organizational context" (Davis, Bagozzi, & Warshaw, 1989, p. 985), and perceived ease of use (PEU) refers "to the degree to which the prospective user expects the target system to be free of effort" (Davis et al., 1989, p. 985). Both PEU and PU are crucial determinants of consumers' behavioral intentions (BI), which provide, according to the TRA (Ajzen & Fishbein, 1980, p. 288), "a measure of the strength of one's intention to perform a specified behavior," such as purchasing online. Greater PEU is instrumental for increased performance (Davis, 1989), and PEU also has a direct effect on PU (Agag & El-Masry, 2016; Venkatesh & Davis, 2000).

With these insights, the TAM receives substantial empirical support in terms of its ability to explain consumers' intentions to accept various types of technology and purchase online (Agag & El-Masry, 2016; Kim et al., 2008; McCoy et al., 2007; Pavlou, 2003; Tong, 2010). We seek to confirm the applicability of the TAM in Vietnam, though as Ajzen and Fishbein (1980) note when extending a model, new variables must be compatible with the existing ones. Therefore, to extend the TAM to any "unusual" context, we first must confirm the applicability of the model to that context. We apply the TAM to an online retail context to examine the relationships of Vietnamese consumers' PEU, PU, and BI toward online retailers' sites, with the prediction that the extent to which an online retailer's site is perceived as easy to use increases consumers' PU and intentions to shop. Furthermore, if an online shopping site appears useful, consumers are more likely to purchase from it. Therefore,

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H1: Consumers' perceived ease of use of online retailers' sites has a positive effect on the perceived usefulness of those sites.
H2: Consumers' perceived usefulness of online retailers' sites is positively related to their intentions to use those sites.
H3: Consumers' perceived ease of use of online retailers' sites has a positive effect on their intentions to use those sites.

Inclusion of Trust and Risk in the TAM

Trust in our study context is the subjective belief that an online store will fulfill its transactional obligations, as understood by the consumer (Kim et al., 2008). We use the definition of trust offered by Jarvenpaa, Tractinsky, and Saarinen (1999), as a consumer's willingness to rely on the seller, even if such action makes the consumer vulnerable to the seller. Because trust in the salesperson does not exist in online shopping settings, we refer to trust in the merchant organization (Jarvenpaa, Tractinsky, & Vitale, 2000). Another pragmatic approach to trust defines it "as a mechanism to reduce the complexity of human conduct in situations where people have to cope with uncertainty" (Grabner-Kraeuter, 2002, p. 44). Because of the uncertainty and complexities of online shopping environments, previous research articulates the importance of trust as a success element for online shopping. For example, with data from Australia, Israel, and Finland, Jarvenpaa et al. (1999) show that trust is instrumental for forming favorable attitudes, which increase consumers' willingness to purchase from online stores. Gefen et al. (2003) also find that consumer trust influences purchase intentions toward e-vendors. With a cross-cultural sample drawn from India, the United States, and Canada, Ganguly, Dash, Cyr, and Head (2010) identify trust as a significant predictor of purchase intentions. Agag and El-Masry (2016) identify a similar instrumental influence of trust on purchase intentions. Furthermore, theoretical and empirical evidence supports including trust in the TAM, in that trust influences both PU and PEU (Chircu, Davis, & Kauffman, 2000; Gefen & Straub, 2003; Pavlou, 2003). Following this research tradition, we anticipate a positive influence of trust on PEU and PU. Similar to Gefen et al. (2003), we also postulate that PU is a consequence of trust.

Perceived risk is another commonly identified consequence of trust (Ganguly et al., 2010). Risk perceptions have negative effects on consumer purchase intentions in online shopping settings, and research indicates that consumers prefer Internet stores that appear less risky (Jarvenpaa & Todd, 1997; Jarvenpaa et al., 2000; Tong, 2010). The influence of perceived risk on BI also relates to the notion of perceived behavioral control from the theory of planned behavior (Ajzen, 1991). In an online shopping context, consumers may perceive various types of risk, including financial, product performance, psychological, and time/convenience loss risk (Forsythe & Shi, 2003).

Therefore, trust in online retailers should positively influence consumers' attitudes toward online retailing sites and their BI (Limbu, Wolf, & Lunsford, 2012; Pavlou, 2003). It also relates negatively to the perceived risks of an online purchase; the more a consumer trusts the retailer, the less he or she will perceive risk associated with its site (McKnight, Choudhury, & Kacmar, 2002; Pavlou, 2003). In turn, the perceived risk might negatively influence online consumers' BI (Featherman & Pavlou, 2003; Park, Lee, & Ahn, 2004). With data from Chinese and U.S. samples, Tong (2010) finds that fewer Chinese consumers tend to trust e-commerce, and they also perceive higher risks of Internet shopping. We expect similarly culturally defined outcomes for our research. That is, with the recognition that including trust and perceived risk in the TAM is well supported, we argue that customers from different cultural

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backgrounds assign differing emphasis to various aspects of a shopping website (Singh, Zhao, & Hu, 2005), and we predict:

H4a: Consumers' trust in online retailers has a positive effect on their perceived ease of use of online retailers' sites.
H4b: Consumers' trust in online retailers has a positive effect on their perceived usefulness of online retailers' sites.
H4c: Consumers' trust in online retailers has a positive effect on their intentions to use online retailers' sites.
H4d: Consumers' trust in online retailers has an adverse effect on their perceived risk of online retailers.
H5: Consumers' perceived risk of online retailers has an adverse effect on their intentions to use online retailers' sites.

Including Self-Enhancement in the TAM

Personal values drive human behavior through their focus on individual motivations and desires (McCarty & Shrum, 2000; Ramayah et al., 2010). Self-enhancement relates to individualistic values in "the extent to which they motivate people to enhance their interests" (Follows & Jobber, 2000, p. 729). It has positive associations with specific consequences, such as convenience, effort, and cost involved (Ramayah et al., 2010). This variation of motivation enables people to feel good about themselves and maintain self-esteem (Blekesaune, 2015). Self-enhancement values in the Schwartz taxonomy consist of three basic values: power, reflecting social status and prestige, as well as control and dominance over others; achievement, which emphasizes personal success attained by demonstrating competence, according to social standards; and hedonism, referring to pleasure and sensual gratification for its own sake (Schwartz, 2007). Barnes and Pressey (2011) also note that arousal and individualism are critical drivers of higher-order needs (belonging, self-actualization) in the virtual world. Purchase intentions are need driven, so we anticipate that they are guided by some need and desire for the self or extended self. By acquiring a material good (i.e., purchasing), the consumer takes possession of a tangible object (Van Boven & Gilovich, 2003), which can constitute a proclamation of power and achievement. Another key reason for purchasing is to bring happiness (Van Boven & Gilovich, 2003). We posit that self-enhancement has a positive effect on consumers' intentions to purchase from online retailers. However, little consumer research establishes empirical support for the effect of self-enhancement on trust. Despite calls from Homer and Kahle (1988), we do not know of any studies that investigate possible mediating routes that might explain the positive effect of self-enhancement on online purchase intentions. Therefore, we hypothesize:

H6a: Self-enhancement has a positive effect on consumers' trust in online retailers.
H6b: Self-enhancement has a positive effect on consumers' intentions to use online retailers' sites.
H7: Consumers' trust in online retailers mediates the effect of self-enhancement on their intentions to use online retailers' sites.

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Control Variables

In line with relevant prior literature, we anticipate that several other variables might affect the hypothesized relationships. As control variables, we include purchase frequency (Pavlou, 2003), income per month, gender, and age (Nagra & Gopal, 2013).

METHODOLOGY

Sample and Data Collection Procedure

The data collection for this study took place in ten branches of a large commercial bank located in Hanoi and Ho Chi Minh City, Vietnam. With the help of the bank executive and employees, customers who visited the branches were approached and asked to take part in an online survey. Interested customers were provided a link to survey questionnaire, administered via Survey Monkey. The participants could complete the survey at the branch using computers or at home. The data were collected from May 1 through July 31, 2018. The participants included in this study were screened for English proficiency, so they all were able to read, write, and speak English, and they completed the questionnaires in English. Customers of the bank's branches were concerned because with the help of branch managers and employees, these customers were directly approached when going to the branches to make banking transactions to receive the questionnaire link. Doing so is expected to increase the number of survey respondents. Furthermore, only customers who were fluent in English would be selected because e-commerce is no longer limited to a country border and these English-proficient customers could completely compare goods and prices of companies in the world in order to make their optimal buying decisions. The sample included only people who had made at least one online purchase in the prior six months. They were asked to respond to the questionnaire based on their latest online purchase. Participants were given a small monetary gift in appreciation. Three hundred six participants completed the survey, and the final sample included 299 after we removed 7 cases due to missing responses.

About 67% of the respondents are women, and 65% are married. In terms of educational background, most of the respondents have at least a bachelor's degree (90%). The median age is 31–35 years. The respondents purchased online, on average, once every three months. The median income per month is 15–20 million VND (approximately 650–850 USD).

Measurement Instruments

The construct operationalization relies on established scales from pertinent literature (see the Appendix for specific construct items). For the trust, we used a seven-item scale adapted from Jarvenpaa et al. (1999). The perceived risk measure is based on four items derived from Forsythe and Shi (2003) that covers four types: financial risk, product performance risk, psychological risk, and time/convenience loss risk. We measured self-enhancement with a six-item scale from Schwartz (2007), covering three fundamental human values: achievement, power, and hedonism. Perceived ease of use, perceived usefulness, and behavioral intention comprise four, four, and three items, respectively, and were adapted from Pavlou (2003). The four control variables reflect the purchase frequency (Pavlou, 2003), income per

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month, gender, and age (Nagra & Gopal, 2013). The data were collected through a structured questionnaire with all the constructs, most of them measured on seven-point Likert scales.

ANALYSIS AND RESULTS

Measurement Model Evaluation

Confirmatory factor analysis (CFA) in AMOS 23 applied to all the multi-item scales: self-enhancement, perceived risk, trust, perceived usefulness, perceived ease of use, and intention. The CFA results exhibited sufficient overall model fit; all the fit indices exceed conventional cutoff values (Vandenberg & Lance, 2000). Specifically, the overall chi-square for this model was 548.05 ($p < .001$) with 284 degrees of freedom, CMIN/DF = 1.93, comparative fit index (CFI) = .95, Tucker-Lewis index (TLI) = .95, incremental fit index (IFI) = .95, and root mean square error of approximation (RMSEA) = .06. We find strong convergent validity for all items except two trust items, in that they load significantly on their intended constructs ($\geq .50$). We checked for discriminant validity by observing the interconstruct correlations, which were significantly different from 1. The average variance extracted (AVE) for each construct also exceeds the square of its largest inter factor correlation (Fornell & Larcker, 1981). Table 1 provides the correlation matrix for the constructs. Adequate discriminant validity is evident for all constructs because the diagonal elements are greater than the off-diagonal elements.

Table 1. Correlation between constructs

Construct	1	2	3	4	5	6
1. Intention	**0.91**					
2. Perceived risk	0.55	**0.73**				
3. Perceived usefulness	0.88	0.52	**0.88**			
4. Perceived ease of use	0.77	0.56	0.81	**0.83**		
5. Self-enhancement	0.49	0.33	0.52	0.57	**0.68**	
6. Trust	0.73	0.56	0.70	0.64	0.46	**0.79**

Note: Values on the diagonal are the square roots of the AVE.

With regard to reliability, all constructs present desirable levels of composite reliability (CR) and exceed the .60 minimum recommended (Bagozzi & Yi, 1988): intention (CR = .94), perceived risk (CR = .82), perceived usefulness (CR = .93), perceived ease of use (CR = .89), self-enhancement (CR = .61), and trust (CR = .89). Regarding the AVE, all constructs except self-enhancement exceeded the .50 threshold. Therefore, for all constructs, the indicators are sufficient and adequate in terms of how the measurement model is specified.

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Structural Model

Testing the Core TAM

To achieve our first research objective to test the applicability of the TAM in Vietnam, we run the core TAM first, with ease of use, usefulness, and behavioral intentions. The chi-square of the model is 120.43, df = 73, CMIN/DF= 1.65, GFI = .95, CFI = .98, TLI = .98, IFI = .99, and RMSEA = .05. Our findings confirm a positive and significant link between PEU and PU (β = .88, $p < .001$), in support of H1. Consumers' PEU concerning online retailers' sites has a positive effect on their PU of those sites. The relationship of PU and BI (β =.93, $p < .001$) also is significant, suggesting that consumers' perceptions of the usefulness of online retailers' sites relate positively to their intentions to use them, as we predicted in H 2. However, contrary to our prediction in H3, we find no significant direct link between PEU and BI (β = -.01, $p = .90$), a finding that also appears in previous research. For example, Pavlou (2003) does not find any significant association between PEU and intentions to transact, and Davis (1989) indicates that ease of use might affect BI indirectly, through PU. Together, this evidence indicates that perceived usefulness mediates the impact of perceived ease of use on behavioral intentions. We check for the specific indirect effect of PEU on BI with bootstrapping in AMOS 23 (2000 samples, 95% confidence interval); the lower bound of the confidence interval is .71, and the upper bound is 1.38. Because 0 does not appear in the confidence interval, we can conclude that PU mediates this relationship (Preacher & Hayes, 2008). The TAM can predict the online shopping intentions of Vietnamese consumers.

Trust and Risk in the TAM

Following our second research objective, we extend the core TAM to include perceived risk and trust and rerun the model in AMOS 23. With trust and risk included, this TAM reveals a good model fit: chi-square = 414.97, df = 223, CMIN/DF= 1.86, GFI = .90, CFI = .96, TLI = .95, IFI = .96, and RMSEA = .05. Consumers' trust in online retailers relates positively to their PEU of the retailers' sites (β =.74, $p < .001$, H4a), the PU of the sites (β =.13, $p < .001$, H4b), and BI to use the sites (β =.22, $p < .001$, H4c). However, trust does not have a significant effect on perceived risk (β =.07, $p = 34$), so among the predictions in H4, we must reject H4d but find support for H4a–4c. Besides, we cannot confirm H5, because perceived risk does not exert any significant effect on BI (β = -.05, $p = .06$). This quasi-significant finding is congruent with research that indicates that as consumers increasingly shop online, they perceive lower levels of risk than they did previously (Sims & Xu, 2012; cf. Jarvenpaa et al., 1999), as do people who purchase online more frequently (Ko et al., 2004). Thus, we argue that trust fits well with the TAM, but the inclusion of perceived risk as an antecedent of BI might be questionable. In the past 20 years, with the massive expansion of the Internet and online businesses, consumers may feel less threat when it comes to shopping online than they did before.

Self-Enhancement in the TAM

As detailed previously, we take a value perspective on the TAM and include self-enhancement, defined by the three lower-order values of achievement, hedonism, and power. We ran the model in AMOS 23 (see Figure 1) and test the hypothesized links among the constructs by estimating the structural equation model with the application of maximum likelihood (ML). The analysis reveals good model fit, with the

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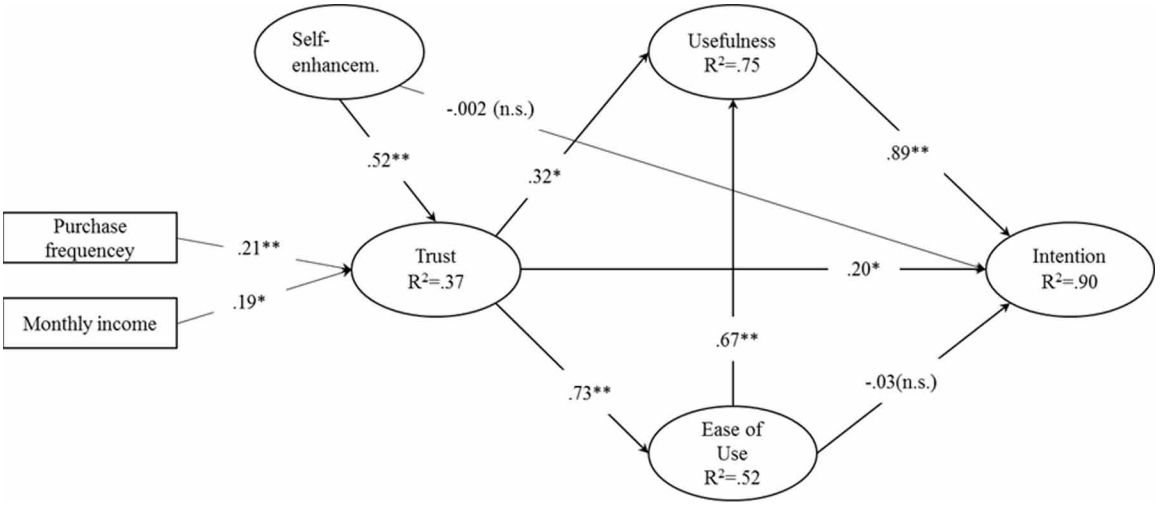
following statistics: chi-square = 513.65, df = 269 ($p < .001$), CMIN/DF = 1.91, CFI = .96, TLI = .95, IFI = .96, GFI = .89, and RMSEA = .06. Because all the fit indexes match conventional cut-off values, we deem the model acceptable (Vandenberg & Lance, 2000). The standardized path coefficients, together with the corresponding *p*-values, are in Figure 1. We find that self-enhancement has a significant positive effect on trust ($\beta = .52$, $p < .001$), which confirms H6a and is in line with previous research. However, self-enhancement does not have a direct association with BI ($\beta = -002$, $p = .96$), and we cannot confirm H6b. This unexpected result might signal strong mediation effects in the self-enhancement–intention relationship. We ran a bootstrap analysis in AMOS, which reveals that trust mediates the effect of self-enhancement on BI ($\beta = .18$, $p < .05$, confidence interval from .08 to .34). Because 0 is not included in the confidence interval, we argue that H7 is supported.

*Figure 1. Research model with path coefficients. Notes: n.s. = not significant, **p < .01, *p < .05. Control variables are gender, age, purchase frequency, and monthly income.*



The variance explained by BI is very high ($R^2 = .90$) and well above that cited by other researchers, suggesting that the proposed model captures many significant variables that influence online purchase intentions among Vietnamese consumers, given the sample size. Therefore, extending the TAM by integrating trust is well supported, and the inclusion of self-enhancement (Schwartz value) is justified.

Of the control variables, only income per month and purchase frequency (Pavlou, 2003) have significant positive effects on trust, as we show in Figure 1. This result makes intuitive sense; more financially solvent and frequent consumers likely trust online retailers more. However, similar to Hasanov and Khalid (2015), we do not find any effect of gender or age on any of the endogenous variables in the research model. This result suggests some similarity in consumer behavior across the world (cf. McCoy et al., 2007).

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DISCUSSION AND CONCLUSION

The primary purpose of this study was to test the applicability of the technology acceptance model to Vietnamese consumers' online shopping intentions and provide evidence in support of the inclusion of perceived risk and trust in the TAM. We also examine the extent to which the self-enhancement values in the Schwartz taxonomy (achievement, power, and hedonism) can predict online purchase intentions, both directly and indirectly through trust. The results broadly support the extended TAM, highlighting the important roles of self-enhancement, trust, perceived ease of use, and perceived usefulness in determining Vietnamese consumers' purchase intentions toward online retailers. This study thus makes both theoretical and practical contributions.

Contributions to Scholarship

The results show that TAM is applicable and useful for predicting consumers' online shopping intentions in Vietnam, an emerging, non-Western country. This finding is relevant and responsive to researchers' calls for more empirical evidence about the universality of TAM theory, especially in cultures marked by high power distance, uncertainty avoidance, and collectivism (McCoy et al., 2007). Consistent with the TAM, we find that perceived ease of use relates positively to perceived usefulness. Perceived usefulness is a significant determinant of behavioral intentions. However, contrary to the predictions of the TAM, but in line with Pavlou (2003), perceived ease of use has no significant direct effect on behavioral intentions. Instead, this effect is mediated by perceived usefulness, consistent with conclusions by Davis (1989). Perhaps learning how to use e-commerce websites is no longer a primary concern for today's consumers. Vietnamese consumers, who are generally young and highly educated, may not regard the perceived ease of use of retailers' sites as a crucial determinant of their purchase intentions.

This study integrates trust and perceived risk into the TAM in an online retailing context, revealing that trust is a direct antecedent of purchase intentions and an indirect determinant, through perceived usefulness; it does not have any significant adverse effect on perceived risk. Unlike previous studies (Jarvenpaa & Todd, 1997; Jarvenpaa et al., 2000; Tong, 2010) that report adverse impacts of risk perceptions on purchase intentions, we do not find any evidence of such a relationship. This finding is surprising; consumers in Asian countries typically are deemed risk-averse. We posit that an increasing number of Internet users also are online shoppers and perceive lower levels of risk associated with online shopping (Sims & Xu, 2012). The majority of our study participants also were urban, young, educated, and affluent, and they purchased products online relatively frequently. Thus, though trust fits well with the TAM framework, the inclusion of perceived risk as an antecedent is questionable.

Another novel contribution of this study reflects our attempt to integrate self-enhancement, one of Schwartz's human values, into the extended TAM, as an exogenous variable. Contrary to our hypothesis and the assertions of Bridges and Florsheim (2008), self-enhancement, comprised of achievement, power, and hedonism, does not function as a direct antecedent of online purchase intentions. Instead, trust mediates the relationship of self-enhancement with behavioral intentions. Consumers who strongly value self-enhancement are more likely to trust online retailers, which positively influences their purchase intentions toward those retailers. Trust thus emerges as a crucial mediating variable in the relationship between self-enhancement and purchase intentions. In light of research gaps and calls for more studies (Homer & Kahle, 1988), these findings offer important empirical insights into how self-enhancement can influence the purchase intentions of online consumers.

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Applied Implications

Consumers' perceptions of the ease of use of online shopping influence their perceived usefulness, which in turn influences their intentions to use retailers' sites. If consumers find online retailers' sites to be easy to use, they will consider the sites useful and likely transact with them. Therefore, online retailers should focus on design, usability, and user experience when building their sites. To enhance user acceptance of retail sites, it is essential that the sites be consumer-friendly, making it easy to browse, use, understand, interact, and transact.

Trust in retailers is a central influence on consumers' purchase intentions, with both direct and indirect effects through perceived usefulness. Accordingly, online retailers must deliver on their promises and commitments, meet consumers' expectations, and offer superior customer service. It is also important that e-vendors ensure the reliability and performance of their websites to enhance consumers' overall shopping experiences.

Self-enhancement values in the Schwartz taxonomy influence consumers' trust in online retailers, which positively influences their behavioral intentions. Understanding consumers' values thus might help online retailers reduce the uncertainty and complexity of online shopping environments, which in turn increases their propensity to purchase. The achievement and power dimensions of Schwartz's self-enhancement value are closely related to the utilitarian value proposition and the functional aspects of a product or service (Kostelijk, 2016), so e-vendors could benefit from emphasizing the utilitarian aspects of their websites. Perceived utilitarian value can be enhanced by an easy and user-friendly website, complete and precise product information, and sales promotions. However, consumers' motivations to shop include both utilitarian and hedonic aspects, so online retailers also should ensure that their websites offer hedonic attributes, another component of self-enhancement value based on experiences of fun and playfulness (Babin, Darden, & Griffin, 1994). To improve consumers' hedonic shopping motivations, online retailers can design websites that are enjoyable and playful and reflect the experiential side of shopping (Scarpi, 2012), to help consumers engage in shopping for fun and enjoyment (Van Boven & Gilovich, 2003). Online retailers' pleasurable and interactive shopping environments might offer a variety of products and also incorporate peripheral cues, such as music, image, video, and so forth.

Limitations and Research Directions

The data for this study were collected mostly from a highly educated, convenience sample of Vietnamese consumers, which could create some selection bias and limit the generalization of findings. Further research should attempt to replicate these findings among a more diverse, random sample that varies in education, age, and income. Another limitation is the use of a cross-sectional design; therefore, the results do not demonstrate causal relationships. Instead, research might adopt a longitudinal approach. This study examines the indirect effect of Schwartz's self-enhancement value on online purchase intentions through the mediating influence of trust; continued studies might examine the effects of other personal values, such as openness to change, conservation, or self-transcendence.

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REFERENCES

Agag, G., & El-Masry, A. A. (2016). Understanding consumer intention to participate in online travel community and effects on consumer intention to purchase travel online and WOM: An integration of innovation diffusion theory and TAM with trust. *Computers in Human Behavior*, *60*, 97–111. doi:10.1016/j.chb.2016.02.038

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. doi:10.1016/0749-5978(91)90020-T

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Prentice-Hall.

Aruna, M., & Anitha, J. (2015). Employee retention enablers: Generation Y employees. *SCMS Journal of Indian Management*, *12*(3), 94–103.

Babin, B. J., Darden, W. R., & Griffin, M. (1994). Work and/or fun: Measuring hedonic and utilitarian shopping value. *The Journal of Consumer Research*, *20*(4), 644–656. doi:10.1086/209376

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, *16*(1), 74–94. doi:10.1007/BF02723327

Barnes, S. J., & Pressey, A. D. (2011). Who needs cyberspace? Examining drivers of needs in Second Life. *Internet Research*, *21*(3), 236–254. doi:10.1108/10662241111139291

Blekesaune, M. (2015). Can self-enhancement values predict retirement behavior? An analysis combining survey and register data from Norway. *International Journal of Aging & Human Development*, *80*(2), 101–114. doi:10.1177/0091415015587161 PMID:26243324

Bridges, E., & Florsheim, R. (2008). Hedonic and utilitarian shopping goals: The online experience. *Journal of Business Research*, *61*(4), 309–314. doi:10.1016/j.jbusres.2007.06.017

Bui, N., Pham, L., Williamson, S., Mohebbi, C., & Le, H. (2020). Intention to use mobile commerce: Evidence from emerging economies. *International Journal of Enterprise Systems*, *16*(1), 1–30. doi:10.4018/IJEIS.2020010101

Chircu, A. M., Davis, G. B., & Kauffman, R. J. (2000). Trust, expertise, and e-commerce intermediary adoption. *AMCIS 2000 Proceedings*, 710-716.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Quarterly*, *13*(3), 319–340. doi:10.2307/249008

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, *35*(8), 982–1003. doi:10.1287/mnsc.35.8.982

Easley, R. W., & Madden, C. S. (2000). Replications and extensions in marketing and management research. *Journal of Business Research*, *48*(1), 1–3. doi:10.1016/S0148-2963(98)00080-0

Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption: A perceived risk facets perspective. *International Journal of Human-Computer Studies*, *59*(4), 451–474. doi:10.1016/S1071-5819(03)00111-3

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Follows, S. B., & Jobber, D. (2000). Environmentally responsible purchase behaviour: A test of a consumer model. *European Journal of Marketing*, *34*(5/6), 723–746. doi:10.1108/03090560010322009

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *JMR, Journal of Marketing Research*, *18*(1), 39–50. doi:10.1177/002224378101800104

Forsythe, S., Liu, C., Shannon, D., & Gardner, L. C. (2006). Development of a scale to measure the perceived benefits and risks of online shopping. *Journal of Interactive Marketing*, *20*(2), 55–75. doi:10.1002/dir.20061

Forsythe, S. M., & Shi, B. (2003). Consumer patronage and risk perceptions in Internet shopping. *Journal of Business Research*, *56*(11), 867–875. doi:10.1016/S0148-2963(01)00273-9

Ganguly, B., Dash, S. B., Cyr, D., & Head, M. (2010). The effects of website design on purchase intention in online shopping: The mediating role of trust and the moderating role of culture. *International Journal of Electronic Business*, *8*(4-5), 302–330. doi:10.1504/IJEB.2010.035289

Gefen, D. (2004). What makes an ERP implementation relationship worthwhile: Linking trust mechanisms and ERP usefulness. *Journal of Management Information Systems*, *21*(1), 263–288. doi:10.1080/07421222.2004.11045792

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Inexperience and experience with online stores: The importance of TAM and trust. *IEEE Transactions on Engineering Management*, *50*(3), 307–321. doi:10.1109/TEM.2003.817277

Gefen, D., & Straub, D. (2003). Managing user trust in B2C e-services. *e-Service, 2*(2), 7-24.

Grabner-Kraeuter, S. (2002). The role of consumers' trust in online-shopping. *Journal of Business Ethics*, *39*(1-2), 43–50. doi:10.1023/A:1016323815802

Hasanov, J., & Khalid, H. (2015). The impact of website quality on online purchase intention of organic food in Malaysia: A WebQual model approach. *Procedia Computer Science*, *72*, 382–389. doi:10.1016/j.procs.2015.12.153

Homer, P. M., & Kahle, L. R. (1988). A structural equation test of the value-attitude-behavior hierarchy. *Journal of Personality and Social Psychology*, *54*(4), 638–646. doi:10.1037/0022-3514.54.4.638

Jarvenpaa, S. L., & Todd, P. A. (1997). Is there a future for retailing on the Internet. *Electronic Marketing and the Consumer*, *1*(12), 139–154.

Jarvenpaa, S. L., Tractinsky, N., & Saarinen, L. (1999). Consumer trust in an Internet store: A cross-cultural validation. *Journal of Computer-Mediated Communication, 5*(2).

Jarvenpaa, S. L., Tractinsky, N., & Vitale, M. (2000). Consumer trust in an Internet store. *Information Technology and Management*, *1*(1-2), 45–71. doi:10.1023/A:1019104520776

Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, *44*(2), 544–564. doi:10.1016/j.dss.2007.07.001

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Ko, H., Jung, J., Kim, J., & Shim, S. W. (2004). Cross-cultural differences in perceived risk of online shopping. *Journal of Interactive Advertising*, *4*(2), 20–29. doi:10.1080/15252019.2004.10722084

Kostelijk, E. (2016). *The Influence of Values on Consumer Behaviour: The Value Compass*. Routledge. doi:10.4324/9781315560045

Limbu, Y. B., Wolf, M., & Lunsford, D. (2012). Perceived ethics of online retailers and consumer behavioral intentions: The mediating roles of trust and attitude. *Journal of Research in Interactive Marketing*, *6*(2), 133–154. doi:10.1108/17505931211265435

McCarty, J. A., & Shrum, L. J. (2000). The measurement of personal values in survey research: A test of alternative rating procedures. *Public Opinion Quarterly*, *64*(3), 271–298. doi:10.1086/317989 PMID:11114269

McCoy, S., Galletta, D. F., & King, W. R. (2007). Applying TAM across cultures: The need for caution. *European Journal of Information Systems*, *16*(1), 81–90. doi:10.1057/palgrave.ejis.3000659

McKnight, D. H., Choudhury, V., & Kacmar, C. J. (2002). The impact of initial consumer trust on intentions to transact with a web site: A trust building model. *The Journal of Strategic Information Systems*, *11*(3-4), 297–323. doi:10.1016/S0963-8687(02)00020-3

Nagra, G., & Gopal, R. (2013). An study of factors affecting on online shopping behavior of consumers. *International Journal of Scientific and Research Publications*, *3*(6), 1–4.

Park, J., Lee, D., & Ahn, J. (2004). Risk-focused e-commerce adoption model: A cross-country study. *Journal of Global Information Management*, *7*(2), 6–30. doi:10.1080/1097198X.2004.10856370

Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, *7*(3), 101–134. doi:10.1080/10864415.2003.11044275

Piscicelli, L., Cooper, T., & Fisher, T. (2015). The role of values in collaborative consumption: Insights from a product-service system for lending and borrowing in the UK. *Journal of Cleaner Production*, *97*, 21–29. doi:10.1016/j.jclepro.2014.07.032

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*(3), 879–891. doi:10.3758/BRM.40.3.879 PMID:18697684

Ramayah, T., Lee, J. W. C., & Mohamad, O. (2010). Green product purchase intention: Some insights from a developing country. *Resources, Conservation and Recycling*, *54*(12), 1419–1427. doi:10.1016/j.resconrec.2010.06.007

Rosengren, S., Lange, F., Hernant, M., & Blom, A. (2018). Catering to the digital consumer: From multichannel to omnichannel retailing. Academic Press.

Scarpi, D. (2012). Work and fun on the internet: The effects of utilitarianism and hedonism online. *Journal of Interactive Marketing*, *26*(1), 53–67. doi:10.1016/j.intmar.2011.08.001

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Schwartz, S. H. (2007). Value orientations: Measurement, antecedents and consequences across nations. Measuring Attitudes Cross-Nationally: Lessons from the European Social Survey, 161-193.

Schwartz, S. H. (2012). An overview of the Schwartz theory of basic values. *Online Readings in Psychology and Culture*, *2*(1), 11. doi:10.9707/2307-0919.1116

Schwartz, S. H., Cieciuch, J., Vecchione, M., Davidov, E., Fischer, R., Beierlein, C., ... Demirutku, K. (2012). Refining the theory of basic individual values. *Journal of Personality and Social Psychology*, *103*(4), 663–688. doi:10.1037/a0029393 PMID:22823292

Sedikides, C., Gaertner, L., & Vevea, J. L. (2005). Pancultural self-enhancement reloaded: A meta-analytic reply to Heine (2005). *Journal of Personality and Social Psychology*, *89*(4), 539–551. doi:10.1037/0022-3514.89.4.539 PMID:16287417

Sims, J., & Xu, L. (2012). *Perceived Risk of Online Shopping: Differences Between the UK and China.* Paper presented at the UKAIS.

Singh, N., Zhao, H., & Hu, X. (2005). Analyzing the cultural content of web sites: A cross-national comparison of China, India, Japan, and US. *International Marketing Review*, *22*(2), 129–146. doi:10.1108/02651330510593241

Tong, X. (2010). A cross-national investigation of an extended technology acceptance model in the online shopping context. *International Journal of Retail & Distribution Management*, *38*(10), 742–759. doi:10.1108/09590551011076524

Van Boven, L., & Gilovich, T. (2003). To do or to have? That is the question. *Journal of Personality and Social Psychology*, *85*(6), 1193–1202. doi:10.1037/0022-3514.85.6.1193 PMID:14674824

Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods*, *3*(1), 4–70. doi:10.1177/109442810031002

Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research*, *11*(4), 342–365. doi:10.1287/isre.11.4.342.11872

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, *46*(2), 186–204. doi:10.1287/mnsc.46.2.186.11926

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APPENDIX

Table 2. Constructs used in the research model

	Mean	SD	Factor loading	Alpha
Trust	4.60	1.16		.88
This online retailer is trustworthy in general.			.87	
This online retailer wants to be known as one who keeps promises and commitments.			.88	
I trust this online retailer keeps my best interests in mind.			.83	
I find it necessary to be cautious with this online retailer.				
This online retailer has more to lose than to gain by not delivering on their promises.			.51	
This online retailer's behavior meets my expectations.			.83	
This online retailer could not care less about servicing a person from Vietnam.				
Perceived risk	3.99	.89		.81
Do not trust that my credit card number will be protected by this online retailer.			.78	
Difficult to judge the quality of a product/service of this online retailer.			.72	
Do not trust that my personal information will be kept private by this online retailer.			.83	
Faster/easier to purchase locally.			.56	
Self-enhancement	4.74	.99		.84
It's important to me to show my abilities. I want people to admire what I do.			.65	
Being very successful is important to me. I hope people will recognize my achievements.			.68	
It is important for me to be rich. I want to have lots of money and expensive things.			.65	
It is important to me to get respect from others. I want people to do what I say.			.61	
Having a good time is important to me. I like to "spoil" myself.			.69	
I seek every chance I can to have fun. It is important to me to do things that give me pleasure.			.78	
Perceived ease of use	4.79	1.18		.89
My interaction with the retailers' Web sites in Vietnam clear and understandable.			.82	
Interacting with the retailers' Web sites in Vietnam do not require a lot of mental effort.			.76	
I find the retailers' Web sites in Vietnam are easy to use.			.90	
I find it easy to locate the information that I need in the retailer's Web sites in Vietnam.			.82	
Perceived usefulness	4.60	1.28		.93
Overall, I find the retailer's Web sites in Vietnam are useful.			.87	
I think the retailer's Web sites in Vietnam are valuable to me.			.93	
The content on the retailer's Web sites in Vietnam are useful to me.			.90	
The retailer's Web sites in Vietnam are functional.			.82	
Behavioral Intention	4.66	1.42		.94
It is likely that I will transact with the web retailer in the near future.			.92	
Given the chance, I intend to use the retailer's website.			.92	
Given the chance, I predict that I should use the retailer's website in the future.			.90	

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Section 4
Utilization and Applications

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Chapter 51
Reverse Logistics in E-Retaling

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ABSTRACT

Consumers mostly prefer internet for reasons such as accessing product immediately, convenience, time saving. However buying products without observing physically causes some troubles. This situation results in return of the purchased product. The return process that is going to be experienced by the customer who wants to return or change his/her product is important for the companies. Managing return process without troubles is going to affect loyalty, satisfaction, revisiting, repurchasing, consumers messages, which are going to be get across to his/her environment. Because of these reasons, it is imperative for the companies to pay attention to the reverse logistic activities that they will undertake for the end consumers. The aim of this chapter is to indicate the importance of reverse logistics in e-retailing.

INTRODUCTION

The elimination of borders with technology ensures the consumers to have the products from the other end of the world with one "click". Consumers can buy the product they want from the Internet, anytime, anywhere, and in the form of payment they want; they can easily compare models, colors and prices. Despite the many benefits of online shopping, some consumers consider that there are some risks of online shopping. Because consumers are acting according to the visuals and information given by the e-retailer. They cannot see, touch, try or test them closely thus they purchase the features which are promised about the product.The fact that the purchased product is not as expected (not being the suitable size, not having the specified features, etc.) or giving up after purchasing the product leads to a reverse logistics process between the consumer and the e-retailer. This process is one of the most important processes determining the fate of the relationship between e-retailer and consumer. Because, in today's conditions, not only the quality, function and utility of the product is important for consumers; but also

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experience in the process of purchasing the product is important. This study examines reverse logistics, e-retailing and the relationship between reverse logistics and e-retailing.

BACKGROUND

There are many definitions in the literature related to the reverse logistics. The first definitions are found in the scientific literature in 1970s. Authors such as Zikmund & Stanton (1971), Guiltinan & Nwokoye (1974) and Ginter & Starling (1978) have used terms such as "Reverse Channels" or "Reverse Flow" instead of the concept of reverse logistics in their study these years. Also they related reverse logistics definitions to recycling (De Brito & Dekker, 2004, p.4). For example, Zikmund and Stanton (1971, p.35) named "reverse logistics" as "reverse distribution" and defined it as: "Conceptually, reverse distribution is identical to the traditional channel of distribution. The consumer has a product to sell and, in essence, he assumes the same position as a manufacturer selling a new product. The consumer's (seller's) role is to distribute his waste materials to the market that demands his product". Lambert and Stock (1981) defined reverse logistics as; "going the wrong way on a one-way street because the great majority of product shipments flow in one direction" (Rogers & Tibben-Lembke, 2001, p.129). Murphy (1986) made a similar definition with Lambert and Stocker and he said that reverse distribution may occur in three cases. These are;

- Customer initiative-voluntarily returned goods.
- Industry initiative-recycling.
- Govemment initiative-product recalls (Murphy, 1986, p.12).

When the studies carried out in the following years are examined, it is seen that the definitions have begun to differentiate. For example, according to Rogers and Tibben-Lembke (1998) reverse logistics is "the process of planning, implementing, and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing value or proper disposal" (Rogers & Tibben-Lembke, 1998, p.2). Srivastava (2008:547) defines reverse logistics as "the process of planning, implementing, and controlling the efficient, effective inbound flow, inspection and disposition of returned products and related information for the purpose of recovering value".

Reverse logistics begins from end users (first customers) where used products are collected from customers (return products) and then attempts to manage end-of-life products through different decisions are undertaken including recycling (to have more raw materials or raw parts), remanufacturing (to resale them to second markets or if possible to first customers), repairing (to sell in the second markets through repairing), and finally, disposing of some used parts (Govindan et al., 2015, p.603). The important point here is; reverse logistics is not just the reverse of the forward logistics or supply chain (Bai & Sarkis, 2013, p.307).

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REVERSE LOGISTICS AND E-RETAILING

Reverse Logistics

Reverse Logistics has become a significant concept in today's supply chain operations (Gencer & Akkucuk, 2016, p.125). The products can take place in reverse flow in various situations. Generally, reverse flows are classified into commercial returns, returns with the warranty period, returns of end-of-use products, reusable container/boxes, etc. returns and others (Roghanian & Pazhoheshfar, 2014, p.348).

Blumberg (2005, p.66) classified the products falling under reverse logistics activities as:

- Products that are defective and need to be repaired or properly disposed of.
- Reusable, repairable or re-workable parts.
- Products that are robust but still left on the seller's shelf for being returned or not sold by the buyer.
- Products and supplies that are ongoing to life cycle but are recalled or obsolete.
- Recycled and reusable products, materials and goods that have been discarded.
- End of life products.

Reverse logistics is applied in many industries, including those producing chemicals, aircraft, computers, medical, automobiles, appliances and steel items (Roghanian & Pazhoheshfar, 2014, p.348, Gonzalez-Torre & Adenso-Diaz, 2006, p.528, Dowlatshahi, 2000, p.144). The efficient use of reverse logistics can help a firm to compete in its industry, especially when confronting intense competition and low profit margins (Dowlatshahi, 2000, p.144).

Reverse logistics examples can also be seen in the service sector. For instance, a holiday tour operator may need to repatriate its clients at short notice due to disease, civil unrest or severe weather conditions (Rushton et al., 2010, p.601).

There are three known features of reverse logistics (Shaik & Abdul-Kader, 2014, p.88);

- High uncertainties of supply on time, quantity and quality.
- Complexities in operations due to recovery options.
- Barriers.

A well-managed reverse logistics program can lead to savings in inventory handling, transportation and waste disposal costs, and can also increase customer satisfaction (Shaik & Abdul-Kader, 2014, p.88). Implementation of reverse logistics especially in product returns would allow not only for savings in inventory carrying cost, transportation cost, and waste disposal cost due to returned products, but also for the improvement of customer loyalty and futures sales (Roghaniana & Pazhoheshfar, 2014, p.348).

Reverse logistics is applied in many sectors and can provide many advantages to a company when it is applied effectively. In a reverse flow products can be in many situations as; commercial returns, warranty returns, end-use returns, reusable package returns. An effective reverse logistics operation provides some advantages to company directly as increased customer satisfaction, reduced resource investment levels and reduced storage and distribution costs (Govindan et al., 2012, p.204).

Many companies are unable to handle the complex networking necessary to have an efficient reverse logistics process. These companies are therefore outsourcing all or part of the reverse logistics process to third-party providers (Govindan et al., 2012, p.206).

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Reverse logistics activities constitute 3-4% of a company's total logistics costs. Companies who purchase reverse logistics assistance from third party providers could reduce up to 10% of their company's annual logistics costs (Govindan et al., 2012, p.206).

Reverse logistics is not optional but mandatory for successful companies, insofar as it can lead to both economic and strategic advantages through the reuse and recovery of materials, analyzing the whole productive process of a particular product (García Rodríguez et al., 2013, p.584).

Reverse Logistics Activities

There are different definitions in the literature related with reverse logistics activities.

Table 1. Reverse Logistics Activities

Author – Study Name	Reverse Logistics Activities
M. Thierry, M. Salomon, J. Van Nunen, L. Van Wassenhove (1995:118) - *Strategic issues in product recovery management*	• Reuse / Resale • Repair • Refurbishing • Remanufacturing • Cannibalization • Recycling • Incineration • Landfilling
M. Fleischmann, H. R. Krikke, R. Dekker, S. D. P. Flapper (2000:657) - *A characterisation of logistics networks for product recovery*	• Collection • Inspection / Separation • Re-processing • Disposal • Re-distribution
M. P. De Brito, R. Dekker (2002:13-14) - *Reverse logistics: A framework*	• Collection • Inspection / Selecting / Sorting • Re-processing / Direct Recovery • Redistribution
C. Zhao, W. Liu, B. Wang (2008:351) - *Reverse logistics*	• Resale / Reuse / Redistribution • Repair / Refurbishing • Remanufacturing • Recycling • Incineration • Landfill
S. Agrawal, R. K. Singh, Q. Murtaza (2015:77-78) - *A literature review and perspectives in reverse logistics*	• Product acquisition/Gate keeping • Collecting • Inspection and sorting • Disposition

Thierry et al. (1995, p.118), gathered reverse logistics activities in three stages: *Direct reuse*; reuse / resale; *Product recovery management*; repair, refurbishing, remanufacturing, cannibalization, recycling; *Waste management*; incineration, landfilling.

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Reuse / Resale

Reuse of products and materials is not a new process. Metal scrap brokers, waste paper recycling, and deposit systems for softdrink bottles are all examples that have been around for a long time. In these cases recovery of the used products is economically more attractive than disposal. In the recent past the growth of environmental concerns has given "reuse" increasing attention (Fleischmann et al., 1997, p.1).

Repair

The products are returned by the consumer/user to have it back in working order. The producer fixes or changes the damaged parts if necessary. It requires limited effort. Generally repaired products are comprehended as less quality products than those new products (Akdoğan & Coşkun, 2012, p.1642).

Refurbishing

The aim of the refurbishing is to bring used products to the stated quality.Quality standards are less rigorous than those for new products. After disassembling the used products into modules, all critical modules are inspected and fixed or replaced. Approved modules are reassembled into refurbished products. Military and commercial aircraft are examples of produrts that are refurbished. Refurbishing significantly enchances their quality and extends their service-life (Thierry et al., 1995, p.119).

Cannibalization

The aim of cannibalization is to rescue the limited parts of used products for reusage in other reverse logistics activities (i.e. repair, refurbish, remanufacture). There is no strict quality standard for cannibalization. It depends on the process where parts will be reused (Akdoğan & Coşkun, 2012, p.1643).

Remanufacturing

In reproduction, product value gained during fabrication is retained and and only the worn-out parts are replaced. For example, disposable cameras, mobile phones, printing presses, truck tires, automobile and airplane components and assembles, copy machines, and toner cartridges are reconditioned or remanufactured and resold (or leased) to end users. Remanufactured products incur costs that are 40–60% less than those incurred in delivery of new products (Kumar ve Putnam, 2008, p.312). Remanufacturing gives used products standards of quality as rigorous as original products with a lower cost (García Rodríguez et al., 2013:585). But remanufacturing centers require very high capital investment, are more technology-based and produce upgraded remanufactured goods (Srivastava, 2008, p.540).

Recycling

In recycling, products and components lose their identity and functionality (Thierry, 1995, p.120). Returned parts and products have to be transformed into raw material by means of melting, grinding etc. (Fleischmann, 1997, p.11). Recycling is the extraction of material to gain recyclable material for reuse in new products (Khor & Udin, 2013, p.73). In some fields, recycling of spent products is well established,

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mainly due to the profitability of recovering secondary materials from spent products. For example, in the paper industry and the metal industry, the use of scrap as a raw material for new products is routine (Schultmann, 2006, p.1035).

Incineration and Landfilling

The last alternative is to incinerate or landfill the returned products because of the limited capacity of waste yards. In case of providing no gain to the company even being involved in recovery process, it can be seen as an option (Akdoğan & Coşkun, 2012, p.1642).

According to Agrawal et al. (2015, p.77-8) the reverse logistics process contains four main steps:

Product Acquisition / Gate Keeping

Product acquisition is the process of acquisition of used prod-ucts, components or materials from the end users for furtherprocessing. Since product returns are uncertain in terms of time, quantity and quality, their acquisition is important for the success of reverse logistics. Gate keeping represents the main entrance of reverse logistics. It is a set of practices performedusually by retailers to identify the products which are allowed intothe system or given back to the user after resolving issues at theirend (Agrawal et al., 2015, p.78).

Collecting

Collection, which is the first of the reverse logistics activities refers to bringing the products from the customer to a point of recovery (De Brito & Dekker, 2002, p.13). Collecting consist of used, damaged, unwanted or outdated products, as well as packaging and shipping materials from the end-user or the reseller (Rogers & Tibben-Lembke, 1998, p.10).

Inspection and Sorting

Product returns may be commercial returns, service returns, distribution returns or end of life returns. So a separate inspection of each item is required for sorting the products. Its overall appearance and state of the constituting elements need to be evaluated. Products and components are sorted out based on this evaluation (Agrawal et al., 2015, p.78).

Disposition:

There are two types of disposition (Krumwiede et al., 2002, p.328):

1. *On-site disposition* involves activities that take place at the customer's facility to handle issues related to product concerns. The product may be repaired or replaced on-site.
2. *Off-site disposition* involves shipping the defective product to a different facility for repair, replacement, or disposal. Companies such as Wal-Mart use dedicated redistribution or processing centers for their off-site processing efforts.

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Reasons of Reverse Logistics

The main reasons of the growing interest in reverse logistics can be called as business factors and environmental factors. In the early days, this interest was originated from the increasing attention of consumers about environmental impacts of used products, environmental legislation, waste management, environmental issues and pollution reduction. Later on, the economical advantages of using return products, increasing customer satisfaction, rising market share, decreasing costs, and added value to the logistics network have become interesting contents of reverse logistics (Keyvanshokooh et al., 2013, p.10183).

According to De Britto ve Dekker (2002, p.6) the reasons of applying reverse logistics are classified as; economics (direct-indirect), legislation and extended responsibility.

Economics as a driving force relates to all recovery actions where the company has direct or indirect economic benefits. The previous regards profit from recovery actions, e.g. because of abating costs, dwindling on the use of materials, or obtaining valuable spare parts. This provides direct benefits to companies. As a result of the increased environmental awareness of the society, improving relations with its customers and increasing their reputation, have become economical reasons that provide benefits to companies.

Legislation is the introduction of any legal obligation that a company must re-evaluate its products or accept them back, e.g. packaging recycling quotas in Europe.

Extended responsibility is that the operator or organization which is responsible and acts in accordance with certain principles when carrying out activities related to reverse logistics.

De Britto ve Dekker (2002, p.8-9) also added that returns may originate from production, distrubition and consumer/user: *Manufacturing returns*; raw material surplus, quality-control returns, production leftovers; *distribution returns*; product recalls, commercial returns (e.g. unsold products, wrong/damaged deliveries), stock adjustments, functional returns; *customer/user returns*; reimbursement guarantees, warranty returns, service returns (repairs and spare-parts), end-of-use, end-of-life.

According to Tan and Kumar (2003, p.30-2) reasons of reverse logistics are:

- **Government Legislation:** Several countries have enacted environmental legislation that charges the producers with responsibility for the whole product life cycle. Some companies are not waiting to be forced into legislative compliance. They are preparing for the inevitable day when the producer will be made fully responsible for the disposal of the product at the end of its useful life. For example, Fuji Xerox in Asia is actively collecting used toners from laser printers for recycling as part of their reverse logistics program.
- **Shortening Product Life Cycles:** New designs are brought onto the market at an ever faster pace to persuade consumers to buy more often. While consumers have benefited from a greater variety and choice of products as well as improved performance, this trend inevitably results in more unsold products, more returns, more packaging materials, and more waste.
- **New Direct Channels of Distribution:** New channels are being developed to provide consumers with easier and quicker ways to purchase products. Direct channels (e.g. e-commerce) increase the likelihood of returned products, such as items damaged in transit. As direct channels serve customers not only locally but also globally, managing returns will become increasingly complicated and expensive. Thus, direct channels will add pressure on reverse logistics networks.
- **Market Forces:** Reverse logistics can also be used to replace customers' obsolete or slow moving inventories with newer goods. If existing parts held by the dealers are not selling well, companies

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like Caterpillar Asia give their dealers a generous return allowance to Exchange for new parts that their customers really need. Caterpillar Asia has an e-commerce program for their dealers to return their existing parts in exchange for parts in new products.

- **Shifting of Power Within the Supply Chain:** Increased competition has enabled customers to become more powerful in the supply chain. A recent survey conducted in Singapore among logistics service providers confirms that the customers are rapidly becoming the most important driver of logistics management.

According to Blumberg (2005, p.183) end-users, return the products because of many reasons:

- The product does not work (partially or completely).
- Product damaged during shipment or when opened.
- The use of the product is very complicated / the usage instructions are not user friendly.
- The desired result or performance level is not compatible with the other items of the product.
- The product is in the wrong color or size.
- Product price is too high.
- Causes of other customer regrets (change of opinion, in fact only a request to rent or test, etc.).

Relations of Reverse Logistics With Some Concepts

Reverse logistics is constantly mixed with green logistics, green supply chain, waste management, and closed loop supply chain because the birth point of all is environmental protection and environmental friendly production. However, these concepts are similar to each other and are separated from each other.

Reverse Logistics and Forward Logistics

Logistics is *the process of planning, implementing, and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements.* Reverse logistics includes all of the activities that are mentioned in the definition above. The difference is that reverse logistics encompasses all of these activities as they operate in reverse (Rogers & Tibben-Lembke 1998, p.2).

In many industries where customers return products for warranty repair, replacement, remanufacturing, or recycling, reverse logistics costs are higher relative to forward logistics costs. The flow cost of a product backwards-from the consumer to the producer-is nine times higher than the cost of the same product-forward-to-consumer-flow. Often the transport, storage and / or processing of the returned item causes higher costs per item (Stock, 2008, p.25-5).

As it can be seen in Figure 1, the flow in the forward channel is towards the consumer, while in the reverse channel the consumer is moving towards the generator. In forward logistics, companies can predict what will be needed at each level. On the other hand, the reverse logistics flow is more sensitive and less predictable than the forward logistics flow (Tibben-Lembke & Rogers, 2002, p.271).

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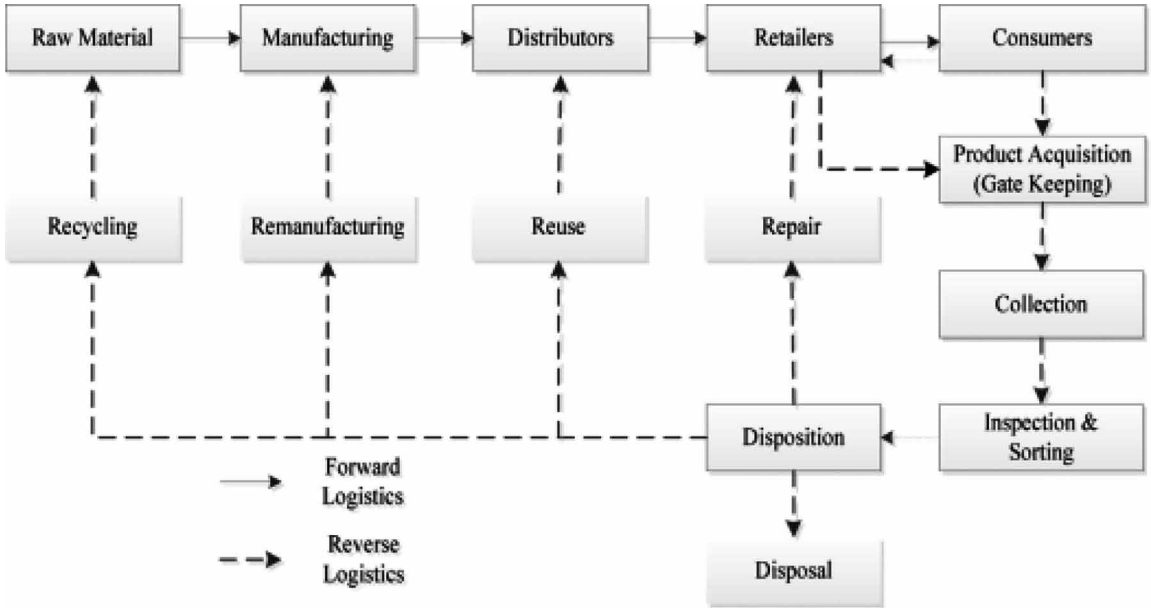
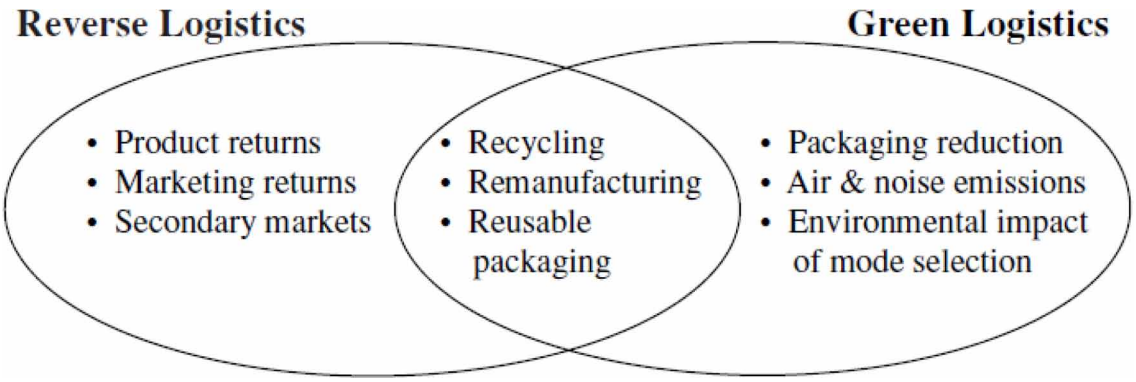
Figure 1. Process of forward logistics and reverse logistics
Source: *(Agrawal, Singh, & Murtaza, 2015).*



Reverse Logistics and Green Logistics

Green logistics describes all attempts to measure and the minimize the ecological impact of logistics activities (Gencer & Akkucuk, 2016, p.129). Reverse logistics and green logistics are two concepts that are often intermixed with each other. Although they have common features such as recycling, they both have different content.

Figure 2. Comparison of reverse logistics and green logistics
Source: *(Rogers, Tibben-Lembke, 2001)*



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Some green logistics activities can be called as reverse logistics. For example, the use of reusable products and reproduction are both in the field of reverse and green logistics. But, many green logistics activities are not related to reverse logistics. For instance, designing a disposable package that reduces energy consumption or requires less packaging is not a reverse logistics activity. Designing a product to use less plastic is not a reverse logistics activity, but it is in the field of reverse logistics to design a product to benefit from reusable packaging (Rogers & Tibben-Lembke, 1998, p.103).

Reverse Logistics and Waste Management

Waste management deals with the collection and processing of wastes efficiently (Şengül, 2011, p.410). Reverse logistics and waste management, which are the basic fields of collecting and processing wastes effectively and efficiently, are different concepts. The main issue here is that the waste is a term with serious legal consequences. For example; Import of waste is forbidden. Reverse logistics focuses on products that have some value in order to be revaluable and their introduction into a new supply chain as output (De Britto & Dekker, 2002, p.4).

Waste reduction has become a prime concern in industrialized countries. For a variety of economic, environmental or legislative reasons, companies have become more accountable for final products, after they sell those products (Roghaniana & Pazhoheshfar, 2014, p.348). Waste management is a key process to protect the environment and conserve resources. In recent years, policies of governments towards waste management have focused on waste avoidance, reuse and recycling (Sbihi & Eglese, 2007, p.105).

Reverse Logistics and Closed Loop Supply Chain Management

The implementation of closed loop supply chain (CLSC) strategies enables companies to reduce negative environmental impacts of their business. In general, CLSC can be seen as the tradition forward supply chain supplemented by reverse operations for recovered products that are reprocessed and eventually reenter the forward supply chain (Stindt & Sahamie, 2014, p.271). For example, for copiers, where manufacturers or other companies within the distribution chain can directly reuse parts of the old machines or can remanufacture them. Thus supply chain transforms to closed loop supply chain (Schultmann et al., 2003, p.58).

The full CLSC includes (Blumberg, 2005, p.71);

- Forward logistics and direct supply chain management.
- Reverse logistics.
- Depot repair, processing, diagnostics, and disposal.

In essence, this strategic value of CLSC and reverse logistics management operations will have a very positive effect in terms of (Blumberg, 2005, p.78);

- Decrease in return costs.
- Increase value of recovered product.
- To provide the reliability, sustainability and dependability of the supported product and very important information on this subject.

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- Reducing shipping and storage costs of deliveries under small packages and reducing the period of partial or complete liquidation.
- It can be counted as fully automatic and fully controlled recycling process.

Benefits of Reverse Logistics to Companies

Retailers who adopt a more "consumer-friendly" approach to return policies provide higher levels of service to their permanent customers, thereby increasing customer satisfaction with high sales and profitability goals. Service failure; Customer satisfaction, customer loyalty, quality of service, trust and behavioral intentions lead to negative progress. For this reason operating effective reverse logistics programs is a critical part of retail business. Because in recycling activities that originate from a service failure, these programs often show the most visible and possibly last endeavor of the company (Horvath et al., 2005, p.191-2).

Implementing reverse logistics programs to reduce, reuse, and recycle wastes from distribution and other processes produces tangible and intangible value and can lead to better corporate image (Srivastava, 2008, p.538). For example; Nike, the shoe manufacturer encourages consumers to bring their used shoes to the store where they had purchased them after their usage. They ship these back to Nike plant where these are shredded and made into basketball courts and running tracks. Nike also donates the material to the basketball courts and donates fund for building and maintaining these courts, thus enhancing the value of brand (Ravi et al., 2005, p.332). Also these activities are a marketing incentive to purchase their products (Rogers & Tibben-Lembke, 1998, p.24).

Returned products can be classified as used long life-cycle products, used short life-cycle products, new established products and new innovative products. Table 2 shows the opportunities that will be provided to the companies in case the products in these criteria are returned (Avitatthur ve Shah, 2004, p.86-88).

Table 2. Business opportunities from product returns

<table>
<tr><td rowspan="2">Late
(Used Product)</td><td colspan="3">Reverse supply chain scale economies</td></tr>
<tr><td colspan="2">Used long life-cycle products</td><td>Used short life-cycle products</td></tr>
<tr><td rowspan="2">Product Return Timing</td><td colspan="2">Low business opportunity</td><td>User product market
Stable raw material source
Commercial disposal</td></tr>
<tr><td colspan="2">Primary market</td><td>High volume market
Secondary market</td></tr>
<tr><td rowspan="2">New
(New Product)</td><td colspan="2">New established products</td><td>New innovative products</td></tr>
<tr><td>Low</td><td>Product return potential</td><td>High</td></tr>
</table>

Source: (Avitatthur, Shah, 2004)

New Established Products

Established products are ones that have been in the market for some time while innovative products are ones launched in the market very recently. Through previous experience and word-of-mouth, customers are generally well aware of established products. The returns for established products are mostly due to

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product failure or other quality problems. Hence, the potential for product returns soon after purchase is low for established products.

New Innovative Products

Innovative products have a high product returns potential. So even if a new product has a large market potential, most of the potential customers are likely to be risk averse and would hesitate to buy the product. Many new technology products like the cell phone set, digital camera and DVD player fall in this category. Fashion goods like garments and sun glasses also fall in this category. The returns for innovative products could also be from retailers if the product has a short life in the market. If remanufactured products are sent back to the primary market, the reverse supply chain network originates at the customer and ends at the firm. If remanufactured products are directed to a secondary market, the reverse supply chain network originates at the customer, passes through the firm and ends in the secondary market.

Used Long Life-Cycle Products

Long life-cycle products are products that have high durability and little change in product design. such products are owned for long time durations. Household goods like ceiling fans and steel almirahs are examples of long life-cycle products. The potential of used product returns is low for such products. Creating reverse supply chains is least attractive for used product returns of long life-cycle products. Moreover, the usage of the product for a long period vastly reduces the potential of restoring it through remanufacturing to the same quality as that of a newly manufactured product. Hence, such products have limited scope for reuse and as a source of raw material.

Used Short Life-Cycle Products

Product returns of used short life-cycle products hold immense business opportunities especially for developing nations. Newer and better versions of these products get launched on a continuous basis, which motivates the customer to keep upgrading at regular time intervals. Products such as televisions, refrigerators and automobiles, even though used for some years, can be restored to very good working condition through remanufacturing. Products such as computers get obsolete within a few years but are still in working condition that is almost as good as at the time of purchase. Products such as floor carpets deteriorate after some time and have to be replaced. The potential for disposal by the customer is high for such products.

E-RETAILING

Since the beginning of the 2000s, there has been a significant increase in the use of the inte#rnet. This development is also reflected in the commercial life, and in particular, consumer electronic commerce has become a major and important segment of the new digital economy.

The retail sector is a sector that has emerged in the last two centuries. The first fabric store is R.H. It was opened in 1858 by Macy. In 1930, Marshall Field opened the first department store in Illinois (Nardal & Şahin, 2011, p.191).

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Shopping from the internet has emerged as one of the most popular internet applications. In the beginning, although sales of durable items such as books outside the food were the sales center, nowadays, almost every product can be sold online (Bourlakis et al., 2008, p.64).

E-retailing is an important trade channel without distances between products and consumers (Nardal & Şahin, 2011, p.190).

The rapid development of information technology and internet presents the retailers with the opportunities for expansion to new online segments. The increase of users' purchase power and the combination of online consumption habit and the forms of mobile and social online shopping promote the growth of online retail market (Chen et al., 2014, p.261).

In parallel with the increasing use of the Internet, e-retailing sector is also growing. Besides;

- Consumers can shop at anytime.
- Consumers have access to products not available in their geographic region.
- An increase in high-speed internet access connections.
- Lower connection costs.
- Increasing consumer competence, e-commerce activity will continue to grow as the availability and ease with which the Internet provides consumers the ability to handle needed tasks increasingly develops (Changchit, 2006, p.177).

The young generation is passionate about e-retailing because they feel the benefits such as (Subramanian et al., 2014, p.70):

- Convenience
- Time saving
- A good deal of product information
- Door to door services
- 24–7 services

An e-retailing research report commissioned by the Goodman Group states that online shopping now accounts for almost a fifth of all purchases in developed markets and is growing at a rate of 15–20% a year (Yang et al., 2014, p.5382).

Consumers can visit e-retailers not only to buy products and services but also to gather information and even browse (Altuğ & Özhan, 2012, p.2).

The results of the research conducted by the Nielsen Research Company on 30,000 Internet users in 60 countries in 2014 are shown in Table 3. According to the table, people between the ages of 21-34, referred to as "Millennials", are the most frequent visitors of e-retailers and the most frequent online shopping group. The most important reason for this result is the fact that people belonging to " Millennials" came to the world in the era of information. Based on this conclusion, it can be interpreted that online shopping will include people called as "Baby Boomers" who are between the ages of 50-64 and in the following years online shopping will include people over the age of 65 called as "Silent Generation". Thus, as the "Millennials" grows, the increase in the volume of shopping made in electronic environment and the expansion of the products sold will be seen.

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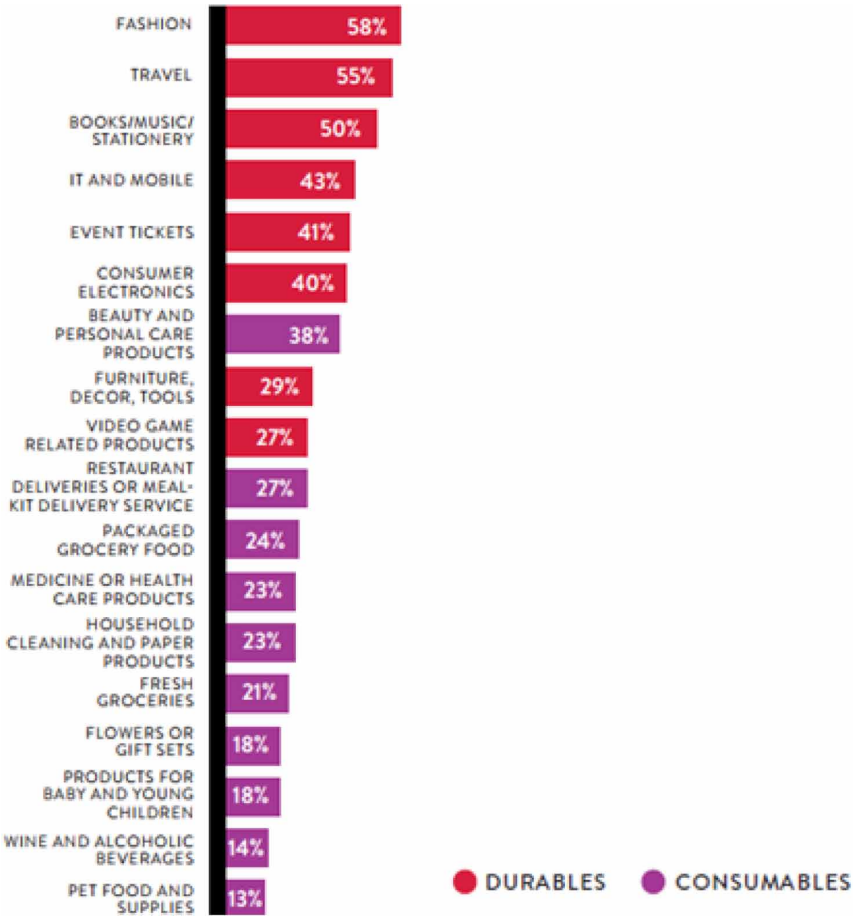
Table 3. Global average percent of the population ranges that make up online purchase intenders

	Will Browse Online	Will Buy Online
Generation Z (under 20)	6-9%	5-9%
Millennials (Generation Y) (21-34)	49-59%	52-63%
Generation X (35-49)	25-28%	25-30%
Baby Boomers (50-64)	7-13%	6-13%
Silent Generation (65+)	1-3%	1-3%

Source: (Nielsen, 2014)

As internet usage is increasing, so is online shopping, especially in those countries whose marketing infrastructures are well developed. Consumers can shop at anytime and have access to products not available in their geographic region. Furthermore, they are now able to access the Internet, not only from their personal computers, but from advanced electronic devices such as PalmPilots and mobile phones (Changchit, 2006, p.177).

Figure 3. Online purchase rates for categories
Source: *(Nielsen, 2017)*



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Durable and service-oriented categories form the baseline of entry for e-commerce, and their popularity continues to expand. More than half of global respondents in the online study say they've purchased fashion products (58%) or travel products or services (55%) online, and half say they've purchased books, music or stationery.

Consumable categories, in contrast, have been slower to gain popularity among online shoppers, but that is changing-especially for categories that are filling particular need states exceptionally well. In fact, nearly four in 10 global respondents (38%) say they've purchased personal-care and beauty products online, and about onefourth say they've ordered meal-kit or restaurant delivery services (27%) or packaged grocery food (24%) online. (Nielsen, 2017, p.5).

Information Which Must Be Shared With Consumers in E-Retailing

Retailers selling in electronic environment must inform consumers about business, product, sales process, contract conditions, storage of personal information, solution process to be applied in case of disagreement. The information provided must be accurate and valid (Svantesson & Clarke, 2010, p.33-35).

Information About The E-Retailer

Sometimes e-retailing is an appropriate environment for internet scams. An electronics store with a professional look can be created, managed, moved and removed within a few hours. For this reason, consumers need some information to be able to trust e-retailers. E-retailers should at least provide the following information regarding the safety of consumers:

- Information about the identity of the e-retailer.
- Information on where the e-retailer is registered.
- Information on the physical location of the e-retailer.
- All contact information of the e-retailer, including physical address, mailing address, e-mail address and phone number.

Information About The Product

Because consumers need some information in order to be able to evaluate the characteristics, quality and price of the products, companies should share the following information with their customers:

- In addition to service and maintenance information, a correct, appropriate and detailed description of the product, product specifications, use, limitations (eg, geographical restrictions on use, etc.).
- Information about after-sales service provided by the vendor, manufacturer or third party
- Information on the total cost of the product, including related taxes and surcharges (such as delivery costs).
- Breakdown of all costs.
- The functional currency.
- Information about warranties and guarantees.
- Information about safety.

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Information About The Sales Process

While it may be easy to order a particular product, it can be very difficult for a consumer to understand the rules about the sales process. For this reason, e-retailers should work to provide a streamlined sales process that will enable consumers to fulfill their orders as easily as possible. For the protection of the e-consumer, the e-retailer should at least provide the following information about the sales process:

- Information on estimated delivery time and method.
- Information on current order tracking system.
- Information about the payment process.
- Information about revocation, change and return policies as well as the right to revoke or withdraw.
- Information on what to look for in credit card statements in case of sales by credit card.
- Information on security measures for shopping.

Information About The Terms of The Contract

Studies show that few consumers ever take the time to read the terms and conditions they agree to when entering into contracts online. For example, in one such study 90% of the respondents indicated that they never read the whole agreement, while at the same time 64% indicated that they always click ''I agree''. Furthermore, 55% did not believe that they entered into a legally binding contract when clicking ''I agree!''.

Businesses, including e-retailers, must provide easily accessible information about the terms and conditions of the contracts they sign. To protect consumers, the following information needs to be shared with consumers:

- The terms of the contract, expressed in clear and simple language.
- Information on how to negotiate the terms of the contract.
- Technical facilities for the protection of the terms (such as printing or downloading).

Information About How The Consumers' Personal Data Will Be Dealt With

The study of Lightner et al. (2002, p.378) on Turkish and American university students reveals that Turkish students have high anxiety about shopping safety when shopping on the internet.

Personal information of a consumer is an important source of commercial value. For this reason, e-retailers usually try to collect as many customers' personal information as possible. However, this creates a conflict with consumer privacy. E-retailers need to provide e-consumers with at least the following information:

- How to collect the data.
- What that data will be used for.
- Who can access the data.
- How to keep the data secure.

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Information About Applicable Dispute Resolution

When few consumers decide to buy or not to buy a product, it considers the existence of a dispute resolution process. However, due to negative experiences consumers will revisit and customer loyalty will suffer greatly and victim consumers and consumer protection associations will try to find in the media the unfair behavior by e-retailers. Therefore, e-consumer protection schemes require e-retailers to share at least the following information about the dispute process:

- Limitations on the ways in which the consumer may apply for compensation, for example the binding of court provisions.
- Applicability of law.
- Provisions of arbitration.
- Options for mediation.
- Applicable internal/ external complaints systems.

Accuracy and Validity of Information

The information given above must be stated in the Consumer Protection Regulations which are valid both before and after the shopping. In addition, the consumer must be informed about how long this information is valid.

A consumer will have to read all the information at the beginning of every visit to the website unless they are certain that any changes have been made to the information. If an e-retailer shows the date of publication of the information it has made amendments, the consumer may evaluate the sections that need to be read again if they notice the changes. In case of a dispute, e-retailers need to store old information so that consumers can access it in the future.

Confirmation of The Transaction

Consumer protection regulation should require e-retailers to provide consumers with a prompt confirmation of the transaction as soon as an order has been placed. That confirmation should contain information acknowledging that the order has been accepted, information regarding expected delivery time and method used, as well as information regarding payment and applicable cancellation rights and procedures. Furthermore, the confirmation should be printable and possible to store in electronic form (for example, emailed at consumer's option or made available as a downloadable file).

Stages of E-Retailing Purchasing Process

Rowley (1998), as seen in Figure 4, indicated that shopping on the internet occurred in four stages.

At the first stage, consumers are looking at the pages of e-retailers and examining the products. In the second stage, they decide which product to buy and place an order. The third stage consists of security and payment. The installment facilities offered to the consumer, different payment options, and the assurance that their information will not be shared with third parties in a safe manner will play an important role in the preference of the e-retailer. The final stage is to deliver the products to the consumer. The most

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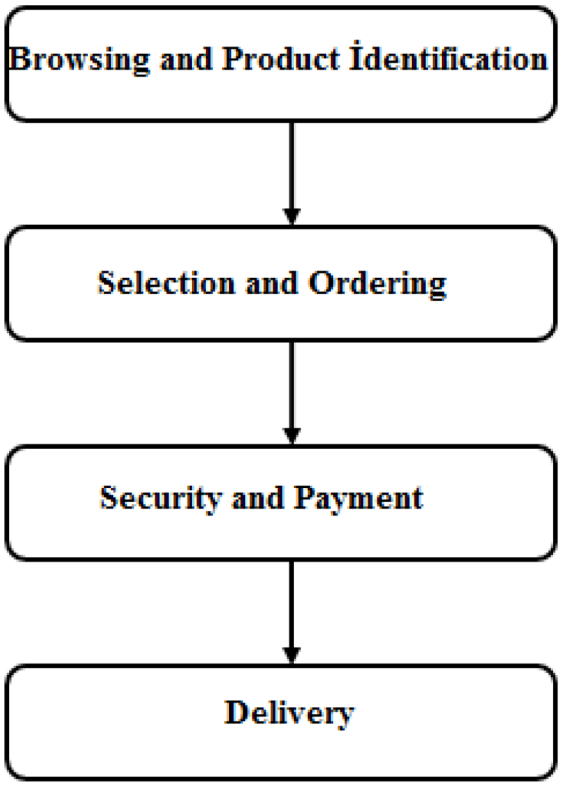
important steps for e-retailers in this process is to deliver security and products to consumers on time. Because the experience on the last two stages will affect the consumer's decision to resume shopping.

Figure 4. Stages of online purchasing process
Source: *(Rowley, 1998).*



According to Zhang et al. (2011, p.192) in general, online buying behavior can be understood in two stages: *the first stage* is primarily concerned with encouraging people to purchase online and *the second* is to encourage them to repurchase, which is critical if the e-commerce vendor is to succeed.

According to another research, the online purchase process involves three stages (Subramanian et al., 2014, p.70):

- **Pre-Sales Stage:** At this stage, while customers try to make a decision to select a specific e-retailer, e-retailers try to attract consumers by offering affordable products with good service.
- **Online Sales Stage:** During the online sales phase, customers make online purchases from e-retailers that provide ease of use and security.
- **Post Sales Stage:** In the last stage, e-retailers have to deliver products safely and help customers if there are any problems with the product.

As it seen, both customers and e-retailers have different roles and goals at different stages.

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High quality services at a low price, fast delivery of goods combined with enhanced website performance retain customers in e-retailing. Product characteristics (such as variety, quality and price), shopping experience (such as effectiveness, convenience and pleasure), customer service (such as responsiveness, assurance, reliability, tangibility and intangibility), and consumer risks (such as social risk, economic risk, performance risk, privacy risk and policy risk) ensure that e-retailers make a difference in the buying process. Additionally these factors affect consumer online purchasing behaviors; customers'perspective, e-retailers'reputation, other customers'comments or feedbacks and pre- and post-sales services (Subramanian et al., 2014, p.70).

Distribution Channels in E-Retailing

Physical stores are not always required to contact retailers and potential customers for logistics, to deliver products for payment. Distribution types in e-retailing; virtual retailers, brick and mortar retailers, and direct retailers (Dennis et al., 2004, p.206-7):

- **Virtual Retailers:** Only sell web-based products. Virtual retailers can do the retailing activities like; price and product comparisons and payment systems easier and quicker than physical retailers. The most known of virtual retailers, called "virtual retailers" or "pure play retailers" is Amazon, which started selling books on the internet in 1995.
- **Bricks and Mortar Retailers:** Is a name used to identify traditional retailers operating in the e-commerce environment with the establishment of virtual retailers. Bricks and mortar retailers have been given names to describe the physical store of the retailer. The biggest difference with virtual retailers is that the customers of bricks and mortar retailers have the chance to go to the physical store and check the product before purchasing the product.
- **Direct Retailers:** Offers a variety of distribution channels for consumers in the retail sector. As examples of direct distribution; Catalog marketing that has been used since the 1800s, door-to-door sales by Avon since 1960, telephone sales since 1970, and 24-hour shopping methods that have been in use since the 1980s.

Differences Between E-Retailing and Physical Retailing

Online shopping offers a variety of benefits to consumers, such as international accessibility, low costs, extensive information about the product, flexibility and convenience. On the other hand, the interaction between the seller and the customer in online shopping is in an uncertain environment, the confidentiality of personal information, the uncertainty of products and orders cause customers to perceive online shopping as more risky than traditional face-to-face shopping (Bulut, 2015, p.56).

According to Grewal et al. (2004, p.703-4), the difference between physical retailing formats and e-retailing is technology. Authors say that selling products such as jewelery, fine art works are much more difficult than selling in physical store because of the needs of trying, touching, tasting while buying them.

Hsiao (2009, p.89) says that economic and psychological differences between e-retailing and physical retailing are as shown in Table 4.

According to Turban et al. (2015, p.141-2), the differences between physical and electronic retailers are as follows:

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Table 4. Economic and psychological differences between store shopping and online shopping

Characteristics		
Attributes	**Store shopping**	**Online shopping**
Information Gathering/Shopping	• Travel cost	• No travel cost
	• Travel time	• No travel time
	o More shopping fun	o Less shopping fun
	o Less information uncertainty	o More information uncertainty
Purchase/Transaction	• Higher purchase price	• Lower purchase price
	o Less distrust feelings caused by transaction	o More distrust feelings caused by transaction
Delivery	• No waiting time for delivery	• Waiting time for delivery
	o Less inconvenience caused by delivery	o More inconvenience caused by delivery
	• Economic function	o Psychological function

Source: (Hsiao, 2009)

- **Customer Research Cost:** With today's shopping search and comparison engines and the use of mobile devices, the cost of customer research is much lower in e-retailing.
- **Delivery Time:** Physical stores, usually fulfil the order quickly. However, online companies are constantly reducing the time between purchase and consumption. In addition, some of the e-retailers have begun to develop distribution services on major metropolises the same day. Since the different stores sell similar products at similar prices, the delivery time has become a very important factor for e-retailers.
- **Delivery Costs:** Traditional retailers have to spend some money to build or rent a store, stock up, advertise a store, etc. On the other hand, e-retailers need to pay for packaging and shipment; Advertising and inventory costs are lower. These costs change depending on the products, geographical location and many other factors.
- **Tax Difference:** In many countries, the reduction in the amount of the tax applied to foreign online products is one of the advantages of e-retailing.
- **Price:** Not only online sellers but also "click and mortar" companies can offer lower prices for the same products.
- **Other Factors:** Consumers usually want to "touch and feel" before buying online. Especially young people prefer to go to a physical store to inspect the products and check the prices, and then buy the product with a lower price online. This is called "showrooming". In addition, shoppers can use apps on their mobile devices to compare prices. Recent shopping trends show that more people are shopping online and spending more money.

In addition, e-retailing offers flexible options for more efficient consumption of consumer needs (Torabi et al., 2015, p.130).

Despite these differences, many companies today are engaged in electronic retailing as well as physical retailing to expand their customer portfolio and retain existing customers. Most major retailers such as Wall-Mart, Tesco, and Sears are integrating electronic retail into their existing operations, especially since they have achieved sales volume (Nardal & Şahin, 2011, p.191). This type of firm is called "*brick and click*". *Brick* is the physical store, and *Click* is the online store. In recent years, such firms have

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increased both at global and national scale. For example; companies like Mango, Zara, H&M operate in brick and click form.

Reverse Logistics and E-Retailing

There are businesses where reverse logistics is a part of the fabric of their organizations. For example, the mail order/catalogue companies can experience return rates on dispatched goods of up to 50 per cent, especially where fashion items are concerned (Rushton et al., 2010, p.598). According to recent industry reports, average return rates for products purchased online have reached levels as high as 22%. In contrast, product return rates average a more reason-able 8.1–8.7% for traditional retailers, according to 2013 reportsby the Retail Equation and the National Retail Federation (Rao et al., 2014, p.295).

Reverse logistics plays an important role in electronic commerce (Zuluaga, 2005, p.40). Reverse logistics activities in e-commerce applications are as shown in Table 5.

Table 5. Reverse logistics and e-commerce

E-Commerce Applications	Reverse Logistics Tasks
Marketing	• Advertisement of available used products, parts or material. • Notification of used products, parts or material, currently sought.
Purchasing	• Search for suppliers/customers • Making purchasing commitments • Receive information of expected delivery • Respond to request for sought used products, parts or materials
Sales	• Price setting (i.e. fixed, negotiations, auction • Order processing • Tracking and tracing orders • Customer invoicing, collection and payment
Post Sales / Service	• Product tracking • Customer support • Customer / product monitoring

Source: (Zuluaga, 2005)

In the shopping made from the internet, the products can not be seen closely, they can not be examined sufficiently, they can not be tried (especially in textile products) thus the number of returns increases. These returns cause both the retailer and the manufacturer to endure some costs.

Table 6 shows the direct and indirect costs of online returns in terms of retailers and producers. As seen in the table, customer dissatisfaction is an important cost item for both retailers and producers.

According to a report by Ryder (2010), over 13% of all HDTVs and 14% of all cellular phones are returned with well over half having no fault: again suggesting the incidence of retail borrowing. It is because of retail borrowing (one form of return fraud) that several retailers such as Target, Home Depot, and Saks have reassessed their return policies (Griffis et al., 2012, p.283).

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Table 6. Online return costs

Direct costs	Indirect costs
Retailer costs	
Lost consumer revenue	Lost bargaining power with suppliers
Original costs of bringing the product to the market	Negative impact on brand
Customer service costs	Weakened competitive advantage due to customer dissatisfaction
Processing costs for returns	Impact on customer lifetime value and switching costs
Increased inventory cycle time	
Manufacturer costs	
Lost revenue from retailers	Retailers frustrated with product returns processing
Processing costs for returns	Impact on customer lifetime value due to customer dissatisfaction
Increased inventory cycle time	Added burdens and distractions for logistics operations

Source: (Jayaraman, Ross, & Agarwal, 2008)

FUTURE RESEARCH DIRECTIONS

It has been seen that a large majority of studies on reverse logistics have been made for industrial consumers while literature review has been conducted.More academic publications on the reverse logistics processes for end users will be important for both consumers ' awareness and enterprises to develop themselves in this field.

CONCLUSION

Nowadays many consumers are biased towards online shopping. This bias prevents them from making purchases on the Internet (consumers do not shop in any way) or restrict them (they only purchase products that do not have the risk of returning them in terms of themselves. The increased number of brick and click style stores will be effective in the disappearance of this bias."Brick and click" style stores offer consumers more options than an e-retailer to return the product they buy.

As consumers can send the product that they want to return to the e-retailer via cargo, they can also return the product to the physical store.Thus, such stores will allow consumers to overcome the return process without a problem, and they will ensure the reverse logistics activities in e-retailing to be more active and customers to be more satisfied with this process. E-retailers' ability to manage the reverse logistics process will result in customer satisfaction. Satisfied customers will improve their revisit, repurchasing and loyalty behaviors towards that e-retailer and they will introduce their e-retailer with word-of-mouth.

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REFERENCES

Agrawal, S., Singh, R. K., & Murtaza, Q. (2015). A literature review and perspectives in reverse logistics. *Resources, Conservation and Recycling*, *97*, 76–92. doi:10.1016/j.resconrec.2015.02.009

Akdoğan, M. Ş., & Coşkun, A. (2012). Drivers of reverse logistics activities: An empirical investigation. *Procedia: Social and Behavioral Sciences*, *58*, 1640–1649. doi:10.1016/j.sbspro.2012.09.1130

Altuğ, N., & Özhan, Ş. (2012). Trakya bölgesi'ndeki üniversitelerde görev yapan öğretim elemanlarının online alışverişten algıladıkları risk ve fayda üzerine bir araştırma. *Öneri, 10*(38), 1-10.

Avitatthur, B., & Shah, J. (2004). Tapping product returns through efficient reverse supply chains: Opportunities and issues. *IIMB Management Review*, *16*(4), 84–93.

Bai, C., & Sarkis, J. (2013). Flexibility in reverse logistics: A framework and evaluation approach. *Journal of Cleaner Production*, *47*, 306–318. doi:10.1016/j.jclepro.2013.01.005

Blumberg, D. F. (2005). *Introduction to managament of reverse logistics and closed loop supply chain processes*. Taylor& Francis Group.

Bourlakis, M., Papagiannidis, S., & Fox, H. (2008). E-consumer behaviour: Past, present and future trajectories of an evolving retail revolution. *International Journal of E-Business Research*, *4*(3), 64–76. doi:10.4018/jebr.2008070104

Bulut, Z. A. (2015). Determinants of repurchase intention in online shopping: A Turkish consumer's perspective. *International Journal of Business and Social Science*, *6*(10), 55–63.

Changchit, C. (2006). Consumer perceptions of online shopping. *Issues in Information Systems*, *7*(2), 177–181.

Chen, Y. G., Zhang, W. Y., Yang, S. Q., Wang, Z. J., & Chen, S. F. (2014). Referral service and customer incentive in online retail supply chain. *Journal of Applied Research and Technology*, *12*(2), 261–269. doi:10.1016/S1665-6423(14)72342-9

De Brito, M. P., & Dekker, R. (2002). *Reverse logistics: A framework*. Econometric Institute Report EI 2002-38. Erasmus University Rotterdam.

De Brito, M. P., & Dekker, R. (2004). A framework for reverse logistics. In Reverse Logistics: Quantitative Models for Closed-Loop Supply Chains. Berlin: Springer. doi:10.1007/978-3-540-24803-3_1

Dennis, C., Fenech, T., & Merrilees, B. (2004). *E-retailing*. London: Routledge.

Dowlatshahi, S. (2000). Developing a theory of reverse logistics. *Interfaces*, *30*(3), 143–155. doi:10.1287/inte.30.3.143.11670

Fleischmann, M., Bloemhof-Ruwaard, J. M., Dekker, R., Van Der Laan, E., Van Nunen, J. A. E. E., & Van Wassenhove, L. N. (1997). Quantitative models for reverse logistics: A review. *European Journal of Operational Research*, *103*(1), 1–17. doi:10.1016/S0377-2217(97)00230-0

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Fleischmann, M., Krikke, H. R., Dekker, R., & Flapper, S. D. P. (2000). A characterisation of logistics networks for product recovery. *Omega*, *28*(6), 653–666. doi:10.1016/S0305-0483(00)00022-0

García-Rodríguez, F. J., Castilla-Gutiérrez, C., & Bustos-Flores, C. (2013). Implementation of reverse logistics as a sustainabletool for raw material purchasing in developing countries: The case of Venezuela. *International Journal of Production Economics*, *141*(2), 582–592. doi:10.1016/j.ijpe.2012.09.015

Gencer, Y. G., & Akkucuk, U. (2016). Reverse Logistics: Automobile Recalls and Other Conditions. In U. Akkucuk (Ed.), *Handbook of Research on Waste Management Techniques for Sustainability* (pp. 125–154). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-9723-2.ch007

Gonzalez-Torre, P., & Adenso-Diaz, B. (2006). Reverse logistics practices in the glass sector in Spain and Belgium. *International Business Review*, *15*(5), 527–546. doi:10.1016/j.ibusrev.2006.05.010

Govindan, K., Palaniappan, M., Zhu, Q., & Kannan, D. (2012). Analysis of third party reverse logistics provider using interpretive structural modeling. *International Journal of Production Economics*, *140*(1), 204–211. doi:10.1016/j.ijpe.2012.01.043

Govindan, K., Soleimani, H., & Kannan, D. (2015). Reverse logistics and closed-loop supply chain: A comprehensive review to explore the future. *European Journal of Operational Research*, *240*(3), 603–626. doi:10.1016/j.ejor.2014.07.012

Grewal, D., Iyer, G. R., & Levy, M. (2004). Internet retailing: Enablers, limiters and market consequences. *Journal of Business Research*, *57*(7), 703–713. doi:10.1016/S0148-2963(02)00348-X

Griffis, S. E., Rao, S., Goldsby, T. J., & Niranjan, T. T. (2012). The customer consequences of returns in online retailing: An empirical analysis. *Journal of Operations Management*, *30*(4), 282–294. doi:10.1016/j.jom.2012.02.002

Horvath, P. A., Autry, C. W., & Wilcox, W. E. (2005). Liquidity implications of reverse logistics for retailers: A markov chain approach. *Journal of Retailing*, *81*(3), 191–203. doi:10.1016/j.jretai.2005.07.003

Hsiao, M. H. (2009). Shopping mode choice: Physical store shopping versus e-shopping. *Transportation Research Part E, Logistics and Transportation Review*, *45*(1), 86–95. doi:10.1016/j.tre.2008.06.002

Jayaraman, V., Ross, A. D., & Agarwal, A. (2008). Role of information technology and collaboration in reverse logistics supply chains. *International Journal of Logistics: Research and Applications*, *11*(6), 409–425. doi:10.1080/13675560701694499

Keyvanshokooh, E., Fattahi, M., Seyed-Hosseini, S. M., & Tavakkoli-Moghaddam, R. (2013). A Dynamic Pricing Approach for Returned Products in Integrated Forward/Reverse Logistics Network Design. *Applied Mathematical Modelling*, *37*(24), 10182–10202. doi:10.1016/j.apm.2013.05.042

Khor, K. S., & Udin, Z. M. (2013). Reverse logistics in Malaysia: Investigating the effect of green product design and resource commitment. *Resources, Conservation and Recycling*, *81*, 71–80. doi:10.1016/j.resconrec.2013.08.005

Krumwiede, D. W., & Sheu, C. (2002). A model for reverse logistics entry by third-party providers. *Omega*, *30*(5), 325–333. doi:10.1016/S0305-0483(02)00049-X

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Kumar, S., & Putnam, V. (2008). Cradle to cradle: Reverse logistics strategies and opportunities across three industry sectors. *International Journal of Production Economics*, *115*(2), 305–315. doi:10.1016/j.ijpe.2007.11.015

Lightner, N. J., Yenisey, M. M., Ozok, A. A., & Salvendy, G. (2002). Shopping behaviour and preferences in ecommerce of Turkish and American university students: Implications from cross-cultural design. *Behaviour & Information Technology*, *21*(6), 373–385. doi:10.1080/0144929021000071316

Murphy, P. (1986). A preliminary study of transportation and warehousing aspects of reverse distribution. *Transportation Journal*, *25*(4), 12–21.

Nardal, S., & Şahin, A. (2011). Ethical issues in e-commerce on the basis of online retailing. *Journal of Social Sciences*, *7*(2), 190–198. doi:10.3844/jssp.2011.190.198

Nielsen. (2014). *E-commerce:Evolution or revolution in the fast-moving consumer goods world?* Author.

Nielsen. (2017). *What's in-store for online grocery shopping*. Author.

Rao, S., Rabinovich, E., & Raju, D. (2014). The role of physical distribution services as determinants of product returns in internet retailing. *Journal of Operations Management*, *32*(6), 295–312. doi:10.1016/j.jom.2014.06.005

Ravi, V., Shankar, R., & Tiwari, M. K. (2005). Analyzing alternatives in reverse logistics for end-of-life computers: ANP and balanced scorecard approach. *Computers & Industrial Engineering*, *48*(2), 327–356. doi:10.1016/j.cie.2005.01.017

Rogers, D. S., & Tibben-Lembke, R. (1998). *Going Backwards: Reverse Logistics Trends and Practices*. Pittsburgh, PA: Reverse Logistics Executive Council.

Rogers, D. S., & Tibben-Lembke, R. (2001). An examination of reverse logistics practices. *Journal of Business Logistics*, *22*(2), 129–148. doi:10.1002/j.2158-1592.2001.tb00007.x

Roghaniana, E., & Pazhoheshfar, P. (2014). An optimization model for reverse logistics network under stochastic environment by using genetic algorithm. *Journal of Manufacturing Systems*, *33*(3), 348–356. doi:10.1016/j.jmsy.2014.02.007

Rowley, J. (1998). Internet food retailing: The UK in context. *British Food Journal*, *100*(2), 85–95. doi:10.1108/00070709810204075

Rushton, A., Croucher, P., & Baker, P. (2010). *The handbook of logistics & distribution management*. Kogan Page.

Sbihi, A., & Eglese, R. W. (2007). Combinatorial optimization and green logistics. *Springer*, *5*(2), 99-116.

Schultmann, F., Zumkeller, M., & Rentz, O. (2006). Modeling reverse logistic tasks within closed-loop supply chains: An example from the automotive industry. *European Journal of Operational Research*, *171*(3), 1033–1050. doi:10.1016/j.ejor.2005.01.016

Şengül, Ü. (2011). Tersine lojistik kavramı ve tersine lojistik ağ tasarımı. *Atatürk Ü. İİBF Dergisi, 10. Ekonometri ve İstatistik Sempozyumu Özel Sayısı,* 407-429.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Shaik, M. N., & Abdul-Kader, W. (2014). Comprehensive performance measurement and causal-effect decision making model for reverse logistics enterprise. *Computers & Industrial Engineering*, *68*, 87–103. doi:10.1016/j.cie.2013.12.008

Srivastava, S. K. (2008). Network design for reverse logistics. *Omega*, *36*(4), 535–548. doi:10.1016/j.omega.2006.11.012

Stindt, D., & Sahamie, R. (2014). Review of research on closed loop supply chain management in the process industry. *Flexible Services and Manufacturing Journal*, *26*(1-2), 268–293. doi:10.100710696-012-9137-4

Stock, J. R. (2008). *Logistics engineering handbook* (G. Don Taylor, Ed.). Boca Raton, FL: CRC Press Taylor&Francis Group.

Subramanian, N., Gunasekaran, A., Yu, J., Cheng, J., & Ning, K. (2014). Customer satisfaction and competitiveness in the Chinese e-retailing: Structural equation modeling (SEM) approach to identify the role of quality factors. *Expert Systems with Applications*, *41*(1), 69–80. doi:10.1016/j.eswa.2013.07.012

Svantesson, D., & Clarke, R. (2010). A best practice model for e-consumer protection. *Computer Law & Security Review*, *26*(1), 31–37. doi:10.1016/j.clsr.2009.11.006

Tan, A., & Kumar, A. (2003). Reverse logistics operations in the Asia-Pacific Region conducted by Singapore based companies: An empirical study. *Conradi Research Review*, *2*(1), 27–50.

Thierry, M., Salomon, M., Van Nunen, J., & Van Wassenhove, L. (1995). Strategic issues in product recovery management. *California Management Review*, *37*(2), 114–135. doi:10.2307/41165792

Tibben-Lembke, R., & Rogers, D. S. (2002). Differences between forward and reverse logistics in a retail environment. *Supply Chain Management*, *7*(5), 271–282. doi:10.1108/13598540210447719

Torabi, S. A., Hassini, E., & Jeihoonian, M. (2015). Fulfillment source allocation, inventory transshipment, and customer order transfer in e-tailing. *Transportation Research Part E, Logistics and Transportation Review*, *79*, 128–144. doi:10.1016/j.tre.2015.04.004

Turban, E., King, D., Lee, J. K., Liang, T. P., & Turban, D. C. (2015). *Electronic commerce a managerial and social networks perspective*. London: Springer.

Yang, S., Liao, Y., Shi, C. V., & Gao, C. (2014). Heuristics for solving an internet retailer's dynamic transshipment problem. *Expert Systems with Applications*, *41*(11), 5382–5389. doi:10.1016/j.eswa.2014.03.004

Yuthayotin, S. (2015). *Access to justice in transnational B2C e-commerce: A multidimensional analysis of consumer protection mechanisms*. Springer. doi:10.1007/978-3-319-11131-5

Zhang, Y., Fang, Y., Kee Wei, K., Ramsey, E., McCole, P., & Chen, H. (2011). Repurchase intention in B2C e-commerce - A relationship quality perspective. *Information & Management*, *48*(6), 192–200. doi:10.1016/j.im.2011.05.003

Zhao, C., Liu, W., & Wang, B. (2008). Reverse logistics. *International Conference on Information Management, Innovation Management and Industrial Engineering*, *1*, 349-353.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Zikmund, W. G., & Stanton, W. J. (1971). Recycling solid wastes: A channels of distribution problem. *Journal of Marketing*, *35*(3), 34–39. doi:10.2307/1249787

Zuluaga, J. P. S. (2005). *Reverse logistics: Models and applications* (Unpublished doctoral dissertation). Universitat Pompeu Farba, Barcelona, Spain.

KEY TERMS AND DEFINITIONS

Brick and Click: "Brick" is the physical store, and "click" is the online store. In recent years, such firms have increased both at global and national scale.

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Chapter 52
Evaluating E-Commerce-Related Distribution and Warehousing in Terms of Sustainability

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ABSTRACT

In this chapter, the relationships between logistics operations and e-commerce are investigated. The logistics operations are discussed under the distribution and warehousing subjects. The effects of e-commerce on these activities are analyzed by considering the social, environmental, and economic dimensions of sustainability in a broad perspective. For evaluating distribution of e-commerce products, current last-mile operations, trends, and future expectations are investigated in the sustainability concept. Furthermore, the effects of e-commerce on warehouse types and operations are presented. Besides that, location and layout of warehouses, materials used in warehouse buildings, and material handling equipment are discussed with a sustainability perspective.

INTRODUCTION

In the last 50 years, the population of the world increased by almost 108% and the ten-year average population growth is almost 16%. (United Nations Department of Economic and Social Affairs, 2019) Since the borders of the world have evaporated by the effect of globalization and the widespread usage of the internet, the purchasing behavior of the consumers of the growing population has been chang-

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ing rapidly in a global environment. Customers have begun to prefer purchasing from online stores to use their time more efficiently. This change and the global economy affected many industries such as manufacturing and lead to emerge new sectors such as e-commerce.

According to Lawrence et al. (1998) e-commerce is "buying and selling information, products, and services using any of the thousands of Internet computer networks". In 2019, worldwide e-commerce sales were US$ 3.53 trillion, and e-commerce revenues are forecasted to increase to US$ 6.54 trillion in 2022 (Clement, 2019). E-commerce retailing is growing 20% while the traditional retailing is growing 6% annually. However, e-commerce is still just a small part of the total €21 trillion retailing markets in the projection of 2019 (Laudon & Traver, 2016).

In the last decade, logistics has been greatly influenced by the growth of e-commerce. Logistics and cargo companies have been forced to change their operations and facilities to keep pace with the growth of e-commerce and to adopt new delivery services, delivery points and shorter delivery times. These firms have to provide various tailor-made solutions to meet their customers' fulfillment operations and last-mile delivery requirements. In the meantime, partial shipments and cargo shipments have increased. New distribution models for last-mile-delivery, have emerged. Customer demands are more various and in smaller sizes according to the past (Boysen, Fedtke, & Weidinger, 2018). Due to changing of customer order types, warehouse operations such as receiving, storing, picking and delivering and types have also changed. Fulfillment centers (FC) are established to meet the customers' changed expectations.

By e-commerce become widespread, consumers visit and shop from brick and mortar (B&M) stores less than before. Although consumers' movement has decreased (Mokhtarian, 2004), the transportation of goods that is triggered by e-commerce has increased all around the world. Increment of transportation level caused traffic congestions. Furthermore, it produces air pollution and noise. That means a decrease in life quality especially in the center of the cities. According to the U.S. Energy Information Administration Report on energy usage (2019), in 2018, about 28% of total U.S. energy consumption was due to transporting people and goods. Besides that, transportation is the largest producer of greenhouse gas emissions (GHG) with 29% in 2017 (Environmental Protection Agency, 2019). Warehouses also play a significant role in producing GHG. By air conditioning, lighting and material handling operations, warehouses produce 13% of supply chains GHG (World Economic Forum, 2009).

The effect of transportation on energy usage and carbon emission takes the attention of the researchers and leads them to focus on the issue from a sustainability perspective. Because it is a popular subject for the last three decades, sustainability has many definitions. One of the accepted definitions is "*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*" (World Commission on Environment and Development., 1987). There are three major aspects of sustainability; environmental, economic and social.

Environmental sustainability is defined as "*a condition of balance, resilience, and interconnectedness that allows human society to satisfy its needs while neither exceeding the capacity of its supporting ecosystems to continue to regenerate the services necessary to meet those needs nor by our actions diminishing biological diversity*" by Morelli (2011). Environmental sustainability issues usually include GHG, air and water pollution, biodiversity, waste management, recycling, water consumption, energy consumption, usage of neutral resources, usage of renewable energy, environmentally-conscious customers and businesses, environmentally-friendly products, environmentally-friendly packaging. Economic sustainability is defined as "*maintenance of capital, or keeping capital intact*" (Goodland et al., 2002). Economic sustainability issues usually include global e-commerce sales and the percentage of e-commerce in gross domestic products (GDP) and the cost of products. McKenzie (2004) defines

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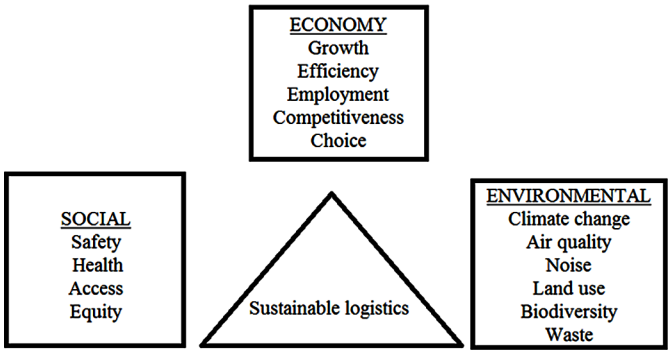
social sustainability as "*a positive condition within communities, and a process within communities that can achieve that condition*". Social sustainability issues include unemployment, new employment areas, improved customer service level, quality of life standards, health and safety. The three aspects of sustainable logistics are given in Figure 1.

Figure 1. Three aspects of sustainable logistics
(Tambovcevs & Tambovceva, 2012)



While many of the studies about e-commerce logistics emphasize just environmental or economic aspects, only a few studies and industrial reports handle the subject on three dimensions of sustainability: economic, social and environmental. Furthermore, there is no study about e-commerce related to sustainability, associated with logistic operations in a broader perspective. Therefore, this chapter aims to evaluate logistics activities related to e-commerce in terms of three dimensions of sustainability. Furthermore, recently developed innovative solutions such as drone-based deliveries, usage of automated vehicles and automated warehouses, and best practices of the companies, supporting sustainable e-commerce logistics, will be discussed. The last but not the least, future expectations in the light of current developments will be presented in the following paragraphs.

The remain part of this paper is structured as follows. The next chapter discusses the e-commerce delivery and transportation trends and gives a brief explanation about how these trends affect sustainability. In the following chapter, the issues about warehouses that are necessary for e-commerce will be discussed with the perspective of social, environmental and economic dimensions of sustainability. Lastly, this chapter ends with the conclusion section.

SUSTAINABILITY EVALUATION OF E-COMMERCE DISTRIBUTION AND TRANSPORTATION TRENDS

Sustainable transportation is a very popular and studied subject. When we write "sustainable transportation" to the Google Search Engine, there are more than 1.1 million results listed (03.01.2020). For academic papers, Google Scholar lists 49 thousand results including this term. Too many results in the search show how much people use this term; can this also indicate that a sustainable transportation system

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is being established today? According to Gordon (1995), people's behaviors, lifestyles, technology, and prices are changing those results in people gaining a vision of "sustainable transportation".

Sustainable transportation is a dynamic concept. While the population and human needs are growing, the meaning of "sustainable transportation" covers more issues every day. Is it impossible to reach a sustainable transportation system? Is "sustainable transportation" just a utopia? Even if the answer is "yes" for both questions, it is good to adopt the idea beyond the heading of Alberro's article, saying, "Utopia isn't just idealistic fantasy – it inspires people to change the world" (Alberro, 2019). From this point of view, it would be fitting for the very broad and widely accepted definition of sustainable transportation by the European Union Council of Ministers of Transport. According to the Council (2001), such a system

- "*allows the basic access and development needs of individuals, companies and societies to be met safely and in a manner consistent with human and ecosystem health, and promotes equity within and between successive generations;*
- *is affordable, operates fairly and efficiently, offers choice of transportation mode, and supports a competitive economy, as well as balanced regional development;*
- *limits emissions and waste within the planet's ability to absorb them, uses renewable resources at or below their rates of generation, and, uses nonrenewable resources at or below the rates of development of renewable substitutes while minimizing the impact on the use of land and the generation of noise.*"

Black (2010) gives a narrower definition of sustainable transportation on purpose because the author believes that, as the definition of sustainable transportation broadens, it cannot be achieved. According to this definition, sustainable transportation is a system, which provides transportation and mobility, using renewable fuels to minimize emissions and prevents transportation-related fatalities and injuries. Although sustainable transportation, defined by Black, seems to be achievable with relevant laws and policies, it does not adequately address the needs of this era.

Litman et al. (2007) proposed sustainable transportation system indicators. According to their study for the economic aspect, a sustainable transportation system is expected to serve efficient mobility, cause local economic development and reach operational efficiency. For the social aspect, this type of system is expected to ensure social equity, affordability, human safety and health, community cohesion, and cultural preservation. Besides, a sustainable transportation system is expected to reduce air, noise and water pollution and global warming emissions. Finally yet importantly, conserving resources, preserving open-space and protecting biodiversity are important performance indicators of a sustainable transportation system. The mentioned subjects above are generally accepted sustainability goals. How can one measure these goals? There are several indexes, aiming to measure the performances of sustainable transportation systems; Framework for Measuring Sustainable Regional Development (2010), Urban Sustainability Rating Tools (2014), Green Community Checklist (Environmental Protection Agency, 2015), etc. By reviewing several reports, Litman et al. (2007) recommends a list of indicators and classifies them into three groups; most important, helpful and specialized. According to them, most important indicators are personal mobility by mode, freight mobility by mode, land use density, total transportation expenditures, average freight transportation speed and reliability, average commute travel time and reliability and per capita congestion cost.

According to WHO (2019) respiratory and cardio diseases, cancer and many other diseases are associated with air pollution. Even adverse birth outcomes and premature deaths can be seen as a result

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of air pollution. WHO reported that, 3.7 million premature deaths are related to air pollution. The transportation industry is a substantial contributor to air pollution, which has a 24% share among all CO_2 emissions including freight and human movements. Especially for the freight sector, it is vital to decrease the amount of transportation-related emissions by using low carbon fuels, using more energy-efficient engines and delivering products more efficiently.

Widespread use of electrical vehicles seems like an environmental friendly solution but because of the high prices of such cars, firms generally continue to use gasoline-powered vehicles. The electric car sales rate increased by more than 2.5% in 2018. However, increased e-commerce sales and increased delivery within the time limits (same-day delivery, instant delivery) also increased the use of vans (IEA, 2019), which is a less energy-efficient option than large trucks (Bonilla, 2016). More than 250 European cities have adopted Low-Emission Zones (LEZ) and few cities have adopted Zero-emission Mobility Zones (ZEZ) since the Dieselgate scandal. The entrance of some road vehicles that have high toxic emissions to these zones is restricted. LEZ or ZEZ may have an accelerating effect on the wide usage of electrical vehicles by firms. In Madrid, after applying LEZ NO_2 concentration decreased 32%. Increasing rail investments and the rail usage rate (7% in 2019) is essential since the rail is an energy-efficient mode of transportation (Transport & Environment, 2019). Besides, promoting more sustainable delivery alternatives such as bicycle and walking deliveries and using crowdsourcing options are essential.

95% of the energy consumption of the transportation sector is based on fossil fuels and the rest is a combination of natural gas, electricity, and biofuels (Kahn Riberio et al., 2012). Because of the increasing number of gasoline-powered vehicles and increasing energy consumption rate due to rapid population growth, limited petroleum resources have become an important topic. According to the forecasts of the International Energy Agency (IEA), global energy demand will increase by approximately 42% from 2009 to 2035 (Singh, Avinash, & Agarwal, 2017). Diminishing petroleum reserves affects three aspects of sustainability. The social aspect of sustainability reveals the necessity of the fair distribution of scarce resources to current and future generations. From an environmental point of view, to fulfill the necessary energy need and to lower harmful emissions, cleaner and renewable energy sources should be produced and used widely instead of fossil fuels. Besides, dependence of petroleum creates an economic problem because of increasing crude oil prices.

From an environmental point of view, another essential subject of sustainable transportation is minimizing the effects of traffic noise. To be exposed to loud or continuous noise is dangerous for human health. It may cause psychological diseases such as annoyance and physiological diseases as ischaemic heart disease (WHO, 2019). According to a report (Jones, 2010), to be exposed to chronic aircraft noise has detrimental effects on memory, sustained attention, reading ability and understanding. Among children, this may cause a high degree of helplessness, motivational decrement and a higher degree of annoyance. Not just aircraft, also vans and motorcycles are noise sources in urban areas.

Because of limited parking areas in front of urban retail locations and restricted delivery times, drivers of delivery and pick-up vehicles park to illegal areas and this increases the number of parking violations. Walkability and bikeability performance indicators of social sustainability are negatively affected by parking violations. Also, double parking, seen on narrow and busy roads, causes congestion. Han et al. (2005) conclude that parking violations increase the travel time, number of accidents and transportation costs. According to research conducted by Mobility Lab and George Mason University, 73% of freight and delivery vehicles were used unauthorized areas to park in Arlington, which results in blocking sidewalks, fire hydrants or bike lanes (Hsu, 2019).

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With the rise of e-commerce sales, distribution strategies have changed. For an online shopping experiment, customers expect to reach products as soon as possible after placing an order. Delivering the right goods to the customer's place or a pre-determined place in the expected time is crucial for an online shopping experiment. Therefore, it is critical to design an efficient distribution network and to provide efficient and effective movement of goods for an e-commerce company (Huppertz, 1999). Because the success of an e-commerce company mostly depends on its delivery performance and distribution network. To meet customers' expectations regarding delivery speed same-day and instant delivery options are spread, the amount of motorcycle and bicycle deliveries are increased and new delivery options such as autonomous delivery robots were proposed.

Chopra and Meindl (2015) classifies distribution network design options into six categories, which are;

- Manufacturer stores the products and ships directly to customer (direct shipping),
- Manufacturer stores the products and ships to customer by in-transit merge,
- Retailer stores the products and customer pickups.
- Manufacturer/distributor stores the products and customer pickups,
- Distributor stores the products and sends them by package carrier,
- Distributor stores the products and uses last-mile delivery options (last-mile delivery),

Manufacturer storage with direct shipping or shipping after in-transit merge strategy is used frequently by e-commerce companies. For these options, the company sells products from its web site or application and send the products from its facility. This type of manufacturer is called a pure player (Rao, Goldsby, & Iyengar, 2009). Drop shippers may be added to this type of delivery network. In such a case, the manufacturer stores all inventory. After the drop shipper receives an order, information is relayed to the manufacturer and the manufacturer sends the product directly to the customer. If the manufacturer and the customers are distant, this distribution network results in long waiting times for the customers.

As the number of layers in a distribution network increases, customer response time decreases. If retailers and distributors participate in a distribution network then customers can reach products faster. Retailers or distributors store the products and customers can come to the stores and pick-up the products and send them to customers' places by using last-mile logistics (LML) strategies. Lim et al. (2018) classified these strategies into three groups: push, pull and hybrid. The push-centric strategy is a multilayer distribution system and requires picking up the products from the manufacturer's facility, distribution center (DC) or B&M store and delivering to the customer's houses or workplaces. Pull strategy requires the customer's involvement in the receiving stage of distribution. The customers receive physical products from local B&M stores and dematerialize products such as video games and software from information stores. The hybrid strategy combines push-centric and pull-centric strategies. In this strategy, the manufacturer or the distributor sends products to intermediate sites and customers pick-up products from these points. These delivery strategies and their effects on sustainable transportation will be discussed in the trends section.

E-Commerce Distribution Trends

Customers of an e-commerce company expect faster delivery, and this pressure forces B2C companies to chance their distribution networks. Especially the last-mile of the distribution networks, which end with customers reach their products, has to meet these expectations to stay competitive in the sector.

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According to Lim et al. (2018), last-mile delivery can be defined as "the last stretch of a B2C parcel delivery service, takes place from the order penetration point (factories, FCs, retail stores, etc.) to the final consignee's preferred destination point (recipients' doorsteps, collection delivery points (CDP) or pickup addresses, etc.)".

Last-mile delivery requires delivering myriad small posts to the multiple diverse locations within time limits. Due to these limitations, last-mile delivery (sometimes called final delivery) is the most expensive, inefficient and complex part of the supply chain management (Gevaers, Voorde, & Vanelslander, 2014). Especially e-commerce companies are willing to absorb last-mile delivery expenses to gain a competitive advantage even its costs exceed 50% of total shipping costs (Joerss, Schröder, Neuhaus, Klink, & Mann, 2016a).

With the rise of e-commerce, van usage for delivery operations has become widespread. Van usage has some negative effects on urban life quality. This delivery option increases the freight energy intensity, which can be interpreted as megajoules/tonne-km, and thus increase air pollution. Because of the limited capacities of vans and complex routes due to delivering small parcels to several points, this delivery method is highly cost. Vans are also effecting urban traffic congestion negatively, and this causes late deliveries, traffic violations, and accidents (Bonilla, 2016). Furthermore, human deaths or injuries due to car accidents are related to traffic congestion. According to research conducted by the U.S. Department of Transportation (2015), 94% of accidents are due to human errors and just in U.S. 4,761 people died in crashes that involve large trucks, in 2017.

To lower last mile costs and to make the delivery process more sustainable, many innovations are made by big players of the e-commerce sector (such as Amazon and Wal-Mart), academicians and startups. Some of these innovations are reception boxes (RB), click and collect points (C&C), drones, bike couriers, autonomous vehicles, crowd-sourcing logistics, anticipatory shipment, and underground delivery. Same-day, instant delivery or delivery with time windows options are becoming popular among customers. Furthermore, trucks, which can manufacture products by 3D printers, and mapping customer behavior to lower failed delivery rates by data mining are topical now.

Types of Delivery Points

If customers have to wait at home/office for their parcels to be delivered, this type of delivery is Attended Home Delivery (AHD). By using classical and most preferred (AHD) business model, costs of the last mile delivery may be up to 75% of total shipping costs (Gevaers, Voorde, & Vanelslander, 2009). In this option, courier brings the parcel to recipients' doorstep or office without a time limitation and if the recipient is not there at that time, then courier has to turn back there even two or three times by using road transportation, which causes more air pollution in urban areas, more traffic noise and more usage of transportation facilities. For the economic aspect, this kind of model leads to inefficient pricing because transportation companies do not know which product will turn back to their facility and how many visits will be conducted to the customers' home or office. Another disadvantage of this model is ringing a bell, waiting for the door to be opened and having customers' sign processes are time-consuming for both parties. Besides, setting time windows for customers results in complicated vehicle routes and more energy consumption.

Another delivery option is Unattended Delivery (UD), and this can be defined as delivering products to a specific place. According to Kamaranien et al. (2001) delivery cost can be reduced by up to 40% by using UD options in comparison with AHD. When considering the social point of view, AHD and

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some of the UD options are beneficial for people with disabilities, about accessibility to products. If retailers provide free shipping opportunities, these delivery options are also beneficial for people with lower incomes. By this opportunity, they can get their products without paying extra money and without using their cars.

UD options are RBs, delivery boxes and shared RBs (Hübner, Holzapfel, Kuhn, & Obermair, 2019). A reception box is a delivery point, which has generally a refrigerator and a freezer unit and provides foods to be stored at predetermined temperatures, generally used to deliver groceries. Wang et al. (2014) mention three kinds of RBs; independent reception box (IRB), delivery box (DB) and shared reception box (SRB). IRB is located at the house (home yard or garage) of the customer. DB is an insulated secured box with a locking mechanism and returns to the retailer. SRBs have separate lockers with changing opening codes and people living in apartment blocks or building complexes jointly can use them. By using RBs, parcels can be delivered even if the customer is not at home. If this box has a controlled access system, couriers may call the recipients and the customers can see the couriers from the camera and open RB by using their mobile phones. Other models of RBs generate specific codes for every delivery and the courier can open the box by using this code. Usage of RBs results with less failed deliveries (Punakivi, Yrjöla, & Holmström, 2001). Besides packages are not need to be sent twice, so energy consumption per freight ton-mile, climate change emissions, air and noise pollution are expected to be lower compared to classic AHD. However, among these alternatives, SRB is the most cost-effective, timesaving and environment-friendly option for delivering companies.

Another main type of delivery point is C&C. There are three categories of C&C points; pick-up point in store (PPS), pick-up point attached to a store (PPAS) and a solitary pick-up point at another location (SPP) (Hübner et al., 2019). A PPS is generally a temporary booth, placed inside the store. PPAS is similar to PPS but with one difference. In PPAS, the pick-up point is located outside the store and customers take their orders by drive-through opportunity. In both options, customers buy products online but they have to collect their orders by visiting the store. For customers, this will be a less time-consuming shopping experience but still, they have to go to the store and pick-up their orders. From the retailers' point of view, this option is less costly than sending the products to the customers' houses. In the SPP option, orders can be picked up by customers from a DC. This option requires a high set-up cost and increases logistics costs.

There are other delivery applications have been offered and implemented. As an example, Amazon offered in-car delivery service in 2018 that enables couriers finding customer's cars with "Key App", unlocking the trunk with keys and delivering products inside the trunk. This option also decreases the probability of failed delivery while increasing cost factors related to the delivery automation system (Reyes, Savelsbergh, & Toriello, 2017).

Delivering Within a Time Limit

Delivering products at a specific time, within a time windows, within same-day or instantly are becoming very common. Both e-commerce companies and parcel delivery services are offering these kinds of delivery options. These options are very costly but some customers are also ready to pay more for these kinds of services. According to research conducted in China, Germany, and the USA, 25% of respondents are willing to pay for same-day or instant delivery options. It is expected this share to increase due to the younger generation is keen on these options. By 2025, the share of same-day and instant delivery

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options of the global e-commerce parcel delivery market are expected to reach 20% to 25% and may have a larger slice of pie if these options can be extended to rural areas (Joerss, Neuhaus, & Schröder, 2016b).

While orders with time constraints increased in number and constraints became definite, solving these kinds of problems requires more time and money. The solutions are getting complicated and this results in longer freight movement times. Boyer et al. (2005) illustrated the solutions of a delivery route problem with and without time windows and showed the effects of time windows constraint on route planning. According to their study, the solution of a 1-hour time window and no window had resulted in a decrease in more than 50% miles per customer. This kind of extra tours decrease the efficiency of the delivery process, increase cost, energy consumption per freight ton-mile, climate change emissions and air and noise pollution.

Crowdsourcing Logistics

Crowdsourcing is used for last-mile delivery by giving the delivery tasks to nonprofessional individuals from a network of people on a technological platform. These individuals generally provide this service by their vehicle and if the delivery point is on their route. This may be for free (Chen & Pan, 2015) or for a fee (Wang, Zhang, Liu, Shen, & Lee, 2016). Amazon, Instacart, Postmates, Shitpt and several other startups have adapted the "Uber Model" to product delivery services, especially for meal deliveries. While generally, these companies match the orders with the proper individuals within the system, Walmart uses a different and more environmentally friendly crowdsourcing strategy than an "Uber Model". It matches orders with its employees after work routes. Also in 2018, Walmart began to use "Spark Delivery" besides its current crowdsourcing model.

Uber Model services are not always cost-efficient especially in countries with high labor costs (Starcke, 2018). However, if people use existing transportation opportunities while they are going home/work, then this kind of transportation becomes cost-efficient and environmentally friendly. If the free capacity of citizens is used to carry loads, this will lead to a reduction in idle vehicle kilometers of vans (Rai, Verlinde, Merckx, & Macharis, 2017) and related pollutants. Employment level increases in the short term (Taylor, 2015); however, in the long term, when drones and AGV's become widely used, the unemployment level for these employees is expected to increase. Also, integrating public transportation based crowdsourcing models with shared reception box and parcel locker deliveries will provide sustainability advantages (Wang et al., 2016).

Automated Delivery Vehicles (ADVs) Usage for Distribution

The usage of ADVs for e-commerce logistics is one of the topical issues of the logistics industry. There are four types of ADVs; unmanned aerial vehicles (UAVs), sidewalk delivery robots, self-driving cars and automated delivery pods (Marks, 2019). These vehicles are on progress, but only some of them are officially in service. ADVs can be used to deliver meals, groceries and other packages. According to the report of McKinsey & Company (2016b), 85% of the parcels will be delivered by ADVs, by 2025, assuming that this technology and the service will become cheaper. If they don't become cheaper, then bicycle delivery is expected to be the best instant delivery option.

According to the simulation results of Gružauskas et al. (2018), transportation costs of distribution systems, work with autonomous vehicles, are 5% less than the traditional distribution systems. Besides, they indicate that the CO_2 emission level can be lowered by 22% by using autonomous vehicles. These

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technologies are expected to make things easier especially for disabled and elderly people but also there are various concerns about human health. People will become immobile by using these kinds of technologies.

The smallest version of the ADVs are drones and they are already delivering in some regions of Australia (Porter, 2019), France and China. France's postal service has used this technology to deliver parcels to hard-to-reach Alpine villages (Willsher, 2019). Google's parent company Alphabet is using drones in Australia and their drone delivery system has just been approved by the US government. Amazon, Uber and other US companies are still waiting for the necessary legal permissions. By these permissions, Amazon Prime plans to deliver 80-90% of its deliveries by drones by 2030 (Spisak, 2019). They aim to carry up to 2.25 kg parcels per delivery within 30 minutes and under $1.

Especially for icy ridgeways and hard-to-reach areas, drone usage seems more reliable in comparison to delivering with vans (Boeras, Collins, & Peeling, 2019). Also by using drone deliveries, it is expected to reduce traffic and obstacles (Murray & Chu, 2015) and to lower carbon emissions using long-life rechargeable batteries. If Amazon Prime Air achieves drone usage goals by 2030, the number of trucks on the way will be reduced which also causes lower carbon emissions (Spisak, 2019). Besides the good sides of drone usage, there are many critical issues to be considered in the means of sustainability. The safety of drone usage is still an investigated research area. A small crash can be resulted by serious damages in the health of people or public infrastructures or airworthiness. According to DPD, drones have many features such as "anti-collision systems", "autonomous parachutes", flight recorders and cameras in case of emergent situations (Willsher, 2019). Another problem related to drone usage in deliveries is noise pollution. Even if the noise of trucks will be reduced by drones soon, drone-related noise pollution will be another critical issue. Another worrisome issue for the social aspect is privacy related to the usage of normal and infrared cameras, on drones. This may cause, collecting unauthorized images illegally.

Sidewalk robot usage in e-commerce deliveries will be an inescapable situation in the near future. Many models have been developed and tested by delivery companies such as Amazon and FedEx. Robots or droids are self-guided delivery vehicles, moving on a determined path (Slabinac, 2015). These are generally equipped with GPS, HD cameras and ultrasound sensors. Due to the high technology investment requirements of these robots, the costs of using robots are high. Unless they do not become more affordable, they have less chance to compete with cheaper delivery options especially in countries with cheaper labor costs.

Drones and sidewalk robots do not have negative effects on traffic congestion. However, unlike drones, these robots occupy a place in sidewalks. As the usage of sidewalk robots becomes widespread, pedestrian traffic in cities (walkability), especially with narrow sidewalks, will be affected negatively. In addition to pedestrians, wheelchair users and parents with strollers should also be taken into account while planning sidewalk robot delivery systems. While planning newly developing residential areas, sidewalk robot traffic can be considered; but for old settlements, it will be hard to adopt these robot delivery systems to existing sidewalks. For now, robots move on sidewalks slowly for safety concerns. Their speed is about 4-6 km/h and this slow movement gives robots the necessary time to think about the next steps and to move without crashing any object or people. For now, this type of delivery is available on some university campuses.

The use of vans and trucks is expected to decrease when ADVs and drones are widely used. However, in the short term, since the battery life of the current drones is short, they are expected to move with the vans. According to ADV producers, ADVs are expected to eliminate human-induced accidents by eliminating people from the transportation system. While it is expected that robots will help prevent

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accidents caused by trucks and vans soon, it is not yet known whether it will reveal a new source of accidents called robot accidents.

SUSTAINABILITY EVALUATION OF E-COMMERCE WAREHOUSES

E-commerce is growing at a remarkable speed. According to Statistica (2019a), in 2019, worldwide e-commerce sales were $3.53 trillion and e-commerce sales are projected to rise to $6.54 trillion in 2022. Both in the United States and Europe, the sales of business to customer (B2C) e-commerce as a percentage of gross domestic product (GDP) have an increasing trend between 2009 and 2019 (Statistica, 2019b; 2019c). The expanding e-commerce requires larger regional warehouses and smaller urban warehouses in order to facilitate the movement of goods and meet customer needs in a shorter time (Deloitte, 2014). Especially in the business-to-customer (B2C) segment, the order sizes are getting smaller while the demand variety is increasing. The expected delivery times by the customers are getting shorter. Same-day delivery or even next day delivery became obligatory for the retailers. The survey, which is conducted by Peerless report group annually on behalf of Logistics Management for Honeywell Intelligrated shows that "on-time delivery" is the most significant key performance indicator with 49% for e-commerce retailers.

Growth in e-commerce retailing caused changes in the whole supply chain. One of the most affected parts of the supply chain is the warehouses. Traditional warehouses have difficulties to meet customer requirements on time and accurately so that the traditional picking systems in warehouses need to change. Especially picking operations need to be improved. The Peerless Report Group report explains that picking is the second biggest operation in need of change with 35% (Peerless Research Group, 2019). In order to facilitate the picking operations, automation, voice-directed picking systems or robotics become interest areas of retailing companies. In addition to the operations in warehouses, the warehouse types and sizes begin to change because of the new distribution networks that appeared due to expanded e-commerce (Öztürkoğlu, 2018). Besides the big DCs, FCs to serve e-commerce orders quickly and on time, are beginning to serve. (Peerless Research Group, 2019). According to the Bureau of Labor Statistics in the U.S., the number of warehouses reached 18.500 in 2019 from 17.000 in 2016 (United States Department of Labor, 2019). The changes in the warehouse industry due to e-commerce created many consequences in the social, environmental and economic dimensions of sustainability.

Although 51 thousand jobs were lost in the retail sector due to e-commerce, 355 thousand new jobs with FCs arise in the sector (Mandel, 2017). Amazon.com which is the top e-commerce retailing company in the world according to Forbes (Angelovska, 2019) works with more than 250 thousand employees in its 104 warehouses and FCs as of 2018 (National Bureau of Economic Research, 2017). Walmart.com which is in the top 5 e-commerce retailing company has 173 DCs with 125.8 million square feet (MWPL International Inc., 2019). The second-largest e-commerce retailer in China JingDong has 166 warehouses and 7 logistics centers (Yu, Wang, Zhong, & Huang, 2016). The average warehouse area in the United States increased by 143% between 2012 and 2017 (Bartolini, Bottani, & Eric, 2019). The growth in the amount and size of the warehouses, DCs, and FCs provide an opportunity for employment. Besides the contributions of warehouses on the social dimension of sustainability, they also have an environmental impact on sustainability such as energy consumption.

According to the U.S. Green building council (USGBC), buildings use 41% of the energy and 29% are used for transportation and 30% are used in the industry in U.S. (Kaplan, 2019). The UK Green Building Council has identified construction as one of the most GHG -intensive industries in the UK

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with almost 50 percent (Dadhich, Genovese, Kumar, & Acquaye, 2015). UK energy policy is leading the construction industry to reduce energy usage in buildings with the target of zero-carbon (Rai, Sodagar, Fieldson, & Hu, 2011). The warehouses generate nearly 11% of the total GHG emissions, which are created by the logistics sector (Bartolini et al., 2019). The level of energy consumption and consequential emission are major indicators of environmental sustainability. Increasing social awareness about carbon and waste management forces companies to re-engineer their supply chain, especially towards sustainable warehouses. Contributions of green building practices, using green energy sources, using energy-efficient material handling equipment, operational strategies for shorter travel distances are main practices for a sustainable warehouse.

In the following sections, the issues about warehouses that are necessary for e-commerce will be discussed with the perspective of social, environmental and economic dimensions of sustainability. FCs as a new warehouse type, location of the warehouse, layout of the warehouse, building materials of the warehouse, the equipment used in the warehouses for material handling will be described in terms of sustainability by considering the relation with e-commerce. The current implications, precautions, recommendations for the warehouse industry will be explained to support sustainability.

Fulfillment Centers

The success of e-commerce depends on giving customers what they want, when and how they want with as possible as the lowest cost. This needs real-time fulfillment solutions. Fulfillment means picking and packing the products in very small quantities and shipping them by parcel carriers (Ricker and Kalakota, 2017). In e-commerce FCs as well as the main operations, attaching instruction manuals, leaflets, taking complaints, repairing returned products, gift packaging, maintenance, management of the e-shop archive, sending sales reports may be served (Kawa, 2017). The operations in a FC and a warehouse are not similar. The operations in warehouses are generally routine but in FCs are not. Since the products in a FC are various, the preparing procedure for shipment needs different processes. A FC can be used as a warehouse but a warehouse can not be used as a FC. In a warehouse, large quantity of products are stored and shipped, and especially Business to Business (B2B) transactions arise. Warehouses are proper places to store seasonal products. The products are stored in warehouses until they are required but in FCs, the inventory turnover rate is larger than warehouses and the cycle time of products is shorter than the products in warehouses. The traditional retailing companies find out it is not possible to provide home delivery service to their customers with their existing delivery network. In traditional warehouses, the picking list is fixed after the picker begins to travel. However, e-commerce demands may cause updates in picklists and routes, which is called dynamic order processing. Incoming urgent orders may be added to a current route if it is necessary and the route is updated (Boysen, De Koster, & Weidinger, 2018). One of the most important requirements of e-commerce quick response is provided by dynamic order processing in FCs. The retailing companies usually meet the customer requirements from FCs. The FCs are vital for new trends in e-commerce.

One of the newest trends in e-commerce is developing fulfillment cross border by reducing shipment costs. Another trend is same-day delivery that is provided only in selected cities. Full coverage of the country with same-day delivery service should be supported (Kawa, 2017). Warehouses do not serve an external customer while serving an external customer is the main focus of FCs. Warehouses simply store products to be used at a later date. FCs pick and pack orders and make sure they get into the hand of the customer on time. Timely replenishment is critical because customers do not tolerate out-of-stock

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situations. Retailing companies may provide fulfillment services themselves or other 3PL service providers may provide fulfillment services. Catalog companies or store-based retailers such as Walmart and JCPenney also have their distribution and fulfillment networks but they ship various products in large quantities in contrary to internet retailers.

Consumers spend 1.2 billion hours on unpaid work like driving to B&M stores, finding a parking lot, traveling between aisles, payment and driving back home in the U.S.. Some of these unpaid works transformed to works in FCs such as picking, packing and driving trucks for delivery. That's why e-commerce creates new jobs. Unlike traditional warehouses, in FCs orders of each customer are prepared by the products that are gathered from various suppliers so that collecting products from many different suppliers and manufacturers, consolidating them, picking and packing according to the customer order are new works emerged due to e-commerce retailing. The number of e-commerce companies and FCs increased by 400,000 from 2007 to 2017 while 140,000 B&M retailing companies closed (Progressive Policy Institute, 2017).

FCs play a critical role in employment. E-commerce FCs employ more workers than traditional warehouses (Texas A&M Transportation Institute, 2017). In Amazon's FC in Kenosha, more than 2000 permanent and 1000 seasonal workers are employed. Amazon now operates about 104 FCs around the country with a space of 80 million square feet. The company increased the number of workers from 14,000 in 2007 to 180,000 in 2016 in the United States and most of them in FCs (Progressive Policy Institute, 2017). Just growth of Amazon alone made a huge contribution to the employment. Besides that, the companies that work as both e-commerce company and retailer, operates FCs. For example, Chewy.com an online pet supplier retailer opened its fifth FC and hired 700 workers. Walmart opened an e-commerce FC in 2017 in Florida and planned to hire 1,500 workers in 2018. Between 2007 and 2017, the e-commerce industry provided 132,000 jobs and the warehouse industry provided 273,000 jobs (Progressive Policy Institute, 2017). Furthermore, as e-commerce increases product returns increase. The returned products need to be processed in the FCs. A new employment field appears due to e-commerce (Delloite, 2014). In terms of income, the average weekly earnings are 31% higher in FCs than in B&M retail jobs in the same county (Progressive Policy Institute, 2017).

Consequently, FCs that are emerged due to expanding e-commerce make a considerable contribution to the social dimension of sustainability by providing new employment fields and high income. The economic impact of those centers will be explained in the building section in detail.

Location of the Warehouses

The pressure of shorter delivery time requirement forces especially online retailers to be closer to the consumer to gain market share. This need may be met with the increased number of larger regional hubs and smaller urban warehouses. Urban warehouses like FCs play a critical role in last-mile delivery services. In the meantime, regional DCs are still required with their large volumes.

Due to transportation cause 28% of total energy consumption of U.S. in 2018 (U.S. Energy Information Administration Report on Energy Usage, 2019) and cause 29% of total GHG emissions in 2017 (United States Environmental Protection Agency, 2019), the location of the warehouses and DCs are crucial in terms of sustainability in the long run. The location of the facility is decided once and during the lifetime of the facility, the costs due to transportation are beard. The companies prefer the DCs or warehouses located near city centers and close to the highway, freeway, airport, port, and railway to minimize their distribution costs (Kaplan, 2019). Reduction distances in transportation means also a

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reduction in the level of GHG emission. On the other hand, getting closer to the city centers may create traffic congestion also air and noise pollution near city centers due to the vehicles that carry goods among warehouses and demand points. Therefore, the location of the warehouses, DCs, and FCs took the attention of the companies and researchers. Companies make network studies to evaluate their location of warehouses to move closer to ports or closer to customers to reduce transportation energy consumption and consequential emission (Napolitano, 2013). In facility location literature, there are many studies, which aim to select the best location alternative according to considered criteria. For example, Demirel, Demirel, & Kahraman (2010) investigated the best location of a logistics firm among four cities by considering the criteria related to costs, labor characteristics, infrastructure, and markets. Ashrafzadeh, Rafiei, Isfahani, & Zare (2015) analyzed four locations in Iran for the warehouse on behalf of the Entekhab industrial group by considering 15 criteria. These criteria are labor costs, transportation costs, handling costs, land cost, skilled labor, availability of labor force, land availability, climate, existence of transportation modes, telecommunication systems, quality and reliability of transportation modes, quality and reliability of utilities, proximity to customers, proximity to producer, lead times and responsiveness. These studies are not related to sustainability directly. They did not take into account energy consumption or GHG emissions but indirectly they contributed to the environmental dimension of sustainability because their common objective was reducing transportation and this result causes a reduction in energy consumption and emission of GHG. Besides that, there are studies that are related to sustainability directly. For example, Govindan, Garg, Gupta, & Jha (2016) assessed facility location in terms of the triple bottom line (3BTL) of sustainability. Raut, Narkhede, Gardas, & Raut (2017) aimed to select a strategic location of a sustainable warehouse in their study. They identified 11 crucial, sustainable selection criteria for the chemical industry warehouse and purposed the governmental policies and regulations, climatic conditions of the region and strategic location as the most significant three factors for sustainable warehouse location.

Besides that, many studies in literature aim to determine the optimal location of a warehouse. Gill and Ishaq Bhatti (2007) considered the product distribution cost and warehouse capital cost in selecting warehouse locations and allocating retailers. Li et al. (2008) purposed a model to determine the location of a DC by considering transport mode and carbon emission. As a conclusion, they claimed that, as the price of crude oil rises, the income of the entire supply chain and carbon emission also decline, while the number of DCs increases. Büyüksaatçi and Esnaf (2014) handled the facility location problem to minimize CO^2 emission level appeared due to the transportation between the facilities and customers. In terms of infrastructure, there are no additional costs like electricity, water pipes, and roads for the warehouses located near city centers. Furthermore, infrastructure costs reduce, as the buildings are located near city centers (Kaplan, 2019). To locate warehouses close to city centers is also important for employee perspective. The transportation of the employees gets easier to reach to work. Therefore, the selection of warehouse location is a strategic issue that has economic, environmental and social dimensions of the businesses (Tan, Ahmed, & Sundaram, 2009).

Layout of the Warehouses

In a typical warehouse, there are four major operations called, receiving, put-away, picking, and shipment (Bartholdi and Hackman, 2011). In unit load warehouses in which large amounts of goods picked up and put-away as a single object like in pallets without decomposing into small pieces (Tompkins, White, Bozer, & Tanchoco, 2003), the aforementioned four operation areas are usually seen. However, since

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the put-away and picking operations are done in the same area, three areas may be seen in practice. In warehouses in which piece or case picking operations are handled, there may be additional areas such as the replenishment area. The placement of the warehouse may change according to the type of products stored such as perishable, frozen foods or flammable chemicals. In such a warehouse, products may require special conditions. For instance, a product needs to be stored in a refrigerated area, or another one needs to be far away from a specific product. Therefore, placing the areas to maximize storage utilization and minimizing travel distance with the concern of providing healthy working conditions for employees is the major objective of warehouse layout problems. The layout of any facility is designed and built once so it is difficult to change but not impossible. It can be modified if necessary with additional costs.

Warehouse layout literature also includes the aisle design. Many studies investigate the number and design of aisles to decrease travel distance or increase warehouse space utilization. In traditional warehouses, the picking aisles are located parallel to each other while cross aisles are arranged perpendicular to the picking aisles. Gue and Meller (2009) proposed two new aisle layouts as an alternative to the traditional ones. They are "Flying-V" and "Fishbone designs". With these aisle designs, the researchers provide to decrease the single-command (travel between a pick-up and deposit (P&D) point and a single warehouse location that a worker store or retrieve a single product/pallet) travel distance 10% and 20% respectively according to the equivalent traditional warehouses. Gue, Ivanovic & Meller (2012) evaluated modified Flying-V and inverted Flying-V aisle designs for a warehouse with multiple P&Ds and provide less expected travel distance. Öztürkoğlu, Gue, & Meller (2012) proposed three new non-traditional aisle designs (Chevron, Leaf, and Butterfly) which have one, two and three angled cross aisles. All new designs are investigated from the perspective of both travel distance and storage utilization and among them Chevron is proposed as the most applicable one for the industry. Öztürkoğlu, Kocaman, & Gümüşoğlu (2018) examined the Chevron design in a multiple P&D point warehouse. Kocaman, Öztürkoğlu, & Gümüşoğlu (2019) searched best aisle layouts to minimize the expected single-command distance for a multiple P&D points warehouse which is used frequently in the industry. Besides that, many studies searched new aisle designs and analyzed their benefits in terms of picking time or travel distance which is indirectly affects the cost of picking operation (Öztürkoğlu, Gue and Meller, 2014; Öztürkoğlu, 2015; Öztürkoğlu and Hoşer, 2018; Öztürkoğlu and Hoşer, 2019a; Öztürkoğlu and Hoşer, 2019b). Common objectives of the mentioned studies are reducing the travel distances in a warehouse between a P&D point and any location. Reduction travel distances cause cost saving, less energy consumption, and less GHG emission. Thus, a well-designed layout of a warehouse contributes to the economic and environmental side of sustainability in long terms.

Boysen et al. (2019) explained warehousing systems that meet the four requirements of e-commerce. They are fulfilling (i) small order under (ii) large variety with (iii) a great time pressure and (iv) varying workloads. They define mixed-shelves storage systems as a good alternative for e-commerce warehouses if the warehouse space is adequate. Mixed-shelves storage is a storage system that stores the products scattered by breaking down unit loads into small units. The main goal of this storage system is reducing the distance between any point in the warehouse and the closest unit of each SKU. By this system, the non-value added travel distance of pickers reduce and shorter delivery time requirement of the customers can be met. In this kind of storage system, the picker needs Information Technology (IT) tools like barcode readers and pick by voice to find the closest product. Boysen et al. (2019) also purposed batching and zoning as a non-value added walking time reduction method. Batching is defined as picking the same units of different orders in one tour to reduce total traveling time and zoning means partitioning the warehouse into zones to make the picker's travel in smaller areas to find the product that they look for

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(De Koster, Le-Duc, & Roodbergen, 2007). Amazon uses batching, zoning and mixed-shelves storage systems to reduce non-value added traveling of pickers (Boysen et al., 2019).

Building of the Warehouses

The warehouse buildings are one of the major energy-consuming factors (Rai et al., 2011; Dadhich et al., 2015; Ürge-Vorsatz, Cabeza, Serrano, Barreneche, & Petrichenko, 2015) since they need energy both in the construction phase and during the lifetime of the facility. The buildings are responsible for 30% of the GHG emissions because of energy consumption (MacNaughton et al., 2017). Almost 30% of black carbon and 33% of halocarbon emissions arise from the building industry (Ürge-Vorsatz et al., 2015). The materials used for insulation, roof, walls, lighting and fan systems (which are explained in detail in the following paragraphs) in the construction phase play a critical role in energy consumption. Since it is difficult to change these systems after building is finished because of additional costs, it is very important to plan it carefully before the construction phase of the facilities. Even so, it is not impossible to transform but the additional costs affect the economies of companies negatively in the sustainability perspective.

Various green building standards lead buildings to reduce the consumption of energy, waste, and water. Leadership in Energy and Environmental Design (LEED) program which is founded by the U.S. Green Building Council (USGBC) in the United States is one of the most popular certification programs in the U.S.. The buildings certified by LEED consume 11% less water and 25% less energy and have 34% lower CO^2 emissions (Kaplan, 2019). In 2013, a new version of LEED is released specifically for construction of warehouses and DCs. LEED-certified buildings have prevented the release of 33MT of CO^2 into the atmosphere and avoided premature deaths in the United States between 172 and 405, in 2016 (MacNaughton et al., 2017). Similar to the LEED program, in Europe, the BREEAM standards (Building Research Establishment Environmental Assessment Method); in Asia, the Green Building Evaluation Label (GBEL), also known as China Three Star; In Australia, Green Star; in Japan, CASBEE (Comprehensive Assessment System for Building Environmental Efficiency), are founded. Totally, the World Green Building Council (World GBC) recognizes more than 40 rating tools for green building (MacNaughton et al., 2017). In 2017, 304 buildings in 17 different countries gained sustainable building certification (Prologis, 2017).

Green building practices reduce GHG emissions as well as other harmful air pollutants like particulate matter, sulfur dioxide and nitrogen oxides, all related to the combustion of fossil fuels for electricity and heat generation in buildings. As a conclusion, the benefits of green building practices that have not yet been quantified (MacNaughton et al., 2017) have social and environmental impacts on sustainability. In addition to green practices, there are energy-saving innovations that support sustainability.

Smart buildings are one of the last emerged developments for buildings. In smart buildings, devices are used to monitor the usage of electricity, gas, and water. The smart meters, which are replaced with gas, electric and water meters are recommended to use in buildings to analyze energy consumption and avoid unpredictable payments. The obtained data is then analyzed to identify the opportunities for energy and cost savings (Napolitano, 2013). Consumption monitoring is one of the most innovative techniques that help to manage energy consumption in the whole building and to understand their energy-related GHG emissions. Prologis reported a reduction in energy use by 8.9% and in emissions by 4% in 2017 according to the previous year. Solar panels on roofs should be set. Prologis (2017) added 10 megawatts

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of solar capacity (onto the roofs of medium-sized homes) to their portfolio in four countries. By the solar panels emissions-free energy is produced (Prologis, 2017).

Photovoltaic panels and wind generators are not cost-effective tools for energy generation but if they are supported by the government's incentives, they become a favorable energy source with low lifecycle emissions. To support the businesses to use renewable energy the regulations should be updated. For instance, in the UK many local authorities force the businesses to meet 10% of their requirements by renewable energy sources. According to the "Merton Rule," policy 350 tons of carbon in a year are saved (DHL, 2010). Combining innovative solutions and renewable energy usage in warehouses may cause 70% less CO^2 emission in a warehouse. (Prologis, 2017).

One of the recently emerged developments for sustainable buildings is net-zero building model which compensates every unit of consumed energy by generating a unit of energy. Pudleiner and Colton (2015) proposed a net-zero energy building design process in which external wall insulation, window properties, infiltration and natural ventilation, lighting, and equipment are considered as the parameters of the model. KSS Architect built a net-zero facility that meets the energy requirement of all campus by setting up a roof-mounted 1.2 megawatt PV panel (Napolitano, 2013).

Materials

Insulation avoids air transmission between indoor and outdoor. This provides a reduction in energy waste and thermal comfort for workers (MacNaughton et al., 2017). The paints, adhesives, wood products, sealants, and carpeting are important for air quality indoor. The material selection can save energy and reduce CO^2 emissions during the life of buildings (Rai et al., 2011). Using natural insulation materials like cork, wood fibre and sheep's wool are also preferable since they provide environmental impact. For instance, sheep's wool release almost 98% less CO^2 than polyurethane materials (European commission report on Science for environment policy, 2011). Improving the insulation of a building may cause a reduction in demanded energy for heating, ventilating and air conditioning (HVAC) by 6–15% and this reduction may lead a reduction in CO^2 emissions by 4–12% for a medium-size warehouse (Ries, Grosse, & Fichtinger, 2017).

Professionals, architects, and engineers should be encouraged to use natural materials in buildings. Using local materials such as soil, stone, and timber in buildings reduces the amount of energy used by up to 215% (Morel, Mesbah, Oggero, & Walker, 2001) so the materials used for roofs, walls, and floors of the buildings affect the sustainability in an environmental perspective. The European Commission Report on Science for Environment Policy (2011) recommends using local clays and renewable ingredients like straw in brick selection to use in walls. Timber cladding and hemcrete walling systems are suggested instead of steel wall systems. Timber cladding may save CO^2 approximately 18% according to steel. Hemcrete is a highly insulating material that can be used in roofs, walls, and floors of the buildings. Since hemcrete includes lime and cement in the binder, it can save CO^2 more than steel and timber cladding systems (Rai et al., 2011). Radhi (2010) proposed vinyl material in wall cladding systems since it reduces embodied CO^2 emissions more than stucco, masonry, aluminum.

The European Commission Report (2011) recommends using roof tiles out of concrete because it is better than the roof materials which are made of ceramic or fibre cement. Concrete tiles can save 42% energy according to ceramic roof tiles. Solar power panels can be used in the warehouse buildings as less expensive energy.

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On the floor of buildings, it is better to use quarry tiles instead of ceramic tiles. It causes saving 86% in energy and 66% in emission (European commission report on Science for environment policy, 2011). Rai et al., (2011) investigated the materials such as steel, concrete, and cladding systems and recommended to use different concrete types with 50% ground granulated blast furnace slug (GGBS) to support energy saving.

Buildings made of wooden materials reduce primary energy demand and they can be carbon neutral if the wood materials are recycled at the end of its life cycle. Other materials such as steel, aluminum, copper, glass and PVC should be re-used because manufacturing secondary steel by using scrap steels reduces emissions 74%, compared to manufacturing the same amount of primary steel. The buildings should be constructed by allowing disassembly at the end of its life and the materials which are disassembled like bolts should be re-used in another building (European commission report on Science for environment policy, 2011)

Lighting

According to the US Energy Information Administration Report on Energy Usage in Commercial Buildings (2016), with 17%, lighting is a major contributor to energy consumption. Also, Dadhich et al. (2015) explain electricity consumption for lighting and diesel consumption for handling operations done by forklifts are the top two reasons for carbon emissions in the warehouses. Cook and Sproul (2011) claimed that energy consumption can be reduced up to 73% by changes in insulation, sawtooth roof, selective glazing, natural ventilation, renewal of lamps, and lighting controls in warehouse buildings. Colicchia, Marchet, Melacini, & Perotti (2013) recommended adjustments in lighting and heating systems as the primary prevention for energy saving in warehouses. Replace old mercury discharge lamps with high-pressure sodium lamps will save 15% in energy costs or replace old-style 38 m (T12) tubular triphosphorous-coated fluorescent lamps with 26 m (T8) tubes will save 8% (McKinnon et al., 2015). For example, in Deutsche Post DHL warehouse changing T5 bulbs with TS bulbs saved 40% energy consumption (DHL, 2010). The world's top retailing company Walmart provides cost-saving $200 million annually just by changing the fluorescent lighting system with the LED one in its stores and parking lots (Reagan, 2018).

Three options for warehouse lighting, high-intensity discharge (HID), fluorescent, and LED have advantages and disadvantages compared to each other. HID lamps have the lowest initial cost but need a warm-up time before reaching full illumination level. Fluorescent lighting consumes energy less than HID lamps so they are more energy-efficient but they are affected by the heat of the warehouse. If it is too cold or too hot, the lifespan of the fluorescent lighting gets shorten. The LED light is more energy-efficient than the other lighting systems and more durable than fluorescent lighting. Therefore, LED lights are the most appropriate lighting for warehouses (Davis, 2019).

In addition to the changing bulbs, using lights just when it is necessary is recommended (DHL, 2010) also using motion detectors and photo sensors should be used to turn lights on and off to avoid waste (Dadhich et al., 2015). Adding a motion sensor to the lighting design can reduce the cost of wasted energy almost 30% in large buildings like warehouses (Davis, 2019). According to Ries et al. (2017), replacing the standard incandescent lamps to fluorescents or LEDs may reduce demanded energy by 80% to 90% and consequently, emissions may decrease between 20 and 34% in the warehouses. Moreover, regular cleaning of light bulbs is recommended. Accumulated dust on bulbs in two years reduce the luminosity 50% and increase operational cost 15% (DHL, 2010).

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The utilization of daylight is also an important issue for lighting. It should be considered in the construction phase of a facility (DHL, 2010). LED lighting, daylight tubes (solar tubes) are tools that reflect outside light inside. In this way, artificial lighting usage reduces. Furthermore, innovative solutions like Smart Meter, digitalSTROM or Kiwigrid should be used to monitor energy and carbon footprinting systems (DHL, 2010).

Heating, Ventilating and Air Conditioning (HVAC)

Operational energy, which is consumed for heating, cooling, ventilating, lighting and powering equipment, is the major component of building energy consumption during its life-cycle. According to the US Energy Information Administration Report on Energy Usage in Commercial Buildings (2016), ventilation and cooling consume 16 and 15% of the energy, respectively. According to the Freis, Vohlidka, & Gunthner (2016), heating and cooling system need most of the energy in a manual warehouse while the material handling equipment needs in a semi and fully automated warehouses. Dadhich et al. (2015) show that reducing the temperature of warehouse 1°C causes 10% energy saving.

There are many ways to reduce costs and emissions related to HVAC. To control the temperature of the warehouse, sensors should be used and to avoid heat loss fast-moving doors or barriers should be used. In this way, the stored goods may be kept in the required conditions. The required temperature of warehouse change according to the products stored. The products like frozen meat need to be stored -10°C, consumer goods need to be stored in 20 °C. The temperature of the indoor environment should also be set according to the working activities. In areas where hard physical activities exist like loading and unloading areas 13°C, in storage areas for dry products 10°C and in picking or inspection areas 19°C may be appropriate (McKinnon et al., 2015).

Indoor environment conditions in terms of HVAC and lighting are also crucial for workers. International WELL Building Institute gives significance to the health and wellbeing of the workers because they believe that higher conscious-workers in green buildings increase productivity. In the Harvard School of Public Health study (MacNaughton et al., 2017) 109 workers are exposed to working conditions in traditional and green buildings and a cognitive examination of higher-order decision-making ability is used to assess the workers. The results of the study show cognitive function scores of workers in green-certified buildings are better with 26.4%, according to the scores of workers in traditional buildings. Another study that investigates the effect of green buildings on the health of workers shows there are benefits providing fewer symptoms of sick building, asthma hospitalizations and lower death rates (Allen et al., 2015). In addition to the effect on health, green buildings have a positive impact on the productivity of the workers (MacNaughton et al., 2017).

The required temperature of the warehouses is maintained by the ventilation. The level of air changes means heat loss. It can be prevented by using fast-acting doors, which are opened if necessary and closed quickly, using zone-controlled thermostats. The heat source depends on the size of the warehouse. In large warehouses, the heating systems usually powered by fuel oil or gas. Heating in small warehouses is provided by warm air or radiant heaters or powered by gas or fuel oil (McKinnon et al., 2015).

Material Handling

In traditional warehouses, the products in the list of a customer order are picked by pickers by traveling between aisles and shelves. This type of picking is called picker-to-parts system. Almost 80% of the

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warehouses use the picker-to-parts system in Western Europe (De Koster et al., 2007). In picker-to-part system warehouses, forklifts, reach, and turret trucks are the most widely used handling equipment. They use a combustion engine that needs diesel, LPG or natural gas or powered by electricity.

According to Collom (2018), electric forklift provides less noise. This provides easier communication between employees and a good working environment for employees. Many studies compare that equipment in terms of environmental impact. Fuc et al. (2016) showed that electric forklift has a significantly smaller environmental effect than any forklift powered by an internal combustion engine (liquefied petroleum gas and diesel forklifts). On the other hand, some studies claim LPG forklifts performs better than electric forklifts in terms of environmental aspect. For example, Johnson (2008) showed that electric and LPG forklifts emit an equal amount of carbon theoretically, but in practice, LPG's have less carbon footprint than electricity. Facchini et al. (2016) show electric forklifts are environmentally preferable if the load is less than 3000 kg. While the weight of load increase the LPG forklifts become more preferable. The main disadvantage of electric forklifts is battery charging. Lead-acid batteries are used in battery-powered forklifts. The batteries may provide power for 8 hours. Changing battery takes almost 5-15 minutes in an automatic change out and it takes at least 45 minutes in a manual change out. A forklift that is charged during 8 hours needs an additional 8 hours for cooling. Therefore, an operation needs three batteries for each forklift in a 7/24 hour working environment. Since oxygen and hydrogen gasses are released in the charging duration it must be done in a temperature-controlled environment. In case of acid leakage in charging duration, the charging must be done in a reserved area and if it happens, the acid must be removed from the batteries for battery efficiency. The productivity of battery-powered forklifts may decrease while it is working. In order to reduce the decline in productivity, AC motors are recommended instead of direct current motors by EPRI (2004). As an alternative to the fossil fuel and battery-powered forklifts, fuel cell forklifts, which is designed as a hybrid system, may be used in warehouses. Fuel cell forklifts are more productive than battery-powered forklifts since they don't need time for battery changing, they can be refueled in five minutes, and it is more preferable in terms of environment since acid leakage does not arise. Although fuel cell forklifts have a high initial cost, they cause less total cost.

In addition, there are literature studies that investigate and compare efficiency of traditional equipment. For instance, Öztürkoğlu (2016) compared picking time of pallets with and without raisable turntable and showed using raisable turntable cause saving on picking time of pallets in warehouse. Since picking time reduction may cause increment in total number of picking operation in a specific period, unit cost of picking in this specific period may decrease. Therefore, it is possible that reduction in picking time can cause indirectly saving in cost of picking.

Automated Storage and Retrieval Systems (AS/RS)

The AS/RS is one of the most used material handling systems in warehouses. In AS/RS, the cranes handle unit loads by traveling vertically and horizontally at the same time. It is used for both unit loads such as pallets and totes and small units. AS/RS is usually used with equally sized rack systems. Lee, Lee, & Hur (2005) proposed an AS/RS with modular sized rack systems to meet the customer's various sized order types. As an alternative to the AS/RS, autonomous vehicle storage and retrieval systems (AVS/RSs) are proposed by considering the economic and environmental dimension of it. In AVS/RS, the unit loads are handling horizontally by vehicles and while vertical movement is provided by lifts. Many of the studies about handling systems showed that AVS/RS is much more suitable than AS/RS for

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unit loads in economic comparison. Tappia, Marchet, Melacini, & Perotti (2015) showed that AVS/RS is more preferable in case required handling capacity is higher than the required number of storage locations and AS/RS is more preferable in vice versa. The environmental impact of the automated warehouse is assessed by the indirect CO^2 emission resulting from energy consumption. Tappia et al. (2015) also showed that CO^2 emission arises from energy consumption due to material handling operations during one year are lower in AVS/RS than AS/RS. For each 1000 single command cycle, AVS/RS consume 1.07 kWh energy and emit 0.39 kg CO^2 while AS/RS consume 9.76 kWh energy and emit 3.54 kg CO^2. There is not much research, which considers both economic and social dimension of sustainability simultaneously but Neto, Walther, Bloemhof, Van Nunen, & Spengler (2009) claimed that decreasing environmental effect is possible with cost increment so there is a trade-off between environment and economic dimensions of sustainability.

Automated Guided Vehicles (AGV) Usage in Warehouses

AGVs have benefits on the environmental dimension of sustainability by reducing energy consumption (Acciaro and Wilmsmeier, 2015) and emissions (Geerlings and Van Duin, 2011). AGVs generate less GHGs (CO^2 and NO^2) since they minimize travel distance (Schmidt, Meyer-Barlag, Eisel, Kolbe, & Appelrath, 2015). The AGVs are evaluated according to their energy usage by Schmidt et al. (2015) and battery-powered AGVs are more beneficial compared to diesel-powered AGVs.

The social contribution of AGVs on sustainability can be evaluated by the working condition improvements and working accidents. Between 1998 and 2007, 3 million work accidents came out and most of them occurred due to forklift drivers (Sabattini et al., 2013). AGVs have the potential to improve safety (Duffy, Wu, & Ng, 2003) in the working environment so this is a big contribution to the social side of sustainability. Krüger, Lien, & Verl (2009) explain the social and economic contribution of AGVs by presenting the reducing effect of AGVs and human corporations on lower back pain, spine injuries. Furthermore, the standards and regulations about the corporation of human and robot operators to improve their safety are examined (Kabe, Tanaka, Ikeda, & Sugimoto, 2010).

Although AGVs have high initial costs (Peterson and Michalek, 2013), they eliminate the labor cost (Gosavi and Grasman, 2009) and can reduce total handling costs. The top internet-based retailing company Amazon bought the manufacturer of Kiva robots that pick and carry a shelf of goods to a picker and used 30.000 kivas in its warehouses and FCs to decrease delivery times (DHL, 2016). By the time, they provide a high level of customer satisfaction that is one of the top expectations of e-commerce customers. Ventura and Rieksts (2009) generate a model to minimize the response time of multiple vehicles by providing on-time delivery in a shift. The AGVs contribution to the operational level promotes the economic dimension of sustainability.

FUTURE RESEARCH DIRECTIONS

In this study transportation, distribution and warehousing are evaluated as logistic activities. Although transportation subject is broad in scope, we investigated road transportation in the means of sustainability. It involves maritime, air, road, rail, pipeline and inland water transportation. Each mode of transportation associate with e-commerce can be evaluated in terms of sustainability in a new chapter as a future study.

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CONCLUSION

E-commerce is becoming widespread every day and this brings some challenges and benefits to the logistics world. Manufacturers, retailers and even small-scaled craftsmen can produce and sell their products using internet portals. Small parts can easily be sent to customers directly from a warehouse of a manufacturer via cargo companies. To deliver these small parts, lots of trucks and vans are on the move, which causes more CO^2 release every day. Due to e-commerce sales, last-mile distribution options are increased. While attended home delivery models increase van-miles and transport costs, unattended delivery (UD) options such as shared RBs, delivery boxes, C&C points provide environmentally and economically sustainable solutions. Instant delivery and same-day delivery options are becoming popular and time constraints make the distribution problems more complex. UD options also provide beneficial solutions for time windows constraints of customers and cause fewer van moves on the traffic. Even so, some UD options require customers to use their cars and pick up products from a specific place and this may result in more CO^2 release and traffic congestion. Crowdsourcing logistics has recently begun to use as a last-mile delivery option. These systems can be environmentally friendly and cost-effective if companies use already planned routes of workers or customers. New technologies such as sidewalk robots and drones are in use for delivering products. For now, these technologies are expensive and the effects of their common usage have not tested yet. The effects of such technologies should be evaluated in the means of environmental, economic and social aspects. Their permissions should be given locally, after evaluating the needs, the capacity and the characteristics of the related region.

Due to the changes in customer demand because of e-commerce, the FCs which provide customer orders on time and accurately are emerged in addition to the big regional warehouses. Beside the traditional equipment such as forklifts, reach trucks and turret trucks, automated systems to store and retrieve products and AGVs became widespread in the FCs. There are some advantages and disadvantages of this equipment about energy consumption, GHG emission rates, inventory cost and working environment of employees which are discussed above. Although all of these equipment have initial investment cost they provide benefit especially in terms of employees since they facilitate to lift heavy products. The equipment especially powered by electric and LPG is recommended in terms of environmental aspect. The issues such as location and layout of the facilities, materials used in wall, roof and floor systems, lighting systems, HVAC systems should be determined accurately before the facilities are built since they cause inventory costs, energy consumption and GHG emission. A brief summary of benefits emerged due to e-commerce related logistics issues that are highlighted in this chapter are shown in the Table 1.

Although there are many supply chain and logistics studies about sustainability in literature, many of them does not related to e-commerce or just one or two dimensions of sustainability has taken into account. The studies and industrial reports especially considered environmental and economic side of sustainability rather than social side. In this chapter, three dimensions of sustainability is considered while evaluating logistics activities, which are appeared due to, expanded e-commerce.

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Table 1. Summary table of sustainability aspects and their benefits

Social Benefits Emerged Due to E-Commerce Related Logistic Issues	
Delivery and Transportation	**Warehousing**
· Easier reach to products with AHD and UD services (Cairns, 2007). · Reduction in idle vehicle kilometers of vans due to usage free capacity of citizens and workers as a part of crowdsourcing delivery (Rai et al., 2017). · Easier to reach products for disabled and elderly people by ADVs · More reliable deliveries to hard-to-reach areas due to drone usage (Boeras et al., 2019). · Reduction in traffic and obstacles is expected by using drones (Murray & Chu, 2015) sidewalk robots.	· Emerging of new jobs due to increased number of FCs and increase in employment (Mandel, 2017). · Reduction in unpaid work, which is transformed to work in FCs due to e-commerce (Progressive Policy Institute, 2017). · Easier reach to work for employees in warehouses/DCs/FCs, which are located closer to city centers with the aim of travel distance reduction between these facilities and e-commerce customers (Tan et al., 2009). · Reduction in sickness symptoms of workers like asthma in green buildings (Allen et al., 2015). · Better working conditions for employees in terms of air quality and noise through electric forklifts used in warehouses/DCs/FCs (Collom, 2018). · Reduction in accidents in warehouses/DCs/FCs through automated guided vehicles (Duffy et al., 2003).
Economic Benefits Emerged Due to E-Commerce Related Logistic Issues	
Delivery and Transportation	**Warehousing**
· Decrease in transportation costs due to increment in UD services (Kämäräinen et al., 2001). · Reduction in transportation cost due to usage free capacity of citizens and workers cars as a part of crowdsourcing delivery (Rai, 2017). · Reduction in transportation cost is expected in the future due to delivering with autonomous vehicles (Gružauskas et al., 2018).	· Reduction in travel distance between warehouses/DCs/FCs and e-commerce customers (Kaplan, 2019; Napolitano, 2013; Demirel et al., 2010; Raut, et al., 2017) and hence reduction in cost of transportation. · Reduction in travel distance between product locations in warehouses/DCs/FCs through new aisle layouts (Gue and Meller, 2009; Öztürkoğlu et al., 2012; Kocaman et al., 2019) and hence reduction in cost of transportation. · Reduction in travel distance through new storage systems in warehouses/DCs/FCs to pick products in an order list (Boysen et al., 2019) and hence reduction in cost of transportation. · Reduction in energy consumption by selecting appropriate light bulbs (Colicchia et al., 2013), by using them when necessary (DHL, 2010), by cleaning the bulbs regularly (DHL, 2010) and by using sensors to turn lights on and off (Dadhich et al., 2015; Davis, 2019) in the warehouse/DC/FC facilities. · Reduction in energy consumption by using sensors for HVAC and hence reduction in cost of warehousing (McKinnon et al., 2015). · Reduction in energy consumption by using AS/RS and AGVs in warehouses/DCs/FCs and hence reduction in cost of warehousing (Tappia et al., 2015; Schmidt et al., 2015). · Reduction in in energy consumption by utilizing day light more in warehouses/DCs/FCs (DHL, 2010).
Environmental Benefits Emerged Due to E-Commerce Related Logistic Issues	
Delivery and Transportation	**Warehousing**
· Reduction in GHG emissions due to increment in electrical vehicle usage (IEA, 2019). · Reduction in GHG emissions due to increment in ZEZ and LEZ (Transport & Environment, 2019). · Reduction traffic noise, air pollution and fuel-oil consumption due to usage free capacity of citizens and workers cars as a part of crowdsourcing delivery (Rai, 2017).	· Reduced energy consumption and GHG emissions due to green warehouse buildings (Kaplan, 2019). · Reduction in travel distance between warehouses/DCs/FCs and e-commerce customer and hence reduction in amount of GHG emissions (Napolitano, 2013). · Reduction in travel distance through new aisle layouts in a warehouse/DC/FC to pick products in order list (Gue and Meller, 2009; Öztürkoğlu et al., 2012; Kocaman et al., 2019) and hence reduction in amount of GHG emission. · Reduction in amount of GHG emission by using renewable energy in warehouse/DC/FC buildings (Prologis, 2017). · Reduction in energy consumption by using natural insulation materials for the wall, floor and roof of the warehouse/DC/FC buildings (MacNaughton et al., 2017; Rai et al., 2011). · Reduction in amount of GHS emissions by using electric forklifts in warehouses/DCs/FCs (Fuc et al., 2016).

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REFERENCES

Acciaro, M., & Wilmsmeier, G. (2015). Energy efficiency in maritime logistics chains. *Research in Transportation Business & Management*, *17*, 1–7. doi:10.1016/j.rtbm.2015.11.002

Alberro, H. (2019). *Utopia isn't just idealistic fantasy – it inspires people to change the world*. Retrieved November 20, 2019, from https://theconversation.com/utopia-isnt-just-idealistic-fantasy-it-inspires-people-to-change-the-world-118962

Allen, J. G., MacNaughton, P., Satish, U., Santanam, S., Vallarino, J., & Spengler, J. D. (2015). Associations of cognitive function scores with carbon dioxide, ventilation, and volatile organic compound exposures in office workers: A controlled exposure study of green and conventional office environments. *Environmental Health Perspectives*, *124*(6), 805–812. doi:10.1289/ehp.1510037 PMID:26502459

Angelovska, N. (2019). *Top 5 online retailers*. Retrieved November 30, 2019, from https://www.forbes.com/sites/ninaangelovska/2019/05/20/top-5-online-retailers-electronics-and-media-is-the-star-of-e-commerce-worldwide/#6c9267bb1cd9

Ashrafzadeh, M., Rafiei, F. M., Isfahani, N. M., & Zare, Z. (2012). Application of fuzzy TOPSIS method for the selection of Warehouse Location: A Case Study. *Interdisciplinary Journal of Contemporary Research in Business*, *3*(9), 655–671.

Bartholdi, J. J., & Hackman, S. T. (2014). *Warehouse & Distribution Science: Release 0.96*. Atlanta, GA: Supply Chain and Logistics Institute, School of Industrial and Systems Engineering, Georgia Institute of Technology.

Bartolini, M., Bottani, E., & Eric, H. (2019). Green warehousing: Systematic literature review and bibliometric analysis. *Journal of Cleaner Production*, *226*, 242–258. doi:10.1016/j.jclepro.2019.04.055

Black, W. R. (2010). *Sustainable transportation: problems and solutions*. New York, NY: Guilford Press.

Boeras, D. I., Collins, B. C., & Peeling, R. W. (2019). *The Use of Drones in the Delivery of Rural Healthcare. In Revolutionizing Tropical Medicine: Point-of-Care Tests, New Imaging Technologies and Digital Health* (p. 618). John Willey and Sons.

Bonilla, D. (2016). Urban vans, e-commerce and road freight transport. *Production Planning and Control*, *27*(6), 433–442. doi:10.1080/09537287.2016.1147093

Boyer, K. K., Frohlich, M. T., & Hult, G. T. M. (2005). *Extending the supply chain – How cutting-edge companies bridge the critical last mile into customers' homes*. New York: Amacom.

Boysen, N., de Koster, R., & Weidinger, F. (2019). Warehousing in the e-commerce era: A survey. *European Journal of Operational Research*, *277*(2), 396–411. doi:10.1016/j.ejor.2018.08.023

Boysen, N., Fedtke, S., & Weidinger, F. (2018). Optimizing automated sorting in warehouses: The minimum order spread sequencing problem. *European Journal of Operational Research*, *270*(1), 386–400. doi:10.1016/j.ejor.2018.03.026

Büyüksaatçi, S., & Esnaf, Ş. (2014). Carbon emission based optimization approach for the facility location problem. *TOJSAT*, *4*(1), 9–20.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Cairns, S. (2007). Delivering supermarket shopping: More or less traffic? *Transport Reviews*, *§§§*, 51–84.

Chen, C., & Pan, S. (2015). Using the Crowd of Taxis to Last Mile Delivery in E-Commerce: a methodological research. Proceedings of SOHOMA15, 640, 61-70.

Chopra, S., & Meindl, P. (2015). *Supply Chain Management Strategy Planning, and Operation*. Edinburgh, UK: Pearson.

Clement, J. (2019). *Retail e-commerce sales worldwide from 2014 to 2023*. Retrieved 11 11, 2019 from https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/

Clive, M. (2015). Reducing the environmental impact of warehousing. In Green logistics: Improving the environmental sustainability of logistics (pp. 167-190). Kogan Page Publishers.

Colicchia, C., Marchet, G., Melacini, M., & Perotti, S. (2013). Building environmental sustainability: Empirical evidence from Logistics Service Providers. *Journal of Cleaner Production*, *59*, 197–209. doi:10.1016/j.jclepro.2013.06.057

Collom, L. (2018). *Electric-Powered Forklift Benefits in the Warehouse*. Retrieved (December 9, 2019) from https://www.toyotaforklift.com/blog/electric-powered-forklifts-benefits-in-the-warehouse

Cook, P., & Sproul, A. (2011). Towards low-energy retail warehouse building. *Architectural Science Review*, *54*(3), 206–214. doi:10.1080/00038628.2011.590055

Dadhich, P., Genovese, A., Kumar, N., & Acquaye, A. (2015). Developing sustainable supply chains in the UK construction industry: A case study. *International Journal of Production Economics*, *164*, 271–284. doi:10.1016/j.ijpe.2014.12.012

Davis, D. (2019). *Guide to Warehouse Lighting*. Retrieved December 5, 2019, from https://blog.1000bulbs.com/home/guide-to-warehouse-lighting

De Koster, R., Le-Duc, T., & Roodbergen, K. J. (2007). Design and control of warehouse order picking: A literature review. *European Journal of Operational Research*, *182*(2), 481–501. doi:10.1016/j.ejor.2006.07.009

Deloitte. (2014). *The shed of the future E-commerce: its impact on warehouses*. London: Deloitte LPP.

Demirel, T., Demirel, N. Ç., & Kahraman, C. (2010). Multi-criteria warehouse location selection using Choquet integral. *Expert Systems with Applications*, *37*(5), 3943–3952. doi:10.1016/j.eswa.2009.11.022

DHL. (2010). *Delivering Tomorrow: Towards Sustainable Logistics. Deutsche Post DHL*. Bonn: Christof E. Ehrhart.

DHL. (2016). *Robotic in logistics: A DPDHL perspective on implications and use cases for the logistics industry. ST. Onge Company*. Tom Bonkenburg.

Duffy, V. G., Wu, F. F., & Ng, P. P. (2003). Development of an internet virtual layout system for improving workplace safety. *Computers in Industry*, *50*(2), 207–230. doi:10.1016/S0166-3615(02)00121-5

Electric Power Research Institute (EPRI). (2004). Evaluating Opportunities for Fast Charging Application at Del Monte Foods. Electric Power Research Institute Report 1002237. Palo Alto, CA: EPRI.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Environmental Protection Agency. (2015). *2015 Green Communities Criteria.* Retrieved January 13, 2020, from https://www.enterprisecommunity.org/solutions-and-innovation/green-communities/criteria

Environmental Protection Agency. (2019). *Greenhouse Gas Emissions*. Retrieved November 12, 2019, from https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions

European Commission. (2011). *Science for environment report*. Bristol: The University of the West of England.

European Union's Council of Ministers. (2001). *2340th Council meeting Transport/Telecommunications*. Retrieved November 26, 2019, from https://ec.europa.eu/commission/presscorner/detail/en/PRES_01_131

Facchini, F., Mummolo, G., Mossa, G., Digiesi, S., Boenzi, F., & Verriello, R. (2016). Minimizing the carbon footprint of material handling equipment: Comparison of electric and LPG forklifts. *Journal of Industrial Engineering and Management*, *9*(5), 1035–1046. doi:10.3926/jiem.2082

Freis, J., Vohlidka, P., & Gunthner, W. (2016). Low-carbon warehousing: Examining impacts of building and intra-logistics design options on energy demand and the CO^2 emissions of logistics centers. *Sustainability*, *8*(5), 448. doi:10.3390u8050448

Fuc, P., Kurczewski, P., Lewandowska, A., Nowak, E., Selech, J., & Ziolkowski, A. (2016). An environmental life cycle assessment of forklift operation: A well-to-wheel analysis. *The International Journal of Life Cycle Assessment*, *21*(10), 1438–1451. doi:10.100711367-016-1104-y

Geerlings, H., & Van Duin, R. (2011). A new method for assessing CO^2-emissions from container terminals: A promising approach applied in Rotterdam. *Journal of Cleaner Production*, *19*(6-7), 657–666. doi:10.1016/j.jclepro.2010.10.012

Gevaers, R., Voorde, E. V., & Vanelslander, T. (2009). Characteristics of Innovations in Last-Mile Logistics - Using Best Practices, Case Studies and Making the Link with Green and Sustainable Logistics. In Proceedings of the E. T. Conference. Association for t European Transport and Contibutors.

Gevaers, R., Voorde, E. V., & Vanelslander, T. (2014). Cost Modelling and Simulation of Last-mile Characteristics in an Innovative B2C Supply Chain Environment with Implications on Urban Areas and Cities. *8th International Conference on City Logistics*, *125*(2014), 398-411. 10.1016/j.sbspro.2014.01.1483

Gill, A., & Ishaq Bhatti, M. (2007). Optimal model for warehouse location and retailer allocation. *Applied Stochastic Models in Business and Industry*, *23*(3), 213–221. doi:10.1002/asmb.666

Goodland, R., & Bank, W. (2002). Sustainability: Human, Social, Economic and Environmental. *Social Science*, *6*, 220–225.

Gordon, D. (1995). Sustainable transportation: what do we mean and how do we get there. *Transportation and Energy: Strategies for a sustainable transportation system*, 1-11. doi:. doi:10.3141/1670-05

A. Gosavi, & S. E. Grasman (Eds.). (2009). Simulation-based optimization for determining AGV capacity in a manufacturing system. In *IIE Annual Conference Proceedings*. Institute of Industrial and Systems Engineers.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Govindan, K., Garg, K., Gupta, S., & Jha, P. C. (2016). Effect of product recovery and sustainability enhancing indicators on the location selection of manufacturing facility. *Ecological Indicators*, *67*, 517–532. doi:10.1016/j.ecolind.2016.01.035

Gružauskas, V., Baskutis, S., & Navickas, V. (2018). Minimizing the trade-off between sustainability and cost effective performance by using autonomous vehicles. *Journal of Cleaner Production*, *184*, 709–717. doi:10.1016/j.jclepro.2018.02.302

Gue, K., Ivanovi'c, G., & Meller, R. (2012). A unit-load warehouse with multiple pickup and deposit points and non-traditional aisles. *Transportation Research Part E, Logistics and Transportation Review*, *48*(4), 795–806. doi:10.1016/j.tre.2012.01.002

Gue, K. R., & Meller, R. D. (2009). Aisle configurations for unit-load warehouses. *IIE Transactions*, *41*(3), 171–182. doi:10.1080/07408170802112726

Han, L., Chin, S.-M., Franzese, O., & Hwang, H.-L. (2005). Estimating the impact of pickup-and delivery-related illegal parking activities on traffic. *Transportation Research Record Journal of the Transportation Research Board,* (1906), 49-55 Doi:10.3141/1906-06

Hsu, J. (2019). *Out of the Way, Human! Delivery Robots Want a Share of Your Sidewalk*. Retrieved November 22, 2019, from https://www.scientificamerican.com/article/out-of-the-way-human-delivery-robots-want-a-share-of-your-sidewalk/

Hübner, A., Holzapfel, A., Kuhn, H., & Obermair, E. (2019). Distribution in Omnichannel Groccery Retailing. In *Operations in an Omnichannel World /Springer Series in Supply Chain Management* (pp. 293–294). Cham: Springer Nature.

Huppertz, P. (1999). Market changes require new supply chain thinking. *Transportation & Distribution*, 70-4.

IEA. (2019). *Tracking Transport*. Retrieved December 16, 2019, https://www.iea.org/reports/tracking-transport-2019

Joerss, M., Neuhaus, F., & Schröder, J. (2016b). How customer demands are reshaping last-mile delivery. *The McKinsey Quarterly*, *17*, 1–5.

Joerss, M., Schröder, J., Neuhaus, F., Klink, C., & Mann, F. (2016a). *Parcel delivery: The future of last mile*. McKinsey & Company.

Johnson, E. (2008). Disagreement over carbon footprints: A comparison of electric and LPG forklifts. *Energy Policy*, *36*(4), 1569–1573. doi:10.1016/j.enpol.2008.01.014

Jones, K. (2010). *Aircraft Noise and Children's Learning. Civil Aviation Authority*. Norwich: The Stationery Office.

Kabe, T., Tanaka, K., Ikeda, H., & Sugimoto, N. (2010). Consideration on safety for emerging technology–Case studies of seven service robots. *Safety Science*, *48*(3), 296–301. doi:10.1016/j.ssci.2009.11.008

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Kahn Ribeiro, S., Figueroa, M. J., Creutzig, F., Dubeux, C., Hupe, J., & Kobayashi, S. (2012). Energy end-use: Transport. In Global Energy Assessment-Toward a Sustainable Future. Cambridge University Press.

Kämäräinen, V., Saranen, J., & Holmström, J. (2001). The reception box impact on home delivery efficiency in the e-grocery business. *International Journal of Physical Distribution & Logistics Management*, *31*(6), 414–426. doi:10.1108/09600030110399414

Kaplan, D. A. (2019). *7 elements of the sustainable warehouse.* Retrieved November 22, 2019 from https://www.supplychaindive.com/news/building-sustainable-warehouse-shippers-cost-benefits/549625/

Kawa, A. (2017). Fulfillment service in e-commerce logistics. *LogForum*, *13*(4), 429–438. doi:10.17270/J.LOG.2017.4.4

Kocaman, Y., Öztürkoğlu, Ö., & Gümüşoğlu, Ş. (2019). Aisle designs in unit-load warehouses with different flow policies of multiple pickup and deposit points. *Central European Journal of Operations Research*, *§§§*, 1–33.

Krüger, J., Lien, T. K., & Verl, A. (2009). Cooperation of human and machines in assembly lines. *CIRP Annals*, *58*(2), 628–646. doi:10.1016/j.cirp.2009.09.009

Laudon, K., & Traver, C. (2016). *E-commerce: business, technology, society*. Boston: Pearson.

Laudon, K., & Traver, C. (2016). *E-commerce: business, technology, society*. Boston: Pearson.

Lawrence, E. C. (1998). *Internet Commerce: Digital Models for Business*. Sydney, Australia: John Wiley & Sons.

Lee, Y. H., Lee, M. H., & Hur, S. (2005). Optimal design of rack structure with modular cell in AS/RS. *International Journal of Production Economics*, *98*(2), 172–178. doi:10.1016/j.ijpe.2004.05.018

F. Li, T. Liu, H. Zhang, R. Cao, W. Ding, & J. P. Fasano (Eds.). (2008). Distribution center location for green supply chain. In *Proceedings of 2008 IEEE International Conference on Service Operations and Logistics, and Informatics*. IEEE.

Lim, S. F., Jin, X., & Srai, J. S. (2018). Consumer-driven e-commerce: A literature review, design framework, and research agenda on last-mile logistics models. *International Journal of Physical Distribution & Logistics Management*, *48*(3), 308–332. doi:10.1108/IJPDLM-02-2017-0081

Litman. (2017). Developing Indicators for Comprehensive and Sustainable Transport Planning. *Transportation Research Record: Journal of the Transportation Research Board*, *2017*(1), 10–15. doi:10.3141/2017-02

MacNaughton, P., Satish, U., Laurent, J. G. C., Flanigan, S., Vallarino, J., Coull, B., ... Allen, J. G. (2017). The impact of working in a green certified building on cognitive function and health. *Building and Environment*, *114*, 178–186. doi:10.1016/j.buildenv.2016.11.041 PMID:28785124

Mandel, M. (2017). *How e-commerce is raising pay and creating jobs around the country*. Retrieved November 11, 2019, from https://www.forbes.com/sites/realspin/2017/04/03/how-e-commerce-is-raising-pay-and-creating-jobs-around-the-country/#aa393d76dff5

Marks, M. (2019). *Robots in space: Sharing our world with autonomous delivery vehicles.* SSRN 3347466.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

McKenzie, S. (2004). *Social Sustainability: Towards Some Definitions*. Hawke Research Institute Working Paper Series 27.

Mokhtarian, P. L. (2004). A conceptual analysis of the transportation impacts of B2C e-commerce. *Transportation*, *31*(3), 257–284. doi:10.1023/B:PORT.0000025428.64128.d3

Morel, J. C., Mesbah, A., Oggero, M., & Walker, P. (2001). Building houses with local materials: Means to drastically reduce the environmental impact of construction. *Building and Environment*, *36*(10), 1119–1126. doi:10.1016/S0360-1323(00)00054-8

Morelli, J. (2011). Environmental Sustainability: A Definition for Environmental Professionals. *Journal of Environmental Sustainability*, *1*(1), 1–9. doi:10.14448/jes.01.0002

Murray, C. C., & Chu, A. G. (2015). The flying sidekick traveling salesman problem: Optimization of drone-assisted parcel deliveryThe flying sidekick traveling salesman problem: Optimization of drone-assisted parcel delivery. *Transportation Research Part C, Emerging Technologies*, *54*, 86–109. doi:10.1016/j.trc.2015.03.005

MWPL International Inc. (2019). *The Walmart distribution center network in the United States*. Retrieved November 11, 2019, from http://www.mwpvl.com/html/walmart.html

Napolitano, M. (2013). *7 Trends in Sustainable Warehouse Design.* Retrieved November 25, 2019, from https://www.supplychain247.com/article/7_trends_in_sustainable_warehouse_design/green

National Bureau of Economic Research. (2017). *Economies of Density in E-Commerce: A Study of Amazon's Fulfillment Center Network (No. w23361)*. Cambridge: Author.

Neto, J. Q. F., Walther, G., Bloemhof, J., Van Nunen, J. A. E. E., & Spengler, T. (2009). A methodology for assessing eco-efficiency in logistics networks. *European Journal of Operational Research*, *193*(3), 670–682. doi:10.1016/j.ejor.2007.06.056

Öztürkoğlu, Ö. (2015). *Investigating the robustness of aisles in a non-traditional unit-load warehouse design: Leverage. In 2015 IEEE congress on evolutionary computation (CEC)* (pp. 2230–2236). IEEE. doi:10.1109/CEC.2015.7257160

Öztürkoğlu, Ö. (2016). The Effects of Manual Material Handling Equipment on Loading and Unloading Time of a Case in a Pallet. *Journal of Yaşar University*, *11*(44), 278–290.

Öztürkoğlu, Ö. (2018). Lean and Sustainable Warehousing. In U. Akküçük (Ed.), *Handbook of Research on Supply Chain Management for Sustainable Development* (pp. 218–241). IGI Global. doi:10.4018/978-1-5225-5757-9.ch012

Öztürkoğlu, Ö., Gue, K. R., & Meller, R. D. (2012). Optimal unit-load warehouse designs for single-command operations. *IIE Transactions*, *44*(6), 459–475. doi:10.1080/0740817X.2011.636793

Öztürkoğlu, Ö., Gue, K. R., & Meller, R. D. (2014). A constructive aisle design model for unit-load warehouses with multiple pickup and deposit points. *European Journal of Operational Research*, *236*(1), 382–394. doi:10.1016/j.ejor.2013.12.023

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Öztürkoğlu, Ö., & Hoşer, D. (2018). A new warehouse design problem and a proposed polynomial-time optimal order picking algorithm. *Journal of the Faculty of Engineering and Architecture of Gazi University*, *33*(4), 1569–1588.

Öztürkoğlu, Ö., & Hoser, D. (2019a). A discrete cross aisle design model for order-picking warehouses. *European Journal of Operational Research*, *275*(2), 411–430. doi:10.1016/j.ejor.2018.11.037

Öztürkoğlu, Ö., & Hoser, D. (2019b). An evaluation of order picking tour efficiency in two-block warehouses. *Operations and Supply Chain Management: An International Journal*, *12*(2), 74–78. doi:10.31387/oscm0370225

Öztürkoğlu, Ö., Kocaman, Y., & Gümüşoğlu, Ş. (2018). Evaluating Chevron aisle design in unit load warehouses with multiple pickup and deposit points. *Journal of the Faculty of Engineering and Architecture of Gazi University*, *33*(3), 793–807.

Peerless research group. (2019). *The Impacts of e-Commerce: Fulfillment Challenges and Improvement Priorities.* Retrieved November 30, 2019, from https://scg-peerless.s3.amazonaws.com/reseach_briefs/Honeywell-Intelligrated_RB5.pdf

Peterson, S. B., & Michalek, J. J. (2013). Cost-effectiveness of plug-in hybrid electric vehicle battery capacity and charging infrastructure investment for reducing US gasoline consumption. *Energy Policy*, *52*, 429–438. doi:10.1016/j.enpol.2012.09.059

Planners, C. (2014). A Global Survey of Urban Sustainability Rating Tools. *Global Symposium on Urban Sustainability Rating Tool*.

Porter, J. (2019). *Google's Wing drones approved to make public deliveries in Australia*. Retrieved December 11, 2019, from https://www.theverge.com/2019/4/9/18301782/wing-drone-delivery-google-alphabet-canberra-australia-public-launch

Progressive Policy Institute. (2017). *How ecommerce creates jobs and reduces income inequality.* Washington, DC: Author.

Prologis. (2017). *Sustainability Report*. San Francisco: Author.

Pudleiner, D., & Colton, J. (2015). Using sensitivity analysis to improve the efficiency of a Net-Zero Energy vaccine warehouse design. *Building and Environment*, *87*, 302–314. doi:10.1016/j.buildenv.2014.12.026

Punakivi, M., Yrjölä, H., & Holmström, J. (2001). Solving the last mile issue: Reception box or delivery box? *International Journal of Physical Distribution & Logistics Management*, *31*(6), 427–439. doi:10.1108/09600030110399423

Radhi, H. (2010). On the optimal selection of wall cladding system to reduce direct and indirect CO^2 emissions. *Energy*, *35*(3), 1412–1424. doi:10.1016/j.energy.2009.11.026

Rai, D., Sodagar, B., Fieldson, R., & Hu, X. (2011). Assessment of CO^2 emissions reduction in a distribution warehouse. *Energy*, *36*(4), 2271–2277. doi:10.1016/j.energy.2010.05.006

Rai, H. B., Verlinde, S., Merckx, J., & Macharis, C. (2017). Crowd logistics: an opportunity for more sustainableurban freight transport? *Eur. Transp. Res. Rev.*, 9-39 . doi:10.100712544-017-0256-6

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Rao, S., Goldsby, T., & Iyengar, D. (2009). The marketing and logistics efficacy of online sales channels. *International Journal of Physical Distribution & Logistics Management*, *39*(2), 106–130. doi:10.1108/09600030910942386

Raut, R. D., Narkhede, B. E., Gardas, B. B., & Raut, V. (2017). Multi-criteria decision making approach: A sustainable warehouse location selection problem. *International Journal of Management Concepts and Philosophy*, *10*(3), 260–281. doi:10.1504/IJMCP.2017.085834

Reagan, C. (2018). *Walmart saves $200 million by changing its light bulbs and $20 million with a new floor wax.* Retrieved December 4, 2019, from https://www.cnbc.com/2018/10/16/walmart-saves-200-million-by-changing-its-light-bulbs.html

Reyes, D., Savelsbergh, M., & Toriello, A. (2017). Vehicle routing with roaming delivery locations. *Transportation Research Part C, Emerging Technologies*, *80*, 71–91. doi:10.1016/j.trc.2017.04.003

Ricker, F., & Kalakota, R. (1999). Order fulfillment: the hidden key to e-commerce success. *Supply Chain Management Review, 11*(3), 60-70.

Ries, J. M., Grosse, E. H., & Fichtinger, J. (2017). Environmental impact of warehousing: A scenario analysis for the United States. *International Journal of Production Research*, *55*(21), 6485–6499. doi: 10.1080/00207543.2016.1211342

Sabattini, L., Digani, V., Secchi, C., Cotena, G., Ronzoni, D., Foppoli, M., & Oleari, F. (Eds.). (2013). Technological roadmap to boost the introduction of AGVs in industrial applications. In *Proceedings* of *2013 IEEE 9th International Conference on Intelligent Computer Communication and Processing (ICCP)*. IEEE. 10.1109/ICCP.2013.6646109

Schmidt, J., Meyer-Barlag, C., Eisel, M., Kolbe, L. M., & Appelrath, H. J. (2015). Using battery-electric AGVs in container terminals—Assessing the potential and optimizing the economic viability. *Research in Transportation Business & Management*, *17*, 99–111. doi:10.1016/j.rtbm.2015.09.002

Singh, A. P., Avinash, A. D., & Agarwal, K. (2017). *Evolving Energy Scenario: Role and Scope for Alternative Fuels in Transport Sector. In Prospects of Alternative Transportation Fuels. Energy, Environment, and Sustainability* (pp. 7–19). Singapore: Springer.

Singh, S. (2015). Critical Reasons for Crashes Investigated in the National Motor Vehicle Crash Causation Survey. U.S. Department of Transportation. Washington, DC: NHTSA's National Center for Statistics and Analysis.

Slabinac, M. (2015). Innovative Solutions For A "Last-Mile" Delivery – A European Experience. *Proceedings of The 15th International Scientific Conference Business Logistics in Modern Management*.

Spisak, K. (2019). *How Can Drone Delivery Change E-commerce?* Retrieved December 09, 2019, from https://www.business2community.com/ecommerce/how-can-drone-delivery-change-e-commerce-02198890

Stanley Frederick, W.T., & Lim, X. J. (2018). Consumer-driven e-commerce: A literature review, design framework, and research agenda on last-mile logistics models. *International Journal of Physical Distribution & Logistics Management, 48*(3), 308-332.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Starcke, D. (2018). *Creative Crowdsourcing for Last Mile Efficiency.* Retrieved August 12, 2019, from https://firstflightsolutions.com/creative-crowdsourcing-last-mile-efficiency/

Statistica. (2019a). *Retail e-commerce sales worldwide from 2014 to 2023*. Retrieved Nov 11, 2019 from statista.com: https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/

Statistica. (2019b). *B2C e-commerce as percentage of GDP in Western Europe from 2009 to 2018*. Retrieved Nov 3, 2019 from https://www.statista.com/statistics/324588/b2c-e-commerce-as-percentage-of-gdp-western-europe/

Statistica. (2019c). *B2C e-commerce as percentage of GDP in the United States from 2009 to 2018*. Retrieved Nov 3, 2019 from https://www.statista.com/statistics/324582/b2c-e-commerce-as-percentage-of-gdp-usa/

Tambovcevs, A., & Tambovceva, T. (2012). Logistic system ıntegration with environmental management system: A case study of ınternational company. ISEE 2012 Conference "Ecological Economics and Rio+20": Abstracts and Full Papers.

K. S. Tan, M. D. Ahmed, & D. Sundaram (Eds.). (2009). Sustainable warehouse management. In *Proceedings of the International Workshop on Enterprises & Organizational Modeling and Simulation*. New York: Association for Computng Machinery.

Tappia, E., Marchet, G., Melacini, M., & Perotti, S. (2015). Incorporating the environmental dimension in the assessment of automated warehouses. *Production Planning and Control*, *26*(10), 824–838. doi:10.1080/09537287.2014.990945

Taylor, J. (2015). Crowdsourcing IT Work: A Three-Fold Perspective from the Workers, Buyers, and Platform Providers. *Proceedings of the 2015 ACM SIGMIS conference on computers and people research*. 10.1145/2751957.2755504

Texas A&M Transportation Institute. (2017). *How will e-commerce growth impact our transportation network? Final report* (No. PRC 17-79 F). Author.

Tompkins, J. A., White, J. A., Bozer, Y. A., & Tanchoco, J. M. A. (2003). *Facilities Planning*. John Wiley & Sons.

Transport & Environment. (2019). *Low-Emission Zones are a success - but they must now move to zero-emission mobility*. Retrieved 02 07, 2020, from https://www.transportenvironment.org/sites/te/files/publications/2019_09_Briefing_LEZ-ZEZ_final.pdf

United Nations Department of Economic and Social Affairs. (2019). *Population Prospects 2019.* New York: Population Division. Retrieved from https://population.un.org/wpp2019/Publications/Files/WPP2019_Volume-I_Comprehensive-Tables.pdf

United States Department of Labor. (2019). *Industries at a glance: Warehousing and storage (NAICS 493).* Retrieved Nov 30, 2019 from https://www.bls.gov/iag/tgs/iag493.htm#workplace_trends

United States Energy Information Administration. (2019). *Use of energy explained: Energy use for transportation*. Retrieved November 11, 2019, from https://www.eia.gov/energyexplained/use-of-energy/transportation.php

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

United States Environmental Protection Agency. (2019). *Greenhouse Gas Emissions*. Retrieved December 12, 2019 from https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions

University of Minnesota Center for Urban and Regional Affairs. (2010). *Framework for Measuring Sustainable Regional Development for the Twin Cities Region*. University of Minnesota Center for Transportation Studies.

Ürge-Vorsatz, D., Cabeza, L. F., Serrano, S., Barreneche, C., & Petrichenko, K. (2015). Heating and cooling energy trends and drivers in buildings. *Renewable & Sustainable Energy Reviews*, *41*, 85–98. doi:10.1016/j.rser.2014.08.039

US Energy Information Administration. (2016). *Energy use in commercial buildings*. Retrieved Dec 5, 2019 from https://www.eia.gov/energyexplained/use-of-energy/commercial-buildings.php

Ventura, J. A., & Rieksts, B. Q. (2009). Optimal location of dwell points in a single loop AGV system with time restrictions on vehicle availability. *European Journal of Operational Research*, *192*(1), 93–104. doi:10.1016/j.ejor.2007.09.014

Wang, X., Zhan, L., Ruan, J., & Zhang, J. (2014). How to choose "last mile" delivery modes for e-fulfillment. *Mathematical Problems in Engineering*.

Wang, Y., Zhang, D., Liu, Q., Shen, F., & Lee, L. (2016). Towards enhancing the last-mile delivery: An effective crowd-tasking model with scalable solutions. *Transportation Research Part E, Logistics and Transportation Review*, *93*, 279–293. doi:10.1016/j.tre.2016.06.002

WHO. (2019). *Air pollution*. Retrieved December 15, 2019, from www.who.int: https://www.who.int/sustainable-development/transport/health-risks/air-pollution/en/

WHO. (2019). *Noise*. Retrieved November 27, 2019, from https://www.who.int/sustainable-development/transport/health- www.who.int/.risks/noise/en

Willsher, K. (2019). *Drones used to deliver parcels to remote Alpine villages*. Retrieved November 23, 2019, from https://www.theguardian.com/technology/2019/dec/02/drones-used-to-deliver-parcels-to-remote-alpine-villages

World Commission on Environment and Development. (1987). *Our Common Future*. New York: Oxford University Press.

World Economic Forum. (2009). *Supply Chain Decarbonization.* Geneva: World Economic Forum.

Yu, Y., Wang, X., Zhong, R. Y., & Huang, G. Q. (2016). *E-commerce logistics in supply chain management*. Academic Press.

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Chapter 53
The Influence of Enjoyment Factor Toward the Acceptance of Social Commerce

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ABSTRACT

Social commerce is a new extension of electronic commerce that involves using social media in the online shopping process. Although the adoption of social technologies was studied in several researches, it is still needed to investigate the specific characteristics of social commerce and the affecting factors on its acceptance. This article verifies the influence of the enjoyment factor on the adoption of social commerce through applying a questionnaire sample allocated to 282 Jordanian social media users from those who are interested in online shopping. The research model is developed to validate the impact of enjoyment, in addition to some other factors, on the behavioral intentions to adopt and use social commerce. The results show that the enjoyment is a key factor on accepting social commerce. The research model indicates that it is viable and has a good power in explaining the variance in the behavioral intentions to adopt and use social commerce.

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1. INTRODUCTION

Social commerce (s-commerce) is a new stream in e-commerce, presented recently from the development of information and communication technologies (ICTs), Web 2.0 technology, and cloud technology. S-commerce represents the benefiting from the social networks to enhance the e-commerce by adding some new activities for the online shopping process, in order to make it more social and acceptable by users (Gatautis and Medziausiene, 2014). Some authors like Leitner and Grechenig (2007) and Liang, Ho, Li, and Turban (2011) believe that s-commerce is affected by the expansion of social networks. The research work of Hajli (2012) mentioned that s-commerce is the resent development in e-commerce that using social technologies in order to create a new environment for social interactions. These social interactions can push online social support in e-commerce, and increase the trust, and as a result, the intention to use s-commerce will be increased. In the s-commerce context, there were a few theoretical or empirical researches on the measurement of user satisfaction of the s-commerce, and measuring the success of such systems in general (Alshibly, 2014; Huang and Benyoucef, 2013). Accordingly, this study aims to investigate the influence of the enjoyment factor toward the acceptance of the s-commerce and the satisfaction from using it. It revised the unified theory of acceptance and use of technology (UTAUT) that was developed by Venkatesh, Morris, Davis, and Davis (2003) by adding the enjoyment factor in the form of enjoyment expectancy to the model′s structure in order to personalize it to be more suitable to measure the technology acceptance of s-commerce within the Jordanian society.

In general, the majority of the technology acceptance theories and models do not discuss the impact of the enjoyment factor on the behavioral intentions and usage behavior of the technology, because these theories were designed to explain the usage behavior and assess the acceptance of adopting information systems in organizations with the mandatory style of usage. S-commerce is a web-based, social-commercial, and voluntary-usage application, and the enjoyment is one of the key-reasons from using it.

2. LITERATURE REVIEW

Since 1940′s, many theories resulted from motivation research (Momani and Jamous, 2017). Self-Determination Theory (SDT) which developed by Deci and Ryan in 1985 is one of them. SDT proposed that self-determination is a human quality. Deci and Ryan (1985) and Ryan and Deci (2000a) explained the psychological innate human needs which are: autonomy, competence, and relatedness. These human needs are directly affecting on individuals′ motivations. The need to autonomy refers to self-determination that causes freedom of action, mainly being self-initiating, and to self-regulating one′s own actions. The need to relatedness refers to developing secure and satisfying connections with others in same social environment (de Brabander, Rozendaal, and Martens, 2009; Hsu and Lin, 2008). According to Deci et al. (1991), these needs are necessary for individuals to be self-determined rather than controlled.

Motivational theories have supported the researches in psychology as an explanation to behavior. These researches resulted that the motivational theory contains two major factors of motivations: extrinsic motivation and intrinsic motivation. Extrinsic motivation was defined as: “the perception that users will want to perform an activity because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself” (Davis, Bagozzi, and Warshaw, 1992, p 1112; Venkatesh et al., 2003, p 448). While Intrinsic motivation was defined as: “the perception that users will want to perform an activity for no apparent reinforcement other than the process of performing the activity per se”

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(Davis et al., 1992, p 1112; Venkatesh et al., 2003, p 456). SDT represents the extrinsic motivation that consists of four types of self-determinations, which are: external, introjected, identified, and integrated form of regulation (Deci and Ryan, 1985; Deci et al., 1991; Ryan and Deci, 2000b). While the intrinsic motivation refers to intrinsic regulation. It also represents how the social environment influencing on motivated behaviors. Davis et al. (1992) tested the extrinsic and intrinsic motivation to use technology in workplaces and found that they are key drivers of an individual′s intention to perform the behavior of technology usage. They explained the extrinsic motivation to use technology as perceived usefulness from using the technology, and intrinsic motivation to use technology as perceived enjoyment of using the technology (Ryan, Patrick, Deci, and Williams, 2008). They noted the relation between usefulness and enjoyment. Enjoyment strongly effects on intentions when information systems are perceived to be more useful, which means that the enjoyability of the information system is enhancing the acceptance of useful systems, but in the same time, it has less effect on acceptance of useless systems (Davis et al., 1992).

The same concept was discussed in several technology acceptance theories besides the motivational theory such as: Model of PC Utilization (MPCU) and Social Cognitive Theory (SCT). These theories are sharing the same features of intrinsic motivation in the motivational theory (Venkatesh et al., 2003). Shen and Eder (2011) examined the factors that influence the user acceptance of social shopping websites which are designed specifically to support social interactions with shoppers. Their study utilized the Technology Acceptance Model (TAM) with specific constructs that may enhance the power of the model to predict the user acceptance of social shopping applications, including social comparison, social engagement, enjoyment, perceived ease of use, and perceived usefulness. The study of Gatautis and Medziausiene (2014) aimed to address the users′ acceptance for s-commerce by identifying various factors affecting the attitudes towards its adoption. They reviewed the Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), and TAM, and utilized the constructs of the UTAUT in addition to the factor of perceived enjoyment, as well.

3. RESEARCH METHODOLOGY

3.1. Research Hypotheses

The research hypotheses of this study present the relations between the model's constructs with the behavioral intentions and actual use behavior. All hypotheses of this research have to be tested statistically depending on the quantitative research method. The proposed research model of this study (Figure 1) consists of five constructs as follows: performance expectancy, effort expectancy, social influence, enjoyment expectancy, and facilitating conditions. The group of determinants (constructs) and their related proposed hypotheses are being discussed as follows:

1. **Performance Expectancy (PE):** It is defined as the degree to which an individual believes that using the system will help him/her to attain gains in job performance (Venkatesh et al., 2003, p 447). It focuses on testing the degree of the beliefs of users that using s-commerce in their online shopping activities will help them attain gains in their job performance. The related studies have shown that the performance expectancy has a positive and significant relation with the behavioral intention (Davis, Bagozzi, and Warshaw, 1989; Davis, 1986; Venkatesh and Davis, 2000). According to this, the following hypothesis was proposed:

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H1: Performance expectancy has an effect on behavioral intention to adopt s-commerce.

2. **Effort Expectancy (EE):** It is the degree of ease associated with the use of the system (Venkatesh et al., 2003, p 450). It focuses on the degree of ease in using the s-commerce and social online shopping applications. The related studies have shown that the effort expectancy has a significant relation with the behavioral intention (Davis, 1986; Triandis, 1979; Venkatesh and Davis, 2000). According to this, the following hypothesis was proposed:
   H2: Effort expectancy has an effect on behavioral intention to adopt s-commerce.
3. **Social Influence (SI):** It is defined as: the degree to which an individual perceives that important others believe he/she should use the new system (Venkatesh et al., 2003, p 451). It examines the degree to what extent a consumer perceives that important others believe in using s-commerce. This determinant investigates the users′ opinion about the society influence on the decision to adopt s-commerce. According to this, the following hypothesis was proposed:
   H3: Social influence has an effect on behavioral intention to adopt s-commerce.
4. **Enjoyment Expectancy (EN):** According to Davis et al. (1992), the enjoyment expectancy is the extent to which the activity of using a certain technology is perceived as being enjoyable. Depending on the proposed framework of this study, enjoyment expectancy is proposed as a direct determinant of behavioral intention. This part of s-commerce acceptance focused on the hedonic experience that the consumer would gain from using s-commerce. This determinant tests the viewpoint of the level of enjoyment and fun expected from using the s-commerce. According to this, the following hypothesis was proposed:
   H4: Enjoyment expectancy has an effect on behavioral intention to adopt s-commerce.
5. **Facilitating Conditions (FC):** It is defined as: the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system (Venkatesh et al., 2003, p 453). It tests the degree to what extent a consumer believes that the social networks, as a working environment, support the use of s-commerce. The related researches denoted that it has insignificant effect on the behavioral intention. It has a positive influence on the usage behavior (Ajzen, 1985; Rogers, 1983, 2003; Taylor and Todd, 1995a, 1995c; Triandis, 1979). For this, the following hypothesis was proposed:
   H5: Facilitating conditions has an effect on actual use behavior of s-commerce.
6. **Behavioral Intention (BI):** It is the degree to which a person has formulated conscious plans to perform or not perform some specified future behavior (Venkatesh et al., 2003). It means the degree to what extent a consumer has formulated conscious plans to perform or not perform his/her future behavior. This determinant investigates the consumers′ opinions about continuing using s-commerce in the future. The related researches have shown that it has a direct relation with usage behavior (Ajzen and Fishbein, 1980; Ajzen, 1985; Davis et al., 1989; Taylor and Todd, 1995b, 1995c; Venkatesh and Davis, 2000). According to this, the following hypothesis was proposed:
   H6: Behavioral intention to adopt s-commerce has an effect on actual use behavior of s-commerce.

3.2. Research Instrument Design

This study utilized the survey questionnaire technique in collecting its data. As mentioned before, the research model of this study has five major determinants, or constructs, for usage intentions and actual use of s-commerce. Performance expectancy, effort expectancy, social influence, and enjoyment expectancy are influencing the behavioral intentions, while facilitating conditions has an influence on the

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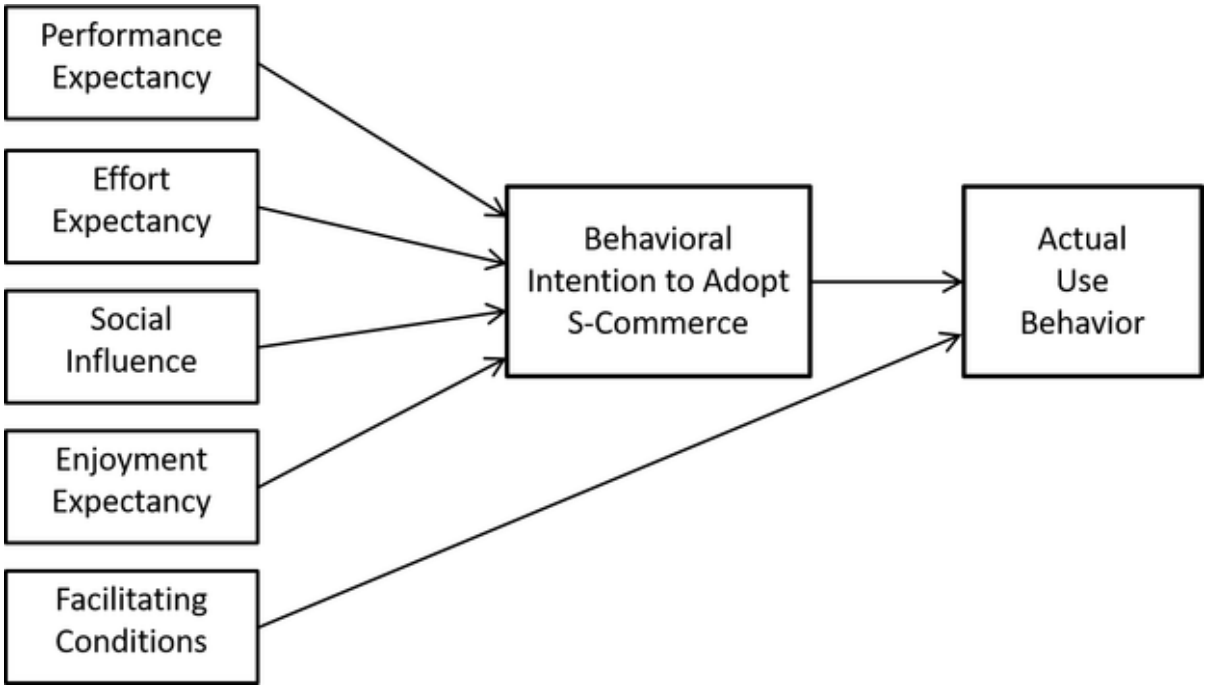
actual usage behavior. Each construct is tested within the questionnaire by four statements. These statements are evaluated by five levels of agreement depending on five-point Likert-type scales (Chomeya, 2010; Pallant, 2005; Sekaran, 2003). The participant has to give his/her opinion about his/her status for each statement from the twenty-four statements presenting the s-commerce adoption acceptance test. Table 1 discusses the tested statements for each one of the five constructs, in addition to the behavioral intention factor.

Figure 1. The research model



3.3. Research Sample and Data Collection

The research population of this study is the actual users of social media within the Jordanian society who are interested in selling and buying over the internet by using their own accounts on the social networks regardless of their career area that would enhance the generalizability of the research results. The best way to define the sample size is to calculate it mathematically. This study adopted Steve Thompson′s equation for estimating the sample size (Thompson, 2012; Vincent and Thompson, 2014). After calculation, the result was at least of 273 usable responses is the target set for this study, taking into consideration, the model complexity and the guidelines of researchers for applying surveys to study the technology acceptance. Actually, a total of 282 questionnaires were collected as a primary data for this study.

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Table 1. The testing statements of s-commerce acceptance test

Construct	The Related Questionnaire Statements
PE	1. Using my social network account in online shopping would enhance my effectiveness of online shopping. 2. Using my social network account in online shopping would help me more in searching for the most appropriate commodity. 3. Using my social network account would help me in discussing opinions and requirements about the commodity with the producers, suppliers, and distributors more effectively. 4. Using my social network account would ease getting reviews about the commodity from its users and discuss it with them. **References:** Alarcón-del-Amo, Lorenzo-Romero, and Gómez-Borja (2012); Ernst, Pfeiffer, and Rothlauf (2013); Venkatesh et al. (2003)
EE	1. Learning to shop through my account on social network would be easy for me. 2. Using my social network account in online shopping is clear and understandable. 3. It would be easy for me to become skillful in using my social network account in my online shopping. 4. I would find it easy to let the shopping system do what I want it to do. **References:** AbuShanab and Pearson (2007); Davis (1989); Venkatesh et al. (2003)
SI	1. Friends on my social network account positively influenced me to use the s-commerce. 2. People who influence my online shopping behavior think that I should use the s-commerce. 3. I prefer to carry the online shopping process accompanied by my family or one of my friends. 4. People who use the social commerce get the best deals than those who do not. **References:** Al Qeisi and Al-Abdallah (2014); Venkatesh et al. (2003)
EN	1. I like shopping by using my social network account more than the traditional online shopping process. 2. I find using my social network account in online shopping process is enjoyable. 3. Sharing the shopping activities between me and my friends and admiring and comments on them through social networks is an exciting process. 4. Discussing the purchasing decisions with friends through the social networking sites is much beneficial to me. **References:** Davis et al. (1992); Ernst et al. (2013); Venkatesh, Thong, and Xu (2012)
FC	1. Using my social network account in online shopping is secured whether to my personal information or in the electronic payment process. 2. By using my social network account in the online shopping, I have the whole control on the purchasing process starting from choosing the commodity as per the specifications I want and ending with completing the electronic payment successfully. 3. Specialized instructions and using-tips provided by the social online shopping site are available to me during the online shopping process through using my account on the social network. 4. From my experience, I found that the assistance and technical support teams in the social networks and social online shopping sites are ready for any assistance or queries. **References:** Alshehri (2012); Kocaleva, Stojanovic, and Zdravev (2015); Kripanont (2007); Venkatesh et al. (2003)
BI	1. I intend to continue using the social commerce in my online shopping. 2. I would use s-commerce in my online shopping to get the benefits of the use of social networking tools in the online shopping operations. 3. I predict that social commerce will enrich my online shopping experience. 4. I will recommend this experience to others. **References:** Dulcic, Pavlic, and Silic (2012); Hu, Poston, and Kettinger (2011); Lim and Ting (2012); Venkatesh et al. (2003)

4. RESULTS AND DISCUSSION

4.1. Reliability Test

Reliability analysis is an important step in any questionnaire analysis. It is the degree of accuracy of collected data and the consistency of measurements. For this study, the most popular technique was used which is the Cronbach′s coefficient alpha (α) (Field, 2009; Kline, 2011; Pallant, 2005). As mentioned by Marchewka, Liu, and Kostiwa (2007) and Hair, Black, Babin, and Anderson (2009), Cronbach′s α

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values close to 1.0 are excellent reliability, over 0.8 are good, in the range of 0.7 are acceptable, and below 0.6 are considered to be poor. Accordingly, by using SPSS, as shown in Table 2, all Cronbach′s α values of each variable are above 0.7, and from the acceptable to the excellent level of reliability. These results indicate that the statements of each measurement item were positively correlated to one another, and they are independent measures for the measurement item.

For other evidence to the questionnaire reliability, another measure was used to assess the internal consistency, which is the inter-item correlation. Inter-item measurement measures the correlation among statements for each item (Hair et al., 2009). The correlation value from 0.10 to 0.29 is considered to be small correlation, from 0.30 to 0.49 is medium correlation, and from 0.50 to 1.0 is large correlation, all these considerations are for both positive and negative correlations (Pallant, 2005). The inter-item correlations′ values are represented in Table 2. It is clear that all the values are above 0.3. These results supported the results of Cronbach's α. And as a result, these values suggest that the questionnaire was reliable research instrument and measurement tool.

Table 2. Cronbach's alpha and inter-item correlations reliability results

Measurement Items	No. of Statements	Cronbach's α	Inter-Item Correlation
PE	4	.864	.539 – .722
EE	4	.910	.678 – .783
SI	4	.705	.311 – .459
EN	4	.842	.483 – .686
FC	4	.843	.500 – .714
BI	4	.868	.498 – .766

4.2. Validity Test

The exploratory factor analysis is a successful technique to assess the relationships among variables for exploring the construct validity of the instrument's scale. Herein, the AMOS statistical package was used to analyze the factor loading of the six scales of the proposed model. The items with values below 0.4 are considered to be low-loaded (Hair et al., 2009). Table 3 presents the loading values of all scales, and all of them are resulting values above the minimum value of factor loading.

4.3. Structural Equation Modelling (SEM)

The SEM is a general structural modelling technique which is widely used in behavioral sciences, especially in information technology researches. It describes the structural relationships among the constructs in the model. Skrondal and Rabe-hesketh (2005) mentioned that SEM contains two types of models, the measurement model and structural model. Measurement model relates the observed responses to the latent variables. Structural model then specifies the relations between the latent variables and regressions of the latent variables on the observed variables in order to describe how the constructs are related to other constructs in the model (Awang, 2012). These two models were applied herein by using AMOS:

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1. **Measurement Model Assessment:** Hair et al. (2009) recommended using the goodness-of-fit (GOF) measures in order to evaluate the measurement model. Several tests were applied, and the results showed that the model is from acceptable to good level of fit with values as follows: Chi-square ($\chi^2 = 419.178$), degree of freedom ($df = 237$), the relative Chi-square ($\chi^2/df = 1.769$), Comparative Fit Index (CFI = 0.953), Tucker-Lewis Index (TLI = 0.945), Incremental Fit Index (IFI = 0.953), and Root Mean Square Error of Approximation (RMSEA=0.052). All results were in good level of fit, Chi-square (χ^2) was greater than the degree for freedom (df), CFI, TFI, and IFI indices were above 0.90, finally, RMSEA was less than 0.80;
2. **Structural Model Assessment:** Within this step, the hypothesized model and its entire relations among constructs were evaluated. GOF test results were as follows: $\chi^2 = 511.280$, $df = 283$, $\chi^2/df = 1.807$, CFI=0.946, TFI=0.938, IFI=0.947, RMSEA=0.054. All results were in good level of fit. Furthermore, the standardized coefficients were presented in Table 4. It is clear that the whole the standardized path coefficient values were in the acceptable range (above 0.30). Accordingly, these results showed a good level of fit to the model.

Table 3. Factor loading of the model's measurement scales

	Factor Loading			
PE	PE1	PE2	PE3	PE4
	.672	.790	.848	.826
EE	EE1	EE2	EE3	EE4
	.836	.905	.847	.847
SI	SI1	SI2	SI3	SI4
	.600	.556	.631	.670
EN	EN1	EN2	EN3	EN4
	.741	.871	.742	.686
FC	FC1	FC2	FC3	FC4
	.670	.729	.837	.796
BI	BI1	BI2	BI3	BI4
	.864	.835	.828	.657

Table 4. The structural model assessment findings

Hypothesis	**Path**	**Standardized Path Coefficient**	**Hypothesis Testing Result**
H1	PE → BI	0.39 ***	Supported
H2	EE → BI	0.33 ***	Supported
H3	SI → BI	0.35 ***	Supported
H4	EN → BI	0.41 ***	Supported
H5	FC → AU	0.84 ***	Supported
H6	BI → AU	0.55 ***	Supported

Note: *** $p < 0.001$

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4.4. Discussion

Actually, the technology acceptance theories that were reviewed by Venkatesh et al. (2003) showed an explanatory power in explaining the variance in the behavioral intentions at a rate ranging from 17% to 42%, while the original UTAUT showed that it can explain 69% of the variance in the behavioral intentions. It is important to mention that the squared multiple correlations (SMCs) of the research model have been estimated by AMOS in order to investigate how much the independent variables can explain the variance of the dependent variables (Nokelainen, 2009). As a result, the model has a power to explain 70% of the variance of behavioral intentions to adopt s-commerce, which is very close to the original UTAUT model. Depending on this finding, it can be concluded that the research model is viable after this modification operation.

5. CONCLUSION

SEM gave a result indicating that the performance expectancy, effort expectancy, social influence, and enjoyment expectancy are significantly influencing on the behavioral intentions to adopt s-commerce by the Jordanian consumers, while the facilitating conditions and the behavioral intentions are significantly influencing on the actual use behavior of s-commerce. These results supported wholly the hypotheses proposed within this study and showed strong statistical evidence on the validity of the research model of all constructs.

S-commerce could be an alternative to the traditional way of online shopping, because of the revolutionary features offered to the consumers. Social media communication and interaction tools make the online shopping more enjoyable, and as a result, it will increase the level of acceptance, as well as, the satisfaction of the process.

REFERENCES

AbuShanab, E., & Pearson, J. M. (2007). Internet banking in Jordan The Unified Theory of Acceptance and Use of Technology (UTAUT) perspective. *Journal of Systems and Information Technology*, *9*(1), 78–97. doi:10.1108/13287260710817700

Ajzen, I. (1985). From Intentions to Actions: A Theory of Planned Behaviour. In J. Kuhl & J. Beckmann (Eds.), *Action Control* (pp. 11–39). Springer-Verlag Berlin Heidelberg. doi:10.1007/978-3-642-69746-3_2

Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behavior* (1st ed.). Englewood Cliffs, NJ: Pearson.

Al Qeisi, K. I., & Al-Abdallah, G. M. (2014). Website Design and Usage Behaviour: An Application of the UTAUT Model for Internet Banking in UK. *International Journal of Marketing Studies*, *6*(1), 75–89. doi:10.5539/ijms.v6n1p75

Alarcón-del-Amo, M.-C., Lorenzo-Romero, C., & Gómez-Borja, M.-Á. (2012). Analysis of Acceptance of Social Networking Sites. *African Journal of Business Management*, *6*(29), 8609–8619.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Alshehri, M. A. (2012). *Using the UTAUT Model to Determine Factors Affecting Acceptance and Use of E-government Services in the Kingdom of Saudi Arabia*. Griffith University.

Alshibly, H. H. (2014). A Free Simulation Experiment to Examine the Effects of Social Commerce Website Quality and customer Psychological Empowerment on Customers' Satisfaction. *Journal of Business Studies Quarterly*, *5*(4), 21–41.

Awang, Z. (2012). Analyzing The SEM Structural Model. In A Handbook on SEM (4th ed.). UiTM Kelantan.

Chomeya, R. (2010). Quality of Psychology Test Between Likert Scale 5 and 6 Points. *Journal of Social Sciences*, *6*(3), 399–403. doi:10.3844/jssp.2010.399.403

Davis, F. D. (1986). *A Technology Acceptance Model for Empirical Testing New End-User Information System: Theory and Results*. Massachusetts Institute of Technology.

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *Management Information Systems Quarterly*, *13*(3), 319–340. doi:10.2307/249008

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, *35*(8), 982–1003. doi:10.1287/mnsc.35.8.982

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and Intrinsic Motivation to Use Computers in the Workplace. *Journal of Applied Social Psychology*, *22*(14), 1111–1132. doi:10.1111/j.1559-1816.1992.tb00945.x

de Brabander, C. J., Rozendaal, J. S., & Martens, R. L. (2009). Investigating efficacy expectancy as criterion for Comparison of Teacher- Versus Student-Regulated Learning in Higher Education. *Learning Environments Research*, *12*(3), 191–207. doi:10.100710984-009-9062-y

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic Motivation and Self-Determination in Human Behavior* (1st ed.). Plenum Press. doi:10.1007/978-1-4899-2271-7

Deci, E. L., Vallerand, R. J., Pelletier, L. G., and Ryan, R. M. (1991). Motivation and Education: The Self-Determination Perspective. *Educational Psychologist, 26*(3 and 4), 325–346.

Dulcic, Z., Pavlic, D., & Silic, I. (2012). Evaluating the intended use of Decision Support System (DSS) by Applying Technology Acceptance Model (TAM) in business organizations in Croatia. In *Procedia - Social and Behavioral Sciences, 8th International Strategic Management Conference* (Vol. 58, pp. 1565–1575).

Ernst, C. H., Pfeiffer, J., & Rothlauf, F. (2013). Hedonic and Utilitarian Motivations of Social Network Site Adoption (No. 01/2013).

Field, A. (2009). *Discovering Statistics Using SPSS* (3rd ed.). London, UK: SAGE Publication Ltd.

Gatautis, R., & Medziausiene, A. (2014). Factors Affecting Social Commerce Acceptance in Lithuania. In Social and Behavioral Sciences, Contemporary Issues in Business, Management and Education 2013 (Vol. 110, pp. 1235–1242). Elsevier B.V. doi:10.1016/j.sbspro.2013.12.970

Hair, J. F. J., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). *Multivariate Data Analysis (7th Ed.)*. Pearson.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hajli, M. (2012). Social Commerce Adoption Model. In *The UK Academy of Information Systems Conference*. AIS.

Hsu, C.-L., & Lin, J. C. (2008). Acceptance of Blog Usage: The Roles of Technology Acceptance, Social Influence and Knowledge Sharing Motivation. *Information and Management Journal*, *45*(1), 65–74. doi:10.1016/j.im.2007.11.001

Hu, T., Poston, R. S., & Kettinger, W. J. (2011). Nonadopters of Online Social Network Services: Is It Easy to Have Fun Yet? *Communications of the Association for Information Systems*, *29*(25).

Huang, Z., & Benyoucef, M. (2013). From E-Commerce to Social Commerce: A Close Look at Design Features. *Electronic Commerce Research and Applications*, *12*(4), 246–259. doi:10.1016/j.elerap.2012.12.003

Kline, R. B. (2011). *Principles and Practice of Structural Equation Modeling* (3rd ed.). New York, USA: The Guilford Press.

Kocaleva, M., Stojanovic, I., & Zdravev, Z. (2015). Model of e-Learning Acceptance and Use for Teaching Staff in Higher Education Institutions. *International Journal of Modern Education and Computer Science*, *4*(4), 23–31. doi:10.5815/ijmecs.2015.04.03

Kripanont, N. (2007). *Examining a Technology Acceptance Model of Internet Usage by Academics within Thai Business Schools*. Victoria University.

Leitner, P., & Grechenig, T. (2007). Community Driven Commerce: Design of an Integrated Framework for Social Shopping. In *Proceedings of the IADIS International Conference on e-Commerce,* Algarve, Portugal (pp. 344–353).

Liang, T.-P., Ho, Y.-T., Li, Y.-W., & Turban, E. (2011). What Drives Social Commerce: The Role of Social Support and Relationship Quality. *International Journal of Electronic Commerce*, *16*(2), 69–90. doi:10.2753/JEC1086-4415160204

Lim, W. M., & Ting, D. H. (2012). E-Shopping: An Analysis of the Technology Acceptance Model. *Modern Applied Science*, *6*(4), 49–62. doi:10.5539/mas.v6n4p49

Marchewka, J. T., Liu, C., & Kostiwa, K. (2007). An Application of the UTAUT Model for Understanding Student Perceptions Using Course Management Software. *Communications of the IIMA*, *7*(2), 93–104.

Momani, A. M., & Jamous, M. M. (2017). The Evolution of Technology Acceptance Theories. *International Journal of Contemporary Computer Research*, *1*(1), 51–58.

Nokelainen, P. (2009). Structural Equation Modeling with AMOS (Vol. 2.5). Finland.

Pallant, J. (2005). *Spss Survival Manual: A step by step guide to data analysis using SPSS for Windows (Version 12) (2nd ed.)*. Crows Nest, NSW: Allen and Unwin.

Rogers, E. M. (1983). *Diffusion of Innovations* (3rd ed.). The Free Press.

Rogers, E. M. (2003). *Diffusion of Innovations* (5th ed.). New York: Free Press.

Ryan, R. M., & Deci, E. L. (2000a). Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. *Contemporary Educational Psychology*, *25*(1), 54–67. doi:10.1006/ceps.1999.1020 PMID:10620381

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Ryan, R. M., & Deci, E. L. (2000b). Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. *The American Psychologist*, *55*(1), 68–78. doi:10.1037/0003-066X.55.1.68 PMID:11392867

Ryan, R. M., Patrick, H., Deci, E. L., & Williams, G. C. (2008). Facilitating Health Behaviour Change and its Maintenance: Interventions based on Self-Determination Theory. *The European Health Psychologist, 10*.

Sekaran, U. (2003). *Research Methods for Business: A Skill-Building Approach* (4th ed.). USA: John Wiley and Sons, Inc.

Shen, J., & Eder, L. (2011). An Examination of Factors Associated with User Acceptance of Social Shopping Websites. *International Journal of Technology and Human Interaction*, *7*(1), 19–21. doi:10.4018/jthi.2011010102

Skrondal, A., & Rabe-hesketh, S. (2005). Structural Equation Modeling: Categorical Variables. In *Entry for the Encyclopedia of Statistics in Behavioral Science*. Wiley Publishing. doi:10.1002/0470013192.bsa596

Taylor, S., & Todd, P. A. (1995a). Assessing IT Usage: The Role of Prior Experience. *Management Information Systems Quarterly*, *19*(4), 561–570. doi:10.2307/249633

Taylor, S., & Todd, P. A. (1995b). Decomposition and crossover effects in the theory of planned behavior: A study of consumer adoption intentions. *International Journal of Research in Marketing*, *12*(2), 137–155. doi:10.1016/0167-8116(94)00019-K

Taylor, S., & Todd, P. A. (1995c). Understanding Information Technology usage: A Test of Competing Models. *Information Systems Research*, *6*(2), 144–176. doi:10.1287/isre.6.2.144

Thompson, S. K. (2012). Sampling (3rd ed.). John Wiley and Sons, Inc.

Triandis, H. C. (1979). Values, attitudes, and interpersonal behavior. *Nebraska Symposium on Motivation*, *27*, 195–259. PMID:7242748

Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, *46*(2), 186–204. doi:10.1287/mnsc.46.2.186.11926

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *Management Information Systems Quarterly*, *27*(3), 425–478. doi:10.2307/30036540

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer Acceptance and Use of Information Technology: Extending The Unified Theory. *Management Information Systems Quarterly*, *36*(1), 157–178.

Vincent, K., & Thompson, S. (2014). Estimating Population Size with Link-Tracing Sampling. *Journal of the American Statistical Association*.

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Chapter 54
The Effects of Social Commerce Utilization on Business Performance:
A Study of Hotels in Lebanon

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ABSTRACT

Social commerce is one of the most relevant technological innovations in recent years. It has strongly benefited many industries, including tourism. While many studies on social commerce have been conducted from the user perspective, less attention has been paid to the organisational perspective, particularly that of hotel organisations. To help understand the key drivers of hotel social commerce usage and their effects on hotel business performance, this study augments the integrated model of e-business usage and impact with hotel social media characteristics. Using stratified random sampling, data from 146 hotels in Lebanon were collected and analysed with the PLS-SEM approach. The model represents a theoretical advancement by offering an organisational perspective to the social commerce literature. It shows there is a significant impact of environmental, organisational, and innovation drivers and social media characteristics. The findings help hotels assess their existing social commerce utilization and identify aspects in need of more attention and improvement.

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INTRODUCTION

Modern digital technologies such as e-commerce and social media platforms have become critical for organisations' competitiveness and survival (Benitez et al. 2018). Consumers utilise these platforms to interact with organisations and to search for a product or service information, provide reviews about products and services and encourage other existing or prospective customers to engage with the organisation. Contemporary organisations simultaneously utilise e-commerce and social media platforms to build so-called social commerce initiatives. Social commerce defined as a form of commerce mediated by social media that allow consumers to involve actively in the promoting and selling of products online (Huang and Benyoucef, 2015). Furthermore, social commerce defined as "the use of Web 2.0 applications and social media to facilitate the interactions of individuals on the Internet to support consumers' acquisition of products and services" (Doha, Elnahla and McShane, 2019, p. 307). In this study, we adopted one of many definitions of social commerce presented by Huang and Benyoucef (2015). The reason for adopting the definition provided by Huang and Benyoucef (2015) is that several social commerce models fall under this definition, including social shopping (Doha et al., 2019), group buying (Han et al., 2018). Also, this definition has been adopted in several studies of social commerce utilisation (Li, 2017; Cui et al., 2018).

Studies on the hotels' use of social commerce and its effect on business performance from an internal or organisational perspective globally and in the Lebanese hotel sector remained scarce (Hajli and Featherman, 2017). As social commerce is still in an early adoption stage, it is not well understood why hotels might benefit from utilising social commerce to enhance their business performance (Lam, Yeung and Cheng, 2019). Lebanon has been selected to be the site for the empirical side of this study for the following reasons: First, the hotel sector is one of the major businesses in the Lebanese tourism industry (WTTC, 2017) and the tourism sector contribution to economy recorded at 18.4% by 2017.The need for social commerce utilisation by hotels manifested by the unique implications of social commerce for hotels including customers, staff, and management. Social commerce enables hotels to enhance business relationships with customers, increase website traffic, and support product/services and brand development (Benitez et al. 2018; Schaupp and Bélanger 2016). customer engagement with hotels through social commerce is considered an important factor in enhancing hotel business performance (Garrido-Moreno and Lockett 2016; Harrigan et al. 2017).

Monitoring and analysing customer feedback, responding to their comments and building a digital brand reputation appear to drive online hotel performance (De Pelsmackera, Tilburg and Holthof, 2018). However, the key strategic and operational challenge in the hotel sector is to become closer to customers by realizing what attributes are most important to them, for example, reducing the uncertainty about the hotel services and products will affect customers decision making (Tran, Pham and Le, 2019). Benitez et al. (2018) stated that simply investing in social commerce does not guarantee the organisation's success in achieving its intended commercial purposes. The sustainability of social commerce is debated since the rate of buying relative to visiting is relatively small for social commerce, despite the high number of visits (Lee and Choi 2014). Hence, hotels are not convinced about the actual effect of social commerce utilisation on performance, as they cannot identify a direct return on investment from social commerce (Garrido-Moreno and Lockett 2016). Similarly, Jung et al. (2013) stated that measuring the productivity of social commerce seems to be difficult. Thus, most hotels concentrate on customer engagement rather than business performance.

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Despite the growing interest in research focusing on social commerce globally, few studies have been conducted from an organisational perspective to investigate the effect of social commerce utilisation on hotel business performance (Hajli and Featherman 2017; Garrido-Moreno et al. 2018). Several authors have proposed that there is a need for additional insight into how hotels can leverage social media to effectively improve their business performance (Tajvidi and Karami 2017; Garrido-Moreno et al. 2018). This paper seeks to address the literature gap by examining social commerce utilisation in a sample of 146 Lebanese hotels. This paper is directed by the following research questions: What are the key drivers of hotels' social commerce utilisation? Does social commerce affect the business performance of hotels? The rest of the paper is arranged as follows. In the following section, the theoretical foundations and relevant literature used to develop the research model and our research hypotheses are discussed. Then, the methods, the analysis of the data and discussion of the results are discussed. The paper ends with implications for research and practice, limitations and recommendations for future research.

LITERATURE REVIEW

Most previous studies have concentrated on social commerce utilisation from the individual's perspective (Hajli 2013; Hashim et al. 2016; Sheikh et al. 2017), while less attention has been paid to social commerce from an organisational perspective, particularly with regard to organisational performance (Schaupp and Bélanger 2016; Odoom et al. 2017; Tajvidi and Karami 2017). In the hotel sector, a small number of studies have considered the effect of social commerce utilisation on hotels' performance (Garrido-Moreno and Lockett 2016; Tajvidi and Karami 2017; Zhang et al. 2017). Organisations have different perspectives and business processes than consumers; hence, organisations' utilisation may be impacted by different factors, and this is worthy of examination. This study examines the use of social commerce from an organisational perspective, specifically hotels.

Considering relevant factors, this study is based on the previous literature and concentrates on two social commerce information technology (IT) capabilities: social media and e-commerce. The study considers social media capability and e-commerce capability to be two social commerce capabilities because social media and e-commerce are the two main pillars of social commerce initiatives. Past social commerce studies, particularly in the hotel sector, have focused on the technology, organisational, and environmental (TOE) theory. Therefore, TOE has been applied in by adopting some variables as key drivers of social commerce in this study. Market pressure, IT readiness and management support are considered as relevant factors for the technology adoption and they have been added in the research framework on this study. The Resource-Based View (RBV) consider the theoretical foundation of this study. It has been used mostly in recent studies to serve as a foundation to investigate how social media relate to firm performance (Garrido-Moreno et al., 2018; Tajvidi & Karami, 2017). The reason is that RBV supports the assumption that earning a competitive advantage for the organisation depends on the application of the organisation's package of productive resources. With regard to the hotel industry, resources are the main drivers of the resource-based view (Gannon, Roper, & Doherty, 2015). There are different resources in the hotel industry containing physical, human and organisational resources. This study uses and extends the model of e-business usage and e-business impact (Zhu et al. 2006) to the domain of social commerce utilisation among hotels. This model has been used widely in e-commerce usage (Salwani et al. 2009), m-business (Picoto et al. 2014), e-government (Srivastava and Teo 2009),

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social media (Schaupp and Bélanger 2014) and TOE factors, to explore the use of social commerce and its benefits for small businesses (Schaupp and Bélanger 2016; Tajudeen et al. 2018).

This study concentrates on social commerce utilisation by hotels, and these activities include having a social media presence, sharing posts and interacting with customers for business purposes. However, some improvements have been made to the main model, particularly measuring social commerce utilisation and business performance. In this study, social commerce measured based on three dimensions: the percentage of business conducted online, the percentage of application diversity and the percentage of social media connections with hotel partners (Parveen et al., 2016; Odoom et al., 2017). In the current study, the data were collected from the hotels. Therefore, measuring business performance mainly focuses on the indicators that align with hotels' business performance. Hotels' business performance refers to activities accomplished after the implementation of social commerce (Azizan and Said 2015). Wang et al. (2015) stated that communication performance through social commerce probably improves business performance in terms of marketing, innovation, and collaboration. Social commerce can positively affect small organisations' performance. Moreover, the intention of investing in social commerce is to improve the business performance of hotels (Anderson 2012; Cesaroni and Consoli 2015; Garrido-Moreno and Lockett 2016). According to Garrido-Moreno and Lockett (2016), hotels' business performance can be measured based on two dimensions: the effect on booking generation and the effect on sales revenue. This notion corresponds with Azizan and Said (2015) study, as the authors used the same two dimensions to measure the online business performance of hotels.

HYPOTHESIS DEVELOPMENT

The study examines nine key drivers of hotels' social commerce utilisation: market pressure, management support, IT readiness, the perception of social commerce benefits, utilisation cost, firms' cultural compatibility, visibility, editability and association. These drivers have been widely used in other studies, such as studies on e-commerce usage (Salwani et al. 2009), m-business (Picoto et al. 2014), e-government (Srivastava and Teo 2009), social media (Schaupp and Bélanger 2014) and the use of social commerce benefits among organizations (Schaupp and Bélanger 2016; Tajudeen et al. 2018). In the following paragraphs, the drivers of social commerce utilisation and previous research related to the research hypotheses are discussed.

In the current study, market pressure is identified as a driver of social commerce utilisation in which hotels are affected by customers, competitors and trading partners. Competitor pressure has been found to be an influential factor for social media adoption (Schaupp and Bélanger 2014). According to Kim (2013), low barriers to adoption may be the main factor leading to an increase in the utilisation of social commerce. In addition, Schaupp and Bélanger (2016) stated that since small organisations need to comply with stakeholders' demands, it is probable that increased pressure from customers will raise their social commerce efforts. This finding corresponds with those of several studies in the domain of e-commerce indicating that organisations are likely to utilise e-commerce due to external pressure from industry competitors, trading partners and customers (Al-Somali 2011). To test whether market pressure influences social commerce utilisation, hypothesis 1 was developed:

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Hypothesis 1: Market Pressure has a Positive Effect on Hotels' Social Commerce Utilisation

Management support refers to "the participation, motivation and encouragement offered by management towards the social commerce utilisation" (Schaupp and Bélanger 2016, p. 53). Management involvement is a crucial factor correlated with the efficacy of e-business adoption. Kim (2013) pointed out that top management and skilled employees are essential to the successful adoption and utilisation of social commerce in small organisations. Schaupp and Bélanger (2016) identified that most of the obstacles to social commerce utilisation faced by small organisations involve their capability to run social media technologies. Moreover, the authors stated that most small organisations' owners/managers attempt to utilise social media with little competence. To test whether management support influences social commerce utilisation, hypothesis 2 was developed:

Hypothesis 2: Management Support has a Positive Effect on Hotels' Social Commerce Utilisation

IT readiness refers to the technological infrastructure/resources and the human factors associated with technology usage. Technology infrastructure or resources refer to hardware and software resources that enable hotels to use and implement Internet and social commerce applications, which is consistent with prior studies on both e-commerce and social commerce adoption (Al-Somali 2011). In addition, human factors refer to employees with IT knowledge or skills to use and implement social commerce applications effectively (Schaupp and Bélanger 2016). IT readiness has been considered and examined in technology adoption studies as a key driver for both e-commerce and social commerce adoption (Zhu et al. 2006; Hu et al. 2016; Schaupp and Bélanger 2016). Schaupp and Bélanger (2016) stated that IT is linked to technological infrastructure/resources and that employee factors are associated with technology usage. In addition, Zhang et al. (2014) found that the availability of technological characteristics in the social commerce environment leads to maximising customer involvement. To test whether IT readiness influence social commerce utilisation, hypothesis 3 was developed:

Hypothesis 3: Information Technology Readiness has a Positive Effect on Hotels' Social Commerce Utilisation

In the current study, the perception of social commerce benefits refers to the actual benefits that hotels gain from using social commerce. These include the potential of social commerce utilisation to maximise sales, decrease costs, improve customer satisfaction, enhance communications with trading partners, achieve greater efficiency in internal processes and, most importantly, expand market share (Zhu et al. 2006; Al-Somali 2011; Schaupp and Bélanger 2016). Parveen et al. (2016) stated that the positive perceptions of the benefits of social media strongly affect the utilisation of social media in organisations. Similarly, Schaupp and Bélanger (2016) indicated that for small organisations, social commerce provides several ways to obtain business benefits such as entering a global market and performing sales and marketing at a lower cost. The authors also stated that social commerce helps in increasing exposure and site traffic for small organisations at a lower cost compared to that of traditional marketing. To test whether the perception of social commerce benefits influence social commerce utilisation, hypothesis 4 was developed:

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Hypothesis 4: Perception of Social Commerce Benefits has a Positive Effect on Hotels' Social Commerce Utilisation

Utilisation cost refers to the costs of implementing the necessary technologies for e-commerce and social media processes, including initial development investments and recurring operating expenses (Kim 2013; Cesaroni and Consoli 2015). Zhu et al. (2006) found that high costs significantly inhibit e-business utilisation. With regard to social commerce, researchers have argued that the costs of adoption could play a critical role in hindering or fostering organisations' decision to adopt social commerce in their online business processes. Kim (2013) stated that social commerce features enable organisations to implement this type of platform with a lower fixed cost at the initial stage, and Cesaroni and Consoli (2015) highlighted that within organisations, the adoption and use of social commerce requires a low-cost investment. On the other hand, studies have identified several obstacles to social commerce utilisation, including lack of knowledge, cost and technology incompatibility (Siamagka et al. 2015). To test whether utilisation cost influences social commerce utilisation, hypothesis 5 was developed:

Hypothesis 5: Cost of Utilisation has a Negative Effect on Hotels' Social Commerce Utilisation

Firms' cultural compatibility refers to "the degree to which social commerce applications are compatible with organisations' business processes, distribution channel and value system" (Zhu et al. 2006, p. 603). Several studies have indicated that cultural compatibility is a crucial factor in explaining technology utilisation by organisations and is one of the major determinants of the innovation spread process (Al-Somali 2011). Ndekwa and Katunzi (2016) study found that compatibility is a significant driver of the adoption of social commerce among hotels in the tourism sector. This finding corresponds to the findings of the study by Parveen (2012), who identified compatibility as an important variable that influences social commerce utilisation among organisations. To test whether the firm cultural compatibility influences social commerce utilisation, hypothesis 6 was developed:

Hypothesis 6: Firms' Cultural Compatibility has a Positive Impact on Hotels' Social Commerce Utilisation

This study seeks to add social media characteristics to the e-business use and value model (Zhu et al. 2006). The characteristics of social media (visibility, editability, association) were proposed by Treem and Leonardi (2012) to help in understanding how organisations are effectively utilising social media to improve their business performance. Visibility is defined as "the ability of social media websites that make users' behaviours, knowledge, preferences, and communication network connections that were once invisible (or very hard to see) visible to others" (Treem and Leonardi 2012, p. 150). Social media websites help an organisation's content become visible and reviewable to the audience. Wang and Zhang (2012) stated that social commerce allows organisations to reach international customers with greater efficiency compared to the traditional method of integrating user-generated content into provided products or services. Previous studies have found that the visibility provided by social media sites can enhance "the communication and business relationships with customers, boost traffic to organisation websites, create new business opportunities, and assist in product and brand development" (Huang and Benyoucef 2013, p. 247). Parveen et al. (2016) found that social media utilisation creates brand visibility for

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organisations, and Odoom et al. (2017) discovered that the utilisation of social media has positive and significant effects on the performance benefits gained by organisations. In the hotel industry, Neirotti et al. (2016) found that hotels' online visibility has a positive impact on their revenue growth. To test whether visibility influence social commerce utilisation, hypothesis 7 was developed:

Hypothesis 7: Visibility Through Social Media has a Positive Effect on Hotels' Social Commerce Utilisation

Editability refers to "the ability to modify or revise content they have already communicated, it enables for more purposeful communication that may aid with message fidelity and comprehension" (Treem & Leonardi 2012, p. 159). Social commerce consists of the utilisation of "Internet-based media that enable users to engage in the selling, comparing, rating, buying, and sharing reviews of products and services" (Zhou et al. 2013, p. 61). By providing users the time to create and design content, editability enables more useful communication that may assist with comprehension of the message. By allowing customers to comment via social media platforms, hotels can discern what customers want and are more likely to meet customers' needs. Parveen et al. (2016) reported that developing business relationships with current and potential customers via social media platforms has a positive influence on the overall utilisation of social media by organisations. For instance, social media is utilised to receive reviews from customers on current products/services or new/future products/services. Similarly, interaction with customers through social media has a positive effect on the business performance of organisations and increases the number of customers (Odoom et al. 2017). To test whether editability influences social commerce utilisation, hypothesis 8 was developed:

Hypothesis 8: Editability Through Social Media has a Positive Effect on Hotels' Social Commerce Utilisation

Association is defined as "established connections between individuals, between individuals and content, or between an actor and a presentation" (Treem and Leonardi 2012, p. 162). Taneja and Toombs (2014) found that social media helps small businesses develop their business brand by engaging them in an interactive relationship with their competitors, the community and the broader environment. The ability to shape a new association between people and content through social media has a great influence on the social capital development of organisations (Treem & Leonardi 2012). Building a connection with prospective customers can increase the customer base, brand loyalty and reputation of organisations (Kietzmann et al. 2011). Garrido-Moreno and Lockett (2016) stated that the main advantages of building an association via social commerce for hotels are improving the image and customer proximity, and (Schaupp & Bélanger 2016) found that social commerce offers several advantages when it is used to develop relationships with customers. To test whether association influence social commerce utilisation, hypothesis 9 was developed:

Hypothesis 9: Association Through Social Media use Has a Positive Effect on Hotels' Social Commerce Utilisation

In this study, hotels' business performance is defined as activities accomplished after the implementation of social commerce (Azizan & Said 2015; Garrido-Moreno and Lockett 2016). The measurement of

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hotels' business performance is established based on two dimensions: the effect on booking generation and the effect on sales revenue (Azizan & Said 2015; Garrido-Moreno and Lockett 2016). The intention of investing in social commerce is to improve the business performance of hotels, and research has found that social commerce can positively impact small firms' performance (Cesaroni & Consoli 2015). This finding corresponds with the study by Siamagka et al. (2015), who found that within organisations, social commerce utilisation has the potential to generate capabilities that can turn into helpful resources, which can, in turn, transform results in competitive advantages and higher performance. Odoom et al. (2017) found that social commerce utilisation significantly affects organisations' accrual of performance benefits. Odoom et al. (2017) stated that performance benefits could be obtained based on the following: increases in sales transactions, increases in the number of customers and improved brand visibility. The current study seeks to determine the extent to which social commerce utilisation impacts the business performance of hotels, specifically, booking generation and sales revenue. To answer this question, hypothesis 10 was developed:

Hypothesis 10: Increased Social Commerce Utilisation Positively Affects Hotels' Business Performance

RESEARCH DESIGN AND METHODOLOGY

This study aimed to examine the effect of social commerce utilisation on hotels' business performance in the Lebanese tourism industry. A portion of this study used a descriptive approach, as it involved obtaining demographic data, and part of it used an exploratory approach to investigate the effect of relationships between variables. The study also adopted a quantitative approach. Therefore, the data gathered via the administration of an instrument relied on predetermined questions. Lebanon has been selected to be the site for the empirical side of this study. According to Internet World Stats (2017), there were 4.6 million Internet users who constituted 76.1% of Lebanon's population. Regarding the use of social media channels, Facebook and WhatsApp are the most popular social media in Lebanon. Facebook was the topmost used with 3.3 million active users (Arab Social Media Report, 2017). Researching a developing country like Lebanon presents a valuable extension to the innovation adoption studies that have been mainly concentrated in developed countries

Instrument Development

Before distributing the questionnaires to the respondents, it was essential to check whether the items had sufficient reliability and validity. Cronbach's alpha test was used to estimate the reliability of the constructs with an acceptable reliability coefficient of 0.7 and above. To ensure construct validity, we established the measurement items based on a comprehensive review of the extant literature and expert feedback. Therefore, the study used scales and items to measure the constructs, such as scales adapted from previous e-commerce, social media and social commerce studies (Zhu et al. 2006; Treem and Leon-

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ardi 2012; Parveen et al. 2016; Schaupp and Bélanger 2016; Odoom et al. 2017). In the current study, 11 constructs were measured using a set of items, and every construct contained least 4 to 5 items that were assessed using 5-point Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree). All constructs and measurement items are provided in the Appendix 1. In addition, some minor modifications were made to the original items according to the comments, discussions, and feedback obtained from the pre-test and the pilot test to ensure the items were appropriate for the context of this study. This check enables the researchers to enhance the understanding of the questionnaire, develop content validity, check for instructions clarity and adequacy as well as to ensure that the questions have proper sequence or flow (Bryman & Bell, 2015). Therefore, in this study modifications were concentrated on clarifying the definitions of the concept of social commerce and instructions, reducing the length of the cover letter, grammar and questionnaire format in order to increase the comprehension of respondents. In addition, some of the items were altered to suits the Lebanese context.

Data Collection

In this study, 416 hotels in Lebanon were considered the total population. This number was obtained from the list of hotels registered with the Ministry of Tourism (MOT; Lebanon Knowledge Development Gateway 2012). The unit of analysis of this study is hotels. The respondents of the survey form are the hotel owner, general manager or director of sales and marketing (the unit of observation). A single informant was collected from each hotel and the informants are chosen not on a random basis but because of the hotel owner, general manager or director of sales and marketing possess special qualifications such as particular status, specialized knowledge, as they are responsible to set marketing strategies for hotels including social commerce. A pilot test was conducted to ensure the reliability of the items. The researcher distributed 35 questionnaires to hotel managers who were randomly selected from the target population. For the main data collection, a random sampling method was used. From a population of 416 hotels, 291 hotels were selected and invited for this survey. Some reasons were behind not covering the whole population when conducting the survey. First, we have discovered that some hotels were not applicable to social commerce activities. Second, the difficulty in delivering the survey to the target population, especially, most questionnaires were delivered personally (face-to-face). The method of delivery was a combination of self-administered questionnaires and an online survey in order to cover the large geographical distribution of hotel locations. Therefore, a total of 146 responses were received, for a response rate of 50.1%, and served as the basis for analysis. Table 1 summarises the demographic profile of the study respondents.

According to the literature, potential biases introduced by "common method variance may lead to erroneous conclusions about the relationships between variables by inflating or deflating findings" (Jakobsen & Jensen, 2015). Harman's Single Factor test" was used in this study to test the biases in variance proportion distributions of items (Lowry & Gaskin's, 2014; Ramayah et al., 2011). By conducting single factor test, the unrotated factor analysis outcomes show that the single factor appeared the ultimate variance explained accounted for 23.26%. Thus, it can be concluded that common method biases are not an obvious issue for this research.

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Table 1. Demographic profile of the respondents

Participant profile (n=146)		
Percentage (%)	**Frequency**	**Gender**
69.9	102	Male
30.1	44	Female
100	146	Total
Percentage (%)	Frequency	Position
44.5	65	General manager/Owner
55.5	81	Director of sales and marketing manager
100	146	Total
Hotel profile		
Percentage (%)	Frequency	Number of rooms
75.3	110	Below 100
6.2	9	101 to 150
8.9	13	151 to 200
9.6	14	Over 201
100	146	Total
Percentage (%)	Frequency	Hotel location by governorate
51.3	75	Beirut
27.3	40	Mount Lebanon
13.2	19	North Lebanon
8.2	12	South and Bekaa
100	146	Total
Percentage (%)	Frequency	Hotel classification
0.7	1	2 stars
15.7	23	3 stars
50.7	74	4 stars
32.9	48	5 stars
100	146	Total
Percentage (%)	Frequency	Number of employees
69.2	101	Below 50
7.5	11	51 to 100
8.9	13	101 to 150
14.4	21	Over 151
100	146	Total
Percentage (%)	Frequency	Hotels' Utilisation of Social media platforms
100	146	Facebook
100	146	Instagram
48	70	Youtube
46.6	68	Twitter

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DATA ANALYSIS AND RESULTS

The research model was examined using partial least squares (PLS), and SmartPLS 3.0 was utilised for the assessment of the measurement and structural model; these two-stage approaches were also adopted by Hair et al. (2013). PLS-SEM technique used as opposed to CB-SEM based on the following reasons (Hair et al., 2016). First, PLS-SEM has fewer restrictions on the sample size required. Second, if the structural model is complex, with various constructs and indicators, PLS-SEM is well-suited to handle the data than CB-SEM (Hair et al., 2016). Third, PLS-SEM is better equipped to handle reflective constructs.

Assessing the Results of the Measurement Model

Following the procedure suggested by Hair et al. (2013) to evaluate the measurement model, we examined the following: composite reliability (CR) to assess internal consistency and individual indicator reliability (outer loading) and average variance extracted (AVE) to assess convergent validity. The Fornell-Larcker criterion and cross-loadings were used to assess discriminant validity (Fornell and Larcker 1981; Hair et al. 2013). Internal consistency was evaluated using the outer loadings and Cronbach's alpha. (Hair et al. 2013) recommended a cut-off parameter of 0.5 for factor loading analysis in exploratory research. In this study, we found that the outer loadings for all the constructs' indicators surpassed the proposed value of 0.5. The calculation of Cronbach's alpha showed that all the variables had high levels of internal consistency reliability, greater than 0.7. Convergent validity was measured based on three criteria: (i) factor loading analysis, (ii) CR analysis, and (iii) AVE analysis, with recommended cut-off parameters of 0.5, 0.7, and 0.5, respectively (Fornell and Larcker 1981; Hair et al. 2013). The Cronbach's alpha and the CR values revealed satisfactory reliability at the construct level using the standard threshold criteria of 0.7 for Cronbach's alpha and 0.7 for CR (Fornell and Larcker 1981; Hair et al. 2013). The results for CR, Cronbach's alpha and AVE are presented in Table 2. All variables had high levels, above 0.7, of internal consistency reliability and CR. Additionally, the AVE values were well above the minimum required level of 0.50. All the tests supported the convergent validity of the scales. Discriminant validity was measured based on two methods: cross-loadings and the Fornell-Larcker criterion (Hair et al. 2013). The results showed that all the indicators' outer loadings on each of the relevant variables were higher than all their cross-loadings. The results of the cross-loadings criterion, the correlations for the constructs and the AVE values indicated discriminant validity among all the variables. Based on the Fornell-Larcker criterion, the test results showed that all the AVEs were higher than the squared inter-construct correlations, which indicated satisfactory discriminant validity among all the variables. In summary, the assessments of the measurement model indicated that the variables demonstrated appropriate measurement properties.

Assessing the Results of the Structural Model

The structural model was assessed to examine the model's predictive capabilities and the relationships between the constructs (Hair et al., 2013). The significance of t-values associated with each path was tested using the bootstrap procedure in SmartPLS 3.0 software with 146 cases and 5000 re-samples. According to Hair et al. (2013), the generally used critical values for two-tailed tests are $p<0.001(2.57)$, $p<0.05$ (1.96) and $p<0.10$ (1.65). Due to the exploratory nature of this study, the hypotheses were supported based on a significance level of $p \leq 0.001$ (Hair et al. 2013). Table 3 shows the hypothesis testing

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and the significance of the path coefficients and it illustrates that 6 of the 10 hypotheses (H_2, H_3, H_4, H_8, H_9, H_{10}) were found to be statistically significant utilising a two-tailed test, while 4 hypotheses (H_1, H_5, H_6, H_7) were not supported.

The R-square (R^2) coefficient of determination was used to evaluate the structural model. Hair et al. (2013) referred to the R^2 value as a measure of the model's predictive accuracy and calculated the squared correlation between a specific endogenous construct's actual and predictive values. The R^2 test result was 0.263 for social commerce utilisation and 0.384 for hotel business performance, indicating a moderate effect of the independent variables on the dependent variables. According to Hair et al. (2013), studies that focus on marketing issues can use the following as a rough rule of thumb: R^2 values of 0.75, 0.50, and 0.20 for an endogenous latent variable can be described as substantial, moderate and weak, respectively.

Table 2. Calculation of measurement model

Constructs	Measurement Item	Mean	Std. Deviation	Outer Loading	Cronbach's Alpha	CR	AVE
Market Pressure	Mp1	3.81	0.858	0.668	0.721	0.810	0.520
	Mp2	3.39	0.928	0.654			
	Mp3	3.42	0.731	0.604			
	Mp4	3.83	0.800	0.768			
	Mp5	3.61	0.978	0.824			
Management Support	Mgs1	4.07	0.776	0.760	0.874	0.900	0.651
	Mgs2	4.04	0.778	0.783			
	Mgs3	4.01	0.733	0.834			
	Mgs4	3.96	0.743	0.880			
	Mgs5	3.82	0.740	0.771			
Information Technology Readiness	Itr1	4.19	0.808	0.825	0.847	0.890	0.621
	Itr2	4.05	0.858	0.900			
	Itr3	3.88	0.775	0.858			
	Itr4	3.82	0.767	0.676			
	Itr5	3.99	0.805	0.651			
Perception of Social Commerce Benefits	Pscb1	3.86	0.654	0.689	0.792	0.855	0.543
	Pscb2	3.92	0.676	0.844			
	Pscb3	3.99	0.747	0.778			
	Pscb4	3.77	0.879	0.712			
	Pscb5	4.09	0.813	0.644			
Utilisation Cost	Uc1	2.71	0.991	0.686	0.760	0.820	0.544
	Uc2	3.22	1.02	0.474			
	Uc3	3.10	0.964	0.863			
	UC4	3.48	0948	0.601			
	Uc5	3.21	0.932	0.857			

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Table 2. Continued

Constructs	Measurement Item	Mean	Std. Deviation	Outer Loading	Cronbach's Alpha	CR	AVE
Firms Culture Compatibility	Fc1	4.25	0.722	0.753	0.820	0.874	0.582
	Fc2	4.18	0.802	0.767			
	Fc3	3.99	0.843	0.801			
	Fc4	4.12	0.653	0.768			
	Fc5	4.09	0.714	0.723			
Visibility	V1	4.38	0.707	0.732	0.705	0.818	0.529
	V2	4.14	0.814	0.760			
	V3	4.32	0.598	0.655			
	V4	4.44	0.587	0.730			
	V5	4.24	0.904	0.686			
Editability	E1	4.04	0.838	0.761	0.843	0.881	0.598
	E2	4.24	0.764	0.803			
	E3	4.04	0.760	0.860			
	E4	3.90	0.861	0.767			
	E5	4.05	0.750	0.661			
Association	Ac1	4.12	0.700	0.657	0.839	0.884	0.604
	Ac2	4.08	0.797	0.782			
	Ac3	3.89	0.940	0.790			
	Ac4	3.86	0.841	0.824			
	Ac5	4.12	0.407	0.822			
Social Commerce Utilisation	Scu1	3.51	1.152	0.752	0.738	0.836	0.562
	Scu2	3.69	0.980	0.664			
	Scu3	3.73	1.212	0.736			
	Scu4	3.77	1.009	0.836			
Hotels' Business Performance	Hbp 1	3.91	0.684	0.738	0.877	0.897	0.524
	Hbp 2	3.80	0.730	0.693			
	Hbp 3	3.60	0.774	0.773			
	Hbp 4	4.20	0.660	0.736			
	Hbp 5	4.05	0.630	0.809			
	Hbp 6	4.09	0.674	0.644			
	Hbp 7	4.10	0.629	0.647			
	Hbp 8	4.10	0.702	0.735			

Outer Loading > 0.4, Average Variance Extracted (AVE > 0.5), Composite Reliability (CR > 0.7), Cronbach's Alpha > 0.7.

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Table 3. Hypothesis testing—significance of the path coefficients

Hypothesis	Relationship	Beta	Confidence Interval		Std Error	t-value	p-value	Decision
			2.50%	97.5%				
H1	Market Pressure -> Social Commerce Utilisation	0.070	- 0.108	0.262	0.095	0.740	0.460	Nonsignificant
H2	Management Support -> Social Commerce Utilisation	0.200	- 0.031	0.368	0.104	1.932*	0.053	Significant
H3	Information Technology Readiness -> Social Commerce Utilisation	0.212	0.012	0.406	0.100	2.118**	0.034	Significant
H4	Perception of Social Commerce Benefits -> Social Commerce Usage	0.238	0.055	0.371	0.079	3.020***	0.003	Significant
H5	Utilisation Cost -> Social Commerce Utilisation	0.158	- 0.138	0.371	0.110	1.433	0.152	Nonsignificant
H6	Firms' Cultural Compatibility -> Social Commerce Utilisation	- 0.005	- 0.174	0.186	0.093	0.052	0.958	Nonsignificant
H7	Visibility -> Social Commerce Utilisation	- 0.095	- 0.261	0.184	0.110	0.865	0.387	Nonsignificant
H8	Editability -> Social Commerce Utilisation	0.323	- 0.033	0.527	0.143	2.267**	0.023	Significant
H9	Association -> Social Commerce Utilisation	- 0.313	- 0.536	0.158	0.170	1.839*	0.066	Significant
H10	Social commerce Utilisation -> Hotels' Business Performance	0.180	0.024	0.334	0.091	1.992**	0.049	Significant

*** Represents p<0.001(2.57), ** Represents p<0.05 (1.96), * Represents p<0.10 (1.69)

INTERPRETATION AND DISCUSSION OF RESULTS

This study modified the integrated model of e-business usage and impact by augmenting hotels' social media characteristics to examine the key drivers of hotel's social commerce utilisation and their effect on hotels' business performance in Lebanon. This approach differs from that of most of the available studies in the literature, which have concentrated on social commerce utilisation from a user's perspective but not from the perspective of organisations. Using social commerce as an example of recent technological innovations, our study fills the theoretical gap by modifying this integrated model and examining it through data collected from 146 hotels. Showing significant effects of environmental, organisational, and innovation factors and social media characteristics, the model represents a theoretical advancement from the organisational perspective in the social commerce literature.

The study results also reveal several new insights regarding specific drivers of hotels' social commerce utilisation. In response to research question 1 (What are the key drivers of hotels' social commerce usage in Lebanon?), management support, IT readiness, perception of social commerce benefits, association and editability were identified as significant and positive predictors and key drivers of hotels' social commerce utilisation. These results are consistent with the outcomes of previous studies outcomes.

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Wang and Zhang (2012) found that IT readiness and management support are significant factors in social commerce research, and Schaupp and Bélanger (2016) found that the overall benefits of social commerce are significantly related to the extent of social commerce deployment in small businesses. Treem and Leonardi (2012) stated that editability and association have a significant impact on the social commerce utilisation of organisations.

Three variables were found to have no significant correlation and do not drive hotels' social commerce utilisation, namely, market pressure, utilisation costs, firm's cultural compatibility and visibility. Market pressure p=0.460 was non significant for social commerce utilisation. Scholars have argued that pressure from customers, competitors and trading partners has an influence on social commerce utilisation. For instance, Schaupp and Bélanger (2016) found that customer and competitive pressure are significant determinants of the social commerce benefits gained by an organisation. The authors indicated that competitors' social commerce initiatives mainly influence the utilisation of social commerce by organisations. Similarly, Ahmad et al. (2018) found that competitive pressure had a significant impact on social media utilisation among organisations. In contrast, competitive pressure has been found to have no impact on social media utilisation by business organisations (Schaupp and Bélanger 2014). Some possible explanations for the study's (H_1) seemingly uncertain outcome include the following. Market pressure might influence preliminary adoption but not subsequent utilisation (Lin and Lin 2008). Ahmed et al. (2018) asserted that several business organisations adopt new or trendy technology simply because the vast majority of the market is doing so. This could be the case for social commerce: many hotels may be unsure of its benefits but adopt it because of its popularity. Additionally, this finding might be explained by the fact that hotels utilise social commerce as a modern communication tool to focus on customer relationships, especially repeat customers.

Utilisation cost p=0.152 was also found to be nonsignificant for social commerce utilisation. Researchers have argued that the costs of adoption can play critical roles in hindering or fostering organisations' decision to adopt social commerce in their online business processes. Kim (2013) stated that social commerce features enable organisations to implement this type of platform with a lower fixed cost at the initial stage. Tajudeen et al. (2018) found that while social media is cost-effective, there could be some additional costs, particularly when the organisation requires dedicated professional staff to monitor, update, and regularly reply to customer queries. Moreover, launching an advertising campaign on social media incurs extra costs. Therefore, this study predicted in H_5 that utilisation cost would negatively influence the social commerce utilisation of hotels due to the additional costs that hotels may have to bear to achieve advanced levels of social commerce utilisation. However, the H_5 result indicates that there is no statistical relationship between cost and utilisation of social commerce.

Firm's cultural compatibility p=0.958 was nonsignificant in the utilisation of social commerce. A similar result was reported in the study by Ahmad et al. (2018), who found no significant relationship between compatibility and social media utilisation among business organisations. This result is also inconsistent with earlier findings. For instance, Ndekwa and Katunzi (2016) found that compatibility is one of the significant drivers of social commerce adoption among hotels in the tourism sector. A possible explanation for this outcome is that social commerce is compatible with current organisational infrastructures and operations.

The study results showed that visibility p=0.387 was nonsignificant. This result was unexpected, as hotels should exploit the visibility features provided by social media sites effectively. However, this result corresponds with the study findings of Taneja and Toombs (2014), who stated that being visible in social media is not as easy as it may appear. It is difficult for hotels with limited resources in terms

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of a skilled team to remain involved in social media networking on a continuous basis and to increase their visibility. In summary, being a social media user may not be sufficient to achieve high visibility for the hotel. In-depth understanding and advanced use of the features of social media sites such as search engine optimisation may be required to attain high visibility.

To address research question 2 (Does social commerce affect the business performance of hotels?), this study examined the relationship between social commerce and its effect on hotels' business performance, specifically the effects on booking generation and sales revenue. The finding for H_{10} p=0.049 confirmed that social commerce has a significant positive influence on hotels' booking generation and sales revenue. The finding for H_{10} addresses the problem raised in this study, namely, that the hotels are not convinced about the actual effects of social commerce utilisation on their performance, as they cannot identify a direct return on investment from social commerce (Garrido-Moreno and Lockett 2016). The study shows a positive relationship between the benefits gained from social commerce and improving the performance of hotels. This result is supported by prior studies. For instance, Cesaroni and Consoli (2015) found that social commerce can positively affect small organisations' performance and that the intention of investing in social commerce is to enhance business performance for hotels. The results also correspond to those of Siamagka et al. (2015), who found that within organisations, social commerce utilisation has the potential to generate capabilities that could turn into helpful resources, which could, in turn, transform results into competitive advantages and higher performance. Similarly, Braojos et al. (2018) found that organisation that invest and develop social commerce achieve various business benefits, such as greater innovation and customer service performance.

However, researchers have argued that social commerce utilisation is an experimental process and that for reasons of accuracy, the results should not be measured immediately (Ahmad et al. 2018). One suggestion was to require hotels of all sizes to record both the benefits realised from their social commerce investments and how they measured these benefits. According to the social commerce literature, there is no measurement standard for the effect of social commerce utilisation on performance. Based on the results of our study, we encourage social commerce scholars to examine the effect of social commerce by conducting experiments to compare whether small hotels benefit more or less than large hotels using a standardised measurement. Please refer to Figure 1 which illustrates the significant and nonsignificant hypotheses of this study.

THEORETICAL CONTRIBUTIONS, IMPLICATIONS AND CONCLUDING REMARKS

This paper makes several contributions to the literature on social commerce utilisation among hotels. It provides findings from a touristic country in the Middle East, specifically Lebanon. There is a dearth of literature in this area that considers the nuances and implications of social commerce utilisation, especially at the hotel level. This study extends the model of e-business usage and e-business impact (Zhu et al. 2006) to the domain of social commerce utilisation among hotels. This study provides empirical support from a social commerce perspective for a conceptual framework with acceptable explanatory power. Unlike the past studies that identify drivers or factors affecting utilisation of a particular type of technology, the implementation of the integrated model of e-business use and e-business impact to determine the key drivers of social commerce utilisation among hotels has demonstrated the robustness and relevance of this model.

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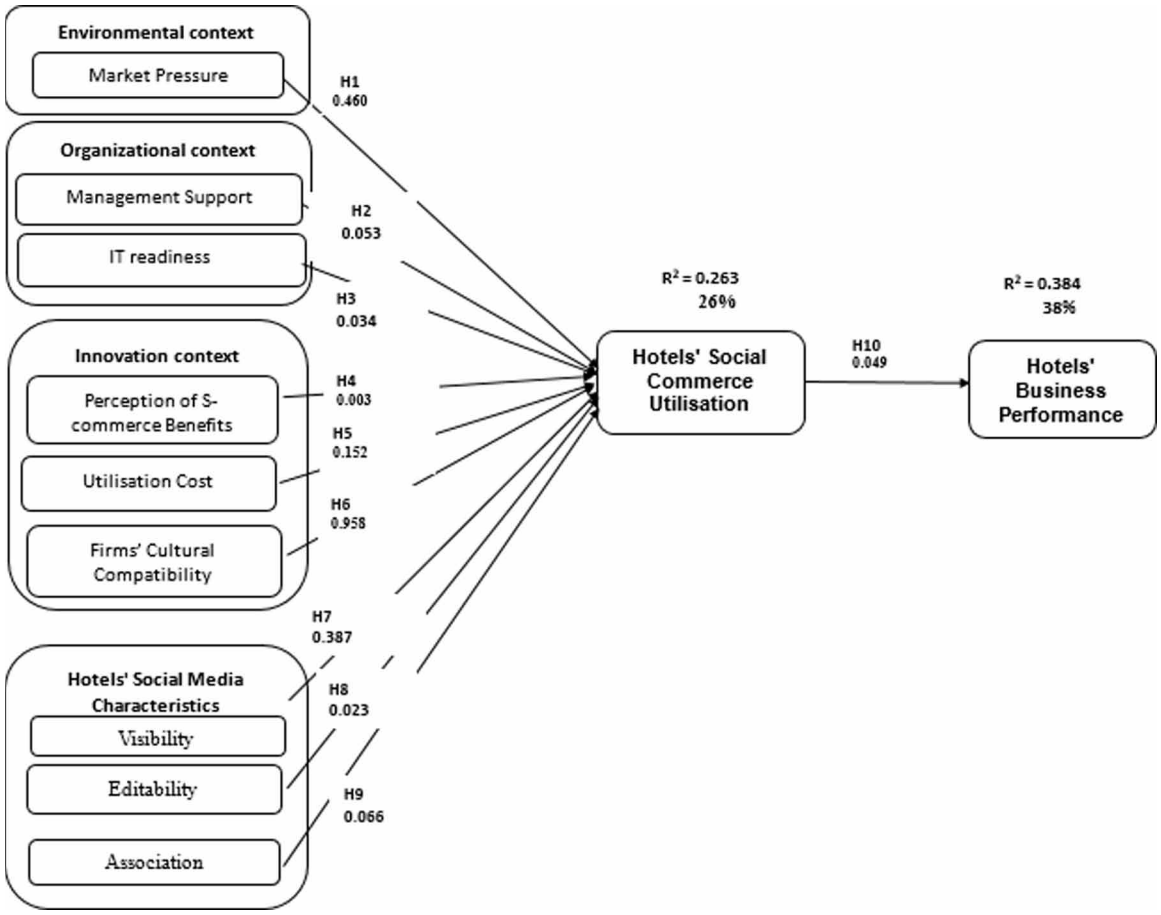
Figure 1. Illustrates the significant and nonsignificant hypotheses of this study



The effect of hotels' social media characteristics on their social commerce utilisation and business performance were not examined in extant studies (Garrido-Morren & Lockett, 2016). Social commerce has been widely applied in practice rather than in research. Thus, there was a shortage in the literature that discussed the role and the utilisation of social commerce and its effect on hotels' business performance within the organisation level, particularly among hotels (Garrido-Morren & Lockett, 2016; Schaupp & Bélanger, 2016). Therefore, in narrowing the gaps, this study contributed to the body of knowledge by incorporating and examining the hotels' social media characteristics a (visibility, editability, association) proposed by Treem and Leonardi (2012) into the model to understand how organisations are effectively utilising social media to improve their business performance. This study contributed to the body of knowledge by relating social commerce to hotels' business performance and examining its effect. The measurement of hotels' business performance was not examined in previous studies (Garrido-Morren & Lockett, 2016). Hotels' business performance was measured on two dimensions: effect on booking generation and on sales revenue (Azizan & Said (2015), this was also supported by Garrido-Morren and Lockett (2016) study. Finally, this study provides some improvements to the model by correlating the dimensions of social media to social media utilisation and business performance by identifying three

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dimensions of social commerce: volume (percent of business conducted online), diversity (application diversity) and breadth (social media connections with its hotel partners).

The study offers several practical implications. The results can improve understanding among owners and managers of hotels, enabling them to exploit or capitalise on the possible benefits of social commerce. The study findings demonstrate the importance of management roles and IT readiness for hotels in Lebanon. In fact, without a manager's commitment and support, social commerce cannot be utilised effectively. Support from hotel management is considered imperative for improving the extent of social commerce utilisation. This study demonstrates the vital role of hotels' social media characteristics regarding visibility, editability and association in the business performance of hotels. A social media presence requires careful consideration of how to utilise social media effectively; this must be done intentionally. Hotel managers need to be clear about their social media objectives and assign expert teams/staff to update posts regularly, create marketing e-posters and respond to customer comments promptly. According to the survey responses, the use of social media varies depending on hotel classification. For instance, four- and five-star hotels assign specialised social media teams to promote their hotels' marketing strategy and embed it into their online social community. These teams are responsible for creating attractive posts, including photos and short videos, to spark the attention of audiences/users on social media sites. Two- and three-star hotels may have fewer resources to master social platforms. Taneja and Toombs (2014) stated that being visible in social media is not as easy as it may appear. It is difficult for hotels without adequate resources in terms of skilled staff and Internet technology to remain engaged in social media networking on a continuous basis and increase their visibility.

The utilisation of social media varies from one platform to another. Most hotels in different classifications have a presence in at least two social media platforms. Facebook and Instagram were at the top of the list of social media platforms used by the hotels surveyed in Lebanon, while Twitter and YouTube were used less frequently. This result is in line with the findings of the Arab Social Media Report (2017); which showed that Facebook is the most commonly used social media in Lebanon, with 3.3 million active users. The utilisation of social commerce corresponds closely to the most popular tools used locally, which implies that the hotels in this study utilised Facebook for external communication purposes. Therefore, it is important for organisations that aim to utilise social commerce as part of their organisational strategy to utilise applications that are popular and compatible with their respective context (geography or target market profiles).

The study findings can help the MOT in Lebanon to obtain a clear picture of the utilisation of social commerce among hotels. These findings could be used specifically to address the lack of studies discussing social commerce utilisation in the Lebanese context. In addition, the current study examined social commerce drivers from an organisational perspective. Therefore, other government bodies such as the Ministry of Economic and Trade (MOET) and the Ministry of Telecommunication in Lebanon could use the findings to develop an effective strategy to promote social commerce utilisation in other sectors.

LIMITATIONS AND FUTURE RESEARCH

The first limitation is that the current study examined social commerce drivers only at a specific point in time, and the use of a cross-sectional survey design does not enable the interpretation of causal inferences between constructs. The second limitation is the generalisability of the proposed social commerce model. The data were obtained from a single geographic area, Lebanon, which could hinder the generalisability

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of the findings to other countries. It would be difficult to confirm the degree to which the results of this study would be generalizable to other countries without additional examination. Additionally, the data were collected from hotels in Lebanese governorates; thus, the generalisability of the findings to other business sectors could be limited without considering the characteristics of each sector. Therefore, it would be worthwhile for similar future studies to extend this research by including organisations from other industries and different countries.

CONCLUSION

This study addressed an important gap in the field of social commerce utilisation at the organisation level. By including respondents representing 146 hotels in Lebanon, this study identified several key drivers for hotels' social commerce utilisation and their effect on hotels' business performance. This study empirically extends the integrated model of e-business usage and impact (Zhu et al. 2006) to the social commerce domain by incorporating the hotel social media characteristics (visibility, editability, association) proposed by Treem and Leonardi (2012). It is believed that the proposed model is more suitable for examining social commerce utilisation from an organisational perspective, particularly for hotels. The study findings are beneficial because they offer needed guidance for hotels hoping to enhance their social commerce strategy, which could lead to enhanced business performance (booking generation and sales revenue). The findings could also provide useful insights into other business sectors that are compatible with social commerce and their respective domain.

REFERENCES

Ahmad, S., Abu Bakar, A., & Ahmad, N. (2018). Social media adoption and its impact on firm performance: The case of the UAE. *International Journal of Entrepreneurial Behaviour & Research*. Advance online publication. doi:10.1108/IJEBR-08-2017-0299

Al-Somali, A. S. (2011). *Electronic commerce adoption: a study of business -to-business practices in Saudi Arabia* (Doctoral Dissertation). Aston University, Birmingham, UK.

Anderson, C. (2012). The impact of social media on lodging performance. *Cornell Hospitality Report, 12*(15), 6-11. https://scholarship.sha.cornell.edu/chrpubs/5/

Arab, S. M. R. (2017). *Social media and the internet of things towards data-driven policy making in the Arab World: potential, limits and concerns*. https://www.mbrsg.ae/getattachment/1383b88a-6eb9-476a-bae4-61903688099b/Arab-Social-Media-Report-2017

Azizan, N. A., & Said, M. A. A. (2015). the effect of e-commerce usage of online business performance of hotels. *Int Bus Manag*, *9*, 574–580.

Benitez, J., Castillo, A., Llorens, J., & Braojos, J. (2018). IT-enabled knowledge ambidexterity and innovation performance in small U.S. firms: The moderator role of social media capability. *Information & Management*, *55*(1), 131–143. doi:10.1016/j.im.2017.09.004

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Braojos, J., Benitez, J., & Llorens, J. (2019, March). How do social commerce-IT capabilities influence firm performance? Theory and empirical evidence. *Information & Management*, *56*(2), 155–171. Advance online publication. doi:10.1016/j.im.2018.04.006

Cesaroni, F. M., & Consoli, D. (2015). Are small businesses really able to take advantage of social media? *Electronic Journal of Knowledge Management*, *13*, 257–268.

Chen, J., Shen, X.-L., & Chen, Z.-J. (2014) Understanding social commerce intention: a relational view. In *Proceedings of the 47th Hawaii international conference on system sciences*. IEEE.

Chong, S., & Pervan, G. (2007). Factors influencing the extent of deployment of electronic commerce for small-and medium sized enterprises. *Journal of Electronic Commerce in Organizations*, *5*(1), 1–29. doi:10.4018/jeco.2007010101

Cui, Y., Mou, J., & Liu, Y. (2018). Knowledge mapping of social commerce research: A visual analysis using CiteSpace. *Electronic Commerce Research*, *18*(4), 837–868. doi:10.100710660-018-9288-9

De Pelsmacker, P., van Tilburg, S., & Holthof, C. (2018). Digital marketing strategies, online reviews and hotel performance. *International Journal of Hospitality Management*, *72*, 47–55. doi:10.1016/j.ijhm.2018.01.003

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *JMR, Journal of Marketing Research*, *18*(1), 39–50. doi:10.1177/002224378101800104

Garrido-Moreno, A., & Lockett, N. (2016). Social media use in European hotels: Benefits and main challenges. *Tourism & Management Studies*, *12*(1), 172–179. doi:10.18089/tms.2016.12118

Garrido-Moreno, García-Morales, V. J, Lockett, N. & King, S. (2018). The missing link: Creating value with social media use in hotels. *International Journal of Hospitality Management*. Advance online publication. doi:10.1016/j.ijhm.2018.03.008

Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2013). *A primer on partial least squares structural equation modeling (PLS-SEM)*. SAGE.

Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*. SAGE.

Hajli, M. (2013). A research framework for social commerce adoption. *Information Management & Computer Security*, *21*(3), 144–154. doi:10.1108/IMCS-04-2012-0024

Hajli, N., & Featherman, M. S. (2017). Social commerce and new development in e-commerce technologies. *International Journal of Information Management*, *3*(3), 177–178. doi:10.1016/j.ijinfomgt.2017.03.001

Han, H., Xu, H., & Chen, H. (2018). Social commerce: A systematic review and data synthesis. *Electronic Commerce Research and Applications*, *30*, 38–50. doi:10.1016/j.elerap.2018.05.005

Harrigan, P., Evers, U., Miles, M., & Daly, T. (2017). Customer engagement with tourism social media brands. *Tourism Management*, *59*, 597–609. doi:10.1016/j.tourman.2016.09.015

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hashim, N. A., Nor, S. M., & Janor, H. (2016). Riding the waves of social commerce: an empirical study of Malaysian entrepreneurs. *Geogr-Malaysian J Soc Sp, 12*, 83-94. http://www.ukm.my/geografia/images/upload/8x.geografia-si-feb16-noorazuan-edam%20(1).pdf

Huang, Z., & Benyoucef, M. (2013). From e-commerce to social commerce: A close look at design features. *Electronic Commerce Research and Applications*, *12*(4), 246–259. Advance online publication. doi:10.1016/j.elerap.2012.12.003

Huang, Z., & Benyoucef, M. (2015). User preferences of social features on social commerce websites: An empirical study. *Technological Forecasting and Social Change*, *95*, 57–72. doi:10.1016/j.techfore.2014.03.005

Jung, T. H., Ineson, E. M., & Green, E. (2013). Online social networking: Relationship marketing in UK hotels. *Journal of Marketing Management*, *29*(3-4), 393–420. doi:10.1080/0267257X.2012.732597

Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011). Social Media? Get Serious! Understanding the Functional Building Blocks of Social Media. *Business Horizons*, *54*(3), 241–251. Advance online publication. doi:10.1016/j.bushor.2011.01.005

Kim, D. (2013). Under what conditions will social commerce business models survive? *Electronic Commerce Research and Applications*, *12*(2), 69–77. doi:10.1016/j.elerap.2012.12.002

Lam, H. K. S., Yeung, A. C. L., Lo, C. K. Y., & Cheng, T. C. E. (2019). Should Firms Invest in Social Commerce? An Integrative Perspective, Information and amp. *Management*.

Lebanon Knowledge Development Gateway. (2012). *Hotels sector in Lebanon report*. https://www.lkdg.org/ar/node/6059

Lee, H., & Choi, J. (2014). Why do people visit social commerce sites but do not buy? The role of the scarcity heuristic as a momentary characteristic. *KSII Trans Internet Info Syst*, *8*, 2383–2399. doi:10.3837/tiis.2014.07.010

Lin, H.-F., & Lin, S.-M. (2008). Determinants of e-business diffusion: A test of the technology diffusion perspective. *Technovation*, *28*(3), 135–145. doi:10.1016/j.technovation.2007.10.003

Ndekwa, A. G., & Katunzi, T. M. (2016). Small and medium tourist enterprises and social media adoption: Empirical evidence from the Tanzanian tourism sector. *International Journal of Business and Management*, *11*(4), 71–72. doi:10.5539/ijbm.v11n4p71

Neirotti, P., Raguseo, E., & Paolucci, E. (2016). Are customers' reviews creating value in the hospitality industry? Exploring the moderating effects of market positioning. *International Journal of Information Management*, *36*(6), 1133–1143. Advance online publication. doi:10.1016/j.ijinfomgt.2016.02.010

Odoom, R., Anning-Dorson, T., & Acheampong, G. (2017). Antecedents of social media usage and performance benefits in small- and medium-sized enterprises (SMEs). *Journal of Enterprise Information Management*, *30*(3), 383–399. doi:10.1108/JEIM-04-2016-0088

Parveen, F. (2012). Impact of social media usage on organizations. *PACIS 2012 Proceedings*. https://aisel.aisnet.org/pacis2012/192

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Parveen, F., Jaafar, N. I., & Ainin, S. (2016). Social media's impact on organizational performance and entrepreneurial orientation in organizations. *Management Decision*, *54*(9), 2208–2234. doi:10.1108/MD-08-2015-0336

Picoto, W. N., Bélanger, F., & Palma-dos-Reis, A. (2014). An organizational perspective on m-business: Usage factors and value determination. *European Journal of Information Systems*, *23*(5), 571–592. doi:10.1057/ejis.2014.15

Salwani, M. I., Marthandan, G., Norzaidi, M. D., & Chong, S. C. (2009). E-commerce usage and business performance in the Malaysian tourism sector: An empirical analysis. *Information Management & Computer Security*, *17*(2), 166–185. doi:10.1108/09685220910964027

Schaupp, L. C., & Bélanger, F. (2014). The value of social media for small businesses. *Journal of Information Systems*, *28*(1), 187–207. doi:10.2308/isys-50674

Schaupp, L. C., & Bélanger, F. (2016). Social commerce benefits for small businesses: An organizational level study. *Journal of Organizational and End User Computing*, *28*(3), 49–66. doi:10.4018/JOEUC.2016070104

Sheikh, Z., Islam, T., Rana, S., Hameed, Z., & Saeed, U. (2017). Acceptance of social commerce framework in Saudi Arabia. *Telematics and Informatics*, *34*(8), 1693–1708. doi:10.1016/j.tele.2017.08.003

Siamagka, N.-T., Christodoulides, G., Michaelidou, N., & Valvi, A. (2015). Determinants of social media adoption by B2B organizations. *Industrial Marketing Management*, *51*, 89–99. doi:10.1016/j.indmarman.2015.05.005

Sigala, M. (2012). Social media and crisis management in tourism: Applications and implications for research. *Information Technology & Tourism*, *13*(4), 269–283. doi:10.3727/109830512X13364362859812

Srivastava, S. C., & Teo, T. S. (2009). E-government, e-business, and national economic performance. *Communications of the Association for Information Systems*, *26*, 267–289. doi:10.17705/1CAIS.02614

Tajudeen, F. P., Jaafar, N. I., & Ainin, S. (2018). Understanding the impact of social media usage among organizations. *Information & Management*, *55*(3), 308–321. doi:10.1016/j.im.2017.08.004

Tajvidi, A., & Karami, A. (2017). The effect of social media on firm performance. *Computers in Human Behavior*, 105174. Advance online publication. doi:10.1016/j.chb.2017.09.026

Taneja, S., & Toombs, L. (2014). Putting a face on small businesses: Visibility, viability, and sustainability the impact of social media on small business marketing. *Academy of Marketing Studies Journal*, *18*, 249.

Tran, L. T. T., Pham, L. M. T., & Le, L. T. (2019). E-satisfaction and continuance intention: The moderator role of online ratings. *International Journal of Hospitality Management*, *77*, 311–322. doi:10.1016/j.ijhm.2018.07.011

Treem, J. W., & Leonardi, P. M. (2012). Social media use in organizations: Exploring the affordances of visibility, editability, persistence, and association. *Annals of the International Communication Association*, *36*(1), 143–189. doi:10.1080/23808985.2013.11679130

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Wang, C. N., & Zhang, P. (2012). the evolution of social commerce: The people, management, technology, and information dimensions. *Commun Assoc Wagnern Inf Syst*, *31*, 1–23. doi:10.17705/1CAIS.03105

Wang, W. Y. C., Pauleen, D. J., & Zhang, T. (2015). *How social media applications affect B2B communication and improve business performance in SMEs*. http://ac.els-cdn.com/S0019850115300146/1-s2.0-S0019850115300146-main.pdf?_tid=033e9e2e-cd9c-11e5-9f4f-00000aab0f27&acdnat=1454850745_50f685762183b2e353b853e77120d1e4

Zhang, H., Gupta, S., & Zhao, L. (2014). What motivates customers to participate in social commerce? The impact of technological environments and virtual customer experiences. *Information & Management*, *51*(8), 1017–1030. Advance online publication. doi:10.1016/j.im.2014.07.005

Zhang, K., & Benyoucef, M. (2016). Consumer behavior in social commerce: A literature review. *Decision Support Systems*, *86*, 95–108. doi:10.1016/j.dss.2016.04.001

Zhang, L., Xu, L., & Zhang, W. (2017). Social media as amplification station: Factors that influence the speed of online public response to health emergencies. *Asian Journal of Communication*, *27*(3), 322–338. doi:10.1080/01292986.2017.1290124

Zhou, L., Zhang, P., & Zimmermann, H.-D. (2013). Social commerce research: An integrated view. *Electronic Commerce Research and Applications*, *12*(2), 61–68. doi:10.1016/j.elerap.2013.02.003

Zhu, K., Dong, S., Xu, S. X., & Kraemer, K. L. (2006). Innovation diffusion in global contexts: Determinants of post-adoption digital transformation of European companies. *European Journal of Information Systems*, *15*(6), 601–616. doi:10.1057/palgrave.ejis.3000650

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APPENDIX

Table 4. Measurement items

Constructs	CODE	Items	References
Market Pressure	Mp1	Our industry is pressuring us to utilise social commerce	Zhu et al. (2006); Al-Somali (2011)
	Mp2	Our relationship with our customers would have suffered if we had not implemented social commerce practices	
	Mp3	Our distant partners' demands for better communications and data interchange are pressuring us to utilise social commerce	
	Mp4	The rivalry among hotels pressuring us to improve our online activities	
	Mp5	We feel that there is efficient and affordable support from the local IT industry to support our move on the Internet	
Management Support	Mgs1	Top managers are willing to provide the necessary resources for implementing social commerce practices.	Zhu et al. (2006); Al-Somali (2011)
	Mgs2	According to top managers in our firm, incorporating social commerce practices is a very important way to gain competitive advantage	
	Mgs3	Top managers often advise employees to keep track of the latest developments in Internet technologies and Internet-related business practices	
	Mgs4	Our top management is likely to consider the implementation of social commerce applications as strategically important	
	Mgs5	We have a policy that encourages social commerce initiatives	
Information Technology (IT) readiness	Itr1	Our hotel is highly computerised with internal and external network connections (i.e. Local Area Network (LAN) - Wide area network (WAN)	Zhu et al. (2006); Al-Somali (2011)
	Itr2	Our hotel has an individual(s) with expert 'knowledge of information technology (IT) and e-commerce and social media technology	
	Itr3	Our hotel has an individual(s) who could plan and carry out various parts of the evaluation procedure of social commerce implementation	
	Itr4	Our employees can understand social commerce business model	
	Itr5	Our employees are computer literate	
Perception of Social Commerce Benefits	Pscb1	Social commerce is useful to increase our hotel profitability	Schaupp and Bélanger, (2016)
	Pscb2	Social commerce is useful to expand our hotel market share	
	Pscb3	We believe that social commerce usage generates competitive advantage	
	Pscb4	Social commerce is useful to increase customer satisfaction	
	Pscb5	Social commerce is useful to communicate better with customers	
	Pscb6	Social commerce reduced our hotel's advertisement and promotion cost	
Firms Culture Compatibility	Fc1	Online booking is compatible with our hotel's current selling process	Zhu et al. (2006) And Odoom et al. (2017)
	Fc2	Conducting transactions over the Internet is compatible with existing distribution channels	
	Fc3	The chosen social media is compatible with our existing IT infrastructure	
	Fc4	The use of social commerce will help our hotels in achieving its objectives (increase sales, widen market reach, etc.)	
	Fc5	The use of social commerce is consistent with the hotel's beliefs and values	
Utilisation Cost	Uc1	The costs of social commerce applications and systems are high for our hotel	Al-Somali (2011)
	Uc2	The cost of access to the Internet is high	
	Uc3	The hosting charge for websites with sufficient bandwidth is high	
	Uc4	social commerce requires a substantial investment in training for employees to maintain a multi-skilled workforce	
	Uc5	The maintenance and support fees for social commerce applications are high for our hotel.	

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Constructs	CODE	Items	References
Visibility	V1	Information relevance: We use social media to provide relevant information about our hotel's services	Huang and Benyoucef (2013); Parveen et al. (2016)
	V2	Information update: We use social media regularly to update product information and social content	
	V3	Paid: Our management encourages us to pay for social media ads (ex: Facebook ads) in order to achieve wider visibility	
	V4	Presence: The presence in social media helped us to provide universal and quick access to the hotel's website	
	V5	Using social media improve our hotel's visibility	
Editability	E1	Improving Information Quality: Social media is used to offer accurate and complete information about the services offered	Huang and Benyoucef, (2013); Fox & McEwan, (2017)
	E2	Information sharing: Social media is used to motivate customers to share content and give their opinions	
	E3	Transparency: Social media is used to build transparency in terms of customers respond and services	
	E4	Trust: Social media increased our hotel's customer trust via direct conversation	
	E5	Overall, Social media improved our hotel's communication quality with customers	
Association	Ac1	Social media increased our hotel's engagement with the community	Huang and Benyoucef (2013); Parveen et al. (2016)
	Ac2	Social media increased our customer base	
	Ac3	Social media helped our hotel to target advertisements more accurately	
	Ac4	Social media increased our hotel's brand loyalty	
	Ac5	Overall, Social media enhanced our hotel's image and presence in the marketplace	
Social Commerce Utilisation	Scu1	Percentage of business-to-business sales conducted online (%)	Zhu et al. (2006); Chang and Pervan, (2007)
	Scu2	Percentage of consumers sales conducted online %	
	Scu3	Percentage of customer services conducted online (%)	
	Sc4	Overall, what is the perceived percentage of online activities (as a % of total business activities) implemented by your hotel	
Hotels' Business Performance	Hbp1	Social commerce activities increased hotel booking rate	Azizan and Said, (2015); Parveen et al. (2016)
	Hbp2	Social commerce activities contribute to the revenue	
	Hbp3	Social commerce customers repeat their web purchases	
	Hbp4	Social commerce activities generate new customers	
	Hbp5	Social commerce activities increase sales	
	Hbp6	Social commerce activities widening the sales area	
	Hbp7	The overall, social commerce activities have a positive effect on the hotel's booking generation	Azizan and Said, (2015); Garrido-Moreno & Lockett, (2016)
	Hbp8	The overall, social commerce activities have a positive effect on the hotel's sales revenue	Azizan and Said, (2015); Garrido-Moreno and Lockett, (2016)

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Table 5. Cross loading for latent variables

	Association	Editability	Firm Cultural Compatibility	Hotels' Business Performance	IT Readiness	Management Support	Market Pressure	Perception of Social Commerce Benefits	Social commerce utilisation	Utilisation Cost	Visibility
Ac1	**0.670**	0.484	0.106	0.301	0.119	0.454	0.210	0.020	0.087	0.194	0.342
Ac2	**0.811**	0.680	0.110	0.323	-0.030	0.406	0.212	0.211	0.052	0.139	0.496
Ac3	**0.829**	0.604	0.189	0.479	0.179	0.498	0.300	0.366	0.090	0.192	0.414
Ac4	**0.773**	0.679	0.066	0.313	0.051	0.330	0.212	0.454	0.142	0.103	0.356
Ac5	**0.809**	0.681	0.192	0.370	0.125	0.513	0.265	0.205	0.125	0.088	0.508
E1	0.592	**0.748**	0.093	0.351	0.187	0.384	0.243	0.175	0.197	0.111	0.452
E2	0.593	**0.782**	0.120	0.238	0.096	0.312	0.129	0.119	0.113	0.060	0.486
E3	0.563	**0.765**	0.023	0.131	-0.019	0.227	0.040	0.072	0.231	0.141	0.311
E4	0.615	**0.814**	0.244	0.383	0.253	0.330	0.300	0.354	0.168	0.114	0.420
E5	0.738	**0.794**	0.054	0.375	0.135	0.378	0.145	0.219	0.019	0.202	0.422
Fc1	0.017	0.068	**0.756**	0.251	0.424	0.061	0.262	0.110	0.176	0.003	0.261
Fc2	0.113	0.096	**0.767**	0.278	0.340	0.120	0.237	0.141	0.164	-0.073	0.220
Fc3	0.042	0.090	**0.803**	0.383	0.657	0.179	0.364	0.065	0.198	-0.092	0.250
Fc4	0.283	0.176	**0.765**	0.565	0.380	0.268	0.321	0.461	0.175	0.051	0.314
Fc5	0.263	0.159	**0.719**	0.518	0.409	0.341	0.334	0.500	0.136	0.016	0.304
Hbp1	0.140	0.148	0.468	**0.592**	0.372	0.102	0.234	0.324	0.280	0.031	0.156
Hbp2	0.116	0.067	0.268	**0.543**	0.218	0.017	0.144	0.315	0.298	-0.001	0.189
Hbp3	0.297	0.307	0.458	**0.681**	0.425	0.242	0.366	0.447	0.304	0.178	0.299
Hbp4	0.377	0.271	0.366	**0.816**	0.381	0.324	0.277	0.340	0.172	-0.060	0.422
Hbp5	0.509	0.405	0.452	**0.896**	0.318	0.380	0.349	0.438	0.176	-0.084	0.424
Hbp6	0.397	0.442	0.390	**0.752**	0.370	0.262	0.286	0.286	0.088	0.001	0.398
Hbp7	0.311	0.283	0.318	**0.712**	0.376	0.333	0.261	0.442	0.190	0.046	0.249
Hbp8	0.441	0.337	0.366	**0.841**	0.407	0.397	0.416	0.517	0.160	0.036	0.378
Itr1	0.084	0.183	0.535	0.400	**0.824**	0.255	0.428	0.176	0.283	-0.112	0.339
Itr2	0.134	0.195	0.618	0.424	**0.898**	0.319	0.387	0.307	0.324	0.035	0.419
Itr3	0.029	0.035	0.463	0.401	**0.856**	0.356	0.359	0.252	0.351	-0.058	0.187
Itr4	-0.004	0.039	0.348	0.280	**0.679**	0.159	0.329	0.149	0.164	0.069	0.272
Itr5	0.257	0.339	0.298	0.370	**0.655**	0.314	0.293	0.282	0.225	-0.097	0.431
Mgs1	0.571	0.504	0.228	0.345	0.360	**0.760**	0.348	0.185	0.036	-0.047	0.443
Mgs2	0.383	0.240	0.382	0.378	0.334	**0.779**	0.516	0.434	0.297	-0.002	0.310
Mgs3	0.458	0.346	0.118	0.207	0.227	**0.833**	0.380	0.077	0.229	-0.039	0.280
Mgs4	0.533	0.430	0.078	0.325	0.307	**0.882**	0.399	0.153	0.230	-0.137	0.344
Mgs5	0.504	0.418	0.148	0.286	0.313	**0.774**	0.364	-0.059	0.160	0.073	0.262
Mp1	0.200	0.136	0.279	0.216	0.230	0.350	**0.668**	0.241	0.172	0.108	0.139
Mp3	0.151	0.035	0.404	0.334	0.252	0.163	**0.597**	0.268	0.116	0.151	0.119
Mp4	0.170	0.162	0.308	0.296	0.179	0.310	**0.762**	0.328	0.194	0.176	0.160
Mp5	0.314	0.266	0.268	0.340	0.509	0.522	**0.830**	0.250	0.359	0.033	0.217
Pscb1	0.297	0.187	0.230	0.424	0.121	0.143	0.212	**0.691**	0.249	0.051	0.211
Pscb2	0.322	0.278	0.268	0.412	0.240	0.191	0.276	**0.842**	0.251	0.003	0.349
Pscb3	0.185	0.190	0.322	0.430	0.327	0.166	0.401	**0.779**	0.270	0.070	0.411
Pscb4	0.143	0.089	0.105	0.285	0.213	0.181	0.282	**0.714**	0.169	0.040	0.218

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	Association	Editability	Firm Cultural Compatibility	Hotels' Business Performance	IT Readiness	Management Support	Market Pressure	Perception of Social Commerce Benefits	Social commerce utilisation	Utilisation Cost	Visibility
Pscb5	0.291	0.219	0.166	0.353	0.196	0.191	0.069	**0.640**	0.134	0.087	0.190
Scu1	-0.008	0.104	0.130	0.143	0.269	0.274	0.241	0.207	**0.766**	-0.072	0.065
Scu2	0.162	0.153	0.220	0.280	0.156	0.088	0.215	0.305	**0.650**	0.094	0.172
Scu3	0.177	0.234	0.176	0.145	0.235	0.154	0.120	0.191	**0.717**	0.241	0.196
Scu4	0.078	0.091	0.164	0.216	0.370	0.296	0.372	0.227	**0.851**	0.171	0.104
Uc1	-0.064	-0.019	-0.134	-0.059	-0.117	-0.242	0.010	0.098	0.091	**0.679**	-0.116
Uc2	-0.044	-0.102	-0.167	-0.187	-0.143	-0.181	0.028	-0.100	-0.018	**0.462**	0.000
Uc3	0.179	0.134	-0.016	-0.029	-0.058	0.009	0.068	-0.043	0.138	**0.866**	0.038
Uc5	0.287	0.239	0.044	0.106	0.044	0.077	0.245	0.118	0.096	**0.857**	0.158
V1	0.479	0.476	0.158	0.252	0.320	0.276	0.137	0.297	0.126	0.091	**0.689**
V2	0.510	0.564	0.096	0.270	0.216	0.289	0.293	0.144	0.148	0.260	**0.688**
V4	0.404	0.385	0.284	0.416	0.340	0.402	0.228	0.375	0.124	-0.115	**0.800**
V5	0.222	0.203	0.444	0.331	0.296	0.110	0.019	0.295	0.105	-0.048	**0.723**

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Chapter 55
E-Commerce Security Research in Big Data Environment

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ABSTRACT

Rapid development of e-commerce and mobile communication opens a new era of big data. In this article, the authors put big data and e-commerce security together. They construct electronic commerce security system from these aspects: the creation of database, the security of information storage, the mining of information based on big data environment thoroughly. The second-generation product distributed platform- Apache Hadoop which is more popular and instant has been brought in. what's more, this article expounds the structure and working process. On the base of this platform, this article analyses the certainty and security of e-commerce transactions data developed on the condition of big data. It puts forward a construction view that people should guide and monitor the behavior of e-commerce, and improve the security system of electronic commerce on the base of data.

1. INTRODUCTION

In September 2008, the "Big Data: Science in the petabytes Era" has been published in the famous magazine "Science." So. the "Big Data" has become a hotspot of academia and industry (Feng Deng-Guo et al., 2014). Since 1997, the company-- IBM put forward the concept of e-business (Electronic Business), as an emerging industry, which has been developed rapidly in recent 20 years. Today in the prosperous development of e-commerce, the emergence of big data increased the development of e-commerce to a new national strategy level (Wang, 2014).

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E-commerce, as a digital platform, is developing rapidly, which carries a large amount of material and the structure and unstructured data. When a lot of data are growing at the same time, the security of data collection, storage and analysis has become an urgent problem to be solved in e-commerce. Recently, Internet users increase rapidly, and the network interactive ways increase variously, which has brought great convenience for information communication and information sharing. People do business activities through network, which has been a kind of fashion. At the same time, huge amounts of business transaction data are emerging constantly in the information space. These data, as the most basic organization form of e-commerce activities, are for saving energy. Data as biological cells has replicability, infectivity, transmissibility and diffusivity. When infected, it spreads quickly. The spread of transmission channels and fields is often beyond people's expectation (Chen, 2013) When people enjoy convenient communications, resource sharing and many other benefits which are brought by network, e-commerce information security is faced with unprecedented potential threats. Traditional means of data collection and analysis, faced with the arrival of the era of big data, has become overwhelmed. In the big data environment, e-commerce security research is particularly urgent and important.

Recently, scholars at home and abroad did a lot of researches on e-commerce security issues. Shu Xiwang (Shu, 2013) generalized the e-commerce security issues, especially the latest research results of e-commerce security issues. On this base, combined with the relevant technology of the big data and cloud computing, e-commerce security issues which are based on big data and cloud computing environment have been analyzed. Wang Shanjun(Wang Shanjun,2013)leaves the electronic commerce system such as the information flow, logistics and cash flow as the main research object. She used analytic hierarchy process, the most commonly used, in the Information security risk analysis to analyze security problems which caused by the three factors, and puts forward an effective e-commerce security evaluation model. Si Yingshuo (Si, Yang & Liu, 2011) analyzed E-commerce system security hierarchy by synthesis, aiming at security requirements. He put forward a kind of quantitative risk assessment model. Meng Xiao Ming (Meng Xiaoming,2006)based on OGSA security architecture and multistage agency chain thought, shows the e-commerce security structure based on grid environment, and evaluated and analyzed its safety performance. Du Yansui (Du, 2015) analyzed how cloud computing impacts development of electronic commerce. He puts forward security problems of e-commerce based on cloud computing, and gives corresponding countermeasures. However, scholars at home and abroad about the e-commerce security research which under the big data environment is relatively scarce.

This paper attempts to base on the data resources in e-commerce, and the big data views on the existing e-commerce security system, and strive to use big data analysis and processing method to enhance the defense capabilities of e-commerce security system, at the same to seek social reality in electronic commerce the common characteristics of crime phenomenon such as e-commerce theft, e-commerce fraud and so on. This behavior's safety certificate is to guarantee the safety of the e-commerce market. In the cloud computing of big data environment, using cloud computing technology reasonably is to support the intelligent management for the enterprise.

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2. CONSTRUCTION OF ELECTRONIC COMMERCE SECURITY SYSTEM

2.1. Build Security Database

As the Internet enters into the Web2.0 era, Traditional relational database is not able to cope with the large scale and high concurrency Social Network Service model and the expansion of large-scale e-commerce site affairs, which exposed a lot of difficult unsolved problems and, at the same time, greatly restricted the development of the enterprise (Wu et al., 2012; Yu, 2012).

However, non-relational database with its own design concept and the scope of business processing developed very fast. Non-relational database—NoSQL (Yuan, 2010; Feng et al., 2013) is to solve the management of large-scale dataset, including data storage, concurrency control and the diversification of data, which emerges at the right moment to solve the unstructured problems. Now NoSQL have many different types, and each have their own technological advantage, data managers should combine their own needs to choose suitable NoSQL database. It can manifest the advantages of a relational database (Shen et al., 2013). NoSQL database mainly divided into the following types: The key value store database, column-oriented database, and documental database, and graphic database and so on. NoSQL database does not have a unified framework. The difference between two kinds of NoSQL databases exceeds the different kinds of two relational databases. No high and low of NoSQL, only by using NoSQL in a suitable situation which can give full play to the advantages of NoSQL.

Now, what are widely used in the database of NoSQL including Redis, Leveldb, and Mongodb, and HBase. HBase serves as the subproject of Hadoop is suitable for unstructured data storage (Li, 2014). An important characteristic of HBase is based on the column model. It will enhance the extensibility of database and improve the efficiency of database storage. What's more, HBase as a distributed database can be built on cheap server size and structured storage cluster.

HBase is a distributed database, so it can easily deal with huge amounts of data storage, and provide the corresponding data service through management mechanism. HBase, as the database system of storage and processing large data, can directly use the local file system. It can also use the HDFS file storage system of the Hadoop.

HBase is a sparse, multi-dimensional, and sorted mapping table. The table index of HBase is line keyword, column keyword and timestamp (Yu, Youzhong & Meng, 2012). As with other NoSQL database, Storage is the string data. No difference in type. The server architecture of HBase follows simple master-slave server architecture. And its structure is shown in Figure 1. HMaster is in charge of all things. At the same time, ZooKeeper is to coordinate, but HRegionServer does not store data, and provide storage management functions. HRegion act as a storage carrier.

The data type of HBase database only includes string type, so all types are left to the user processing, which greatly reduce the test pressure of database between data type. It means HBase storage data's efficiency higher than relational database. HBase operation only includes query, insert, delete, and clear operation. Such as there has no contact between table and table, and need not to involve of multiple tables used by relational database connection, query, and so on. HBase on storage model is based on the list of storage. It is through countless files to save data. In addition, HBase is used to store data sparse, so some columns can be null.

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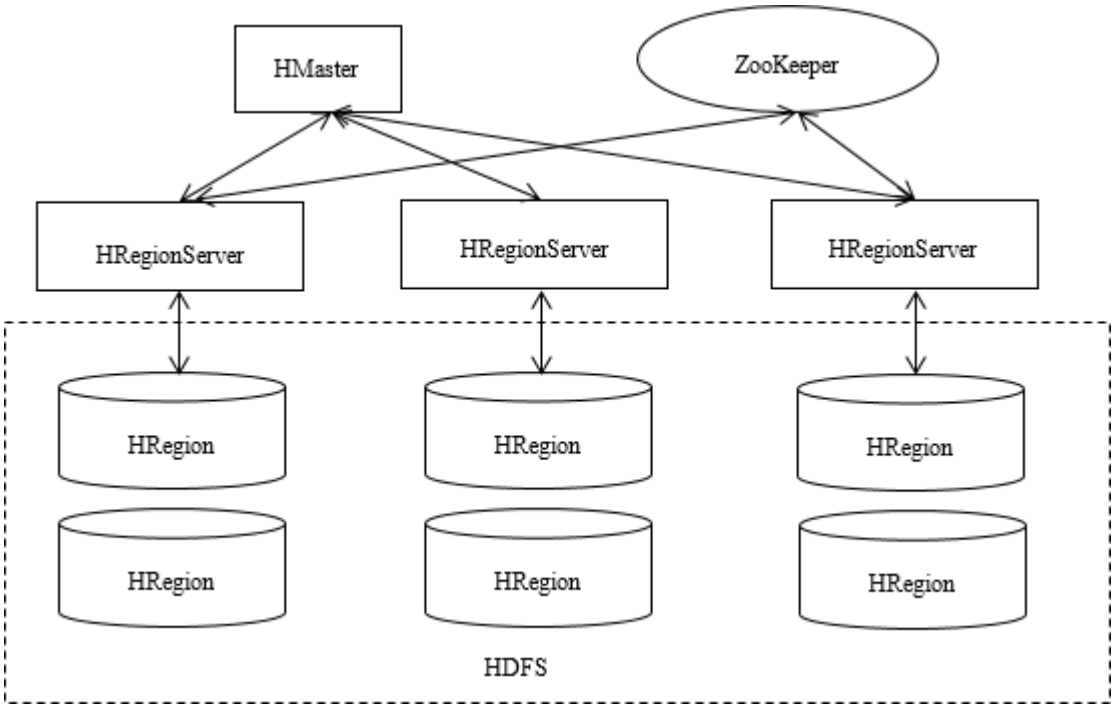
Figure 1. HBase architecture



In big data environment, it is very important whether the database access mechanism can hold huge amounts of data to access concurrently, and the database can handle huge amounts of data or not. Whether the database can storage and management the huge amounts of data or not is a very critical problem. Non-relational database solved the condition, so that we can use the data of high concurrency reading and writing requirements and the storage of mass data problems in big data, but because of the relational database on the maturity and business services is still in its infancy. Therefore, in the face of arrival of web 2.0, relational database can be used in combination (Guo, 2012). The storage structure is shown in Figure 2, the data storage controller based on the analysis of the data sources and institutions, and classified the data and stored separately to the relational database and relational database. Information index and attribute data can be stored in a relational database and record behavior, such as transaction data, which can be stored in a relational database. A data correlation controller is mainly used for the scattered data associated with key values.

E-commerce security system covers many fields of security technology. If someone wants to design an Omni bearing e-commerce security system, he has to rely on data mining and data analysis technology, and uses data to demonstrate the data, meanwhile, controls data with the data.

Data information mining research mainly divides into visual mining, memory calculation, and semantic analysis, and cloud computing technology and so on. The contents of this research mainly include the new data mining algorithm, visualization platform development, and model of machine learning research, and large data of natural language recognition, and unstructured data knowledge discovery and integration technology, etc.

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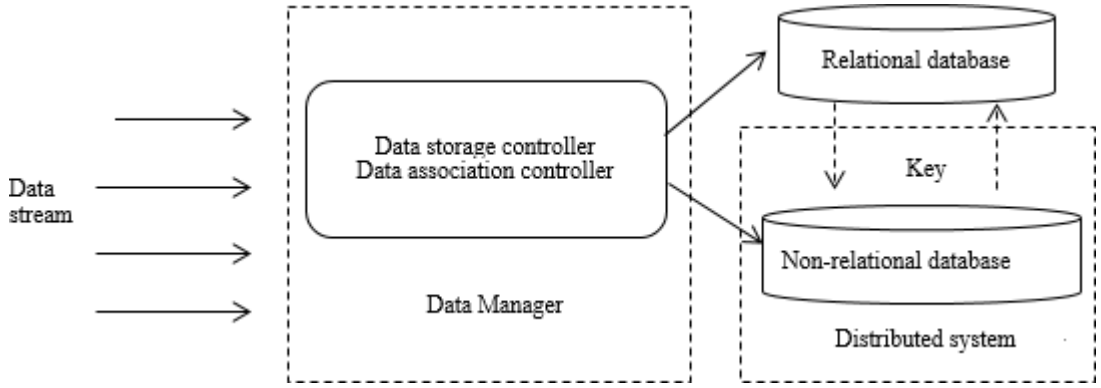
Figure 2. Joint storage database structure diagram



Big data analysis technology is under the condition of big data. It uses and improves the original data processing technique to explore network data, group, and images, graphics, etc. According relative principles of the big data to look for new technologies oriented field of network behavior and language.

The perspective of mining tasks and methods focuses on breakthrough visualization analysis, and data mining algorithm, predictive analysis, semantic engine, and data quality and data management. Data quality and management are the best practices of managements. Through the standardization process and machine process, they ensure a preset quality analysis results (Jang Bo,2010).

2.2. Safety Data Architecture Based on Hadoop

Under the wave of big data, the storage system of e-commerce need a strategy to expand the capacity, at the same time, it also need to have the ability to provide huge amounts of data services. Through the hardware resources, virtual storage technology will virtualize to manage the underlying storage device virtually. In this way, it can retain its unified logic feature and finally realize the centralized, unified, convenient management of storage system.

Cloud storage bases on cluster storage technology, it means that characteristics are hierarchical storage management, data security and on-demand deployment. Cluster distract the date load to each node, and it integrates the storage space into the huge data pool to have data management and visit uniformly. According to the data access frequency and data identification, cluster storage technology stores the data in different storage devices in order to realize the hierarchical storage management. Traditional storage file system, capacity management and disk array in the system are integrated into cluster file system through cloud storage. Traditional data security uses the way of redundant arrays of independent disks, which can only depend on the host computer to protect the date between disks. According to the set of storage, CST can realize different host computers' redundancy, it also improves guarantee of data security. In view of the traditional storage space deployment can only add server hard disk or connect network, CST may satisfy the user system demand and control the size of the storage space during conduction, which will improve the efficiency of storage and reduce the cost of investment.

With the advent of big data era, it brings new safe problems to e-commerce data storage. As people pay more attention to date, large complicated data is stored together and no one doubts the value of the data. These data storage are the target of public criticism under various attacks. As for huge amounts

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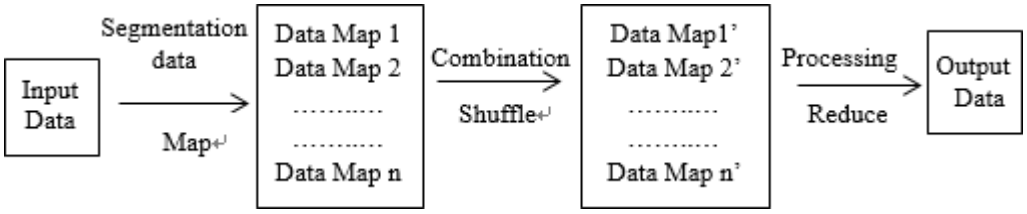
of data, it is easy to be regarded as the carrier of advanced persistent threat by attackers. On the one hand, the traditional means of security scanning may consume too much resource. On the other hand, it is a waste of time, which already cannot satisfy the security requirements nowadays. Big data analysis platform makes it possible to process the huge amounts of data. However, if the attack on a big data technology can be used, the biggest challenge is security defense absolutely.

The establishment of information security defense system in big data era, not only inherits the advantages of the traditional security defense system, but also increases the degree of data supervision and makes the information security defense strategy. At the same time, it can improve data analysis technology under the environment of electronic commerce. Finding abnormal data points through the data analysis can even predict the occurrence of some crime.

MapReduce is a kind of data processing method. It uses map and reduction as main data processing means (Liu, 2012). Programmers may not need to know about distributed systems, but can also be used to write your own programs to calculate by distributed system. If you want to execute MapReduce, you must write a Map function first. Through a variety of mapping methods, input key value pair into a new key value pair. After processing, the programmer needs to hand it over to Reduce. Reduce collates the identical characteristic value of the data. According to a certain algorithm, integrate the data, and finally output the key value of the final result. Graphs of processing task flow chart are shown in Figure 3.

Figure 3. MapReduce task processing flow



HDFS is a distributed file system. HDFS is often deployed on the computer cluster. Because of its high fault tolerance, it can use some low performance computer as nodes. For applications with large data sets, HDFS can provide high throughput rate to access (Cheng, 2011).

HDFS mainly uses the Name Node, Data Dode and Client to manage the file system. The NameNode as administrator in the distributed file system, undertake the management of the file system and processing mechanism of cluster configuration and related tasks. The NameNode stores information Data Node in memory, which is convenient for task allocation and control at any time. Data Node is the basic unit of file storage, as storage nodes, it through the file system to store data saved all the pieces of metadata, and periodically send all pieces of information to the NameNode. The Client is an application used to access to system files. Specific operation is shown in Figure 4.

3. DATA ANALYSIS PLATFORM CONSTRUCTION

Install Hadoop platform need Install JDK1.6 first or higher versions and the SSH protocol, using JDK1.8 in experiments.

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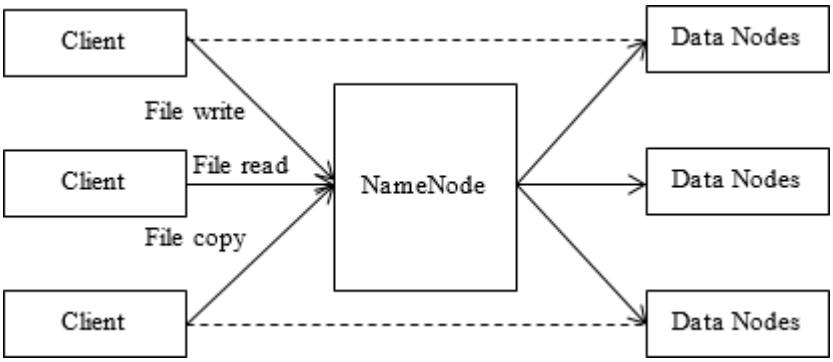
Figure 4. HDFS file operation process



First, download JDK1.8. Jar.gz to set the path began to configure the environment variables, and input sudo gedit/etc/profile commands to add the environment variables, as shown below.

Export HADOOP_HOME=/home/moon/MYData/hadoop-2.2.0
Export PATH=$PATH: $HADOOP_HOME/bin/:$HADOOP_HOME/sbin/
Export JAVA_LIBRARY_PATH=/MYData/hadoop-2.2.0/lib/native/
Export JAVA_HOME=/home/moon/MYData/jdk1.8
Export CLASSPATH=.:$JAVA_HOME/lib:$JAVAHOME/jre/lib/
Export PATH=$PATH:$JAVA_HOME/bin/:$JAVA_HOME/jre/bin/

SSH as the function of Secure Shell Protocol is to encrypt all data transmission. In the Hadoop platform, need though SSH for password-less login to start daemon process of each distribution hosts.

Because Ubuntu14.04 systems come with SSH protocol, there is no need to download, only need to input commands "ssh-keygen -t dsa" to generate a key file, as shown in Figure 5:

The key file will be appended to authorization keys, the input command is "Cat ~/.ssh/id_dsa.pub>>~/.ssh/authorized_keys", notice~ express the current folder of the users, for example /home/moon.

Through the input command: "ssh" localhost to judge whether the SSH installed successfully. If successful, the user can login this machine without password. If an error is shown like Figure 6, which expresses ubuntu14.04 version only installed ssh-agent, and did not install ssh-server, So you need to type the command: "sudo apt-get install openssh-server".then, repass "ps-elgrep ssh" Command to check, as shown in Figure 7, which shows ssh sets up successfully

Since Hadoop was launched in 2010, it has experienced several versions. In 2005, the first version of Hadoop was launched, 0.20.2 version in 2010 was known as the first-generation classic version, which contains all the previous features. Yarn, as the second-generation framework of Hadoop, solved the first generation of outstanding resource allocation, and the lack and bottleneck of task processing etc.

In this paper, the experiment used Hadoop 2.2.0 that belongs to the Hadoop second-generation products. It not only simplifies the resource consumption for Job Tracker, but also can make distributed cluster safer, and more efficient.

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Figure 5. Generate dsa key file

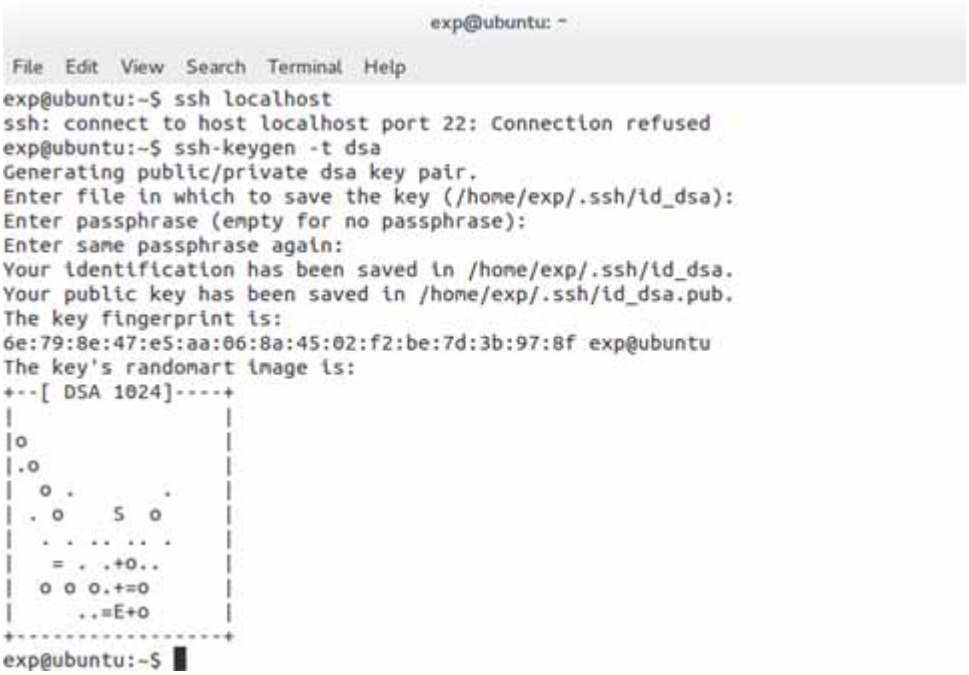

Figure 6. Present SSH connected wrong

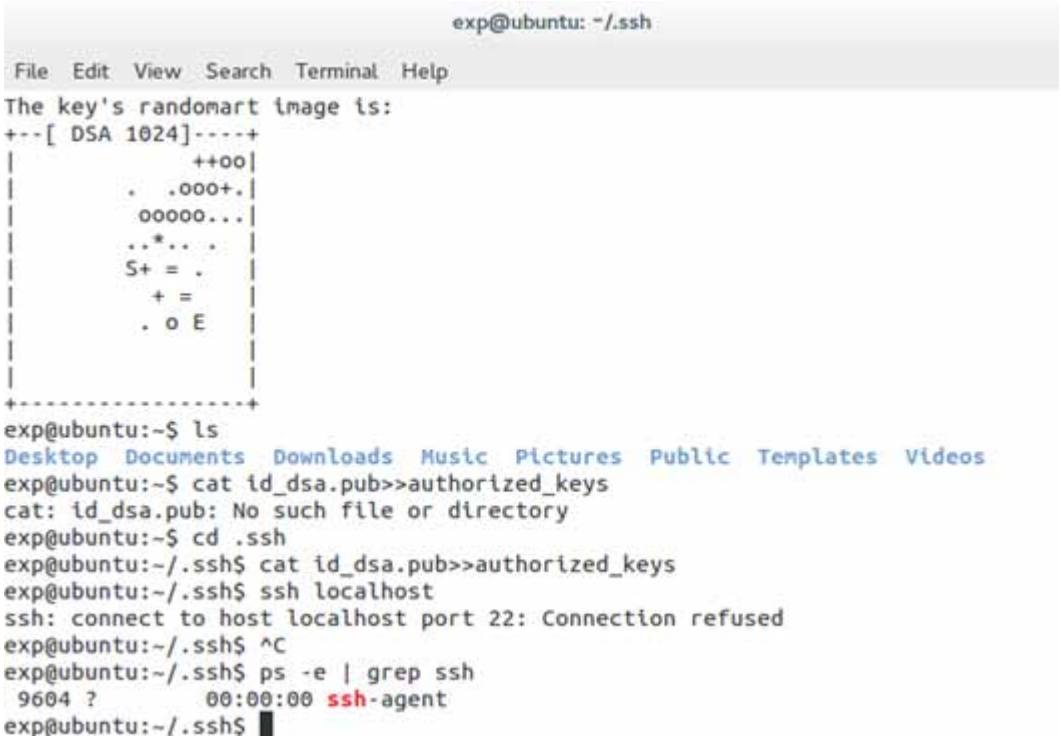

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Figure 7. SSH login this machine interface without password

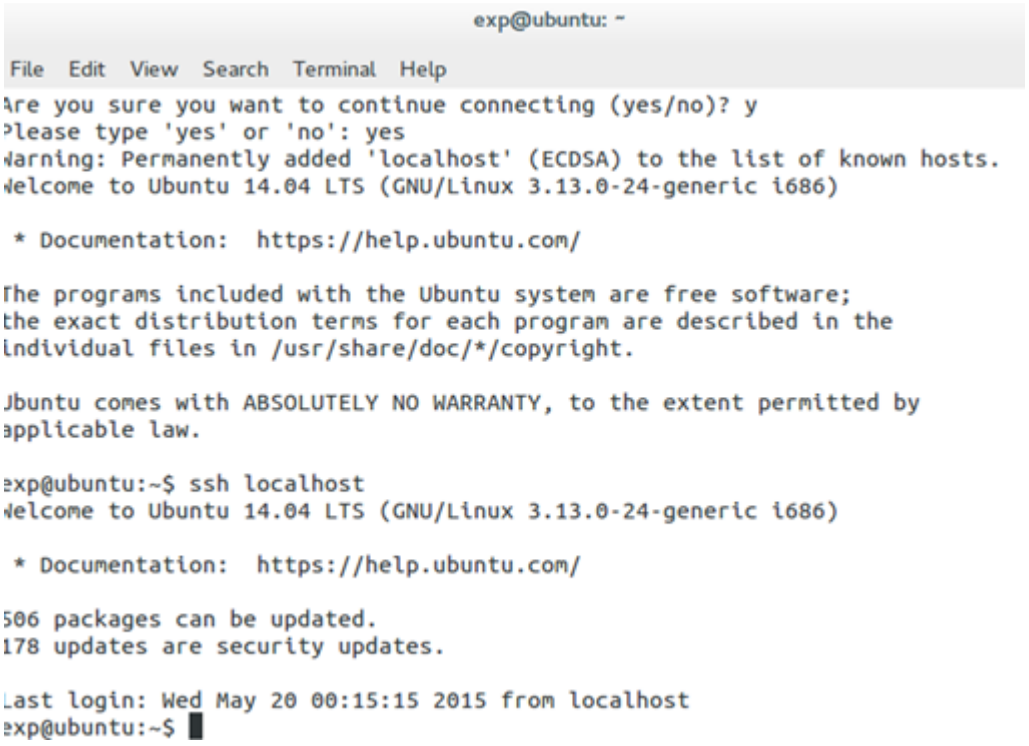

Table 1. Hadoop resource configuration

Resource name	Parameter	Meaning	Experimental value
hadoop-env.sh	parallelGC	Parallel garbage collection mechanism	XX:+UseParallelGC ${HADOOP_ NAMENODE_OPTS}
core-site.xml	fs.default.name	IP and port of NameNode	
hdfs-site.xml	Dfs.NameNode.name.dir	The log location and Storage name space of NameNode	/hadoop/dfs/namenode
hdfs-site.xml	Dfs.datanode.data.dir	location to store data blocks for DataNode	/hadoop/dfs/datanode
hdfs-site.xml	dfs.replication	Distributed file system Database replication number	2
mapred-site.xml	mapreduce.framework. name	Frame name	yarn

The installations of Hadoop and JDK are similar. They both can copy and cyber-install. The allocations of Hadoop have three kinds: single node mode, Pseudo-distributed mode and cluster mode. The former two ways were mainly used to test, which did not reflect the advantage of distributed systems, thus, the experiment, in this paper, adopts cluster method. The configuration of Hadoop through resource location and resources adopt XML file format.

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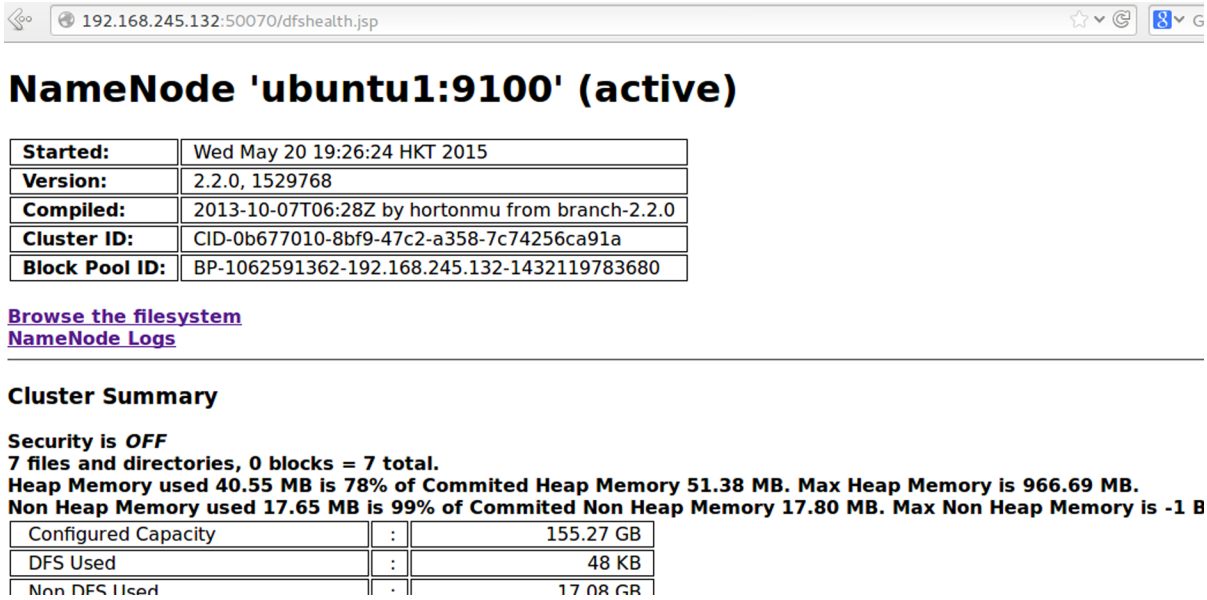
In regard to the configuration of Hadoop resource, as shown in Table 1, detailed resources allocation is in the literature (Guo Yizhong,2012).

Hadoop via 50070 port to manage NameNode, at the same time, it can check Name Node's Execution Log, as shown in Figure 8.

Figure 8. Hadoop system NameNode management controller



4. ELECTRONIC COMMERCE DATA ANALYSIS IN BIG DATA ENVIRONMENT

4.1. Trading Data Certainty Analysis

Log files as data sources file contains the information of transaction number, control data, input data, return data and output data and so on. When the user calls the Interface, it will produce a deal. Whether trading successful or not, it wants to through calculating the number of times of successful trading to alert the customer to notice whether the account is safe, there are several features:

1. No obvious separator, which is unfavorable for file splitting. File data formats are more which include date, Xml, characters, figures and so on.
2. Transaction number is not the only, need another judge.
3. Transaction number is non-unique, and need another judge.
4. According to the requirements, deal with the return value. Only take 1 as a symbol of a successful deal, others do not calculate.
5. Because of its complex structure, not easy to make a simple Map/Reduce, the file needs to be processed.

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a. Remove files order transaction number and return values, to calculate. This method USES a single calculation mode, suitable for a small amount of calculation and analysis of data, under the condition of big data, consume too many resources, time consuming, even unable to achieve results.
b. using the method of distributed processing, will be split into several files unit, calculated by the various units, after the results summary. This method is suitable for the large data analysis summary.

The experiment used Reduce algorithm as follows:

```
Public static class Reduce extends MapReduceBase implements
Reducer<Text, IntWritable, Text, IntWritable>
{
public void reduce (Text key, Iterator<IntWritable> values,
OutputCollector<Text, IntWritable> output, Reporter reporter)
throws IOException
{
int sum = 0;
while (values.hasNext())
{
sum += values.next().get();
}
output.collect (key, new IntWritable (sum));
}
}
```

The experimental results are shown in Figure 9:

Experimental found Map split files with behavior units. At first, an author wanted to use transaction number to divide files, but she found that the segmentation results are quite different. After a careful study, she found a Map in the treatment of the file has first for segmentation. Keyword logo matching method is used to the text in the transaction number and return value matching processing. The experiment is through configure, and deals with hadoop procedure. The results showed a better effect and rapid running. what's more, if there are any errors in program, they may soon be prompted. The query results are also very convenient.

4.2. Trading Safety Test and Analysis

Against hacker attack, modifying the data, it can also judge the time interval of data. At the same time, it is impossible to carry on the different batches of e-commerce transaction logic algorithm based on facts. The arithmetic flow chart shown in Figure 10.

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Figure 9. Reduce computing hadoop program results

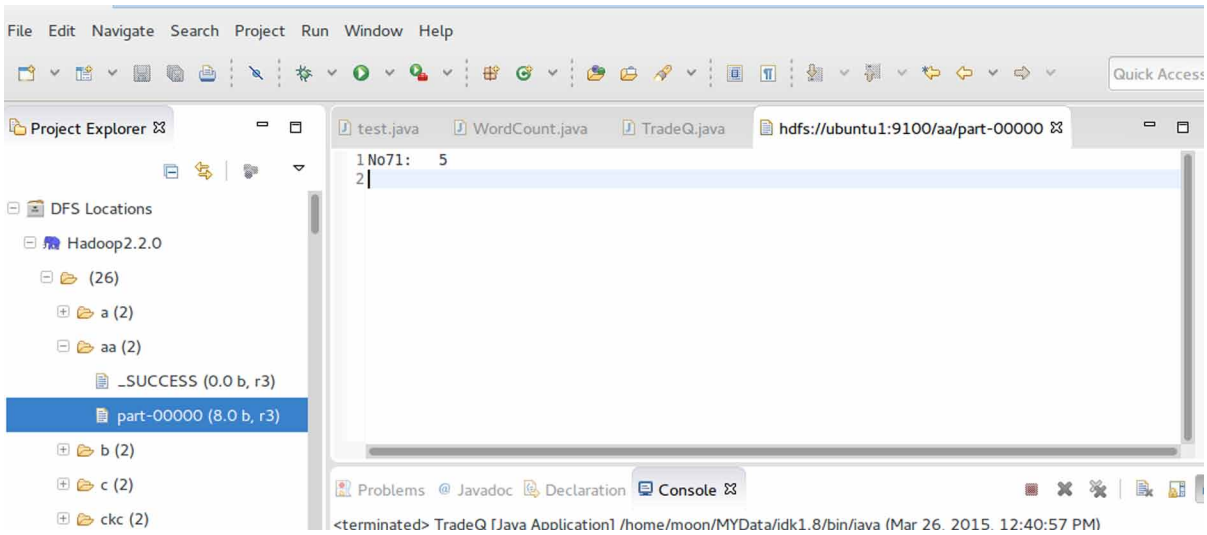
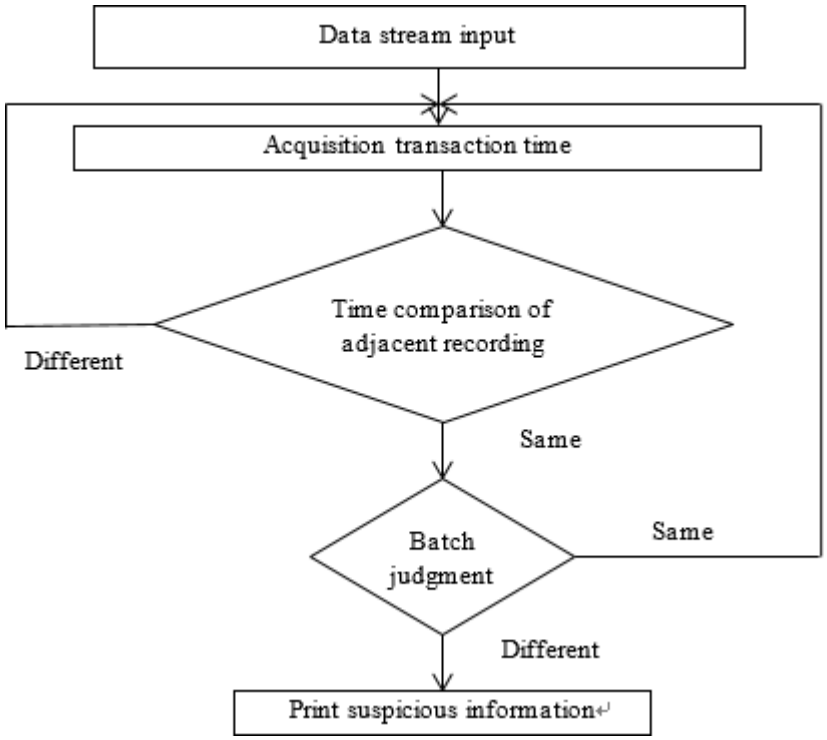


Figure 10. Data security detection algorithm flow chart



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The main design code is as follows

```
Public static void main (String [] args) throws Exception
{
JobConf conf = new JobConf (SafeCheck.class);
conf.setJobName ("trade");
conf.setOutputKeyClass (Text.class);
conf.setOutputValueClass (IntWritable.class);
conf.setMapperClass (Map.class);
conf.setCombinerClass (Reduce. Class);
conf.setReducerClass (Reduce. Class);
conf.setInputFormat (TextInputFormat.class);
conf.setOutputFormat (TextOutputFormat.class);
FileInputFormat.setInputPaths (conf, new Path (args [0]));
FileOutputFormat.setOutputPath (conf, new Path (args [1]));
JobClient.runJob (conf);
}
```

5. CONCLUSION

Electronic commerce, as the data production platform, plays a obviously important role, which has important influence on the economic development of our country. A large data processing algorithm is more complicated, and needs a lot of better capability hardware to support. Although the thought of big data has been put forward to the electronic commerce security system, after the big data platform set up, some people just did a simple calculation experiment. They didn't profoundly use more complex data analysis or processing algorithms to the experiment. Combined with complex data algorithm, large data in the field of e-commerce security research will serve as a top priority in further research.

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REFERENCES

Si, Y. S., Yang, W. T., & Liu, G. (2011). A Quantitative Risk Evaluation Model of E-commerce System. *Journal of North China Institute of Water Conservancy and Hydroelectric Power*, *32*(3), 136–138.

Bo, J. (2010). Research on Architecture of Electronic Commerce. *Microcomputer Information, 2*(26), 76–77.

Chen, Y., & Huang, L. (2013). *Study on the Impact of Big Data Processing in Electronic Commerce*.

Feng, D., Min, Z., & Hao, L. (2014). Big data security and privacy protection. *Chinese Journal of Computers*, *37*(1), 246–258.

Feng, Z., Guo, X., & Zeng, D. (2013). On the research frontiers of business management in the context of Big Data. *Journal of Management Sciences in China*, *16*(1).

Guo, Y. (2012). *Design and Implementation of the Data Storage System Based on Cloud Storage*. Beijing University of Posts and Telecommunications.

Guo, Y. (2012). *Hadoop distributed data cleaning Method the research and implementation of Hadoop data cleaning algorithm based on Outlier mining*. South China University of Technology.

Hao, W., & Du Xinyuji, L. (2012). Analysis on the current situation and technical strategy of the development of electronic commerce security. *Computer CD Software and Applications*, *17*(20), 1–3.

Meng, X. (2006). Study on Electric Commercial Safety Architecture in Gr id-Environment. *Jisuanji Yingyong Yanjiu*, *24*(1), 114–170.

Miao, C., & Chen, H. (2011). Weblog Mining Based on Hadoop. *Computer Engineering*, *15*(6), 37–39.

Qing, L. (2014). *Processing Research of big data processing based on NoSQL*. Xi'an Electronic and Science University.

Shen, D., Ge, Y., & Xite, W. (2013). Survey on NoSQL for Management of Big Data. *Journal of Software*, *24*(8), 1786–1803. doi:10.3724/SP.J.1001.2013.04416

Shu, X., & Li, A. (2013). Research of E- commerce security in big data and cloud computing environment. In *Proceedings of the 2013 Chinese Information Economic Association annual meeting and international graduate Symposium*.

Tong, L. (2012). *Design and Implementation of the Data Analysis System Based on HADOOP*. Beijing University of Posts and Telecommunications.

Wang, S., & Li, J. (2013). Research on the security risk assessment model of electronic commerce. *Modern management science*, *35*(1), 73-78.

Xiu, W. (2014). *Research on e-commerce security risk assessment model for cloud computing environment*. Anhui University of Finance and Economics.

Yansui, D. (2015). *The security of e-commerce in cloud computing environment and Its Countermeasures*.

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Yu, L., Li, J., & He, Y. (2012). Introduction to electronic commerce (3rd ed.). Beijing: Tsinghua University press.

Yu, Z., Youzhong, M. A., & Meng, X. (2012). Efficient Processing of Spatial Keyword Queries on HBase. *Journal of Chinese Computer Systems*, *33*(10), 2141–2146.

Yuan, D. (2010). *Research on theory and model of the e–commerce pariicirtor credit risk evaluation*. Beijing University of Posts and Telecommunications.

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Chapter 56
Exploring the Influence of Live Streaming in Mobile Commerce on Adoption Intention From a Social Presence Perspective

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ABSTRACT

With the rise of live streaming, many internet companies began to carry out the live streaming business, and this system was applied in various fields. Due to the emergence of e-commerce live streaming in recent years, the studies on it are not comprehensive. And for the construction of live streaming of mobile e-commerce, it is rarely considered from the perspective of users' hedonic needs. This study combined with the social presence theory to build a conceptual model explored the impact of this system on users' intention to adopt from the perspective of enjoyment feeling. The results show visual scene positively affects users' perceived enjoyment, visual scene and communication function have positive effect on social presence, social presence has positive effect on perceived enjoyment, and perceived enjoyment positively affects users' adoption intention. Finally, the authors provide practical suggestions and strategies for platform operators and sellers.

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INTRODUCTION

In 2011, the first live streaming platform of online games, twitch TV (it is a free video live-streaming platform that enables viewers to watch live broadcasts of video gamers playing.) was born in the United States. Due to the changes of people's attitudes towards the computer games and mobile games and the development of international electronic competition industry, live streaming soon became popular. Due to the popularity of twitch, live streaming as a new medium has become a prevalent recreational and leisure activity in China since 2012. In 2015, a large number of companies began to invest in the field of online live streaming in China. Since that a few broadcasters have run their own online shop on Taobao or other e-commerce platforms, using the live streaming to advertise the products they sell.

In the first half of 2019, major Internet enterprises actively explored the "live +" mode, and e-commerce platforms took advantage of the "live" to drive their own business development. The simplified threshold of e-commerce platform attracts the host to stay, gathers fans, and establishes the emotional connection between the platform and consumers. From March 2018 to March 2019, among the total transactions of e-commerce platform Mogujie, the total transactions using mobile live streaming increased by 138%, and the users using mobile video live service increased by 42%. In the Chinese "618" Promotion of 2019, Taobao Mobile's live streaming led to 13 billion yuan of sales. (CNNIC, 2019)

According to the survey of China Internet Network Information Center, by June 2019, the number of mobile online shopping users reached 620 million, increased by 29.89 million over 2018.(CNNIC, 2019) By March 2020, the number of live streaming users of mobile e-commerce has reached 265 million, accounting for 37% of the users of mobile e-commerce. (CNNIC, 2020) Live streaming users of mobile e-commerce can activate users' perceptual consumption and improve the purchase rate and user experience by introducing and displaying products and interacting with users in real time.

In e-commerce, the transformation of traffic is a consideration for all e-commerce platforms. The live streaming provided by Alibaba company takes e-commerce as the core, and by embedding the live streaming into mobile Taobao and Tmall applications, it provides users with the experience of "buying while watching". With the convenience of mobile devices, users can watch live streaming anytime and anywhere. (Jiang Fan, 2018) The live streaming promotes the timely communication of information between buyers and sellers. At the same time, certain social relations will be also established in the live streaming of e-commerce for the reason of Internet celebrity so that on the role of Internet celebrity the transformation of traffic will be promoted. The short video social mobile application, Tiktok has been added mobile e-commerce system in to achieve traffic into funds. The novel coronavirus, COVID-19, emerged in China in early 2020. Under the government's strategy to respond to this crisis of the pandemic, most of the brick-and-mortar stores were suspended in China, which had an adverse impact on their sales. However, owing to no direct contact between people of the mobile e-commerce, some clothing and food brands launched relevant sales activities on the live streaming which had higher audience ratings. Although people stay at home to refrain from going outdoors as far as possible to avoid infection of COVID-19 in China, these applications help people experiencing the fun of shopping on the mobile equipment.

Compared with traditional e-commerce, main feature of mobile commerce is mobility implying portability. Users can browse e-commerce platform with mobile terminal immediately, if they want, not limited by time and place. Ubiquity, convenience, and personalization are also the features of mobile e-commerce. (Hillman & Neustaedter, 2017) The live streaming of mobile e-commerce also has these features. Using live streaming of mobile e-commerce,the buyer can also obtain three-dimensional visual

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information and auditory information, with the needs of certain social interaction satisfied at the same time compared with traditional e-commerce.

At present, the research on user attitude and behavior intention of mobile e-commerce platform is one of the hot spots in behavior research, especially for loyalty (Dong et al., 2018), purchase intention (Dehghani et al., 2015; Erkan et al., 2016), etc. And there are also many scholars aiming at traditional e-commerce platform, social e-commerce platform based on text and image sharing (Liang and Turban, 2011; hajli, 2015; hajli, 2017; Xiang, et al. 2016; Bai, 2015). However, due to the emerging field of live streaming, the current research mainly focuses on the construction of live streaming system, and some scholars study the interaction on live streaming (He, 2013) and purchase intention on live streaming from the perspective of trust(Hyun Jung Rark, 2020).

The live streaming of mobile e-commerce is a form of high human-computer interaction. To do well in live streaming of mobile e-commerce, it not only has high requirements for the design of its computer system, but also it is need for operators and researchers to pay attention to the user's internal perception on the users' interaction with the system. However, at present, there are relatively few researches on the live streaming of mobile e-commerce. Although previous studies have explored live streaming of e-commerce from trust and perceived utilitarian value, but these studies can't fully understand the behavior mechanism of users. And for the construction of live streaming of mobile e-commerce, it is rarely considered from the perspective of users' hedonic needs and enjoyment experience. As this live streaming of mobile e-commerce is a new mode, and it has not become a main sales method of mobile e-commerce, whether all consumers accept this way or not, there is little research point out at present, so this study focuses on how to affect users' adoption intention and the role of visual and auditory characteristics of live streaming of mobile e-commerce. This paper will study from the perspective of the visual and auditory dimensions of live streaming and the user's perceived enjoyment of online shopping to explore influence mechanism, which will be a supplement to previous researches.

RELATED WORK

Research on Live Streaming

After the rise of live streaming, many researchers began to study this new human-computer interaction product. The relative research mainly includes the exploration of live streaming mode, user behavior, technical support and others.

There are two main forms of live content generation: the corresponding information generated by the host or the broadcaster and the corresponding content generated by the viewer. In the interview study of Gandolfi (2016), it was found that one of the live content generated by the broadcaster is a form of professional live content generation, and the other content is generated by the broadcaster and the viewer who share experience and attitudes on the platform. Hamilton, William & Garretson (2014) found that twitch, as a third-party virtual platform, where users communicate which promotes the formation of informal communities, and forms group identity while users share content and experience. Online live streaming was applied to citizen activities. The users who have already join in citizen activities on the live streaming have a higher sense of self-identity in the live streaming (Dougherty, 2011). Jia, et al. (2016) found that twitch.tv is a fast-consuming repository, with millions of videos uploaded, viewed

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and soon forgotten. And on the live streaming while the creator generates content emphasizing personal skills, the audience appreciated teamwork strategies.

Previous studies on live streaming mainly focused on the use motivation and perceived value of viewers and broadcasters (Max & Juho, 2017; Yu et al., 2016), while a few studies also focus on the e-commercial revenues brought by live streaming. As a kind of media for video generation and sharing, live streaming broadcasters and platforms mainly rely on the viewers' consumption of media content and advertisements to benefit.In the live streaming platforms, the platforms and the broadcasters also sell products related live streaming, including virtual medals, videos, etc., which are the main products sold by streamer and the platform to consumers. For twitch, payment subscription is a way for consumers to buy broadcasters' virtual products. Through this way, they can buy virtual products such as expression packs and badges. (Hilvert-Bruce et al., 2018) Subscriber streams is a paid browsing streams service only provided to buyers. When consumers are interested in video content through preview, they can watch it completely by purchasing subscription services(Twitch,2019). On the research of the purchasing virtual products of the live streaming platform, previous study has emphasized that social motivation will promote consumers to consume video content and choose to pay for live subscription services(Hilvert-Bruce et al., 2018). For the live streaming of entertainment, the live streaming rooms not only have the internal electronic transaction system of the live streaming platform, but also embed some web page elements that link to the external e-commerce platform. The research on twitch highlighted 35% of broadcasters will put merchandise link where the viewers can purchase relative merchandise in the live streaming rooms of Twitch. In this case, live streaming becomes a medium to introduce traffic to e-commerce platform so that live streaming indirectly participates in e-commerce transactions.(Sjöblom, Törhönen, Hamari & Macey, 2019)

For live streaming, many researches focus on perceived utilitarian value and the motivation of using live streaming, and some scholars focus on purchasing virtual products of live streaming and external e-commerce links in live streaming. It can be seen that the live streaming has been integrated into people's life, and it has also become a medium to participate in e-commerce transaction process. Therefore, it is a new hot topic to study the mode that e-commerce combines with live streaming.

Research on Mobile e-Commerce User Behavior

With the development of e-commerce, many scholars have studied e-commerce from different perspectives. Most of the researches on mobile e-commerce are based on user perceived usefulness, satisfaction, trust and other perspectives, using technology acceptance model, Expectation Confirmation model and so on. Liébana-Cabanillas et al. (2017) extended the technology acceptance model, adding other external variables to explore the user's adoption of mobile e-commerce, and perceived trust, perceived usefulness, customer customized services and user involvement have a significant impact on user adoption. Through neural network analysis, customer customized services and user involvement are the most important factors affecting user's use of mobile e-commerce.

Chong (2013a) added perceived ease of use, perceived enjoyment, trust and perceived cost to the traditional expectation verification model to build a more comprehensive research model of mobile e-commerce sustainable use intention. The results show that satisfaction, perceived usefulness, perceived ease of use, perceived enjoyment, perceived cost and trust have significant effects on consumers' sustained intention of mobile commerce. The trust of consumers is considered to be one of the most important psychological states that affect internet behavior. Previous studies have pointed out that trust has an im-

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portant impact on the acceptance of e-services, and consumer groups, types of e-services and objects of transactions are the key factors affecting consumer trust(Mou, Shin & Cohen, 2017). Hew et al. (2016) explored the user's willingness to continue to use mobile social e-commerce based on the Expectation Confirmation model, and they found social media information privacy and brand loyalty are the main influence factors. Hillman (2017) conducted an interview on the users who have used mobile e-commerce and new users who have used mobile e-commerce to investigate the impact of users' trust concerns on the use of mobile e-commerce shopping. Cheung et al. (2017) used planned behavior theory and trust relationship factors to build a model to explore the impact of advertising on user behavior intention in mobile social e-commerce applications. Hillman (2017) and Cheung et al. (2017) pointed that trust is the key factor to affect user behavior intention in mobile social e-commerce. Pantano (2016) conducted a qualitative analysis on 29 consumers in order to understand the extent that mobile technology affects consumer behavior and the driving factors of consumer experience that promote consumers to adopt mobile shopping. The results showed that retailers need to develop new mobile service capabilities to promote consumer consumption. Hyun Jung Rark (2020) studied consumers' purchase behavior of products under live streaming from the perspective of anchors and product sources. Based on the research of celebrity endorsements, their study explores the influence of various pairings on consumer behavior in the context of online shopping of online celebrities in China.

It can be seen from the above research that many scholars have studied mobile e-commerce user behavior from multiple perspectives. Due to the rise of live streaming, mobile e-commerce has added live streaming module, which is a relatively new form. At present, there is relatively little research on human-computer interaction of this kind of information system. Therefore, exploring the influence mechanism of adoption intention of mobile e-commerce live streaming will make up for the lack of research on it.

Social Presence Theory

Social presence is defined as "the extent to which an individual can feel the existence of others through media in a virtual environment" (Short et al, 1976; Gefen et al, 2003). With the continuous development of information technology, the application of social presence theory has also expanded to the fields of human-computer interaction, marketing, distance education and so on. In recent years, many scholars have extended the theory of social presence to the field of Internet user behavior. According to the theory of social presence, the more clues the media provides for people to communicate with others, the more users can feel the human warmth, emotion and sociality possessed by the media (Short et al, 1976). When users use media, when they need social emotion, they are more willing to choose the way of high sense of presence. When they just need to complete information transmission, the way of low sense of social presence can meet the needs of users. (Rice & Case,1983;Zmud, & Young,1990)In the study of user acceptance behavior toward social interaction, it is often pointed out that the main factor affecting user acceptance is the performance adaptability and social stability, while the social presence is a factor that cannot be ignored, which is the key to accepting behavior intention. Improving user's social presence in interaction is more conducive to user's accepting behavior(Shin, 2013).

With the development of Internet technology, social telepresence technology is also used in various Internet environments. For a website, its social presence is the degree to which users feel the presence of others. Lee (2014) defined the social presence as the sense of social reality felt in the online shopping environment. For social presence, many scholars think that it is the inherent attribute of the media, while some scholars think that it is the user's feeling in his mind through the use of media. Charlotte

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et al. (1997) believed that social presence is the attribute of media is one-sided, and it is also a kind of psychological perception produced in the process of interaction between human and media, and this kind of psychological perception can be cultivated through human behavior. Sallnas (2005) indicated that social presence emphasizes the sense that one person and another exist together in the media environment.

For feeling the social presence, pictures, text information, video, virtual character image, voice and other factors will affect the degree of users to feel social presence. Gefen & Straub, 2003;Kumar, & Benbasat, 2002;Kumar, & Benbasat, 2006;Mennecke, et al,2011;Lombard & Ditton,1997;Chattaraman, Kwon & Gilbert, 2012)Compared with face-to-face business activities, e-commerce obviously lacks human warmth and social interaction. Through the integration of web interface, human warmth and social interaction will be aroused, and ultimately customers' online shopping attitude will be affected. Their research results show that high perceived social presence has a positive impact on perceived use, trust and customer pleasure of shopping websites, and through these three intermediary variables, customer attitude is improved (Khaled Hassanein & Milena Head, 2007). Although there are significant differences between offline and online store scenarios, social interaction is a common need for customers in these environments.

Social presence can reflect the user's feeling of human warmth in the use of information system. It is more suitable for the study of the user's intrinsic feelings in the use of information system, which is the reason why this study will use social presence as a factor to explore.

HYPOTHESES

In Davis's (1992) model, perceived hedonism has a positive impact on the use of information systems. For online environment, factors related to online system environment affect users' shopping behavior, and emotional cues will not directly improve the effect of effective information on shopping goals, but affect users' behavior by affecting the emotional enjoyment degree in users' shopping experience. Eroglu (2001) used online environmental cues, affect and cognition states, and user response to build a research model. Live streaming is a new form of high HCI level, so it is necessary to combine user perception from the characteristics of live streaming in mobile e-commerce for research. And perceived enjoyment and social presence can help researchers understand the intrinsic feelings of users before taking actions(Chong, Y. L., 2013b). Our research uses the above research model for reference to construct the research model with characteristics of livestreaming,perceived enjoyment and social presence. We build the research model as shown in Figure 1.

Live Streaming Feature

Because live streaming transmits information through video and audio, this study chooses visual scene and communication function as the main features of live streaming. Visual scene means the performance effect of the system presented by some visual elements such as image and video in system design (Eroglu, 2001; Vander Heijden et al., 2003). Communication function means the degree of social interaction between users and others through technology system (Animesh et al., 2011).

Compared with the image and text form, online video live streaming puts the commodity sales into a certain scene. Because of the use of video technology, it can display the commodity information more intuitively and truly, and it is easier for businesses to extract the value of products to show products to

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users combined with the scene from multiple dimensions, from which users can find more useful information. Parboteeah et al. (2009) pointed out that when the visual effect is better, users are more likely to pay attention to the useful content. Tractinsky et al. (2000) pointed out that the visual attraction of the system increases the perceived pleasure of users. Due to the use of live streaming, the visual experience of users is more real and easier to improve the user's shopping experience. In the use of users, users browse product information by watching videos and listening to the introduction of merchants, which is closer to the form of real shopping and can meet the entertainment goals of users' shopping. Stephenson pointed out that entertainment is one of the main purposes of mass media. Eroglu et al. (2001) pointed out that the visual effects of the system, such as style and interface, are emotion related features, which produce certain atmosphere to promote the user to have a happy shopping experience. Heijden et al. (2003) pointed out that visual attraction is the main emotion related feature, which can promote users to generate pleasant and pleasant feelings. Xiang Li et al. (2016) pointed out that better visual attraction will make users generate pleasant feelings. Yee-Lin Lai et al. (2009) found that mobile animation can improve the hedonic perception of product attitude. Therefore, this study assumes that:

H1: on the live stream of mobile e-commerce visual scene will positively affect users' perceived enjoyment.
H2: on the live stream of mobile e-commerce visual scene will positively affect users' social presence.

In the live streaming of mobile e-commerce, businesses transmit information to users in the form of vision and auditory. However, information transmission is not only a one-way pattern from the seller to the user in the live streaming. Users can transmit information to other users and seller through danmaku(a type of comment which is scrolled across the particular area of screen in real time) and chat rooms. For users, mobile e-commerce live streaming has a role on satisfying users' need of social interaction. In the live streaming, users can communicate and interact with each other through the free release of danmaku to help users find the same interests, styles and shopping goals, so that they can establish relationship with like-minded people. Through this medium, users communicate and interact with each other, thus satisfying the emotional needs of users. Under the interaction of computer as the medium, the user's purchase experience can be enhanced, and then a pleasant experience of online shopping can be generated (Skadberg, 2004). Hassanein and head (2005) pointed out that when the media has interpersonal communication and sociality, it will make users feel warm. Choi (2016) pointed out that the communication between users of hedonic information system will increase the enjoyment of users. Users constantly communicate with each other through the danmaku, which virtually shortens the distance between users. When the information system is social, users will feel warm and cordial from it, resulting in a sense of social presence (Hajli, 2017). Animesh et al. (2011) pointed out that in the IT media environment, users can perceive a higher level of social presence, which will be affected by social nature. Therefore, this study assumes that:

H3: on the live stream of mobile e-commerce communication function will positively affect users' perceived enjoyment.
H4: on the live stream of mobile e-commerce communication function will positively affect users' social presence.

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Social Presence

Social presence is people's perception of personal intimacy, enthusiasm, friendliness or social interaction in virtual environment. In computer-based communication, the media richness is stronger, the stronger the individual's social presence will be. In the network live streaming system, for the interaction between users and broadcasters through live broadcast in the form of danmaku or chat rooms, to a certain extent, it will give users a corresponding sense of social presence, so as to promote the communication between users and generate the pleasure value of communication and other accessories in the shopping process. Lombard and Ditton (1997) pointed out that the most prominent psychological impact of social presence is to generate pleasure. In the study of e-commerce user behavior, Hassanein (2007) thinks that the stronger the user's social presence, the more enjoyable the user's shopping experience will be; Cyr (2007) tests the impact of social presence on the user's perceived pleasure, and the results show that these two variances are positively related.

In general, the richer the media provided by online stores, the more social presence of consumers can be enhanced. Mobile e-commerce can enhance the communication and interaction between consumers and online stores or consumers through various ways such as video, push notifications in app (such as Taobao's Micro Taobao), online comments, questions to purchased consumers, live marketing, etc., which to a certain extent will make consumers have a sense of social presence. Animesh et al. (2011) pointed out that in the virtual environment, the interactivity and sociality provided by the virtual environment will affect the virtual experience of participants, and there is a correlation between the interactivity and sociality of participants and the sense of social presence. When individuals have a stronger sense of social presence, they can generate a stronger sense of pleasure and hedonic mind, and they can also have a better experience (Lombard et al., 1997). So here we assume:

H5: on the live stream of mobile e-commerce social presence will positively affect users' perceived enjoyment.

Perceived Enjoyment

Perceived enjoyment is an intrinsic emotional factor of users' adoption of information technology (Davis, 1992). Perceived enjoyment is the user's mental satisfaction after using information system. And it is the expression of users' emotional needs in the process of shopping. Hedonic attitude and utilitarian attitude are two dimensions of consumer attitude (Voss & Grohmann (2003). Consumers with hedonic attitude are pursuing emotional satisfaction while they are shopping online (Inés & Ruiz 4, 2011). Owing to the development of network technology, online shopping is no longer only a tool to meet the practical needs of users, such as product information retrieval, purchase, etc., but also a field for users to meet the enjoyment, and for users the hedonic value that can be pursued from it (Gansesh et al., 2010). In previous studies, the good mood of consumers in online and offline situations can promote their purchase behavior (Rook and Gardner, 1993; Huang, 2001). The shopping process of users online shopping affects the perception of shopping fun and the emotional response of users in the user experience, and then affects the purchase intention of users. Crawford and Melewar (2003) pointed out that when the environment can make consumers have a happy and relaxed perception, it will promote the purchase of consumers. Rodgers and Harris (2003) pointed out that when users use e-commerce shopping, insufficient perceived emotional benefits will reduce users' e-commerce activities. When us-

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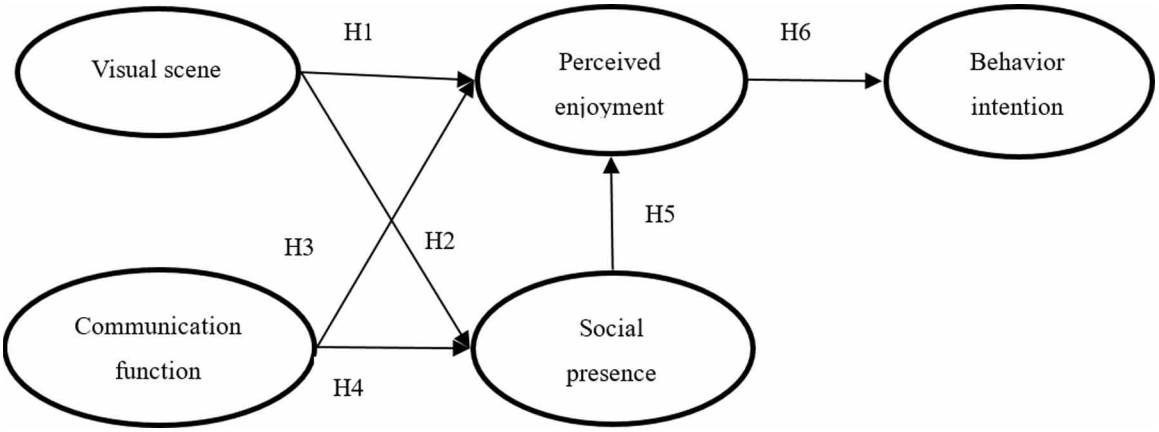
ers enjoy online shopping experience more, users will have a longer browsing query, the more likely to adopt online shopping behavior. In the previous research on e-commerce, researchers found that users' perceived pleasure positively affected their willingness to shop (Gefen and karahanna, 2003; Parboteeah et al, 2009). Adoption intention indicates that the user has the willingness to use the information system. Therefore, this study assumes that:

H6: on the live stream of mobile e-commerce perceived enjoyment will positively affect users' adoption intention.

The above assumptions are shown in Figure 1.

Figure 1. Research theoretical model



METHODOLOGY

The questionnaire of this study mainly includes two parts: the basic demographic information and the main body measurement questionnaire. The explanation part of the questionnaire is mainly to explain the purpose of the questionnaire survey and the relevant requirements of answering questions to the respondents, so that we can obtain more authentic and reliable measurement data when the respondents exclude the concerns of personal privacy and other relevant aspect and cooperate actively. The basic personal information of the questionnaire mainly investigates the demographic information of the respondents, such as gender, age, education background, use experience. Referring to the mature scale of previous studies, combined with the characteristics of mobile e-commerce live streaming environment and the characteristics of user adoption behavior intention in this environment, this paper adopts the form of Likert 7-level scale for the measurement of all potential variables in the research theoretical model (from 1 point to 7 points, indicating very disagreeable to very agreeable) to evaluate the degree of the respondents'' approval of the question. The scales items of main body measurement questionnaire are showed in Table5.

The survey method of this study was online questionnaire, so we designed an electronic questionnaire on the professional online questionnaire platform. And then we looked for groups about e-commerce live

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streaming of instant chat tools such as WeChat, QQ and other social software, where businesses push live streaming information, product advertisements and coupons for consumers. In order to improve the filling rate of the questionnaire, we asked group members who have experience of e-commerce webcast to help to fill in the questionnaire.

In order to ensure that the number of samples meets the specified requirements, we have set in the questionnaire whether there is any experience of using live streaming of mobile e-commerce. If not, we will not use the questionnaire. Before the participants filled in the questionnaire, we explained to them that this survey considers their feelings of the software system function, not the performance of the broadcasters and the shopping scenarios broadcasters designed. Finally, 214 valid questionnaires were collected. The demographics information is shows in Table1.

Table 1. Demographics of valid participants

items		frequency	percentage
Gender	male	73	33.11%
	female	141	65.89%
Age	<20	36	16.82%
	20-30	106	49.53%
	>30	72	33.64%
Education background	junior college education or below	41	19.16%
	bachelor	99	46.26%
	master	61	28.50%
	PhD	13	6.07%
E-commerce use experience	Less than 1 years	4	1.86%
	1-3years	43	20.09%
	3-5years	64	29.91%
	5years	103	48.13%

ANALYSIS AND RESULTS

We used spss21 and Mplus software to analyze the data we collected. Considering the limited amount of data we collected, we choose robust maximum likelihood (MLR) estimator analysis method in Mplus to analyze our data of SEM to ensure the effectiveness of the analysis.

Reliability can be used to test the consistency of the results of each observation variable index of each potential variable. In this study, Cronbach α and Composite Reliability are used as reference values of reliability.

According to the previous research on the reliability of the scale, Cronbach α coefficient below 0.650 indicates that the reliability is not good enough, α coefficient value between 0.650 and 0.700 is acceptable, Cronbach α coefficient greater than 0.700 means that the reliability of the scale of structural variables is good, and when the value greater than 0.800 indicates that the reliability of the scale

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is very good (Fornell and Larcker, 1981). It can be seen from table 2 that the α factor values of the five variables of visual scene, communication function, perceived enjoyment, social presence, and adoption intention are all greater than 0.800, indicating that the reliability of these variables is very good. It can be seen from table 2 that the composite reliability value of each variable is between 0.8 and 0.9, which also indicates that the measurement reliability is good. Therefore, the reliability of the scale in this study is good, which meets the requirements of the follow-up study and analysis.

Table 2. Reliability analysis

Variance	Items	Cronbach α	Composite Reliability
Visual scene	V1	0.850	0.851
	V2		
	V3		
Communication function	C1	0.854	0.856
	C2		
	C3		
	C4		
Perceived enjoyment	H1	0.854	0.852
	H2		
	H3		
Social presence	P1	0.880	0.882
	P2		
	P3		
Intention	I1	0.892	0.895
	I2		
	I3		

Table 3. Validity analysis

	AVE	Visual scene	Communication function	Perceived enjoyment	Social presence	Intention
Visual scene	0.655	0.809				
Communication function	0.599	0.667	0.774			
Perceived enjoyment	0.658	0.760	0.732	0.811		
Social presence	0.713	0.730	0.761	0.772	0.844	
Intention	0.740	0.615	0.640	0.708	0.689	0.860

Starting from the second column, the diagonal is the square root of the AVE value of each variable, and the rest data is the correlation coefficient between the two variables

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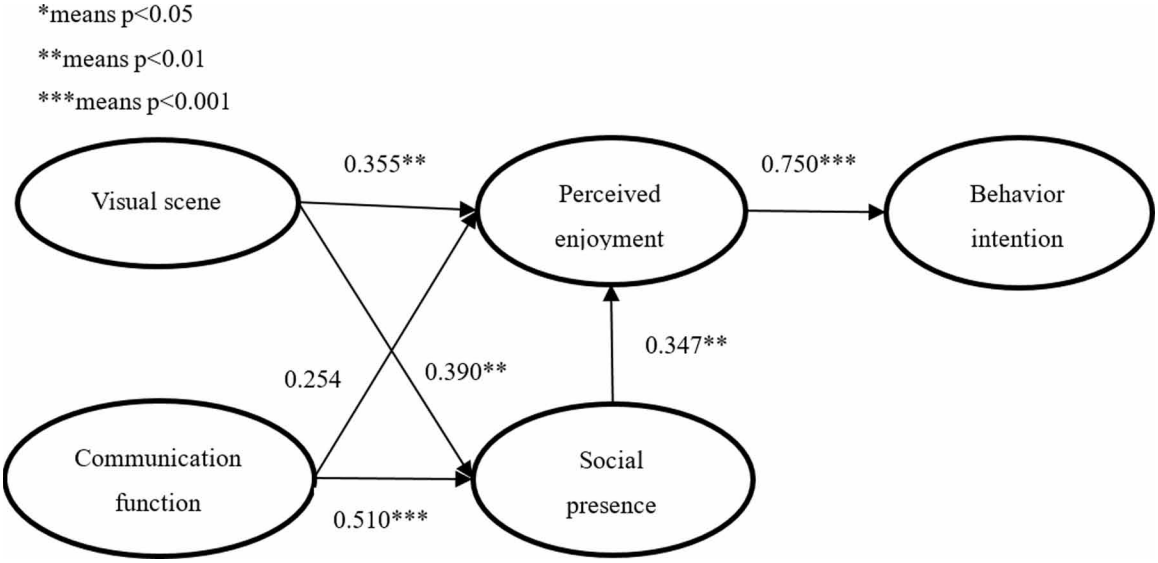
Validity test is to test the extent to which a measurement process actually achieves the measurement purpose, that is, to test the extent to which the measurement subject of the investigation estimates the objective to be investigated, that is, to what extent it reflects the real situation. We test convergence validity and differential validity. For convergence validity, we test the ave of each variable. We follow the criteria suggested by Fornell and Larcker (1981) that AVE should be at least 0.50. From table 3, we can see that the AVE of each variable is greater than 0.5, which shows that the variable we measure has good convergence validity. In terms of the detection of differential validity, we use the correlation coefficient between variables to compare with the square root of Ave. From table 3, we can see that the square root of AVE is greater than the correlation between variables. Therefore, our measurement validity is better.

In this study, we use Mplus to set variables and build models. Because of using Mplus, we mainly use RMSEA, CFI and TLI to make quasi kernel judgment for model fitting. It can be seen from table 5.5 that the value of RMSEA is 0.033 (less than 0.05), indicating that the model fitting is acceptable. The CFI value is 0.988 (more than 0.900), and the TLI value is 0.985 (more than 0.900). For the given parameter indexes are reference to the fitting effect of the model, and the RMSEA, CFI and TLI indexes of this study are in the acceptable range. Therefore, the model has a good fit.

Figure 2. Results of SEM



It can be seen from Figure 2 that the standard path analysis and hypothesis test results of user behavior intention under mobile e-commerce live network. It can be seen from the figure that visual scene has a significant positive impact on perceived enjoyment, the significance level P is less than 0.01, and the path coefficient is 0.355; while visual scene has a significant positive impact on social presence, the significance level P is less than 0.01, and the path coefficient is 0.390. The communication function has a significant positive impact on the social presence, the significance level P is less than 0.001, and the path coefficient is 0.510; the significance level P of which the communication function has an impact on the perceived enjoyment was more than 0.05, so it has no significant impact. The positive

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effect of social presence on perceived enjoyment was less than 0.01, and the coefficient was 0.347. The perceived enjoyment has a significant positive effect on the intention of users to adopt in the webcast, the significance level P is less than 0.001, and the path coefficient is 0.750. The results of Hypothesis test are showed in table4.

Table 4. The results of Hypothesis test

Hypothesis	content	Path coefficient	Results
H1	On the live streaming of mobile e-commerce visual scene will positively affect users' perceived enjoyment.	0.355	Supported
H2	On the live streaming of mobile e-commerce visual scene will positively affect users' social presence.	0.390	Supported
H3	On the live streaming of mobile e-commerce communication function will positively affect users' perceived enjoyment.	0.254	Not Supported
H4	On the live streaming of mobile e-commerce communication function will positively affect users' social presence.	0.510	Supported
H5	On the live streaming of mobile e-commerce social presence will positively affect users' perceived enjoyment.	0.347	Supported
H6	On the live streaming of mobile e-commerce perceived enjoyment will positively affect users' adoption intention.	0.750	Supported

DISCUSSION

Our research started from the user's experience of visual scene and communication function, and explore the impact on the impact on adoption intention with the combination of perceived enjoyment and social presence. As live streaming of mobile e-commerce is a high HCI level commerce form, it is necessary to consider the impact mechanism by combining live streaming features and users' perception. Here we do not consider the perceived utilitarian value of live streaming of mobile e-commerce which previously researches have studied, but mainly explore the impact mechanism from the perspective of hedonism.

From table4, the hypothesis H1, the hypothesis H2, the hypothesis H4, the hypothesis H5 and the hypothesis H6 were all supported, but only the hypothesis H3 was not supported. The supports of H1 and H2 prove that the effect on the visual dimension of webcast has a positive impact on the user's perceived enjoyment and social presence. Previous studies on traditional e-commerce and social e-commerce have shown that when e-commerce has a good visual effect, it will improve the user's perceived enjoyment and social presence (Eroglu et al., 2001; Xiang Li, et al., 2016; Tractinsky et al., 2000), and our research also agrees with these results. The H4 is supported, which is also similar to previous research results (Xiang Li, et al. 2016). Hypothesis H6 shows that the perceived enjoyment generated by live streaming of mobile e-commerce will promote the user's option intention for the mobile e-commerce live broadcast system. This is also similar to the previous research on traditional e-commerce, in which the effect of perceived enjoyment on users' final intention to use traditional e-commerce shopping. (Chong, 2013b; Abdennebi & Debabi,2017) It also proves our model is feasible, and shows the importance of the impact of perceived enjoyment on user adoption. However, our study found that the communication function has no direct impact on the user's perceived enjoyment, that is, hypothesis H3 isn't supported. In the

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previous researches on e-commerce and other information systems, when users use information systems and information they received is overloaded, them will feel bored and reduce their enjoyment on using the system(Hwang et al., 2020; Chen et al., 2009; Park & Lee, 2008).

Because it is on mobile device, the screen is relatively small, and the area for displaying the communication content is limited. We speculate that perhaps in the live streaming of mobile e-commerce, there are many words sent out in users' communication, and the communication content is updated quickly so that it is difficult for users to answer one by one. At this time, the information received by users is overloaded, which will affect their communication experience. However, in our research, we have not explored the reasons, and the reasons why communication function has no direct impact on the user's perceived enjoyment needs to be further explored.

CONCLUSION AND IMPLICATIONS

Our research mainly investigates the impact of live streaming on consumers' adoption intention in mobile e-commerce. Based on this research goal, we construct a research model from the perspective of the characteristics of the live streaming system to explore the mechanism of the adoption intention of users. We find that visual scene and communication function affect users' online purchase intention through social presence and enjoyment attitude. The theoretical and practical implication is as follows.

Theoretical Implication

First of all, we contribute to the literature on mobile e-commerce by investigating live streaming of mobile e-commerce, which is an emerging form of mobile e-commerce with the function of timely interaction. Previous literature on traditional e-commerce or social commerce mainly focuses on traditional platform characteristics, such as image, community and text description.(Eroglu et al., 2001; Xiang Liet al., 2016; Tractinsky et al., 2000; Heijden et al., 2003) However, mobile e-commerce with live streaming has several characteristics that differ from Previous e-commerce. Users in live streaming of mobile e-commerce can engage more deeply through real-time interactions with broadcasters. In addition, consumers can obtain product information from visual and auditory dimensions at the same time. Although recently a few researchers began to show interest in investigating user behavior in the live streaming of mobile e-commerce, but very few of them focus on enjoyment experience. Our study is among the first research to investigate adoption intention of live streaming of mobile e-commerce from the perspective of enjoyment experience. From the perspective of user's mental perception, the research makes up for the lack of the current research on this system. It is found that in human-computer interaction, the user's social presence and perceived enjoyment can be improved, and then the user's adoption behavior intention can be improved.

Second, we contribute to the literature on the behavior of mobile e-commerce live streaming by considering visual scene and communication function. Previous literature on the behavior of mobile e-commerce mainly focuses on trustworthiness and source attractiveness (Hyun Jung Rark, 2020). In the research of traditional e-commerce and social e-commerce, the characteristics of e-commerce, especially web design effect and sociability, will promote users to have a sense of pleasure and enjoyment perception, when they use it, which will promote users to use it or purchase on the e-commerce (Eroglu et al., 2001; Xiang Li et al., 2016). And many researchers find that the broadcaster-product matching

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and utilitarian value promote users' trust in product and broadcasters(Hyun Jung Rark, 2020;), while they only explore the roles of these on the choosing intention to buy on the live streaming, ignoring the role of visual characteristic and social interaction of live streaming of e-commerce. Our research explores the impact on user's intention from the factors of visual scene, communication function, social presence and perceived enjoyment, making up for the previous researches lack of exploring the role of characteristics of live streaming of mobile e-commerce.

Practical Implication

Our research is helpful for mobile e-commerce operators. At present, the mobile e-commerce live streaming environment is initially formed, but for operators, there is a large space for improvement. This study analyzes its influencing factors, aiming at online shopping of users, and provides effective strategies for mobile e-commerce live streaming operation managers and the sellers. The way sellers use live streaming to show the products should help customers visualize and understand the information that sellers introduce and display products, and consumers can enjoy this activity process. The sellers (or called broadcasters) can use the high-quality equipment helps to produce high-quality video streams, enabling customers to watch live streaming video more clearly and fluently. In order to ensure that consumers can enjoy watching live streaming video, operators should improve the video system design of mobile e-commerce live streaming, such as dynamically adjusting the code rate of uploaded video stream to adapt to most mobile devices. In the research, we point out that the communication function will affect the user's social presence which then affects the user's perceived enjoyment. It is very important for sellers to participate in the communication with users in time. The seller needs to answer the consumer's questions orally in time. Because the live broadcast can convey visual and auditory information, they should also convey non-verbal information to consumers, such as actions and expressions. Operators can optimize communication functions to promote users' willingness to adopt and improve users' enjoyment. For example, operators can use algorithms to block the upload of uncivilized discourse to reduce the load of chat system and provide a good communication atmosphere. Watching live streaming usually takes more time than browsing text descriptions and pictures of products, so broadcasters need to keep customers engaged and reduce their boredom. From our research, we know that visual scene and communication function are the factors which can promote users' enjoyment so that they can include enjoyable activities and interesting communication (e.g. Product introduction with a sense of catchwords and jokes) to interact with users in the live streaming to reduce users' boredom. The problem for sellers is how to create activities to promote users' willingness to use and watch. Finally, our research proves that this is a feasible sales model from the perspective of hedonic experience in China and even other countries around the world during the case of such a large epidemic.

LIMITATIONS AND FUTURE RESEARCH

This study is a preliminary attempt to study the user behavior of mobile e-commerce live network. We used structural equation method to explore, and selected questionnaire s to collect data. As we all know, e-commerce living streaming is a high human-computer interaction system. In this interaction process, users can not only receive the verbal information of the broadcasters, but also receive the expression and action of the host. Whether this information also affect the use of system users is not discussed in this study. In the future research, we can explore and perfect the research model through grounded theory,

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and analyze and explore through objective data and from many views. At the same time, because this study is from a systematic point of view, we ignore the influence of human factors in the live streaming. In mobile e-commerce live streaming, the system has an impact on the use of viewers, but this research has not explored how other human related factors affect, such as the formation of community, which is likely to expand the research direction of this type of human-computer interaction.

Table 5. Scales items

Variance	Items	content	references
Visual scene	V1	The visual scene of mobile e-commerce livestreaming looks very comfortable	Parboteeah, et al. (2009).
	V2	The visual scene display content of mobile e-commerce live streaming is rich	
	V3	I think the online live streaming visual scene of mobile e-commerce is very humanize	
Communication function	C1	I can ask and response to other users on the live streaming of mobile e-commerce	Khan M L. (2017).
	C2	I can meet interesting users on the live streaming of mobile e-commerce	
	C3	I can stay in touch with other users on the live streaming of mobile e-commerce	
	C4	I can Share and exchange relevant information with others.	
Perceived enjoyment	H1	I feel enjoyable on the live streaming of mobile e-commerce.	Voss & Grohmann (2003); Yee-Lin Lai, et al(2009); Inés López & Ruiz (2011).
	H2	I feel happy, using the live streaming of mobile e-commerce.	
	H3	Using live streaming of mobile e-commerce, I feel it is a kind of entertainment.	
Social presence	P1	The interaction of mobile e-commerce live streaming has caused a sense of intimacy.	Hajli (2017); Chang,(2016);
	P2	I can sense the existence of others on the live streaming of mobile e-commerce	
	P3	I can discover other people's ideas on the live streaming of mobile e-commerce.	
Intention	I1	I have the desire to use live streaming of mobile e-commerce to go shopping.	Parboteeah et al. (2009);Lu & Su (2009)
	I2	I'm happy to use it.	
	I3	Trough watching live streaming of mobile e-commerce, I may purchase relevant products.	

REFERENCES

Abdennebi, H. B., & Debabi, M. (2017). Intention of Adoption of Mobile Commerce from Consumer Perspective. In R. Jallouli, O. Zaïane, M. Bach Tobji, R. Srarfi Tabbane, & A. Nijholt (Eds.), *Digital Economy. Emerging Technologies and Business Innovation. ICDEc 2017. Lecture Notes in Business Information Processing* (Vol. 290). Springer. doi:10.1007/978-3-319-62737-3_3

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Animesh, A., Pinsonneault, A., Yang, S. B., & Oh. (2011). An odyssey into virtual worlds: Exploring the impacts of technological and spatial environments on intention to purchase virtual products. *Management Information Systems Quarterly*, *35*(3), 789–810. doi:10.2307/23042809

Bai, Y., Yao, Z., & Dou, Y. F. (2015). Effect of social commerce factors on user purchase behavior: An empirical investigation from renren.com. *International Journal of Information Management*, *35*(5), 538–550. doi:10.1016/j.ijinfomgt.2015.04.011

Gunawardena, C. N., & Zittle, F. J. (1997). Social presence as a predictor of satisfaction within a computer-mediated conferencing environment. *American Journal of Distance Education*, *11*(3), 8–26. doi:10.1080/08923649709526970

Chattaraman, V., Kwon, W. S., & Gilbert, J. E. (2012). Virtual agents in retail web sites: Benefits of simulated social interaction for older users. *Computers in Human Behavior*, *28*(6), 2055–2066. doi:10.1016/j.chb.2012.06.009

Choi, S. (2016). The flipside of ubiquitous connectivity enabled by smartphone-based social networking service: Social presence and privacy concer. *Computers in Human Behavior*, *65*, 325–333. doi:10.1016/j.chb.2016.08.039

Chen, Y. C., Shang, R. A., & Kao, C. Y. (2009). The effects of information overload on consumers' subjective state towards buying decision in the internet shopping environment. *Electronic Commerce Research and Applications*, *8*(1), 48–58. doi:10.1016/j.elerap.2008.09.001

Chong, Y. L. (2013a). Understanding Mobile Commerce Continuance Intentions: An Empirical Analysis of Chinese Consumers. *Journal of Computer Information Systems*, *53*(4), 22–30. doi:10.1080/08874417.2013.11645647

Chong, Y. L. (2013b). A two-staged sem-neural network approach for understanding and predicting the determinants of m-commerce adoption. *Expert Systems with Applications*, *40*(4), 1240–1247. doi:10.1016/j.eswa.2012.08.067

Cheung, M F Y., & To, W. M. (2017). The influence of the propensity to trust on mobile users' attitudes toward in-app advertisements: An extension of the theory of planned behavior. *Computers in Human Behavior*, *76*, 102–111. doi:10.1016/j.chb.2017.07.011

CNNIC. (2019). *The 44th China statistical report on the Internet development*. Retrieved December 28, 2019, from http://www.cnnic.net.cn/hlwfzyj/hlwxzbg/hlwtjbg/201908/P020190830356787490958.pdf

CNNIC. (2020). *The 45th China statistical report on the Internet development*. Retrieved April 29, 2020, from http://www.cnnic.net.cn/hlwfzyj/hlwxzbg/hlwtjbg/202004/P020200428596599037028.pdf

Crawford, G., & Melewar, T. C. (2003). The importance of impulse purchasing behaviour in the international airport environment. *Journal of Consumer Behaviour*, *3*(1), 85–98. doi:10.1002/cb.124

Cyr, D., Hassanein, K., Head, M., & Ivanov, A. (2007). The role of social presence in establishing loyalty in e-Service environments. *Interacting with Computers*, *19*(1), 43–56. doi:10.1016/j.intcom.2006.07.010

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace. *Journal of Applied Social Psychology*, *22*(14), 1111–1132. doi:10.1111/j.1559-1816.1992.tb00945.x

Dehghani, M., & Tumer, M. (2015). A research on effectiveness of facebook advertising on enhancing purchase intention of consumers. *Computers in Human Behavior*, *49*, 597–600. doi:10.1016/j.chb.2015.03.051

Wang, D., Zha, Y., Bi, G., & Chen, Y. (2018). A meta-analysis of satisfaction-loyalty relationship in e-commerce: Sample and measurement characteristics as moderators. *Wireless Personal Communications*, *103*(1), 941–962. doi:10.100711277-018-5488-9

Dougherty, A. (2011). Live-streaming mobile video: production as civic engagement. *Mobile HCI 13th International Conference on Human-Computer Interaction with Mobile Devices and Services*, 425-434. 10.1145/2037373.2037437

Erkan, I., & Evans, C. (2016). The influence of ewom in social media on consumers' purchase intentions: An extended approach to information adoption. *Computers in Human Behavior*, *61*, 47–55. doi:10.1016/j.chb.2016.03.003

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2001). Atmospheric qualities of online retailing: A conceptual model and implications. *Journal of Business Research*, *54*(2), 177–184. doi:10.1016/S0148-2963(99)00087-9

Fornell, C. G., & Larcker, D. F. (1981). Evaluating structural equation models with un-observable variables and measurement error. *JMR, Journal of Marketing Research*, *18*(1), 39–50. doi:10.1177/002224378101800104

Gandolfi, E. (2016). To watch or to play, it is in the game: The game culture on twitch.tv among performers, plays and audiences. *Journal of Gaming & Virtual Worlds*, *8*(1), 63–82. doi:10.1386/jgvw.8.1.63_1

Ganesh, J., Reynolds, K. E., Luckett, M., & Pomirleanu, N. (2010). Online Shopper Motivations, and e-Store Attributes: An Examination of Online Patronage Behavior and Shopper Typologies. *Journal of Retailing*, *86*(1), 106–115. doi:10.1016/j.jretai.2010.01.003

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in Online Shopping: An Integrated Model. *Management Information Systems Quarterly*, *27*(1), 51–90. doi:10.2307/30036519

Gefen, D. & Straub, D. (2003). Managing user trust in b2c e-services. *e-Service Journal, 2*(2), 7-24.

Hajli, N. (2015). Social commerce constructs and consumer's intention to buy. *International Journal of Information Management the Journal for Information Professionals*, *35*(2), 183–191. doi:10.1016/j.ijinfomgt.2014.12.005

Hajli, N., Sims, J., Zadeh, A. H., & Richard, M.-O. (2017). A social commerce investigation of the role of trust in a social networking site on purchase intentions. *Journal of Business Research*, *71*, 133–141. doi:10.1016/j.jbusres.2016.10.004

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hamilton, W. A., Garretson, O., & Kerne, A. (2014). Streaming on twitch: fostering participatory communities of play within live mixed media. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM. 10.1145/2556288.2557048

Hassanein, K., & Head, M. (2007). Manipulating perceived social presence through the web interface and its impact on attitude towards online shopping. *International Journal of Human-Computer Studies*, *65*(8), 689–708. doi:10.1016/j.ijhcs.2006.11.018

He, W. (2013). Examining students' online interaction in a live video streaming environment using data mining and text mining. *Computers in Human Behavior*, *29*(1), 90–102. doi:10.1016/j.chb.2012.07.020

Heijden, H. V. D., Verhagen, T., & Creemers, M. (2003). Understanding online purchase intentions: Contributions from technology and trust perspectives. *European Journal of Information Systems*, *12*(1), 41–48. doi:10.1057/palgrave.ejis.3000445

Hew, J. J., Lee, V. H., Ooi, K. B., & Lin, B. (2016). Mobile social commerce: The booster for brand loyalty? *Computers in Human Behavior*, *59*, 142–154. doi:10.1016/j.chb.2016.01.027

Hillman, S., & Neustaedter, C. (2017). Trust and mobile commerce in North America. *Computers in Human Behavior*, *70*, 10–21. doi:10.1016/j.chb.2016.12.061

Huang, M. H. (2001). The Theory of Emotions in Marketing. *Journal of Business and Psychology*, *16*(2), 239–247. doi:10.1023/A:1011109200392

Hilvert-Bruce, Z., Neill, J. T., Sjöblom, M., & Hamari, J. (2018). Social motivations of live-streaming viewer engagement on twitch. *Computers in Human Behavior*, *84*, 58–67. doi:10.1016/j.chb.2018.02.013

Park, H. J., & Li, M. L. (2020). The effects of match-ups on the consumer attitudes toward internet celebrities and their live streaming contents in the context of product endorsement. *Journal of Retailing and Consumer Services*, *52*, 52. doi:10.1016/j.jretconser.2019.101934

Hwang, M. Y., Hong, J. C., Tai, K. H., Chen, J. T., & Gouldthorp, T. (2020). The relationship between the online social anxiety, perceived information overload and fatigue, and job engagement of civil servant LINE users. *Government Information Quarterly*, *37*(1), 101423. doi:10.1016/j.giq.2019.101423

López, I., & Ruiz, S. (2011). Explaining website effectiveness: The hedonic–utilitarian dual mediation hypothesis. *Electronic Commerce Research and Applications*, *10*(1), 49–58. doi:10.1016/j.elerap.2010.04.003

Jia, A. L., Shen, S., Epema, D. H. J., & Iosup, A. (2016). When game becomes life: The creators and spectators of online game replays and live streaming. *ACM Transactions on Multimedia Computing Communications and Applications*, *12*(4), 1–24. doi:10.1145/2957750

Fan, J. (2018). *"Looking at China" forum report*. Available at: http:www.sohu.com/a/280416130568146

Hassanein, K., & Head, M. (2007). Manipulating perceived social presencc"ehrough the web interface and its impact on attitude towards online shopping. *International Journal of Human-Computer Studies*, *65*(8), 689–708. doi:10.1016/j.ijhcs.2006.11.018

Kumar, N., & Benbasat, I. (2006). Research note: The influence of recommendations and consumer reviews on evaluations of websites. *Information Systems Research*, *17*(4), 425–439. doi:10.1287/isre.1060.0107

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Lee, E.-J., & Park, J. (2014). Enhancing virtual presence in e-tail: Dynamics of cue multiplicity. *International Journal of Electronic Commerce*, *18*(4), 117–146. doi:10.2753/JEC1086-4415180405

Liang, T. P., & Turban, E. (2011). Introduction to the Special Issue Social Commerce: A Research Framework for Social Commerce. *International Journal of Electronic Commerce*, *16*(2), 5–14. doi:10.2753/JEC1086-4415160201

Liébana-Cabanillas, F., Marinković, V., & Kalinić, Z. (2017). A SEM-neural network approach for predicting antecedents of m-commerce acceptance. *International Journal of Information Management*, *37*(2), 14–24. doi:10.1016/j.ijinfomgt.2016.10.008

Lombard, M., & Ditton, T. (1997). At the Heart of It All: The Concept of Presence4. *Journal of Computer-Mediated Communication*, *3*(2), 0. doi:10.1111/j.1083-6101.1997.tb00072.x

Lu, H. P., & Su, Y. J. (2009). Factors affecting purchase intention on mobile shopping web sites. *Internet Research*, *19*(4), 442–458. doi:10.1108/10662240910981399

Lombard, M., & Ditton, T. B. (1997). At the heart of it all: The concept of presence. *Journal of Computer-Mediated Communication*, *3*(2), 0. doi:10.1111/j.1083-6101.1997.tb00072.x

Max, S., & Juho, H. (2017). Why do people watch others play video games? an empirical study on the motivations of twitch users. *Computers in Human Behavior*, *77*, 985–996.

Mennecke, B. E., Triplett, J. L., Hassall, L. M., Conde, Z. J., & Heer, R. (2011). An examination of a theory of embodied social presence in virtual worlds. *Decision Sciences*, *42*(2), 413–450. doi:10.1111/j.1540-5915.2011.00317.x

Mou, J., Shin, D. H., & Cohen, J. F. (2017). Trust and risk in consumer acceptance of e-services. *Electronic Commerce Research*, *17*(2), 255–288. doi:10.100710660-015-9205-4

Kumar & Benbasat. (2002). Para-social presence and communication capabilities of a web site: a theoretical perspective. *e-Service Journal, 1*(3), 5-24.

Pantano, E., & Priporas, C. V. (2016). The effect of mobile retailing on consumers' purchasing experiences: A dynamic perspective. *Computers in Human Behavior*, *61*, 548–555. doi:10.1016/j.chb.2016.03.071

Parboteeah, D. V., Valacich, J. S., & Wells, J. D. (2009). The influence of website characteristics on a consumer's urge to buy impulsively. *Information Systems Research*, *20*(1), 60–78. doi:10.1287/isre.1070.0157

Park, D. H., & Lee, J. (2008). eWOM overload and its effect on consumer behavioral intention depending on consumer involvement. *Electronic Commerce Research and Applications*, *7*(4), 386–398. doi:10.1016/j.elerap.2007.11.004

Rice, R. E., & Case, D. (1983). Electronic message systems in the university: a description of use and utility. *Journal of Communication, 33*(1), 131-152.

Rodgers, S., & Harris, M. A. (2003). Gender and E-Commerce: An Exploratory Study. *Journal of Advertising Research*, *43*(43), 322–329. doi:10.2501/JAR-43-3-322-329

Rook, D. W., & Gardner, M. P. (2006). In the mood: Impulse buying's affective antecedents. *Research in Consumer Behavior*, (7), 1-28.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Skadberg, Y. X., & Kimmel, J. R. (2004). Visitors' flow experience while browsing a Web site: Its measurement, contributing factors and consequences. *Computers in Human Behavior*, *20*(3), 403–422. doi:10.1016/S0747-5632(03)00050-5

Sallnäs, E. L. (2005). Effects of communication mode on social presence, virtual presence, and performance in collaborative virtual environments. *Presence (Cambridge, Mass.)*, *14*(4), 434–449. doi:10.1162/105474605774785253

Shin, D. (2013). User experience in social commerce: In friends we trust. *Behaviour & Information Technology*, *32*(1), 52–67. doi:10.1080/0144929X.2012.692167

Short, J., Williams, E., & Christie, B. (1976). The Social Psychology of Telecommunications. *Contemporary Sociology*, *7*(1), 32, 175–188.

Sjöblom, M., Törhönen, M., Hamari, J., & Macey, J. (2019). The ingredients of Twitch streaming: Affordances of game streams. *Computers in Human Behavior*, *92*, 20–28. doi:10.1016/j.chb.2018.10.012

Tractinsky, N., Katz, A. S., & Ikar, D. (2000). What is beautiful is usable. *Interacting with Computers*, *13*(2), 127–145. doi:10.1016/S0953-5438(00)00031-X

Twitch. (2019). *Superfans welcome: Subscriber Streams are coming to Twitch*. Retrieved April 22, 2020, from https://blog.twitch.tv/en/2019/06/26/superfans-welcome-subscriber-streams-are-coming-to-twitch-fc90cab23a73/

Voss, K. E., & Grohmann, S. B. (2003). Measuring the hedonic and utilitarian dimensions of consumer attitude. *JMR, Journal of Marketing Research*, *40*(3), 310–320. doi:10.1509/jmkr.40.3.310.19238

Li, X., Zheng, X., & Lee, M. K. O. (n.d.). Exploring consumers' impulse buying behavior on social commerce platform: The role of parasocial interaction. *International Journal of Information Management*, *36*(3), 333–347.

Lai, Y.-L., Kuan, K. K. Y., Hui, K.-L., & Liu, N. (2009, August). The effects of moving animation on recall, hedonic and utilitarian perceptions, and attitude. *IEEE Transactions on Engineering Management*, *56*(3), 468–477. doi:10.1109/TEM.2009.2023454

Yu, E., Jung, C., Kim, H., & Jung, J. (2018). Impact of viewer engagement on gift-giving in live video streaming. *Telematics and Informatics*, *35*(5), 1450–1460. doi:10.1016/j.tele.2018.03.014

Zmud, R. W., & Young, L. F. W. (1990). An attribute space for organizational communication channels. *Information Systems Research*, *1*(4), 440–457. doi:10.1287/isre.1.4.440

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Chapter 57
A Study on Performance of E-Commerce Web Applications

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ABSTRACT

The growth of World Wide Web and technologies has made business functions to be executed fast and easier. E-commerce has provided a cost efficient and effective way of doing business. In this paper the importance of e-commerce web applications and how Internet of Things is related to e-commerce is well discussed. In the end-user perspective, the performance of e-commerce application is mainly connected to the web application design and services provided in the e-commerce website. A grading system is used to evaluate the performance of each e-commerce website.

INTRODUCTION

In the present-day scenario, the World Wide Web (WWW) is an important and popular information search tool. It provides convenient access to almost all kinds of information from education to entertainment. The World Wide Web is the key source of information and it is growing rapidly. The growth of World Wide Web and technologies has made business functions to be executed fast and easier. E-commerce has provided a cost efficient and effective way of doing business. As a large amount of transactions are performed through ecommerce sites and the huge amount of data is stored, valuable knowledge can be obtained by applying the Web Mining techniques. Using Web Mining, companies can understand customer behaviour, improve design of e-commerce site, improve customer services and relationship, and measure the success of marketing efforts and to provide personalized services. The extension in web mining research will lead to success of e-commerce sites and also it will improve the services for customers. In e-commerce websites, you can sell, advertise, and introduce different kinds of services and products in the web.

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BACKGROUND

E-Commerce Web Applications

E-commerce websites have the advantage of reaching a large number of customers regardless of distance and time limitations. The advantage of e-commerce over traditional businesses is the faster speed and the lower expenses for both e-commerce website owners and customers in completing customer transactions and orders. Because of the above advantages of e-commerce over traditional businesses, a lot of industries in different fields such as retailing, banking, medical services, transportation, communication, and education are establishing their business in the web. But creating a successful online business can be a very difficult and costly task if not taking into account e-commerce website design principles, web engineering techniques, and what e-commerce is supposed to do for the online business. Unfortunately, to most companies, web is nothing more than a place where transactions take place. All the e-commerce sites have high traffic. People surf the sites very often but the income is not always very high. So, the web data mining appeared and also nowadays much attention is paid to it. It is very important to apply web data mining to e-commerce in order to gather knowledge about users and rank data accordingly. It is advance successful technology through which information is filtered easier. So, web data mining became a publicly accessible source that gives promising results. With the use of e-commerce through internet, companies find a new and better way to do business. After developing the web site thought companies get benefits, they have to implement Web mining systems to understand their customers' profiles and to identify their own strength and weakness of their E-marketing efforts on the web through continuous improvements. Internet is a gold mine, but only for those companies who realize the importance of Web mining and adopt a Web mining strategy now. Web mining technology has many important roles that should be mentioned. It can automatically find, extract information from the variety web resources. It also develops, improves and enhances the quality and the efficiency of search engines, determines web pages or files, makes classifications (Purandare, 2008). It can also generate large-scale real-time data. Web data mining discovers useful information from the Web hyperlink and page content. It has already changed the face of many business functions in a modern competitive enterprise. It is obviously easier to make right business decisions or understand the information that came from customers with the help of web data mining. It helps e-commerce to understand how to improve its services for special groups of customers and clients, and what tasks to realize. The e-commerce site can increase the exposure of its product pages and so average order size can be increased. Companies can save percentage of its budget per month owing to knowledge that was received from web mining analysis. Web data mining gathers implicit knowledge about clients and instructs e-commerce in every aspect. Then, it extracts valuable and comprehensible information from huge web resources to instruct e-commerce. It also gathers the information in an automated way and builds models used to predict customer purchasing decisions. Web mining is very precious to the company in the fields of understanding customer behaviour, improving customer services and relationship, launching target marketing campaigns, measuring the success of marketing efforts, and so on. Attractiveness of the site depends on its reasonable design of content and organizational structure. Web Mining can provide details of user behaviour, providing web site designers basis of decision making to improve the design of the site (TIAN Meirong, CHEN Xuedong, 2010). E-Commerce generally refers to a new business model, where consumer makes online shopping, online transactions between merchants and online electronic payments and a variety of business activities, trad-

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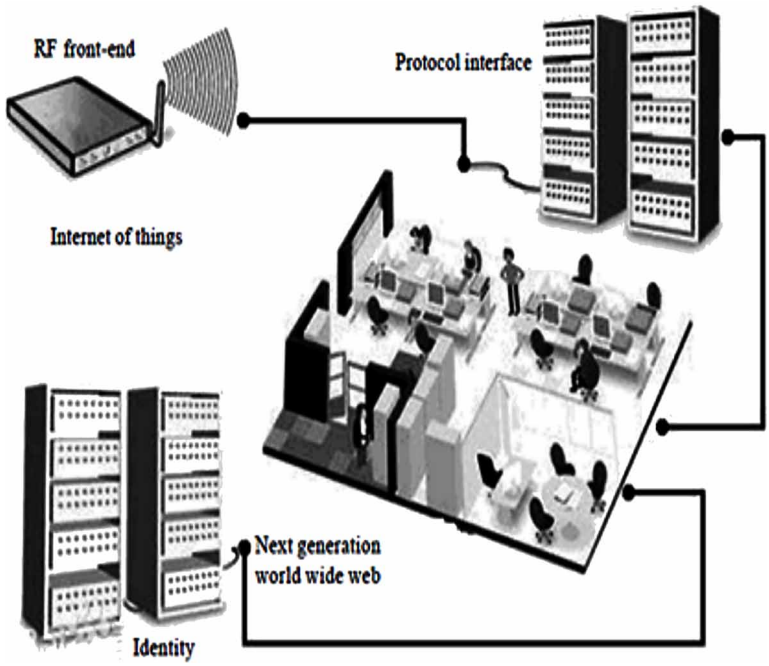
ing activities, financial activities and related integrated services activities, buyers and sellers are not met to conduct various business activities based on browser/server application mode.

Internet of Things (IoT)

Internet of Things (IoT) is a network which is composed with Radio Frequency Identification (RFID), infrared sensors, global positioning systems, laser scanners, gas sensors and other information sensing device, according to the agreed protocol, any goods are connected with the Internet for information exchange, communication, IoT is used to make intelligent identification, positioning, tracking, monitoring and management. The schematic diagram IoT is shown in Figure 1.

Figure 1. Schematic diagram of internet of things



With the rapid development of e-commerce, its technology requirements will also increase on all aspects of future e-commerce. Firstly, the e-commerce applications are combined with IoT development and IoT technologies are applied in three important aspects of e-commerce, such as inventory, logistics and payment. An e-commerce system includes inventory, logistics, electronic payment and other important aspects, if IoT technology is used in various aspects of e-commerce, e-commerce will greatly improve the efficiency of the system. The diagram of E-Commerce with combined IoT is shown in Figure 2.

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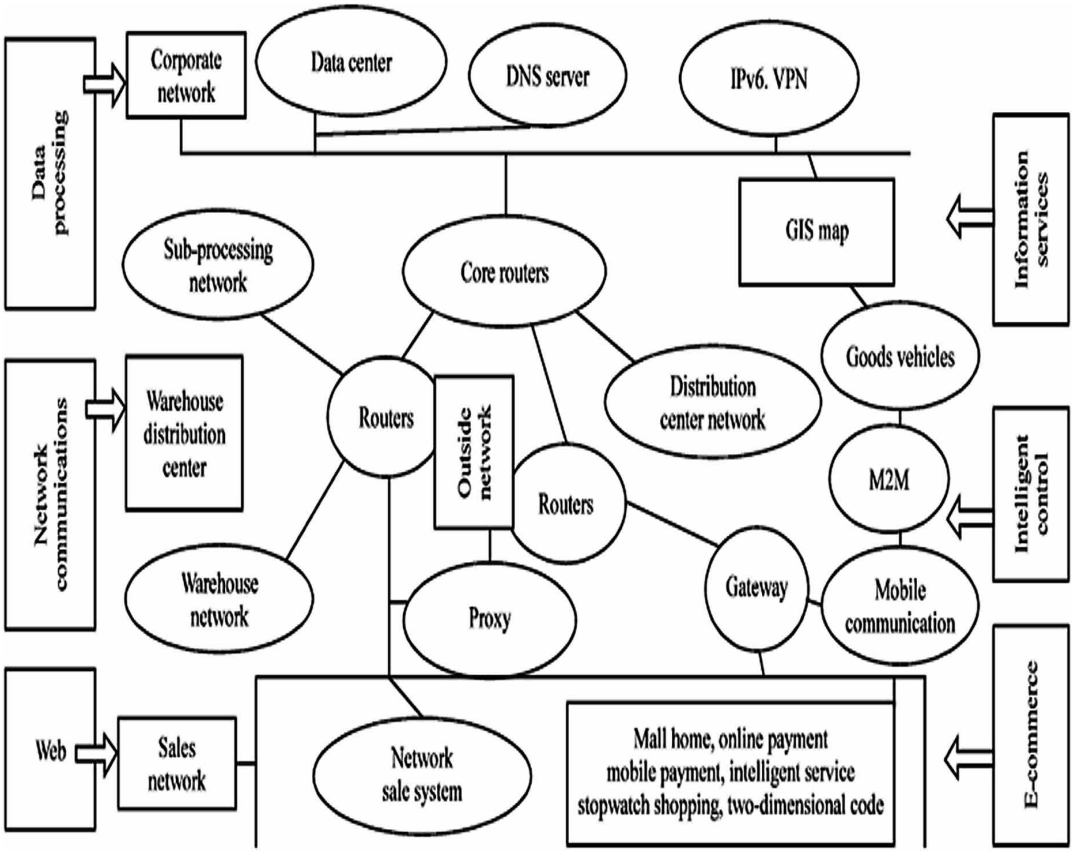
Figure 2. E-commerce web application with Internet of Things
Source: (GTmetrix, n. d.).



ANALYZING PERFORMANCE OF E-COMMERCE WEB APPLICATIONS

The procedure for analysing performance of e-commerce website initially starts with a web program. The program consists of two parts: extracting components of website with download time and download time performance grades. In the web program, all the components of website with corresponding downloading time are extracted using a web tool namely Web Page Analyser (Figure 1). The Download time performance grade is obtained using the web tool GTMetrix (Figure 2). The GTMetrix web tool analyses the website download time and evaluates the download time performance in A, B, C, D, E and F grades as described in Table 1.

The size of a web page is measured considering all its images, sounds, videos and textual components. For each page, the size in bytes can be obtained. The size of pages is an important issue in order to appreciate the site efficiency. The download time (T) is related with the size of a page (τ) and the speed in the established connection line (c) and this relation is shown in equation (1).

$$T_{Download} = f(\tau, c) \tag{1}$$

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Figure 3. Website analysis

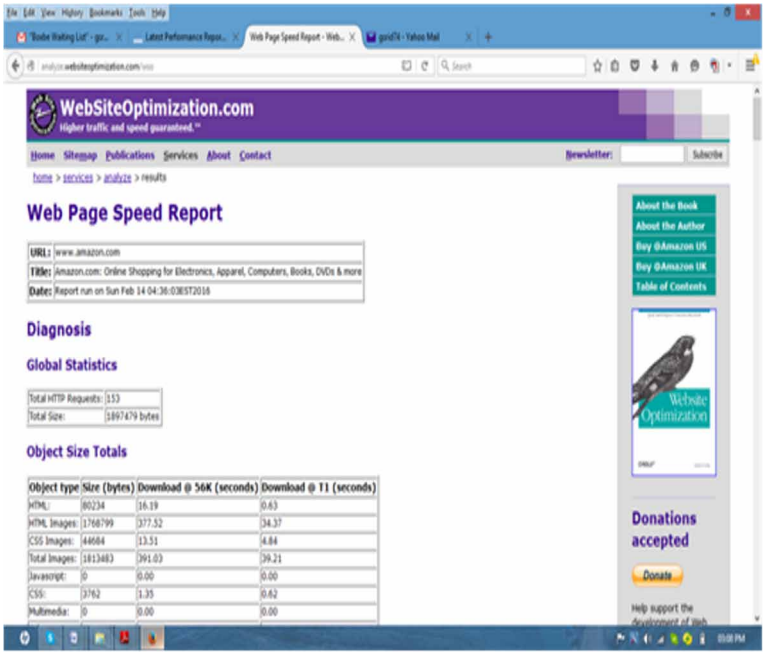

Table 1. Description of web application performance grades

Web Application Performance Grade	Description
A	Very Good
B	Good
C	Better than Average
D	Average
E	Poor
F	Very Poor

This download time is directly proportional to the page size and inversely proportional to the speed of a given connection line and it is shown in equation (2). A function may be created in order to classify pages as quick or slow access pages, according to a minimum threshold of time (e.g. 10 seconds) for a given speed of a connection line.

$$g\left(T_{Download}\right)=\begin{matrix} QuickAccess & T_{Download}<T_{\max} \\ SlowAccess & T_{Download}\geq T_{\max} \end{matrix} \quad (2)$$

The website size (Zheng Che et al, 2003), (E. Glover et al, 2002) is dependent on various components of the website. These components include Images Size, Documents size, Media Size, Programs or Scripts Size, CSS Size and other objects. As the components sizes increase then automatically the size of website is also increases. The relation between website size and web components is shown in equation (3).

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$$WEBSIZE = f(IMAGESIZE, DOCSIZE, MEDIASIZE, CSSSIZE, SCRIPTSIZE, OTHEROBJSIZE) \ldots (3)$$

where

WEBSIZE = Website Size
IMAGESIZE = Images Size
DOCSIZE = Documents Size
MEDIASIZE = Multimedia Size
SCRIPTSIZE = Scripts or Programs Size
CSSSIZE = Cascading Style Sheet Size
OTHEROBJSIZE = Other Objects Size like Active X Control Objects, Applets etc.

A regression analysis is carried out to analyse the relationships among these variables. The analysis is carried out through the estimation of a relationship using equation. The results serve the following two purposes.

- Answer the question of how much web size changes with changes in each of the web component's size
- Forecast or predict the value of web size based on the values of the web component's size

In analyzing the download time performance of the websites, the websites of 10 e-commerce websites are considered in evaluation process. The download time of each e-commerce website is analyzed (Figure 3) using web program and the corresponding download time performance grade is derived using GTMetrix web tool. The performance of e-commerce websites is shown in Figure 4 and Table 2.

Table 2. Performance of e-commerce web applications

S.No.	E-Commerce Website	Download Time (in secs)	Web Page Size (in M.B)	Performance Grade
1	http://goidirectory.nic.in/ministries_departments_view.php	18.3	1.76	F
2	http://goidirectory.nic.in/state_departments.php?ou=AP	4.3	0.5	F
3	http://www.amazon.com	5.8	4.89	A
4	http://www.flipkart.com	4.7	1	A
5	http://fitness.reebok.com/international	10.4	2.78	A
6	http://www.spyder.com	5	2.31	B
7	http://www.apple.com	1.8	1.25	B
8	http://ebay.com	4.2	2.49	B
9	http://myspace.com	7.3	5.98	C
10	http://www.hp.com	5.2	4.01	C

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Figure 4. Performance of e-commerce website

CONCLUSION

The main objective of the chapter is how to understand the performance of the system. In this paper the importance of e-commerce web applications and how Internet of Things is related to e-commerce is well discussed. In the end-user perspective, the performance of e-commerce applications is mainly connected to the web application design and services provided in the e-commerce website. In this paper a focused approach has been made to identify all possible parameters in the web design with specific reference to some of the major e-commerce websites. The performance of each e-commerce web application is measured in terms of web page speed and loading time of the website. Hence performance evaluation of web applications is very much necessary to fulfill the need of online user and web developer can enhance the features based on the performance report of e-commerce website.

REFERENCES

Chen, Z., Liu, S., Wenyin, L., Pu, G., & Ma, W.-Y. (2003). Building a Web Thesaurus form Web Link Structure. *Proceedings of SIGIR* (pp. 48-55).

Glover, E. J., Tsioutsiouliklis, K., Lawrence, S., Pennock, D. M., & Flake, G. W. (2002). Using Web Structure for Classifying and Describing Web Pages. *Proceedings of WWW '02*.

GTmetrix. (n. d.) Analyze your site's speed and make it faster. Retrieved from www.GTMetrix.com

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Meirong, T. I. A. N., & Xuedong, C. H. E. N. (2010). Application of Agent-based Web Mining in E-business. *Proceedings of the Second International Conference on Intelligent Human-Machine Systems and Cybernetics*.

Page, L., Brin, S., Motwani, R., & Winograd, T. (1998). *The PageRank Citation Ranking: Bring Order to the Web. Technical Report*. Stanford University.

Websiteoptimization.com. (2017, March 30). Webpage Analyzer (Web Page Speed Analysis). Retrieved from www.websiteoptimization.com

Purandare, P. (2008). Web Mining: A Key to Improve Business On Web. *Proceedings of the IADIS European Conference Data Mining*.

KEY TERMS AND DEFINITIONS

Ecommerce Website: E-commerce websites have the advantage of reaching a large number of customers regardless of distance and time limitations.

GTMetrix: The download time of each e-commerce website is analyzed using web program and the corresponding download time performance grade is derived using GTMetrix web tool.

Internet of Things: Internet of Things (IoT) is a network which is composed with Radio Frequency Identification (RFID), infrared sensors, global positioning systems, laser scanners, gas sensors and other information sensing device, according to the agreed protocol, any goods are connected with the Internet for information exchange, communication, IoT is used to make intelligent identification, positioning, tracking, monitoring and management.

Web Mining: Web mining is very precious to the company in the fields of understanding customer behaviour, improving customer services and relationship, launching target marketing campaigns, measuring the success of marketing efforts, and so on.

Website Download Time: The website download time is related with the size of a page and the speed in the established connection line.

Website Size: The size of a web site is measured considering all its images, sounds, videos and textual components.

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Chapter 58
Difficulty in Transition: Study on Hindrances in Online Shopping for Potential Shoppers

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ABSTRACT

The purpose of this article is to identify and study various risks that stop potential online shoppers to shop online. A total of 268 potential online shoppers were personally surveyed with a structured questionnaire. These respondents were from Gurgaon city. Exploratory factor analysis and regression analysis were used to assess the potential consumers' risk perception towards online retailing. It was found that potential online shoppers considered product risk, privacy risk, time risk, social risk, and security risk to be important while thinking of online shopping. Among all these risks security risks were found to be on potential online buyers' minds followed by product risk, social risk, privacy risk, and time risk. Online shopping behavior was the dependent variable in the study.

INTRODUCTION

Online retailing is the process of buying and selling over the internet (Zeithaml, Parasuraman & Malhotra, 2000). Online shopping is found to be an important online activity of Indian internet users. This is supported with an estimate of 43.8 percent digital buyer penetration in 2016, Retail web-based business deals in India added up to around 16 billion U.S. dollars that year and are anticipated to outperform 45 billion U.S. dollars in 2021. Mobile shopping has picked up pace in India as well. Around 49 percent of Indian shoppers expressed utilizing their mobiles for purchasing goods or services. This share is above the trend shown worldwide on an average – which stood at 38 percent as of 2016 – and the second-highest figure in the globe, only behind China. What is under our study is that the rest of the percentage of shoppers who have not expressed their interest in online shopping until now.

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Previous researches have advocated that in comparison to offline retail consumers feel more risk in online retail because of the involvement of the internet. Despite the tremendous growth of the online retail sector in India many national and international players are struggling to find a model that can guarantee the sustainable growth in the ever-changing taste and preferences of Indian consumers' market as well as changing the business environment. Marriott & Williams (2018) when explored consumers perceived risk and trust for mobile shopping found that many buyers hesitate to shop online because of various perceived risks like privacy risk and security risk.

Previous researchers (Lee & Tan, 2003) found consumers perceived online shopping riskier than offline (Brick & Mortar) shopping and that higher levels of perceived risk influenced purchase intention. However, customers who have a lower level of perceived risk tend to shop online majorly. Miyazaki and Fernandez (2001) also advocated that the online shopping behavior of consumers is strongly governed by the perceived risk of online shopping. A consumer who either had a positive online shopping experience earlier or had a positive recommendation from their peer group will have a positive perception of online shopping. Li & Huang (2009) confirmed the same with their research that consumers feel worried that their personal information will not be safe on the internet and unauthorized access on the Internet is always a matter of worry for them. Furthermore, digital payment gateways have always shaken the trusts of the consumers for both internet banking as well as payment on the shopping sites, which affects the growth of e-commerce transactions (Hoffmann & Soyez, 2010). Thus, trust influences consumer attitudes toward online buying and assurance given by online retailers always help in lowering perceived risk in online shopping (Lee & Tan, 2003, Ha & Lennon, 2010).

REVIEW OF LITERATURE

Previous researches have been reviewed covering e-tailing, key issues, and challenges, reasons for adoption and non-adoption of e-tailing. The following are the risks identified which are creating hindrances for potential customers in the adoption of online retail.

Privacy Risk

Privacy refers to "the degree to which the online shopping web site/App is safe and protects the customers' information" (Chiu et al., 2009). Privacy in e-tailing is defined as what consumers feel about the safety of personal and financial information on the web (Bart et al., 2005) or how much the consumer is ready to share information over the web (Belanger et al., 2002). Perceived privacy risk is defined as the "likelihood that online businesses might use personal information inappropriately hence marching into a consumer's privacy" (Nyshadham, 2000). The introduction of big data and cloud computing has made privacy an increasingly important issue (Flavia´n and Guinalı´u, 2007). As a result of which consumers feel unsafe in sharing their data as they were afraid of how their data will be collected and used. (Flavia´n and Guinalı´u, 2007). Orubu (2016), attempted to study unique attributes/ determinants of trust and intention to buy online and came up with the conclusion that as the first time user of online shopping is full of doubts and usually hesitate to buy online from an unknown vendor, the same can be reduced if vendor specific guarantee with the product is associated as compared to the absence of guarantee from the other vendor. Customer's reviews of already existing customers on the online platform also place a very crucial role for the non-users to be users.

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Security Risk

Security risk in e-tailing is the perception of the customer about how much are the payment gateway is secure and how well the internet firewall has been programmed filtered (Kolsaker and Payne, 2002). Further, some authors defined security risk as "the technical aspect of ensuring the reliability, confidentiality, authentication, and non-recognition of relationships". Previous researchers have advocated security as a key aspect of studying user attitudes toward online services (Suh and Han, 2002). Consumers perceive security risk when they pay through the credit card or debit cards that probably their account will be hacked and money loss will be there. Literature shows that perceived security risk is an important predictor of internet banking adoption as customers find it very risky to disclose their account information. Chelder et al. (2006), found perceived web security to be an important factor in customer's acceptance of online shopping. Perceived risk for security among online shoppers results in negative behavior towards online shopping (Rathee & Saini, 2017). Suki and Suki (2017) studied the perceived risk and customer trust in online buying in case of holiday makers while using internet bookings for their holidays and revealed the associations between internet perceived risk and equal influence of product e-channel risk in customers trust played equal role.

Customers will be interested in online purchases only if they feel that all the financial information and another sensitive piece of information is safe, customers may panic that unofficial party access to their online account and it will result in serious financial loss. In a study that has been conducted in Britain on internet banking (White and Nteli, 2004), consumers rank the security asses the service quality of the bank's web site based on security it provides to the customers. Yet another study on online retail and consumer behavior, security concern about password leak, use of email-ids, credit card details were found to be very significant (Huang and Oppewal, 2006). Consumers' confidential information can be used unethically (e.g., name, address, password, social security, and credit card numbers) and often result in identity theft (Milne et al., 2004). In most of the instances, the benefit of e-tailing like convenience, time, and/or financial savings afforded to consumers are offset by privacy issues.

Product Risk

Oghazi P. (2018) suggested that major hindrance customer feel about online shopping, is product risk that is they may be delivered wrong/ expiry / used products and online retailers can minimize these risks by offering easy return policy to the customers and if they will follow this strategy the purchase intention of buyer through online platform increases. Consumers' decisions whether or not to shop online are also influenced by the type of product or service they require. It is being observed that it depends on the nature of the product that an individual customer is shopping for like for some product categories they will feel very confident in the online channel while at the same time may feel hesitant for other categories. Since shopping on the internet does not have the physical interaction between buyer and seller this is one factor that influences its attractiveness. Another factor is the need to feel, touch, smell or try the product, which is not possible when shopping online. Following this, clearly standardized and familiar products such as books, videotapes, CDs, groceries, and flowers, have a higher potential to be considered when shopping on the Internet, especially since quality uncertainty in such products is virtually absent, and no physical assistance or pre-trial is needed (Garbarino et al., 2008). On the other hand, personal-care products like perfume and lotion, or products that require personal knowledge or experiences like computers and cars, are less likely to be considered while shopping online (Elliot and Fowell, 2000).

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Time Risk

Time risk equals to customer's risk of wasting valuable time in searching product and waiting for an uncertain delivery (Chen and Sherrell, 2004). On-time delivery will satisfy the customer, which will decrease time risk. On-time delivery makes the customer realize that the retailer is effective. On-time delivery is a very important component of customer satisfaction. Customers' dissatisfaction will increase as the item is not delivered on time or not arrive at all (Grewal et al., 2002). The potential loss of time associated with making a bad purchasing decision by wasting time researching, shopping, or have to replace the unexpected goods. (Chen & Sherrell, 2004).

Time from a different point of view is one of the factors that relates to the attractiveness of online channels of shopping. It is observed that different consumers have a different angle of their own for including time as a factor of choice for online shopping, whether or not to shop from the internet. According to (Grewal et al., 2002), accomplishing the task of shopping at the earliest refers to the time-saving oriented consumers and they always favor their own store choices to make it quick; customers who are not very fond of shopping and approaching for time-saving retail stores refer to the economic shoppers ". In online shopping, it requires less effort and better decision making for consumers who opt to purchase at the e-store (Chen and Sherrell, 2004). Customers may spare their time in e-shopping since they don't need to experience any exertion on going to a shopping center or sparing their time in other psychological factors, for example, automobile overload and so on.

Social Risk

"Potential loss of status in one's social group as a result of adopting a product or service, looking foolish or unpopular" (Bosque & Sanchez, 2009). Social risks concern potential loss of status in one's social gathering, for example, being laughed at by others, and refusal of membership into a social gathering.

(Lee and Turban, 2001) describe perceived social risk as to the loss of self-esteem due to the reputation of the store from your social group family and friend. Feathersman (2003) defines perceived social risk as to the type of risk that relates to how the reference group will perceive the selection of retail stores and the purchase of a product. Perceived social risk is the risk that a poor store decision will result in social humiliation (Schiffman & Kanuk, 2007). Social risk reflects the disappointment in the individual by his friends in case of a poor product/service choice (Lee and Turban, 2001). Social risk can be defined as the potential loss of esteem, respect, and/or friendship offered to the consumer by other individuals and is more likely to occur with services because of the service encounter Social risk: Reflects disappointment in the individual among friends. Social risk is the risk undertaken by the different members of society in terms of positive or negative perception (Lee and Turban, 2001).

OBJECTIVES

1. To identify the factors creating hindrance in online shopping for potential online shoppers.
2. To study the impact of identified factors on potential online shoppers' behavior.

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RESEARCH METHODOLOGY

Research Design

This study is based on an exploratory cum descriptive research design. Exploratory research design has been used to identify the factors that potential online shoppers relate to online retail and descriptive design has been used to make the concept clearer. The ethical considerations have been kept into the mind by referencing the others' work in case of secondary data and primary data is also being collected with the consent of the respondents.

Sample Design

Because of the limitation of time and financial resources, it was not possible to study the census. Therefore, a sample of 300 respondents has been taken from Gurgaon city. Out of 300 distributed questionnaires 290 responses were collected and 268 responses found correct for further research. The correct data response rate was 92%. For the study, Purposive sample design has been used. Purposive sample design justified on the ground that only those respondents were taken who had no prior experience of online shopping.

Data Collection

Both primary and secondary data have been taken for the study. Primary data has been collected through the questionnaire technique. The questionnaire framed under this study was divided into two parts. Part A covers the demographic information and Part B covers the 44 statements related to the risks in online shopping based on a five-point Likert scale with scale anchors from "1" – strongly disagree to "5" – strongly agree. Secondary data has been collected through books, journals, articles, newspapers and web sites.

Statistical Tools Used

Collected questionnaires were coded and entered into SPSS spreadsheet for analyzing the data. After entering the data exploratory factor analysis, stepwise regression and mean were used for analyzing the data.

Data Analysis and Interpretation

Exploratory Factor analysis technique has been used for identifying the factor acting as the risk for potential online shoppers. Factor analysis is techniques through which variables that are correlated with one other but independent of other variables are combined into factors (Malhotra and Dash, 2016). Before applying factor analysis, appropriateness of factor analysis has been checked. For this purpose, Kaiser-Meyer-Olkin measure of sample adequacy and Bartlett's test of sphericity has been performed (Table 1).

Higher the value of KMO and Bartlett greater will be the reliability of factor analysis. The value of KMO should be greater than 0.5 for applying factor analysis. In this study, the value of KMO comes 0.966 (Table 1) considered as excellent. It means our sample size was adequate and factor analysis can be used for reducing data.

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Table 1. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.966
Bartlett's Test of Sphericity	Approx. Chi-Square	13041.787
	Df	1830
	Sig.	.000

Source: Primary data

The rotated component matrix is also called a Rotated Factor matrix in factor analysis. We used the varimax method of rotation. Table 2 depicts the factor loading for each variable into each factor. Factor loading less than 0.6 is not shown in the table because we neglected those loadings.

Table 2 depicts that Factor 1(Security) includes S1-S4. Factor 2 (Privacy) includes S5- S11 Variable. Factor 3 (Time Risk) included S12- S21 variables Factor 4 (Social Risk) includes the variable S22-S31 and S32- S44 comes under the fifth factor (Product Risk).

Table 2. Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
S1					.737
S2					.624
S3					.699
S4					.804
S5		.786			
S6		.717			
S7		.725			
S8		.712			
S9		.728			
S10		.744			
S11		.751			
S12			.741		
S13			.740		
S14			.747		
S15			.723		
S16			.755		
S17			.743		
S18			.768		
S19			.757		
S20			.767		
S21			.816		
S22				.746	
S23				.720	
S24				.740	
S25				.728	
S26				.751	
S27				.705	
S28				.736	
S29				.666	
S30				.682	
S31				.726	
S32	.783				
S33	.709				
S34	.721				
S35	.732				
S36	.675				
S37	.718				
S38	.756				
S39	.700				
S40	.720				
S41	.744				
S42	.729				
S43	.731				
S44	.717				

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.
Source: Primary data

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Table 3 shows the name of every factor and which variable comes under which factor with their scores. It can be seen that the average loading of each factor is more than 0.5 which is a good value and also Cronbach's Alpha value of each factor is more than 0.6 which indicates that the constructs are reliable. Also, these factors collectively explain 66 percent of the study.

Table 3. Mean value of factors

Constructs	Items	Loadings	Average	Construct Reliability
F1	**Security Risk**			
Sec1	I add the product into my cart only but don't buy it for security reasons	0.737	2.864/4=0.716	0.977
Sec 2	I am concerned that the information I submit on the Internet could be misused	0.624		
Sec 3	I doubt that online sites have adequate security features	0.699		
Sec 4	I feel online buying is full of errors and not safe	0.804		
F 2	**Privacy Risk**		5.163/7=0.737	0.976
PVR1	Online retailer asks for a particularly sensitive piece of information	0.786		
PVR2	I feel my credit card information will leak	0.717		
PVR3	I feel that online shopping sites may share my personal information with others for profit motive	0.725		
PVR4	I feel online retailer will keep a record of my purchase priority and frequency and will share it outside	0.712		
PVR5	I am concerned that a person can find private information about me on the internet.	0.728		
PVR6	Online retailers may force me to accept privacy policy without disclosing the facts	0.744		
PVR7	Privacy of my details concerns me	0.751		
F3	**Time Risk**		7.557/10=0.76	0.981
TR1	There is a risk that my product will not be delivered on time when I require it	0.741		
TR2	I may end up with losing my precious time in diverted searches over web stores	0.740		
TR3	Exchanges and returns in online shopping are far much time consuming than that of offline	0.747		
TR4	Comparisons of price waste my important time in online shopping	0.723		
TR5	I feel refund for returned products will be realized very late in my bank account	0.755		
TR6	I may miss the important moment in waiting for the products	0.743		
TR7	Online retailers charge extra for a speedy delivery	0.768		
TR8	I doubt the timely delivery of the products	0.757		
TR9	Important time is lost in logging in to websites	0.767		
TR10	Time is a crucial factor for me while shifting to online shopping	0.816		

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Table 3. Continued

Constructs	Items	Loadings	Average	Construct Reliability
F4	**Social Risk**		7.200/10=0.72	.973
SR1	Online shopping will take away the fun of social interaction	0.746		
SR2	I may have a tag of online shopper among my friends/ Aquatints	0.720		
SR3	I may be known as a discount freak among my circle	0.740		
SR4	I may end up with the loss of the social circle in the market if I will be involved in more of online shopping	0.728		
SR5	I may lose my respect in society due to more online shopping	0.751		
SR6	I enjoy shopping with my friends which are missing in the online channel	0.705		
SR7	I cannot enjoy street food while shopping online	0.736		
SR8	The bargain is missing in online shopping	0.666		
SR9	I cannot use my social references in online shopping	0.682		
SR10	I feel disconnected from society when I shop online	0.726		
F 5	**Product Risk**			
PR1	I feel safe in the transactions which involve personal interaction and touch	0.783	9.435/13=0.725	0.970
PR2	I will never attempt to buy the costly product through the online channel	0.709		
PR3	Quality of the product cannot be checked in online shopping	0.721		
PR4	Size try is a big issue in online shopping	0.732		
PR5	I am not able to touch and feel the product	0.675		
PR6	Guarantee and warranty policies of the products are unclear in online shopping	0.718		
PR7	When shopping on the Internet, the store's reputation concerns me.	0.756		
PR8	I may purchase the product by accident/ by mistake/by misleading ads	0.700		
PR9	News of delivery of Brick instead of mobile concerns me	0.720		
PR10	I may be delivered Defective product	0.744		
PR11	I may receive second-hand product	0.729		
PR12	I may receive pirated product	0.731		
PR13	I may not get the product as an image shown at the time of purchase	0.717		

Source: Primary data

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Regression Analysis

To test the most important risk for potential online shoppers' behavior a stepwise multiple regression analysis was performed as shown in Table 4. Online shopping behavior was taken as dependent variables while Product risk, Privacy risk, Time risk, Social Risk, and Security risk were independent variables. The higher value of the standardized coefficient beta depicts the most contributing risk on which online shopping behavior is dependent. Here in our case value of standardized coefficients, beta is 0.404 for Product risk, 0.241 for Privacy risk, and 0.268 for Time risk, 0.269 for social risk and 0.102 for security risk. Regression equation that shows the impact of risks on the online shopping behavior of potential online shoppers can be given:

Online shopping behavior= .837+ .328 (Product Risk) + .192 (Privacy Risk) + .207 (Time Risk) + .205 (Social Risk) +.084 (Security Risk)

Table 4. Step Wise regression results of identified risks

Independent Variable	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Constant	.837	.085		9.827	.000
Product Risk	.328	.010	.404	31.753	**.000**
Privacy Risk	.192	.009	.241	20.365	**.000**
Time Risk	.207	.009	.268	23.477	**.000**
Social Risk	.205	.009	.269	22.076	**.000**
Security Risk	.084	.008	.102	9.943	**.000**

Dependent Variable: online shopping behavior
Source: Primary data

Mean and Standard Deviation Analysis

Table 5 depicts the mean value and standard deviations of various risks in online shopping. Security Risk (F5) mean ($\bar{X} = 3.3396$) is highest so it is the strongest hurdle that a potential customer feels while thinking of shift to online shopping. Product Risk (F1) is the second-highest influencing factor with mean value ($\bar{X} = 3.2018$) followed by Social Risk (F4) ($\bar{X} = 2.9534$), Privacy Risk (F2) ($\bar{X} = 2.9515$). As the table shows Time Risk (F3) has the lowest mean value ($\bar{X} = 2.9134$) which represent that it is the lowest influencing factor among all the five risks that potential customer feels in online shopping. On the other side, privacy risk had the highest variation because it has the highest standard deviation (σ) with value 0.93984 while product risk shows minimum variability in responses and shows the highest consistency because of lowest standard deviation (σ) with value 0.86327.

All the risks in online shopping were significant for potential online shoppers. So, the online retailer should frame strategies for consumers based on their perceived risks.

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Table 5. Mean value and standard deviation of various risks

Variables	Factors	N	Overall Mean	Std. Error	Std. Deviation	Preference
Product Risk	Product Risk	268	3.2018	.05373	.87959	II
Privacy Risk	Privacy Risk	268	2.9515	.05741	.93984	IV
Time Risk	Time Risk	268	2.9134	.05667	.92771	V
Social Risk	Social Risk	268	2.9534	.05477	.89666	III
Security Risk	Security Risk	268	3.3396	.05273	.86327	I

Source: Primary data

RECOMMENDED STRATEGIES FOR ONLINE RETAILERS

Online retailers should work for improving their measures to protect the privacy of the information that is entered by the customers while entering into a buying process. They should assure customers that any piece of information provided by the customers at the time of purchase will be kept safe. Even there should be pop up or disclaimer by the online retailers containing the assurance of protection of privacy. The privacy assurance policy of the company should be well defined and well communicated to the customers, which in turn will boost the confidence of the potential online shoppers.

Product risk was found yet another concern for potential online shoppers. Surety of delivery of right products, Uploading the real pictures of the product on the sites and matching the image to the original product, avoiding misleading ads, clearly mentioning the guarantee and warranty policies without hidden conditions, Making return policies clear to the customers at the time of billing and making sure that no pirated, defective or wrong product has been delivered to the customers.

As the customers feel risk in delivery time in online retail and for the same, they found offline shopping the best alternative for these issue online retailers must frame strategies. Time risk also included the time lost in the search of desired products, online retailers should make the search of the product easy on the site and also suggesting the products to the customers based on their past purchase history to save their time. Auto order placing can also be the option given to the customers for recurring purchases to save time.

Customers feel that they will lose their status of exclusivity if they will shop online. So somewhere, for some income groups, online shopping is lower their status. Heavy discounts, everyday sales have somewhere shaken the trust of the customers and they directly link it with the poor quality of the products. Online retailers need to keep a check on this point that too many sales are not affecting their positioning.

CONCLUSION

This study identified the risks that significantly influence the potential online buyers to shift from brick and mortar retail to online retail. It was found that potential online shoppers considered Product Risk, Privacy Risk, Time risk, Social Risk and Security Risk to be important while thinking of online shopping. Among all these risks Security Risks was found to be on potential online buyers' mind followed by product risk, social risk, privacy risk, and time risk which stops them from buying online.

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The present study adds into the existing knowledge of the policymakers of online retail platforms that they should averse the risks identified in the study by formulating the strategies which are best aligned with the expectations of the potential online buyers.

This study is not free from limitations. As this study was conducted on a limited geographical area of Gurgaon city only, so, it is difficult to generalize the result. Limited time and financial resources acted as a limitation of the study.

FUTURE SCOPE FOR THE STUDY

For further research, a comparative analysis of the risk of potential and existing online shoppers can be performed. Comparison based on demographics can also be done for future research. Further research can be conducted by considering another geographical area.

REFERENCES

Bart, Y., Shankar, V., Sultan, F., & Urban, G. L. (2005). Are the drivers and role of online trust the same for all web sites and consumers? A large scale exploratory empirical study. *Journal of Marketing*, *69*(4), 133–152. doi:10.1509/jmkg.2005.69.4.133

Belanger, F., Hiller, J. S., & Smith, W. J. (2002). Trustworthiness in electronic commerce: The role of privacy, security and site attributes. *The Journal of Strategic Information Systems*, *11*(3), 245–270. doi:10.1016/S0963-8687(02)00018-5

Chen, L., Gillenson, M. L., & Sherrell, D. L. (2004). Consumer acceptance of virtual stores: A theoretical model and critical success factors for virtual stores. *ACM Sigmas Database*, *35*(2), 8–31. doi:10.1145/1007965.1007968

Childers, T. L., Carr, C. L., Peck, J., & Carson, S. (2001). Hedonic and utilitarian motivations for online retail shopping behavior. *Journal of Retailing*, *77*(4), 511–535. doi:10.1016/S0022-4359(01)00056-2

Elliot, S., & Fowell, S. (2000). Expectations versus reality: A snapshot of consumer experiences with Internet retailing. *International Journal of Information Management*, *20*(5), 323–336. doi:10.1016/S0268-4012(00)00026-8

Featherman, M. S., & Pavlou, P. A. (2003). Predicting E-Services Adoption: A Perceived Risk Facets Perspective. *International Journal of Human-Computer Studies*, *59*(4), 451–474. doi:10.1016/S1071-5819(03)00111-3

Flavián, C., & Guinalíu, M. (2007). Perceived e-service quality (e-sq): Measurement validation and effects on consumer satisfaction and web site loyalty. *Managing Service Quality*, *17*(3), 317–340. doi:10.1108/09604520710744326

Garbarino, E., & Johnson, M. S. (2008). The different roles of satisfaction, trust, and commitment in customer relationships. *Journal of Marketing*, *63*(2), 70–75. doi:10.1177/002224299906300205

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Ha, Y., & Lennon, S. J. (2010). Online visual merchandising (VMD) cues and consumer pleasure and arousal: Purchasing versus browsing situation. *Psychology and Marketing*, *27*(2), 141–165. doi:10.1002/mar.20324

Hoffmann, S., & Soyez, K. (2010). A cognitive model to predict domain-specific consumer innovativeness. *Journal of Business Research*, *63*(7), 778–785. doi:10.1016/j.jbusres.2009.06.007

Kolsaker, A., & Payne, C. (2002). Engendering trust in e-commerce: A study of gender-based concerns. *Marketing Intelligence & Planning*, *20*(4), 206–214. doi:10.1108/02634500210431595

Lee, K. S., & Tan, S. J. (2003). E-retailing versus physical retailing: A theoretical model and empirical test of consumer choice. *Journal of Business Research*, *56*(11), 877–885. doi:10.1016/S0148-2963(01)00274-0

Lee, M.K.O. and Turban, E. (2001). A trust model for consumer internet shopping, *International Journal of Electronic Commerce,* (1), 75-91.

Li, H., & Huang, W. (2009). Applying the theory of perceived risk and technology acceptance model in the online shopping channel. *World Academy of Science, Engineering and Technology*, *53*(4), 919–925.

Malhotra, N. K., & Dash, S. (2016). *Marketing research: An applied orientation* (7th ed.). Chennai, India: Pearson Education.

Milne, G. R., & Culnan, M. J. (2004). Strategies for Reducing Online Privacy Risks: Why Consumers Read (or Don't Read) Online Privacy Notices. *Journal of Interactive Marketing*, *18*(3), 15–29. doi:10.1002/dir.20009

Miyazaki, A. D., & Fernandez, A. (2001). Consumer perceptions of privacy and security risks for online shopping. *The Journal of Consumer Affairs*, *35*(1), 27–44. doi:10.1111/j.1745-6606.2001.tb00101.x

Mohd Suki, N., & Mohd Suki, N. (2017). Modeling the determinants of consumers' attitudes toward online group buying: Do risks and trusts matters? *Journal of Retailing and Consumer Services*, *36*(February), 180–188. doi:10.1016/j.jretconser.2017.02.002

Nyshadham, E. A. (2000). Privacy policies of air travel web sites: A survey and analysis. *Journal of Air Transport Management*, *6*(3), 143–152. doi:10.1016/S0969-6997(00)00007-7

Oghazi, P., Karlsson, S., Hellström, D., & Hjort, K. (2018). Online purchase return policy leniency and purchase decision: Mediating role of consumer trust. *Journal of Retailing and Consumer Services*, *41*, 190–200. doi:10.1016/j.jretconser.2017.12.007

Orubu, O. F. (2016). The impact of perceived risk on willingness to buy in online markets. *E3 Journal of Business Management and Economics*, *7*(1), 13-18.

Rathee, V., & Saini, C. (2017). A study on the effect of retail web site factors on customers' attitude. *Journal of Marketing Strategy*, *5*(3), 238–249.

Reibstein, D. J. (1999). Who is buying on the Internet, 1999? The Wharton School, University of Philadelphia, Philadelphia, PA.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Suh, B., & Han, I. (2003). The impact of consumer trust and perception of security control on the acceptance of electronic commerce. *International Journal of Electronic Commerce*, *7*(3), 135–161. doi:10.1080/10864415.2003.11044270

Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2000). A Conceptual Framework for Understanding e-Service Quality: Implications for Future Research and Managerial practice. Marketing Science Institute.

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Chapter 59
Influence Factors of Online Shopping Food Quality Performance Considering the Relationship Quality

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ABSTRACT

Most of the existing research relating to online shopping are focused on the analysis of customers' purchase intention and loyalty, but lack influencing factors on the quality performance of online shopping food. This article introduces the relationship quality, and constructs a model of relationship quality, logistics service quality, information sharing, supplier quality management and quality performance. This is done through an empirical study, taking 145 online food businesses as an example. At the same time, the relationship quality not only has an effect on the quality performance through information sharing, logistics service quality and supplier quality management, but also has an indirect effect on quality performance through information sharing and logistics service quality or information sharing and supplier quality management.

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INTRODUCTION

With the rapid development of network economy and the acceleration of modern lifestyle, the way of shopping has changed, in addition to the traditional farmers markets, chain supermarkets, small retail stores and other food shopping modes, online shopping has become a new channel for sales of food products in China. According to relevant analysis, the total amount of electricity suppliers of food in China is close to 40 billion Yuan in 2015. The market size of food online shopping will be approximately 140 billion Yuan in 2018. Compare with the traditional sales format, the advantages of online shopping is reflected in the integration of information, capital and logistics trading platform to meet the personalized shopping needs of different customers (Yao, 2015). However, the low thresholds of online food sales, such as the undetermined locations, the lack of formal procedures and other issues, have brought convenience to consumers, but also have led to food safety problem.

The new "Food Safety Law" provides a network food trading platform should require food operators to provide real-name registration and clarify their food safety management responsibilities. The license shall be obtained legally and examined in accordance with the law. Therefore, online shopping businesses are faced with the double pressure as to improve the quality of products and to save production cost for a greater profit. The change of competitive environment is an urgent business to strengthen the management of all aspects from the point of view of supply chain, and to establish the corresponding supply chain quality performance evaluation system. While the scholars have studied the quality performance, the concept of relationship quality has been introduced and a series of studies were carried out. Prajogo & Olhager (2012) found that supply chain relationship quality not only play a direct positive role on performance, but also play a positive role on logistics through the information sharing, and then through the logistics impact on performance.

In view of this, this paper represents the point of view from online shop business in exploring the factors of online shopping food quality performance and the relationship between relationship quality and quality performance under the online shopping. In the food supply chain, it is closely related to the quality of logistics, information flow, and the choice of the correct supplier is the key factors in determining the quality of the product. Therefore, this paper focuses on the supply chain management in the logistics service quality, information sharing and supplier quality management on the impact of online shopping food quality performance, and meanwhile it provides theoretical basis and guidance for the development of online shopping food industry, so as to improve the quality performance of online shopping food industry.

THEORETICAL FOUNDATION AND RESEARCH HYPOTHESIS

Online Shopping Supply Chain Definition

Lu et al. (2015) proposed that the online shopping supply chain is a multi-level sales and distribution network which is formed by the supplier, the online shop (business), third-party logistics service providers and customers. It is a specific process which includes supplier supply, merchant sales, customer online orders, electronic payment, express logistics and transportation, receiving, payment, return and evaluation feedback and a series of activities. In this paper, the online shopping supply chain mainly consists of five participants: suppliers, online shop (business), third-party logistics service providers, customers and the

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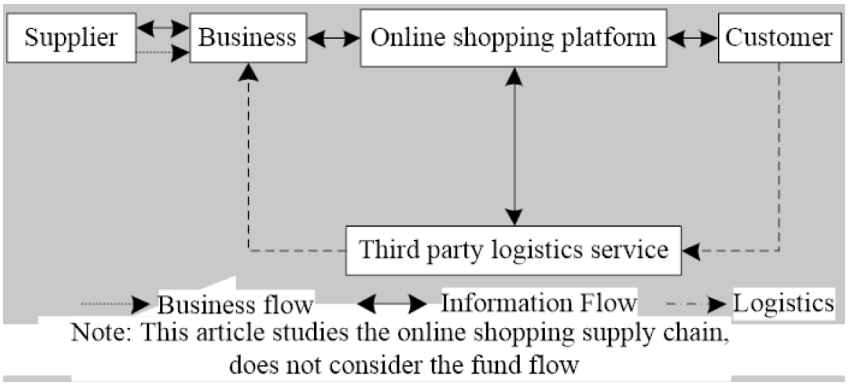
online shopping platform. The supplier will be responsible for supplying the goods to shop. Online shop makes a sale in E-commerce platform as a business. Third party logistics enterprises are responsible for the delivery of goods to customers. Customer who has online shopping terminals and composed of distribution in the world is responsible for the receipt of goods. Online shopping platform is the core of the online shopping supply chain, and the supply chain factor flow is not involved in the elements of transfer directly. Its role is to connect each function node and to collect transaction information service for all. The online shopping platform of this article refers to the third-party E-commerce model, which is represented by Taobao, PaiPai, eBay, etc., and belongs to the C2C E-commerce platform model. The structure of online shopping supply chain is shown in Figure 1.

Figure 1. Online shopping food supply chain structure



Relationship Quality and Logistics Service Quality

Service quality is deemed as a prerequisite for the relationship quality which has been endorsed by many scholars. The research of logistics service quality under service quality subset on relationship quality is also attracted the attention of scholars, but few scholars have studied the effect of relationship quality on the logistics service quality. In fact, high-quality supply chain relationship can reduce transaction costs and increase the value of logistics service. Panayides & So (2005) found that relationship quality has a significant positive impact on the logistics service quality through large-scale industrial survey data. In order to explore the impact of relationship quality on the logistics service quality, this paper uses the relationship quality as the pre-variable, and makes the following hypothesis:

H1: Relationship quality has a positive impact on logistics service quality.

Relationship Quality and Information Sharing

Researchers generally believe that the supply chain relationship has a significant impact on information sharing. When the relationship among supply chain partners is closer, the degree of information sharing will be greater. Fu & Lin (2014) found that trust and relationship commitment have significant positive effect on information sharing from the perspective of the company and farmers. Ye & Xue (2012) dis-

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covered that the relationship commitment has a significant positive impact on the quality and the content of information sharing through questionnaire survey of 273 manufacturing industries. Therefore, this paper puts forward the following hypothesis:

H2: Relationship quality has a positive effect on information sharing.

Relationship Quality and Supplier Quality Management

With the increase of external resource dependence, enterprises begin to develop a close relationship with major suppliers. The intimate relationship can encourage the suppliers to participate in the design of food quality effectively, to improve the quality of food and the stability of the process so as to reduce the cost of enterprise's quality, and improve the qualified rate of food. Enterprises and suppliers who maintain a stable and sustainable relationship is conducive to the production, delivery quality and reduce transaction costs and have other aspects of the advantage. Zhang et al. (2013) has suggested that the supply chain relationship quality has a positive impact on the supplier quality management in the supply chain management. Therefore, this paper puts forward the following hypothesis:

H3: Relationship quality has a positive effect on supplier quality management.

Information Sharing and Logistics Service Quality

The normal operation of the supply chain cannot be separated from the support of information and logistics, information is the basis of maintaining the normal operation of the supply chain, especially in the food supply chain when the improvement of the level of information sharing plays an important role in the logistics service quality. High quality information sharing is conducive in improving the whole logistics supply chain responsiveness and response capacity, and thus improving the logistics service quality, timeliness and so on. Carr & Kaynak (2007) stated that effective communication can improve the service quality through information sharing. Dai et al. (2015) have taken on 130 logistics enterprise users as the object of investigation and shown that information sharing has a significant positive impact on the logistics service quality. Therefore, this paper puts forward the following hypothesis:

H4: Information sharing has a positive impact on the logistics service quality.

Information Sharing and Supplier Quality Management

The information and knowledge transfer among supply chain partners can promote the timeliness and effectiveness of business contacts, and improve the quality of service of the supplier. Hsu et al. (2008) have identified that information sharing has a positive effect on supplier quality through the empirical and multiple regression analysis. Jiang & Li (2014) believed that through exchanging information between enterprises and suppliers is advantageous to the development of new products and promote the supplier's attention to the quality of products. Therefore, this paper puts forward the following hypothesis:

H5: Information sharing has a positive impact on supplier quality management.

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Logistics Service Quality and Quality Performance

The management of logistics service quality is beneficial in improving the overall interests of the whole supply chain and reducing the influence of uncertainty factors. The improvement of quality performance and high-quality logistics services are integrated closely. Stank et al. (2003) have proved that the logistics service quality can affect the performance directly. It can be seen as that high level of logistics service quality can bring higher product quality performance for the enterprise. Therefore, this paper puts forward the following hypothesis:

H6: Logistics service quality has a positive impact on quality performance.

Information Sharing and Quality Performance

Information sharing is the key to obtain and maintain competitive advantage, and is also the base of realizing supply chain management. Therefore, the enterprises between upstream and downstream of supply chain through information sharing can reduce the bullwhip effect, and improve the quality of performance of supply chain. Koçoğlu et al. (2011) have said that information sharing has a positive effect on performance in the study of supply chain integration on the role of information sharing. In order to discuss the relationship between information sharing and quality performance, this paper puts forward the following hypothesis:

H7: Information sharing management has a positive impact on quality performance.

Supplier Quality Management and Quality Performance

Quality is the survival of the enterprise, supplier quality management activities not only affect the operating conditions of enterprises, but also affect the entire supply chain operating performance. Enterprises and suppliers who establish a long-term and stable cooperative relations would make a greatest contribution to the performance quality. Kaynak & Hartley (2008) have found that supplier quality management and performance has a positive relationship. Zhang et al. (2013) have demonstrated that the supplier management has a significant positive impact on the quality of agricultural products. Therefore, this paper puts forward the following hypothesis:

H8: Supplier quality management has a positive impact on quality performance.

According to the above analysis, this paper designs the model in Figure 2.

RESEARCH DESIGN

Sample Description and Investigation

This questionnaire is mainly aimed at the business of food store on the electronic commerce platform. It mainly consists of two parts. The first part is the basic situation questionnaire, including personal

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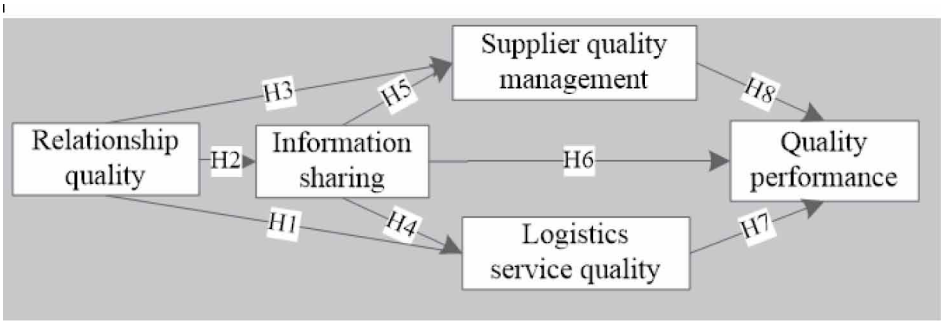
position, the nature of the shop, the number of staff, sales of food types, the complaint rate and so on. The second part is the main part of the questionnaire, that is, factors affecting the quality performance of online shopping food. The main questionnaire methods were e-mail and telephone, with survey duration from February 2016 to June 2016. A total of 235 questionnaires were issued, the actual recovery was 182 questionnaires, and among them, 37 results have to be removed as they were omitted or contradictory answers obviously, and 145 questionnaires were returned. The effective rate of the questionnaires was 60.9%.

Figure 2. Hypothesis model



Variables Measurement

In order to assure the reliability and persuasiveness of the test scale, this study selected the domestic and foreign scale as matured as possible. Among them, the measurement scale of relational quality was mainly using the research results of Fynes et al. (2004) for reference, and selected four dimensions including trust, commitment, cooperation and relationship atmosphere with a total of 12 measurement items.

Combined with the reality of logistic of online food shopping, logistics service quality is based on five dimensions including integrity, timeliness, responsiveness, convenience and reliability with a total of 5 measurement items. Information sharing refers to the dimension of Li & Lin (2006), which is divided into the content of the information sharing and the quality of the information sharing, a total of 6 measurement items. According to the dimension of Miao (2015), the supplier quality management is divided into three dimensions: supplier involvement, supplier cooperation and supplier evaluation, a total of 3 measurement items. According to the study of the internal quality performance of Song et al. (2011), the division of quality performance has selected the 3 indexes of durability, reliability and pass rate. With the external quality performance of Voss & Fynes (2002), this paper selected quality, customer satisfaction and the delivery quality of 3 indicators, a total of 6 measurement items. Questionnaire answers were compiled using the Likert 5 scale. Respondents were required to know the shop profile and responded by the current actual operating conditions of the shop. The "1" in the questionnaire means disagree strongly. "2" means disagree and so on, until "5" means agree strongly. After the initial preparation of all the measurement scales, we select the relevant personnel for a small sample of the test, then modify the form of expression and processing of the questionnaire items so as to compile the final formal questionnaire.

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DATA ANALYSIS AND TESTING

Reliability and Validity Test

1. **The reliability test:** In this paper, the Smartpls software is used to analyze the validity of the questionnaire and the validation model by partial least squares regression. In order to ensure the accuracy of the data, reliability and validity of the samples are needed to be tested. As shown in Table 1, the lowest coefficient is 0.783 and the combined reliability CR is 0.873, which is greater than 0.7, indicating that the sample variables have good reliability and internal consistency;
2. **The validity test:** The converge validity and discriminant validity of construct validity were being deployed in this paper. The convergent validity should be tested by cross-loading value, that is, the load on each item is greater than the load on other factors, and all the AVE values are greater than 0.5. From the section in bold of Table 2, we can see that the questionnaires are tested by the validity of polymerization. In the PLS algorithm, the AVE value is mainly adopted to verify the discriminant validity, that is, the AVE value of each variable is obtained by the square of the numerical value, and the AVE value of the square root must be greater than 0.5. From table 3 we can see that the discriminant validity of each variable is good.

Table 1. The reliability of variable table

Latent Variable	Number of Measurements	Cronbach's α	CR
Relationship quality	12	0.920	0.932
Logistics service quality	5	0.852	0.894
Information sharing	6	0.860	0.896
Supplier quality management	3	0.783	0.873
Quality performance	6	0.845	0.884

Structural Model Validation

The model was validated by using the PLS-based bootstrapping algorithm, which included the standardized path coefficient, the determination coefficient (R^2), and the significance level, the results are shown in figure 3. It can be seen that both the logistic service quality and the information sharing value of R^2 are greater than 0.35, and the R^2 of supplier quality management and quality performance are also close to 0.35, which indicates that the model has a good fitting effect.

When P is equal to 0.05, the T value of each path is greater than 1.96, the structural equation model has a preferable predictive effect. Specific results are shown in Table 4.

From Table 4, we can see that all the assumptions of this paper are tenable. Among them, H1, H2, H4, H5 in $p < 0.001$ significantly. H3, H6, H7 in $p < 0.05$ significantly. In light of this, we can know that this model can well reflect the influence factors of online shopping food quality performance.

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Table 2. Cross-loading and AVE values

Latent Variable	Relationship Quality	Logistics Service Quality	Information Sharing	Supplier Quality Management	Quality Performance
RQ1	0.778	0.389	0.427	0.347	0.169
RQ2	0.741	0.474	0.505	0.459	0.215
RQ3	0.735	0.492	0.422	0.294	0.167
RQ4	0.762	0.377	0.409	0.335	0.140
RQ5	0.696	0.355	0.403	0.377	0.167
RQ6	0.834	0.474	0.481	0.356	0.168
RQ7	0.769	0.486	0.464	0.382	0.268
RQ8	0.687	0.306	0.368	0.276	0.163
RQ9	0.681	0.315	0.414	0.289	0.195
RQ10	0.725	0.294	0368	0.293	0.161
RQ11	0.686	0.390	0.479	0.393	0.178
RQ12	0.650	0.364	0.471	0.355	0.241
LC1	0.506	0.781	0.483	0.346	0.338
LC2	0.432	0.753	0.412	0.311	0.340
LC3	0.393	0.835	0.386	0.333	0.483
LC4	0.407	0.789	0.436	0.341	0.348
LC5	0.430	0.805	0.429	0.314	0.337
IS1	0.477	0.423	0.786	0.378	0.386
IS2	0.433	0.469	0.838	0.444	0.405
IS3	0.447	0.413	0.773	0.541	0.443
IS4	0.520	0.461	0.814	0.483	0.394
IS5	0.420	0.387	0.682	0.289	0.273
IS6	0.475	0.331	0.703	0.306	0.313
SM1	0.429	0.299	0.469	0.822	0.363
SM2	0.310	0.327	0.427	0.844	0.341
SM3	0.451	0.410	0.456	0.838	0.400
QP1	0.176	0.406	0.397	0.308	0.761
QP2	0.241	0.325	0.391	0.296	0.797
QP3	0.244	0.417	0.454	0.441	0.758
QP4	0.196	0.376	0.292	0.357	0.726
QP5	0.136	0.227	0.254	0.230	0.710
QP6	0.129	0.288	0.339	0.300	0.737
AVE	0.533	0.629	0.590	0.697	0.560

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Table 3. AVE square root and discriminant validity

	Information Sharing	Logistics Service Quality	Quality Performance	Relationship Quality	Supplier Quality Management
Information sharing	0.768				
Logistics service quality	0.542	0.793			
Quality performance	0.487	0.468	0.748		
Relationship quality	0.601	0.548	0.257	0.730	
Supplier quality management	0.540	0.415	0.443	0.481	0.835

Figure 3. Model hypothesis test results

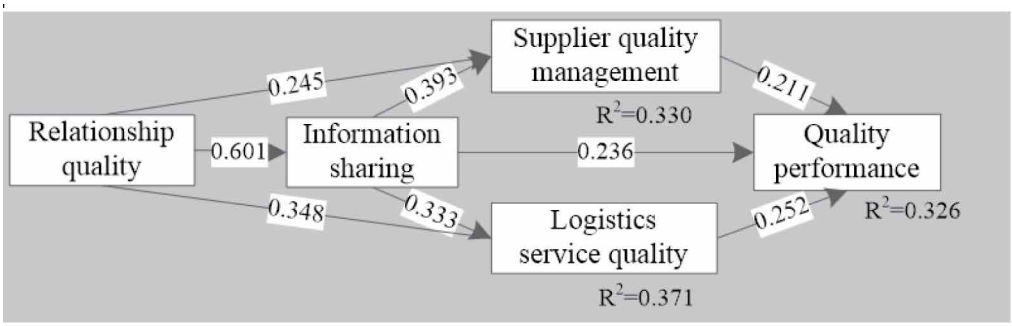

Table 4. Hypothesis test results table

Hypothesis	Hypothesis Test	Standard Path Coefficient	T Value	Conclusion
H1	Relationship quality has positive effect on logistics service quality	0.348	3.309***	pass
H2	Relationship quality has positive effect on information sharing	0.601	8.434***	pass
H3	Relationship quality has positive effect on supplier quality management	0.245	2.772*	pass
H4	Information sharing has a positive effect on the quality of logistics service	0.333	2.979***	pass
H5	Information sharing has positive effect on supplier quality management	0.393	4.676***	pass
H6	Information sharing has positive effect on quality performance	0.236	2.067*	pass
H7	Logistics service quality has positive effect on quality performance	0.252	2.143*	pass
H8	Supplier quality management has a positive effect on quality performance	0.211	2.336*	pass

Note: significant level: $^{**}P < 0.05$, $^{**}P < 0.01$, $^{***}P < 0.001$

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CONCLUSION

Through the above research, we can obtain the following conclusions:

1. The relationship quality has positive influence on information sharing, logistics service quality and supplier quality management. This indicates that the relationship quality among supply chain partners can improve the reliability and authenticity of the information sharing. It is conducive in achieving the efficient operation of logistics, promoting the supplier quality management, and improving the quality of food suppliers. Businesses should deal with the relationship among supply chain members reasonably, maintain the relationship quality among supply chain members through trust, commitment, and so on, as well as promote long-term and stable cooperative relationship among supply chain partners. For that reason, businesses can sign contracts with partners, not only conducive to the establishment of a more lasting, close cooperative relationship, but also conducive to improve the quality of the store's food quality performance;
2. Information sharing has a positive impact on logistics service quality and supplier quality management. By strengthening the management of the third-party logistics service quality, the business can master the real time information of the logistics service, which is beneficial to improve the logistics service quality of the shop. Through information sharing, businesses can adjust their sales according to market changes and the number of products, and form an effective control on the product quality of the supplier. They should strengthen the internal information network platform construction, establish advanced partner management information system with suppliers and third-party logistics enterprises, improve the efficiency and frequency of information exchange, and ensure the seamless communication between supply chain partners;
3. Logistics service quality, information sharing and supplier quality management have a positive impact on quality performance. This means that the logistics service quality, information sharing and supplier quality management determine the performance of food quality of shops, businesses should strive to improve the level of information sharing, third-party logistics service quality and supplier quality management level to promote shop quality performance;
4. From the path analysis of the model, we find that the relationship quality not only have an effect on the quality performance through information sharing, logistics service quality and supplier quality management, but also have an effect on food quality performance through information sharing and logistics service quality or information sharing and supplier quality management indirectly. It shows that the relationship quality can play a role in the quality performance through multiple paths.

This paper mainly discusses the factors influencing the online food quality from the perspective of online food businesses, and constructs the model of impact of information flow, logistics and supplier quality management on quality performance. The results of this study enrich and improve the theoretical system of online shopping food supply chain, which have important practical significance on Chinese online shopping in the food industry. In addition, this article also has shortcomings: without considering the quality of business and online shopping platform relationship, we will study the impact of online shopping platform on food quality performance of online shopping further in the future.

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REFERENCES

Carr, A. S., & Kaynak, H. (2007). Communication methods, information sharing, supplier development and performance: An empirical study of their relationships. *International Journal of Operations & Production Management*, *27*(4), 346–370. doi:10.1108/01443570710736958

Dai, J., Xie, L., & Wang, Q. (2015). The impact of the third party logistics integration on logistics service quality, partnership and corporate operational performance. *Management Review*, *27*(5), 188–197.

Fu, S., & Lin, J. (2014). The effects of trust and relationship commitment on information sharing and alliance performance: Evidence from "a company + farmers" in China. *Biotechnology: An Indian Journal*, *13*(23), 5600–5605.

Fynes, B., Búrca, S. D., & Marshall, D. (2004). Environmental uncertainty, supply chain relationship quality and performance. *Journal of Purchasing and Supply Management*, *10*(4–5), 179–190. doi:10.1016/j.pursup.2004.11.003

Hsu, C. C., Tan, K. C., Leong, G. K., & Kannan, V. R. (2008). Information sharing, buyer-supplier relationships, and firm performance. *International Journal of Physical Distribution & Logistics Management*, *38*(4), 296–310. doi:10.1108/09600030810875391

Jiang, X. R., & Li, S. C. (2014). An exploratory study on the influencing factors of enterprise-supplier relationship commitment. *Management Review*, *26*(8), 188–199.

Kaynak, H., & Hartley, J. L. (2008). A replication and extension of quality management into the supply chain. *Journal of Operations Management*, *26*(4), 468–489. doi:10.1016/j.jom.2007.06.002

Koçoğlu, İ., İmamoğlu, S. Z., İnce, H., & Keskin, H. (2011). The effect of supply chain integration on information sharing: Enhancing the supply chain performance. *Paper presented at the Procedia-social & Behavioral Sciences*.

Li, S., & Lin, B. (2006). Accessing information sharing and information quality in supply chain management. *Decision Support Systems*, *42*(3), 1641–1656. doi:10.1016/j.dss.2006.02.011

Lu, W., Guo, R., & Hu, X. h. (2015). Study on dynamic integration and optimization of inventory and transport processes of online shopping supply chains based on revenue sharing and conservation. *Logistics Technology*, *34*(11), 204–207.

Miao, S. C. (2015). Empirical research of supply chain quality management and e -business performance. *Logistics Engineering and Management,* (11), 161-164.

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Panayides, P. M., & So, M. (2005). The impact of integrated logistics relationships on third-party logistics service quality and performance. *Maritime Economics & Logistics*, *7*(1), 36–55. doi:10.1057/palgrave.mel.9100123

Prajogo, D., & Olhager, J. (2012). Supply chain integration and performance: The effects of long-term relationships, information technology and sharing, and logistics integration. *International Journal of Production Economics*, *135*(1), 514–522. doi:10.1016/j.ijpe.2011.09.001

Song, Y. T., Su, Q., & Jiang, P. (2011). The effect of relationship quality on quality management practice and performance. *Science Research Management*, *32*(4), 69–75.

Stank, T. P., Goldsby, T. J., Vickery, S. K., & Savitskie, K. (2003). Logistics service performance: Estimating its influence on market share. *Journal of Business Logistics*, *24*(1), 27–55. doi:10.1002/j.2158-1592.2003.tb00031.x

Voss, C., & Fynes, B. (2002). The moderating effect of buyer-supplier relationships on quality practices and performance. *International Journal of Operations & Production Management*, *22*(6), 589–613. doi:10.1108/01443570210427640

Yao, J. M. (2015). Resources integration decision about online shopping supply chain based on service capacity equilibrium. *Chinese Journal of Management Science*, *23*(10), 88–97.

Ye, F., & Xue, Y. P. (2012). Research on the impact of relationship commitment on information sharing and operational performance. *Journal of Management Science*, *25*(5), 41–51.

Zhang, M., Fang, X. H., Dong, M., & Li, P. L. (2013). Impact of agricultural supply chain relationship and management on agricultural product quality and safety. *Fisheries Economy Research,* (1), 29-41.

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Chapter 60
Relationships Among Dimensions of Online Second-Hand Shopping, Satisfaction, and Repurchase Intention

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ABSTRACT

The purpose of this study is to examine the relationships among dimensions of online second-hand shopping, customer satisfaction, and repurchase intention. Responses obtained from 608 Indian online second-hand shoppers show that the dimensions of online second-hand shopping such as price, website quality, nostalgia, and brand image influence customer satisfaction. In addition, customer satisfaction positively affects repurchase intention. Findings of the present study provide intuitive guidelines for online second-hand marketers in approaching emerging markets through effective online shopping strategies.

INTRODUCTION

E-commerce research has gained momentum among academicians and practitioners over the past few years. Online second-hand retail market is the most interesting expansion of e-commerce industry (Belk, Sherry, and Wallendorf, 1988; Roux and Guiot, 2008; Sherry, 1990a; Soiffer and Herrmann, 1987). It provides huge opportunities for sellers and buyers. Buyers are able to compare products through online platform and sellers are able to post advertisements online and communicate easily with the prospective buyers (Kamoun and Halaweh, 2012; Kumar, Sikdar, and Alam, 2016; Sherry, 1990b).

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Globally, online second-hand retail market is spearheading. In India, online second-hand retail industry has been growing over the past years (Snigdha, 2016). For example, Indian households have progressed dealing with second-hand goods worth of 1, 15, 000 crore in 2015 from 60,000 crore in 2011 (Chitra, 2014). Today's economic condition fuels the demand for purchasing second-hand products. Importantly, middle and lower income people buy second-hand products to satisfy their needs in a cost-effective manner. People who count on time and money are the most prospective buyers to engage in second-hand shopping (Kwon and Lennon, 2009; Williams and Paddock 2003). However, customer retention stands as a major concern for online retailers and sellers who wish to develop and maintain customer relationships (Sharkey, Scott and Acton, 2010). Customer retention is four times profitable than acquiring a new customer (Fang, Chiu, and Wang, 2011). Hence, it is crucial to determine the key factors that affect customer's intention towards repeat purchase of second-hand products.

Thus, the purpose of this study is to examine the effect of online second-hand shopping dimensions on customer satisfaction and customer retention. Specifically, this study aims to test the relationships between price, website quality, nostalgia, and brand image on customer satisfaction and effect of customer satisfaction on customer retention. The rest of the paper is structured as follows. The next section provides hypotheses development followed by research methodology. Finally, we present discussion, implications and future research directions.

Hypotheses Development

This study hypothesizes that price, website quality, nostalgia and brand image have a positive influence on customer satisfaction and customer satisfaction will positively affect customer retention. Customer retention refers to the probability that a customer will continue to purchase second-hand products from the same website in future (Chiu et al., 2012). Figure 1 shows the research model of the study.

Price

Price represents a sum of money that customers give to acquire a particular product (Zeithaml, 1988). Customers use price as a quality-signalling cue that indicates "you get what you pay for" (Erickson and Johansson, 1985). Customers have a propensity to compare the prices and then adopt the one which suits their situation (Abu-shamaa et al., 2016; Bojanic, 1996; Kim et al., 2012; Yoon, et al., 2014). In online second-hand consumption, price is the most influencing dimension as many rare products are available for lesser price. Fair price strategy helps the second-hand sellers to attract buyers and achieve buyers' satisfaction. Therefore, we hypothesize that

H_1: There is a positive relationship between price and customer satisfaction.

Website Quality

Website quality refers to the extent to which it presents sufficient and relevant information about the products being promoted (Law and Bai, 2008). Website plays a major role in online retail industry because it is the only way to communicate with the customers (Chang and Chen, 2008). It's a platform for efficient and effective information and services (Yates, 2005). Online retailers must pay attention to website design to ease customer search for information and payment. Poor website design may lead

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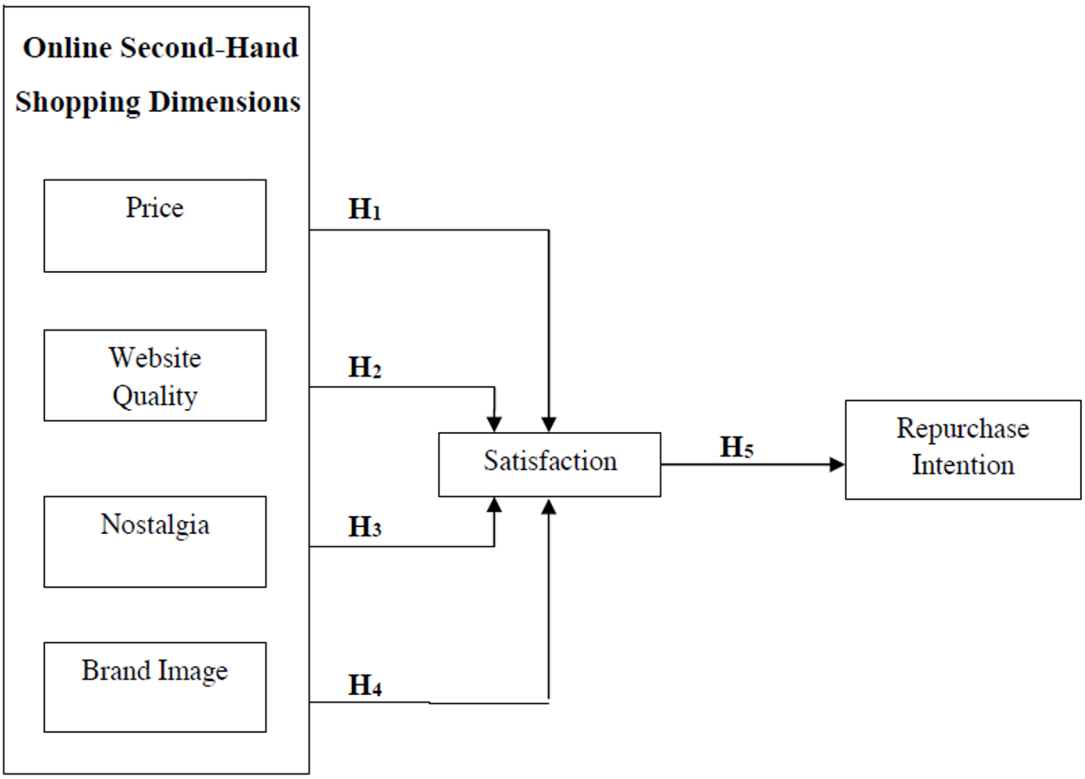
to less chance of customers' repeat purchase (Lin, 2008). Online shoppers will tend to repurchase if a particular website has greater functionality (Maamar et al., 2009). Hence, we hypothesize that

H_2: There is a positive relationship between website quality and customer satisfaction.

Figure 1. Research Model



Nostalgia

Belk et al., (1989) explain second-hand shopping as a way of obtaining exclusive products. Online second-hand market stimulates the consumers by offering exclusive recreational provisions (Leonard-Barton, 1981; Stone, Horne, and Hibbert, 1996). Consumers who tend to have a high return on their income prefer online second-hand shopping (Williams and Paddock, 2003). In addition, people who look for unique and old objects adopt second-hand shopping (Gregson and Crewe, 1997; Kopytoff, 1986). In short, online second-hand shopping is the method of interlinking hedonic and economic phases (Bardhi and Arnould, 2005; Sherry, 1990a). Therefore, we hypothesize that,

H_3: There is a positive relationship between nostalgia and customer satisfaction.

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Brand Image

Brands have a major role to play while making a purchase decision (De Chernatony and McDonald, 2003; Keller, 2007). Brand image enables sellers to generate more profit by attracting more number of customers (Delgado and Herna´ndez, 2008; Rubinstein and Griffiths, 2001). Many studies find a positive relationship between brand image and customer satisfaction (eg., Hahn and Kim, 2009; Ibeh et al., 2005). As sellers advertise branded second-hand goods (Liu, Eng and Sekhon, 2014), we hypothesize that

H_4: There is a positive relationship between brand image and customer satisfaction.

Satisfaction

Satisfaction is an affective state that emerges from emotional reaction to a particular product or service experience (Spreng, MacKenzie, and Olshavsky, 1996). In this study, satisfaction is an evaluation and fulfilment of performance based on prior experience with online second-hand shopping (Hellier et al., 2003; Jones, Mothersbauch, and Beatty, 2000). Previous empirical findings indicate that satisfaction positively influence customers' repurchase intention (Anderson and Sullivan, 1993; Fornell, 1992; Patterson and Spreng, 1997; Selnes, 1998). Further, online purchase satisfaction increases repeat purchase behaviour (Amoroso and Ogawa, 2013; Anderson and Srinivasan, 2003). Hence, we hypothesize that

H_5: Customer satisfaction will have a positive influence on repurchase intention.

METHODOLOGY

Sample and Data Collection

To empirically test the model proposed in Figure 1, we collected data from online second-hand shoppers. Questionnaire was posted with hyperlink on a number of relevant Facebook pages. Customers with online second-hand shopping experience were invited to participate in the survey. The returned questionnaires were screened for usability and as a result 608 responses were found to be complete and valid for data analysis.

Measurements

To ensure content validity, all the items were adopted from existing literature. Items for measuring price, nostalgia, website quality, brand image, customer satisfaction, and repurchase intention were adapted and modified from Guiot and Roux (2010); Min et al., (2009); Pappas et al., (2014); Roux, and Guiot, (2008). All the items were measured on a five-point Likert scale ranging from 5 'strongly agree' to 1 'strongly disagree'. Demographic profile of the respondents including gender, age, education, occupation, income and experience in online second-hand shopping were also captured. Table 1 presents the demographic profile of the respondents. Table 5 in Appendix A lists the items.

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Table 1. Demographic Profile (N = 608)

Demographic Questions	N	%
Gender		
Male	313	51.5
Female	295	48.5
Age		
Less than 20 years	180	29.6
21-30 years	383	63.0
31-40 years	35	5.8
41-50 years	5	0.8
51-60 years	5	0.8
Education		
Undergraduate	205	33.7
Post-graduate	107	17.6
Others	296	48.7
Occupation		
Private sector	132	21.7
Public sector	94	15.5
Student	312	51.3
Business	68	11.2
Others	2	0.3
Income per annum		
0 - 5 lakhs	559	91.9
5-10 lakhs	25	4.1
10-15 lakhs	21	3.5
15-20 lakhs	1	0.2
More than 20 lakhs	2	0.3

Demographic Questions	N	%
Online shopping		
Yes	608	100.0
No	0	0
Experience in buying second-hand products online		
1 year	272	44.7
1-3 years	322	53.0
more than 3 years	14	2.3
No. of products bought		
1 product	276	45.4
1-3 products	307	50.5
3-6 products	22	3.6
6-9 products	2	0.3
more than 9 products	1	0.2
Type of products		
Electronics	403	66.3
Furniture	92	15.1
Two-wheeler	40	6.6
Four-wheeler	23	3.8
Home appliances	45	7.4
Others	5	0.8
Website		
OLX	386	63.5
QUIKR	124	20.4
VIT second-hand emarket	25	4.1
Others	73	12.0

ANALYSIS AND RESULTS

Exploratory Factor Analysis

An exploratory factor analysis (EFA) using varimax rotation was performed on the dimensions of online second-hand shopping to identify the underlying factor structure. We deleted certain items based on factor loadings (<.5), cross loadings (<.4) (Hair et al., 1998) and reliability (<.7) (Nunally, 1978). Final EFA resulted in 76.9% of the total variance with four factors. The items had communalities ranging from 0.66 to 0.84 with each item loaded strongly on one factor. Cronbach's alpha for each construct was calculated to ensure internal consistency among the items. Alpha for Price = 0.91, Website Quality = 0.92, Nostalgia = 0.90, Brand image = 0.85, customer satisfaction = 0.93, repurchase intention = 0.93 and combined reliability was high enough with alpha value as 0.96. All the alpha values were above 0.7 and thus exceeded the cut-off value recommended by Nunally (1978).

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Table 2. Measurement model results

Constructs	Items	Loadings	p Value	Alpha	AVE	Composite Reliability
Price	PR1	0.88	***	0.91	0.78	0.93
	PR2	0.90	***			
	PR4	0.88	***			
	PR5	0.88	***			
Nostalgia	NT1	0.83	***	0.90	0.78	0.93
	NT2	0.88	***			
	NT3	0.91	***			
	NT4	0.90	***			
Website Quality	WQ3	0.86	***	0.92	0.80	0.94
	WQ4	0.91	***			
	WQ5	0.91	***			
	WQ6	0.90	***			
Brand image	BR2	0.83	***	0.85	0.70	0.90
	BR3	0.86	***			
	BR4	0.85	***			
	BR5	0.80	***			
Satisfaction	ST1	0.84	***	0.93	0.79	0.95
	ST2	0.89	***			
	ST3	0.92	***			
	ST4	0.90	***			
	ST5	0.89	***			
Repurchase Intention	RP1	0.89	***	0.93	0.79	0.95
	RP2	0.91	***			
	RP3	0.90	***			
	RP4	0.88	***			
	RP5	0.85	***			

Measurement Model

We evaluated measurement model based on reliability, convergent and discriminant validity using Smart PLS 3.2.6. First, reliability was examined using composite reliability (CR) values. Results showed that the values of CR range from 0.90 to 0.95, exceeding the threshold value of 0.7 (Hair et al., 1998), confirming construct reliability. Second, convergent validity was tested using two criteria: indicator loadings and average variance extracted (AVE). The results showed that all the factor loadings exceed 0.7 and the AVE values range from 0.70 to 0.80, indicating that convergent validity is achieved (Table 2). Third, discriminant validity was tested using the criteria mentioned by Fornell & Larcker (1981) that the square root of AVE should be greater than all the inter-construct correlations. The results indicated that square root of AVE is greater than inter-construct correlations and thus discriminant validity is achieved (Table 3).

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Table 3. Discriminant Validity

Constructs	1	2	3	4	5	6
Price	**0.88**					
Nostalgia	0.51	**0.88**				
Website Quality	0.64	0.58	**0.90**			
Brand image	0.58	0.54	0.63	**0.83**		
Satisfaction	0.64	0.60	0.79	0.67	**0.89**	
Repurchase Intention	0.67	0.58	0.64	0.66	0.74	**0.89**

Note: The diagonal elements are the square root of AVE & the off-diagonal elements are the values of inter-construct correlations

Structural Model

Given a valid and reliable measurement model, we evaluated the inner model by employing bootstrapping. The results of structural model indicated that all the four dimensions of online second-hand shopping significantly predict customer satisfaction, supporting H_1, H_2, H_3, and H_4. Further, customer satisfaction has significant positive effect on repurchase intention, supporting **H_5:** Table 4 shows structural model results.

Table 4. Structural model results

Hypothesized paths			*t*-value	*p*-value	Hypotheses
Satisfaction	<--	Price	2.98	0.003	Accepted
Satisfaction	<--	Website Quality	10.79	***	Accepted
Satisfaction	<--	Nostalgia	3.64	***	Accepted
Satisfaction	<--	Brand image	6.06	***	Accepted
Repurchase Intention	<--	Satisfaction	34.47	***	Accepted

*** statistically significant at $p < 0.001$

DISCUSSION AND IMPLICATIONS

Despite numerous researches on online shopping, only few studies have examined factors influencing customers' online second-hand repurchase intention (Roux and Guiot, 2008). This research has contributed to online second-hand retail literature in two ways. First, this study has developed and tested a model containing the relationships among dimensions of online second-hand shopping, customer satisfaction, and repurchase intention. Second, to the best of our knowledge, this is the first study to identify factors influencing online second-hand repurchase intention in the context of Indian online second-hand retailing.

The results of the study showed that price significantly affects satisfaction, supporting H_1. This is in line with previous studies in which price predicts online customer satisfaction (Williams and Paddock, 2003). Price refers to fair pricing of products that sellers quote in online second-hand platform. Next, we found positive impact of website quality (H_2) on satisfaction, which is consistent with previous

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studies. For instance, Chen et al., (2010) and Liu et al., (2000) find that website functionality improves customer satisfaction. Website quality enables customers to search for products easily and to transact safely. Significant positive effect of nostalgia on satisfaction (H_3) reveals that customers choose online second-hand market to buy unique and antique products. Finally, we found positive effect of brand image on customer satisfaction (H_4). Selling branded second-hand goods under various product categories lure the buyers to purchase the product and improve satisfaction levels. Further, this study found a positive and significant effect of satisfaction on repurchase intention (H_5). Increased levels of satisfaction make the customers to repurchase products in future.

The study provides certain practical implications for online second-hand retailers. The positive effect of online second-hand shopping dimensions on customer satisfaction indicates that customers get satisfaction from e-commerce websites when they find antique products, effective user interface of websites, comparable and reasonable pricing, and branded products. This implies the retailers to encourage sellers to post vintage products and branded goods that are reasonably priced. It is important for retailers to have appealing website design. Specifically, online retailers can constantly update their website and adapt user-friendly design for easy search of products and safe transaction to improve customer satisfaction levels. They can include unique and old products in the product portfolio to attract nostalgic customers. They can encourage sellers to advertise branded second-hand products with a rational price to attract more buyers and to satisfy their needs on second-hand shopping.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

This research has certain limitations. First, the hypothesized relationships were tested using a cross-sectional research design. To enhance the generalizability of the findings, longitudinal research should be used by future researchers to test the research model. This study is based on Indian population and future studies can use data from other culture to generalize the findings. Second, other variables such as bargaining power, convenience, and personality can also be studied as antecedents of customer satisfaction. Third, future studies can examine other customer outcome variables such as cross-buying, impulse buying, and word-of-mouth communication (Agag and Masry, 2016; Kuo et al., 2012; Li, Browne, and Wetherbe, 2006; Samuel, Balaji and Wei, 2015). Finally, this study tested the effect of dimensions of online second-hand shopping on satisfaction and effect of satisfaction on repurchase intention. Future studies can determine the mediating effect of satisfaction between online second-hand shopping dimensions and repurchase intention.

REFERENCES

Abu-Shamaa, R., Abu-Shanab, E., & Khasawneh, R. (2016). Payment Methods and Purchase Intention from Online Stores: An Empirical Study in Jordan. *International Journal of E-Business Research*, *12*(2), 31–44. doi:10.4018/IJEBR.2016040103

Agag, G., & El-Masry, A. A. (2016). Understanding consumer intention to participate in online travel community and effects on consumer intention to purchase travel online and WOM. *Computers in Human Behavior*, *60*, 97–111. doi:10.1016/j.chb.2016.02.038

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Alam, M. D. (2015). Factors that Influence the decision when buying second-hand products.

Amoroso, D. L., & Ogawa, M. (2013). Comparing Mobile and Internet Adoption Factors of Loyalty and Satisfaction with Online Shopping Consumers. *International Journal of E-Business Research*, *9*(2), 24–45. doi:10.4018/jebr.2013040103

Anderson, E. W., & Sullivan, M. W. (1993). The antecedents and consequences of customer satisfaction for firms. *Marketing Science*, *12*(2), 125–143. doi:10.1287/mksc.12.2.125

Anderson, R. E., & Srinivasanan, S. S. (2003). Esatisfaction and e-loyalty: A contingency framework. *Psychology and Marketing*, *20*(2), 123–138. doi:10.1002/mar.10063

Bardhi, F., & Arnould, E. J. (2005). Thrift Shopping: Combining Utilitarian Thrift and Hedonic Treat Benefits. *Journal of Consumer Behaviour*, *4*(4), 223–3. doi:10.1002/cb.12

Belk, R. W., Sherry, J. F. Jr, & Wallendorf, M. (1988). A Naturalistic Inquiry into Buyer and Seller Behavior at a Swap Meet. *The Journal of Consumer Research*, *14*(March), 449–6. doi:10.1086/209128

Belk, R. W., Wallendorf, M., & Sherry, J. F. Jr. (1989). The Sacred and Profane in Consumer Behavior: Theodicy on the Odyssey. *The Journal of Consumer Research*, *16*(February), 1–18. doi:10.1086/209191

Bojanic, D. C. (1996). Consumer perceptions of price, value and satisfaction in the hotel industry: an exploratory study. *Journal of Hospitality and Leisure Marketing*, *4*(1), 5-22.

Chang, H. H., & Chen, S. W. (2008). The impact of online store environment cues on purchase intention, trust and perceived risk as a mediator. *Online Information Review*, *32*(6), 818–841. doi:10.1108/14684520810923953

Chen, Y.-H., Hsu, I. C., & Lin, C.-C. (2010). Website attributes that increase consumer purchase intention: A conjoint analysis. *Journal of Business Research*, *63*(9-10), 1007–1014. doi:10.1016/j.jbusres.2009.01.023

Chitra, U. (2014, January 05). Second-hand products selling like hot potatoes: Assocham. Retrieved from http://www.timesofindia.indiatimes.com

Chiu, C. M., Hsu, M. H., Lai, H. C., & Chang, C. M. (2012). Re-examining the influence of trust on online repeat purchase intention: The moderating role of habit and its antecedents. *Decision Support Systems*, *53*(4), 835–845. doi:10.1016/j.dss.2012.05.021

De Chernatony, L., & McDonald, M. (2003). *Creating Powerful Brands* (3rd ed.). London: Butterworth-Heinemann.

Delgado, E., & Herna'ndez, M. (2008). Building online brands through brand alliances in Internet. *European Journal of Marketing*, *42*(9/10), 954–976. doi:10.1108/03090560810891091

Chiu, C. M., Chang, C. C., Cheng, H. L., & Fang, Y. H. (2009). Determinants of customer repurchase intention in online shopping. *Online Information Review*, *33*(4), 761–784. doi:10.1108/14684520910985710

Erickson, G. M., & Johansson, J. K. (1985). The role of price in multi-attribute product evaluations. *Journal of Consumer Research*, *12*(2), 195-199.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Fang, Y. H., Chiu, C. M., & Wang, E. T. G. (2011). Understanding customers' satisfaction and repurchase intention: An integration of IS success model, trust, and justice. *Internet Research*, *21*(4), 479–503. doi:10.1108/10662241111158335

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *JMR, Journal of Marketing Research*, *18*(1), 39–50. doi:10.2307/3151312

Fornell, C. D. (1992). A national customer satisfaction barometer: The Swedish experience. *Journal of Marketing*, *56*(1), 6–21. doi:10.2307/1252129

Gehrt, K. C., Rajan, M. N., Shainesh, G., Czerwinski, D., & O'Brien, M. (2012). Emergence of online shopping in India: Shopping orientation segments. *International Journal of Retail & Distribution Management*, *40*(10), 742–758. doi:10.1108/09590551211263164

Gregson, N., & Crewe, L. (1997). Possession and Performance: Rethinking the Act of Purchase in the Space of the Car Boot Sale. *Journal of Material Culture*, *2*, 241–263. doi:10.1177/135918359700200205

Guiot, D., & Roux, D. (2010). A second-hand shoppers' motivation scale: Antecedents, consequences, and implications for retailers. *Journal of Retailing*, *86*(4), 355–371. doi:10.1016/j.jretai.2010.08.002

Hahn, K. H., & Kim, J. (2009). The effect of offline brand trust and perceived internet confidence on online shopping intention in the integrated multi-channel context. *International Journal of Retail & Distribution Management*, *37*(2), 126–141. doi:10.1108/09590550910934272

Hair, J. R., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate date analysis with readings* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Hao Suan Samuel, L., Balaji, M. S., & Kok Wei, K. (2015). An investigation of online shopping experience on trust and behavioral intentions. *Journal of Internet Commerce*, *14*(2), 233–254. doi:10.1080/15332861.2015.1028250

Hellier, P. K., Geursen, G. M., Carr, R. A., & Rickard, J. A. (2003). Customer repurchase intention: A general structural equation model. *European Journal of Marketing*, *37*(11/12), 1762–1800. doi:10.1108/03090560310495456

Ibeh, K., Luo, Y., & Dinnie, K. (2005). E-branding strategies of internet companies: Some preliminary insights from the UK. *Journal of Brand Management*, *12*(5), 205–228. doi:10.1057/palgrave.bm.2540231

Jones, M. A., Mothersbauch, D. L., & Beatty, S. E. (2000). Switching barriers and repurchase intentions in services. *Journal of Retailing*, *76*(2), 259–274. doi:10.1016/S0022-4359(00)00024-5

Kamoun, F., & Halaweh, M. (2012). User interface design and E-commerce security perception: An empirical study. *International Journal of E-Business Research*, *8*(2), 15–32. doi:10.4018/jebr.2012040102

Keller, K. L. (2007). *Strategic Brand Management: Building, Measuring, and Managing Brand Equity* (3rd ed.). Englewood Cliffs, NJ: Prentice-Hall.

Kim, H.W., Xu, Y., & Gupta, S. (2012). Which is more important in Internet shopping, perceived price or trust? *Electronic Commerce Research and Applications*, *11*(3), 241-252.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Kopytoff, I. (1986). The Cultural Biography of Things: Commoditization as Process. In A. Arjun (Ed.), *The Social Life of Things* (pp. 64–69). Cambridge, UK: Cambridge University Press. doi:10.1017/CBO9780511819582.004

Kumar, A., Sikdar, P., & Alam, M. M. (2016). E-Retail adoption in emerging markets: applicability of an integrated trust and technology acceptance model. *International Journal of E-Business Research*, *12*(3), 44–67. doi:10.4018/IJEBR.2016070104

Kuo, Y.-F., Hu, T.-L., & Yang, S.-C. (2013). Effects of inertia and satisfaction in female online shoppers on repeat-purchase intention. The moderating roles of word-of-mouth and alternative attraction. *Managing Service Quality: An International Journal*, *23*(3), 168–187. doi:10.1108/09604521311312219

Kwon, W. S., & Lennon, S. J. (2009). Reciprocal effects between multichannel retailers' offline and online brand images. *Journal of Retailing*, *85*(3), 376–390. doi:10.1016/j.jretai.2009.05.011

Law, R., & Bai, B. (2008). How do the preferences of online buyers and browsers differ on the design and content of travel websites? *International Journal of Contemporary Hospitality Management*, *20*(4), 388–400. doi:10.1108/09596110810873507

Leonard-Barton, D. (1981). Voluntary Simplicity Lifestyles and Energy Conservation. *The Journal of Consumer Research*, *8*(December), 243–252. doi:10.1086/208861

Li, D., Browne, G. J., & Wetherbe, J. C. (2006). Why do Internet users stick with a specific Web Site? A relationship perspective. *International Journal of Electronic Commerce*, *10*(4), 105–141. doi:10.2753/JEC1086-4415100404

Lin, H. F. (2008). Determinants of successful virtual communities: Contributions from system characteristics and social factors. *Information & Management*, *45*(8), 522–527. doi:10.1016/j.im.2008.08.002

Liu, C., & Arnett, K. P. (2000). Exploring the factors associated with web site success in the context of electronic commerce. *Information & Management*, *38*(1), 23–33. doi:10.1016/S0378-7206(00)00049-5

Liu, G., Eng, T. Y., & Sekhon, Y. K. (2014). Managing Branding and Legitimacy: A Study of Charity Retail Sector. *Nonprofit and Voluntary Sector Quarterly*, *43*(4), 629–651. doi:10.1177/0899764012474722

Maamar, Z., Subramanian, S., Thiran, P., Benslimane, D., & Bentahar, J. (2009). An approach to engineer communities of web services: Concepts, architecture, operation, and deployment. *International Journal of E-Business Research*, *5*(4), 1–21. doi:10.4018/jebr.2009040601

O. Pappas, I., G. Pateli, A., N. Giannakos, M., & Chrissikopoulos, V. (2014). Moderating effects of online shopping experience on customer satisfaction and repurchase intentions. *International Journal of Retail & Distribution Management*, *42*(3), 187–204. doi:10.1108/IJRDM-03-2012-0034

Nunnally, J. C. (1978). *Psychometric theory*. Delhi, India: Tata McGraw-Hill Education.

Patterson, P. G., & Spreng, R. A. (1997). Modelling the relationship between perceived value, satisfaction and repurchase intentions in a business-to-business, services context: An empirical examination. *International Journal of Service Industry Management*, *8*(5), 414–434. doi:10.1108/09564239710189835

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Roux, D., & Guiot, D. (2008). Measuring second-hand shopping motives, antecedents and consequences. *Recherche et Applications en Marketing* [English ed.], *23*(4), 63–91. doi:10.1177/076737010802300403

Rubinstein, H., & Griffiths, C. (2001). Branding matters more on the internet. *Journal of Brand Management*, *8*(6), 394–404. doi:10.1057/palgrave.bm.2540039

Selnes, F. (1998). Antecedents and consequences of trust and satisfaction in buyer-seller relationships. *European Journal of Marketing*, *32*(3/4), 305–322. doi:10.1108/03090569810204580

Sharkey, U., Scott, M., & Acton, T. (2010). The influence of quality on e-commerce success: An empirical application of the Delone and Mclean IS success model. *International Journal of E-Business Research*, *6*(1), 68–84. doi:10.4018/jebr.2010100905

Sherry, J. F. Jr. (1990a). ASociocultural Analysis of a Midwestern American Flea Market. *The Journal of Consumer Research*, *17*(June), 13–30. doi:10.1086/208533

Sherry, J. F. Jr. (1990b). Dealers and Dealing in a Periodic Market: Informal Retailing in Ethnographic Perspective. *Journal of Retailing*, *66*(Summer), 174–200.

Snigdha, A. (2016, January 02). 'Tis the season of buying second-hand designer wear, but online. Retrieved from http://www.hindustantimes.com

Soiffer, S. S., & Herrmann, G. M. (1987). Visions of Power: Ideology and Practice in the American Garage Sale. *The Sociological Review*, *35*(1), 48–83. doi:10.1111/j.1467-954X.1987.tb00003.x

Spreng, R. A., MacKenzie, S. B., & Olshavsky, R. W. (1996). A re-examination of the determinants of consumer satisfaction. *Journal of Marketing*, *60*(3), 15–32. doi:10.2307/1251839

Stone, J., Horne, S., & Hibbert, S. (1996). Car Boot Sales: A Study of Shopping Motives in an Alternative Retail Format. *International Journal of Retail & Distribution Management*, *24*(11), 4–15. doi:10.1108/09590559610131682

Wang, J., Gu, L., & Aiken, M. (2010). A study of the impact of individual differences on online shopping. *International Journal of E-Business Research*, *6*(1), 52–67. doi:10.4018/jebr.2010100904

Williams, C. C., & Paddock, C. (2003). The Meanings of Informal and Second-Hand Retail Channels: Some Evidence from Leicester. *International Review of Retail, Distribution and Consumer Research*, *13*(July), 317–336. doi:10.1080/0959396032000101372

Yates, R. (2005). Web site accessibility and usability: Towards more functional sites for all. *Campus-Wide Information Systems*, *22*(4), 180–188. doi:10.1108/10650740510617494

Yoon, S., Oh, S., Song, S., Kim, K. K., & Kim, Y. (2014). Higher quality or lower price? How value-increasing promotions affect retailer reputation via perceived value. *Journal of Business Research*, *67*(10), 2088–2096. doi:10.1016/j.jbusres.2014.04.017

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means end model and synthesis of evidence. *Journal of Marketing*, *52*(3), 2–22. doi:10.2307/1251446

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APPENDIX

Table 5. Items used in the Questionnaire

S.no	Measurement items
1.	**Price (Roux and Guiot, 2008; Guiot and Roux, 2010)**
	By shopping second-hand, I feel I'm paying the right price for things
	I can afford more things because I pay less in second-hand
	It's often not worth paying more to get something new*
	I don't want to pay more for a product just because it's new
	One can have more things for the same amount of money if one buys second-hand
2.	**Website Quality (Gehrt et al., 2012)**
	My online second-hand shopping website is user-friendly*
	My online second-hand shopping website is easy to access*
	My online second-hand shopping website is easy to search for products
	I like the functionality of my second-hand shopping website
	My second-hand shopping website performs effectively
	I like the features of my second-hand shopping website
3.	**Nostalgia (Roux and Guiot, 2008; Guiot and Roux, 2010)**
	I'm much more attracted by old things than by new things
	I like buying second-hand objects because I find them authentic
	I love buying second-hand objects because they evoke the past
	Above all, I buy second-hand articles because they're old and have a history
	I like buying second-hand mainly for old objects*
4.	**Brand (Alam, 2015)**
	I tend to buy a second- hand product if it is a recognized brand*
	I'm willing to pay a higher price if the second-hand product is a well-known brand
	I'm more interested in buying branded second-hand products
	Second-hand product's age does not matter if it is a well-known brand
	Brand name is an important factor for me in second-hand product purchase
5.	**Satisfaction (Pappas et al., 2014)**
	I am satisfied with online second-hand shopping
	I am pleased with online second-hand shopping
	I feel fulfilled by shopping second-hand products through online
	I feel that second-hand shopping through online is satisfactory
	My feeling with second-hand shopping through online is good
6.	**Repurchase intention (Pappas et al., 2014)**
	I will continue using online platform for shopping second-hand products in the future
	I have a strong intention to go for online second-hand shopping in the future
	I will regularly use online platform for buying second-hand products in the future
	My intention to buy second-hand products through online is high
	If I were to buy second-hand products, I would consider buying it from an online platform

*removed based on poor loadings

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Chapter 61
Advantages and Obstacles of Electronic Commerce in Sports Footwear

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ABSTRACT

The purpose of this article is to explore the perception of consumers regarding electronic commerce as a tool for sports footwear purchasing. Based on secondary sources, firstly, the authors define e-commerce and discuss its advantages and disadvantages. Then, the results of the empirical research are presented with the aim of (1) determining consumer perception of electronic commerce in the area of this specific product group, and (2) determining the difference between two generations of consumers. Two relevant age groups are compared: the younger population (18-39 years) and middle-aged consumers (40-59 years). The study was conducted on a sample of 202 respondents, of whom 110 are members of the young population and 92 are members of the middle age population. This research empirically confirmed that there are significant differences between generations when it comes to attitudes towards electronic commerce, thus this paper filling the existing gap in modern literature in retail and electronic commerce fields.

INTRODUCTION

Electronic commerce has been expanding over the last few years, and from one of the most unusual forms of trading it has become one of the leading business operation models, especially among business entities. At a time when laptops, smartphones and Internet-enabled tablets are widely and commonly used

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technologies, we can expect that gathering information about products, ordering products or services, and digital sales or purchasing activities are the common way of doing business in this digital environment. This is the fact, no matter of types of products sold and distributed.

Knezevic et al. (2017) claim that intermediaries/traders should provide efficient distribution of goods and services, contributing to the whole trade process keeping in mind aforementioned trends. Retailers should use those market drivers that will provide the sale using basic sales activities, elements, skills and forces that persuade consumers to buy products and pay for it at a desirable level of price suiting their channels to new consumer trends. Because 91% of Croatian citizens use the Internet to collect information on products and services (according to Croatian Ministry of Economy, 2017), trends in sales and production should follow market forces within various industries and for various types of products.

In this paper, we are dealing with a specific product group, i.e. "sports footwear", because of its current worth and growing trends within this particular market. Euromonitor (2014) describes continuous growing trends in the footwear market since 2012. In addition, Global Market Insight (2018) claim that the athletic footwear market size was US $80 billion in 2015 and is forecasted to grow at a compound annual growth rate of approximately 3% in the period from 2016 to 2023. Global shipments within this market were over 3.5 billion units in 2015 (according to Global Market Insights, 2018). Euromonitor (2014) shows the structure of the footwear market according to two criteria – gender and age of consumers. It further shows that women's footwear still dominates sales in the general global footwear market.

The global market size of sports footwear is also rapidly growing due to the trend of using footwear products not only for professional sport purposes and trainings, but also for recreation, leisure time and other purposes. This massive trend started some time ago, when sports products, including sports footwear, were labeled "athleisure," a portmanteau comprised of "athlete" and "leisure." Key drivers of athleisure are: "Luxury goods heavy weights join in the wellness and experience trends", "Health is new wealth" and "Wellbeing driven by millennials" (as discussed by Euromonitor, 2017). More and more people are motived by increased awareness regarding a healthy lifestyle, more leisure time, efficient supply chains and increased purchasing power (rise of global spending on luxury goods and healh and fitness), and are willing to purchase all kind of athleisure products including sports footwear. Moreover, Euromonitor (2017) states that athleisure is still going strong and will begin to evolve into a more sophisticated trend, influencing multiple categories and industries. Therefore, sports footwear products with usage for other purposes (i.e athleisure) are a fast-growing trend that will make a significant impact, not only in growing numbers, but also through multiplier effects on complementary industries. Consequently, the athletic footwear market is expected to witness significant growth due to rising disposable income, increasing awareness about healthy lifestyle, demand for comfortable and innovative footwear, and the growing e-commerce retail market (Grand View Reserarch, 2013).

Internet purchase of sports footwear has potential and space for significant increase as well. Namely, market trends analysis and estimations show that the world market for sports footwear will grow both in traditional and in digital channels (see more details in Knezevic et al., 2017). Purchases of sports footwear are expected to increase accordingly in both sales channels. Because of the present and future role and significance of e-retail for purchase of footwear, it is essential to carry out primary research for specific product types in order to better understand consumer preferences for this particular commodity in different age groups.

Although consumer behavior varies significantly depending on the type of product being purchased, there are some studies dealing with apparel or shoes in classical sales channels (Rachulan et al., 2015; Rocha et al., 2005; Seock & Salus, 2008; Moschis et al., 2011). Hovewer, there is a lack of research ex-

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plaining consumer behavior and differences among various consumer groups within online sales channels for sports footwear particularly. In addition, within the current e-commerce literature particular product groups are not sufficiently addressed nor explored. Therefore, the purpose of the paper is to fill in this gap and to explore e-commerce benefits and obstacles perceived by consumers, focusing on examination of differences in attitudes between consumer generations for a particular group of products that shows growing market trends, i.e. sports footwear.

This paper is divided into two parts. The first part gives an overview of literature in the field of electronic commerce (with an emphasis on its advantages and disadvantages from the consumers' point of view) and an overview of the literature in the field of age-related consumer research. The second part of the paper gives the results of the primary research conducted by a questionnaire method applied to two groups of consumers (a) younger consumers (18-39 years) and (b) middle-aged consumers (40-59 years). The results obtained relative to electronic commerce within the area of sports footwear will be compared between these two age groups. Furthermore, statistically significant differences between consumers' groups in perceiving the advantages and disadvantages of e-commerce for this specific product type will be determined.

LITERATURE REVIEW

E-Commerce Definition and E-Commerce Acceptance in Croatia

Different sources give different definitions of electronic commerce that sometimes vary significantly. Laundon & Traver (2015, p. 49) define e-commerce as "the use of the Internet, the World Wide Web, and mobile applications to transact business. More formally, digitally enabled commercial transactions between and among organizations and individuals". Panian (2000) defines electronic commerce as a "process of buying, selling or exchanging products, services or information through a publicly available computer network, the Internet, which offers a great possibility to decrease costs and shorten transaction time." Chaffey (2014, p. 12) claims that e-commerce is "all electronically mediated information exchanges between an organization and its external stakeholders".

Electronic commerce can be defined in a narrower and a wider sense. In the narrow sense, e-commerce represents the digital conduct of the purchase and sales process and the associated transfer of products, services, information and money through computer networks (including the Internet). Some authors also include all sales promotion activities supported by computer networks before and after purchasing, while others point out that individuals, but also private and public organizations can participate in sales transactions. However, accepting Internet technologies and introducing electronic commerce is an inexpensive way of doing business that enables small and medium-sized businesses to compete with multinational companies on the global market (Delić & Knežević, 2012).

Srića & Müller (2001) illustrate e-commerce and e-business as an iceberg where on the top, easily observable part is e-commerce in the narrower sense. That means utilization of digital platforms to sell goods and services to consumers. Under the surface, the larger part of the iceberg depicts all other forms of e-business or internal digital processes supporting various business activities. The hidden part of the iceberg digitally interfaces a certain company towards various customers (both industrial buyers and final consumers), suppliers, government institutions, banks and insurance companies, etc. Turban et al. (2015, p. 7) claim that some authors do not make a distinction between the terms e-commerce and

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e-business. E-commerce, in wider sense, comprises commercial activities and activities that support the sales process, but also e-learning, online cooperation and other digital business activities.

If we discuss forms of e-commerce, we distinguish pure e-commerce and partial e-commerce. (Segetlija et al., 2011, pp. 453). Pure e-commerce requires all digital dimensions to be achieved: the product has to be digital, the sales process has to be digital, as well as payment and delivery. Therefore, examples of the pure e-commerce are online shops for digital music and digital videos, downloadable computer games or applications, electronic books, etc. If one of those dimensions is not digital (product, sales process, payment or distribution), we are in the field of partial e-commerce. As examples of partial e-commerce, we can outline online bookshops that deliver physical books to their customers, online purchasing of apparel and shoes, online travel reservations, etc. In these examples, a part of sales process is done online, i.e. in the virtual world, while goods and services are delivered in the real, i.e. physical, nondigital world.

Panian (2002, pp. 60-61) outlines socially positive and socially negative implications of e-commerce. Positive implications are: quick data access, costless document transformation, openness of information space, the possibility to easily create datasets and efficient data analysis, improved pre-shopping data analysis of products and services, quicker exchange of knowledge and skills utilization, improved collaboration and accessible expertize. On the other hand, socially negative implications of e-commerce are in correlation with the level of risk from technology misusage. Risks of e-commerce according to Panian (2002, p. 61) are: questionable data safety and security, exposed data privacy, endangered personal privacy, lack of control in commercial transactions (both at company and government levels), and jeopardized national interests in conditions of rapidly increasing international exchange.

The data for electronic commerce at the company level, presented by the Croatian Ministry of Economy (2017), show that e-commerce in Croatia generates 44 billion EUR in segment GDP from foreign companies, which is 10.295 EUR per capita. Moreover, 18% of the total retail sales in Croatia is Internet shopping (online spending is amounted to EUR 401 million). The Croatian Ministry of Economy (2017) states that the largest share of sales through the Internet is achieved in the category of "accommodation and preparation and serving of food" (48%). The ICT sector comprises the highest percentage of Internet sales, where 66% of companies acquire needed goods and services via online channels.

As far as the use of the Internet is concerned, 91% of Croatian citizens use the Internet to collect information on products and services, 91% for reading newspapers and magazines, 80% for watching video content like YouTube, 79% for using electronic mail, 73% for collecting health information, 69% for using social networks, etc. (Croatian Bureau of Statistics, 2016).

According to Babic et al. (2011), in 2010 the B2C segment in Croatia accounted for around 13% of total electronic commerce, while the remaining 87% is trading among companies (B2B) segment. In addition, according to data by the Croatian Ministry of Economic (2017), the average spending per e-customer within 6 months in Croatia is 227 EUR. The report of the Croatian Bureau of Statistics (2016) emphasizes the increase in online purchases. In 2016, this indicator reached 33% of the population. Respondents within the aforementioned study mostly bought clothing and sports equipment, (57% of respondents), household necessities (34%), tickets for events (31%), electronic equipment (29%), and computer components (25% of respondents).

E-Commerce Advantages

If we discuss advantages of e-commerce from the consumer perspective, Turban et al. (2010, p. 77) state the following advantages:

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- Ubiquity – possibility to shop anytime and anywhere
- More products and services – enlarged assortments (more retailers, more products more styles available)
- Customization of products and services
- Cheaper products and services – improved possibility of price comparison
- Instant delivery – digital products can be downloaded immediately upon payment
- Information availability – easy finding of needed product/service with exhaustive information available online
- Convenient auction participation
- Sometimes there are no taxes
- Possibility of telecommuting – possibility to study and work at home
- Electronic socialization – socialization in online communities at home
- Finding of unique products – using online auctions to search collectible products.

Laundon & Traver (2015, p. 375) claim that important drivers of online shopping are price, convenience (shopping from home), the ability to shop 24/7, increased variety of available products, improved comparability of products and offers, etc.

Some studies empirically test and explain consumer perception of e-commerce benefits. Dholakia & Uusitalo (2002) propose that online shopping and traditional shopping are clearly differentiated in terms of perceived shopping benefits. Nikolaeva (2006) proposes a model of e-commerce adoption by retailers that includes determinant factors in three areas: (1) perceived benefits, (2) organizational readiness and (3) external influences.

Bonera (2011) found that the perception of the usefulness and emotional commitment regarding online shopping platforms have to be added to the already mentioned utilitarian motives of e-commerce usage. Furthermore, perceived security of online shopping also plays an important role in decision making to shop or not to shop online. Pilik et al. (2017) suggest that the key driver for customers in the Czech Republic is the price of merchandize, while convenience is more important for consumers who prefer brick-and-mortar stores, and still shop online irregularly. Bong (2017) analyzed users of e-commerce and non-users of e-commerce and showed that they significantly differ in purchasing tendency, information channels used and attitudes on future online shopping orientation.

Strugar et al. (2011) explain perceptions of students regarding e-commerce advantages compared to traditional stores. They found that for students the most important advantage is the availability of goods and services that are not offered at a given market. Then comes easier comparability of prices and product characteristics, while the possibility to shop abroad without travel expenses is ranked as the third benefit of e-commerce.

Parker & Wang (2016) provide insight into m-commerce (as a newest form of e-commerce) within fashion retailing from the aspect of shopping m-application engagement. They claim that utilitarian motivators to shop online via m-applications are ranked in the following order of importance: efficiency, convenience, personalized service, convenient operation processes. Moreover, findings by Kovačević et al. (2017) indicate that increasing use of mobile services is bringing new challenges, including making digital content available everywhere, always, and in real time. This challenge is increasing in the context of social media as well (Roblek et al., 2013). Zhang et al. (2017) explored the impact of online reviews on consumer behavior and concluded that it is a new form of word-of-mouth marketing channel that is very effective for niche products and especially effective for experienced online consumers.

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Individualization of consumer approach is one more benefit of e-commerce. The trend of individualization is observable when a consumer switches from mass products to fully personalized products. Large sports footwear producers such as Nike, Adidas and Reebok have recognized this trend and offered the possibility of product customization. By using digital platforms and applications, consumers can easily design their own, individualized sport shoes without a large difference in price compared to the serial product. This opportunity is added value in consumer-producer relations. For example, Nike offers this possibility via the NikeID web application, through which consumers can chose a generic sneaker model and customize colors, signs and other design features (see Nike web, 2017).

E-Commerce Obstacles

We have to emphasize some disadvantages of or obstacles to e-commerce both for companies and for consumers. Spremić (2004, p. 120) outlines following disadvantages and risks of e-commerce:

- Security of operation and running of business over the Internet is endangered
- Exposure to the risk of misusage
- Insufficient or inadequate technological infrastructure
- Underdeveloped software support
- Technically demanding transition from the existing mode of operation to electronic mode
- Costs of development and implementation of electronic business
- Privacy issues and copyright protection issues
- Lack of trust in virtual business environment
- Unavailability of experts and knowledge
- Insufficient and underdeveloped legal framework
- Other shortcomings and problems

Security and privacy are two factors related to customer trust and they are in direct connection with online threats and online frauds. Joines et al. (2003) discuss motivators for web use that directly influence the e-commerce activities of consumers and claims that transactional privacy concerns are negatively related to the percentage of time spent on product searches and online shopping. In addition, they isolated three groups of positive e-commerce motivators: information availability, interactivity and socialization. Chellappa and Pavlou (2002) and Suh & Han (2014) show a significant correlation between perceived information security and trust in e-commerce transactions. Kim et al. (2008) strongly claim that Internet consumers' trust has a strong impact on online purchasing decisions.

Smith (2004) is recommending companies to strive to apply the latest safety and privacy policies and technologies to ensure a carefree shopping experience to their customers, due to increasing cybercriminal activities, the concerns of consumers regarding privacy and increased security over time. This topic is addressed in Henari & Mahboob (2008) who emphasize the insecurity of consumers in regulation level and privacy issues when sharing information online.

Even though there are increasing investments in data protection and improved security, and despite the fact that legal framework is set up in the field of consumer protection in the digital environment, a significant number of consumers still feel concerned when sharing their credit card number or personal information online.

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Many other factors, such as honesty and reliability, are explored in research studies as well (see Mandić, 2009). Strugar et al. (2011) based on primary research rank the main issues of e-commerce compared to classical stores. According to this study, the three mostly observed disadvantages are:

1. Complicated return policy
2. An absence of physical contact with products
3. Questionable trustworthiness of information in online stores

Šimičević et al. (2013) state that trust is a factor that is significantly more important to the adoption of e-commerce and it is related with perceived barriers to online purchasing, such as difficult information search, more expensive purchasing, long delivery times, problems of home delivery, concern about personal and credit card data, etc. In addition, Hamidi & Moradi (2017) suggest that on time and correct electronic seller's responses affect customer loyalty positively.

Petković et al. (2016) examined privacy and security issues in mobile phone commerce. According to this research, the five most disturbing issues and fears from the perspective of examinees are: (1) underdeveloped and not fully explained return policies, (2) too many advertising messages via smartphones, (3) too many unwanted requests within mobile applications (surveys, personal data etc.), (4) fear of personal information misusage, and (5) fear that the legal framework concerning privacy and consumer security protection is not developed enough.

Sinha & Singh (2017) claim that consumers' purchase intentions are determined by their attitude towards online purchases, based on both perceived benefits (hedonic benefit, convenience benefit, economic benefit and variety) and perceived risks (product risk and financial risk).

An Overview of the Age-Related Research on Consumer Behavior

There are numerous studies examining age-related differences and generation gaps among consumers for various groups of products and various sales channels, especially sales channels related to intensive technological usage.

Meneely et al. (2009) show how consumers change their retail behavior when getting older. Based on empirical findings they suggest that it is inevitable that retailers take into account age when differentiating consumer groups in order to adjust their business approach to the targeted market. In addition, Aron et al. (2007) found that older consumers are more critical when it comes towards retailers and they tend to discuss problems more often than younger consumers do, but that they are also telling more people their concerns about the retailing company and/or products bought. Age differences in retailing behavior were proven by Seok & Salus (2008) who explored how shopping behavior and store evaluation criteria differ among consumer age groups in apparel retailing. Rocha et al. (2005) discuss different requirements for clothing and fashion products based on age and gender, and support the influence of age on consumer behavior in apparel retailing. Litrell et al. (2005) give a detailed explanation of generation differences, claiming that consumers from the Baby Boomer and Swing generations pay more attention to comfort, value and quality of apparel together with greater preference towards authentic and local products than Generation X consumers do. In addition, Eastman & Liu (2012) focus on status consumption and suggest that variance in status consumption is most influenced by age or generation cohort of consumer among all demographic variables. Moreover, the results of Moschis et al. (2011) show that older consumers differ from younger consumers in the field of apparel and footwear and that there are certain differences

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according to age within the mature consumer group. Price reductions and special sales are drivers of brand selection in the mature consumer group, while ease of returning products and frequency of items on sale are drivers of department store loyalty (see more details in Moschis et al., 2011).

Age-related differences are explored in the sportswear group of products as well. For instance, Rahulan et al. (2015) compared the Baby Boomer generation with generation Y in compression sportswear and came to the conclusion that consumers in Generation Y are more inquisitive and more focused on technical information, while consumers in the Baby Boomer Generation are more confident and quicker in making purchase decisions.

Technology implementation in relation to generational gaps is an emerging scientific topic. Even though the literature is scarce, we will mention several studies addressing this topic.

Harris et al. (2016) investigated attitudes towards new technologies in the banking sector. Their results suggest that older consumers perceive greater value in traditional banking and that, on the other hand, younger consumers are more open to the newest technologies. Dean (2008) showed that adoption of self-service technologies in retail stores and showed that the adoption rate is lower in the older consumer generation because they have less confidence in technology and they expressed greater concerns regarding missing human interaction especially when it comes to payment information sharing at checkout. Furthermore, Malik et al. (2016) proved that older age groups are less active in sharing photos online and they have a lower trust level in social networks as tools for information sharing. In both age groups, users expressed consciousness and concern about privacy, however, younger consumers in the study of Malik et al. (2016) showed greater usage of privacy-protection than older consumers did.

Sorce et al. (2005) empirically proved age-related differences among younger and older online shoppers exist for many product categories. Leppel & McCloskey (2011) compared three consumer age groups and came to the following conclusions: (1) consumers in older consumer groups have a greater concern about security, (2) consumers in older groups are more frustrated when searching for product information online, (3) consumers in the oldest group rarely make Internet purchases, but use the Internet as a source of product information. In addition, Leppel and McCloskey (2011) explored significant differences between consumer age groups regarding product categories. For instance, elderly shoppers use Internet to obtain information and to purchase medical supplies more often than younger shoppers do. The same finding is observed for food products.

Nalbantis et al. (2017) claim that purchase channel choice for sports merchandise is significantly affected by sociodemographic attributes such as gender, education, income, and place of residence. In addition, recent online shopping behavior in various countries (Pilik et al., 2017; Kuoppamaki et al., 2017) confirms that consumer online behavior depends on the age or generation of shopper. Moreover, the results in the aforementioned studies suggest that mobile-based online shopping is best predicted by age and as age grows shoppers pay more attention to the convenience of shopping.

Hovewer, there is a scarcity of research focusing on the particular product and consumer generation gap when implementing new technologies in retail channels. In this paper, due to the previously mentioned increase of the sports footwear market and the fact that e-commerce is being recognized as an important retail channel, we will empirically focus on e-commerce as a retail channel for this particular group of products. In the empirical research, we will focus on the perception of e-commerce benefits and risks. Moreover, as there is a lack of studies focusing on particular product groups within e-commerce, this primary research will fill the gap within existing literature in retailing, category management, e-commerce and sports management, while providing information on consumer perceptions about sports footwear both for professional and recreational usage. In addition, we will focus on the consumer generation gap

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in order to prove that it can be observed within this product category as it was previously observed for medical supplies, food, apparel, etc.

In the paper, four hypotheses will be tested and they are set up and adjusted to the particular product group based upon the analyzed literature on the generation divide in e-commerce (Rahulan et al., 2015; Harris et al., 2016; Dean, 2008; Malik et al., 2016; Sorce et al., 2005; Leppel & McCloskey, 2011):

- **H1:** Younger consumers have a more positive attitude towards advantages of e-commerce application in sport footwear shopping.
- **H2:** Older consumers express a higher degree of concern towards obstacles of e-commerce application in sports footwear shopping.
- **H3:** Younger consumers use the Internet as a source of purchasing information when buying sports footwear more often than middle-aged consumers do.
- **H4:** Younger consumers express more positive attitudes towards future use of e-commerce in sports footwear purchasing than middle-aged consumers do.

THE EMPIRICAL RESEARCH RESULTS ON SPORT FOOTWEAR ONLINE SHOPPING

Research Methodology and Sample

The research was conducted during the first half of May, 2017, and included two age groups: the younger population (18-39 years old) and the middle-aged population (40-59 years old). There were 202 respondents to this study, of which 110 respondents were of the younger age group and 92 respondents were of the middle-aged population. Of the 110 respondents of the younger population, 66 were female (60%) and 44 were male (40%). In the middle-aged population there were 92 respondents, 49 of whom were female (53.3%) and 43 were male (46.7%).

The primary survey was conducted by using the survey questionnaire method and was carried out using Google Forms, by social network sharing, and by emailing and filling in a survey in print format in order to cover a relevant number of respondents in both age groups. The questions of the closed type of multiple choice were used, and questions in the form of the Likert scale where several statements were pointed out and respondents were required to express the degree of agreement or importance, with 1 indicated a total disagreement or irrelevance, while 5 indicated total agreement or importance of the examined claim.

The survey questionnaire included 17 questions, of which the first 5 questions related to socio-demographic features, followed by 4 questions related to sports activities and the frequency and location of purchasing of sports footwear. In addition, the following four questions explored the importance of some advantages, such as buying in traditional stores and via the Internet, then question obstacles to online shopping, and the general preferences and priorities when purchasing sports footwear. The last four questions were about the Internet as a new channel of consumer communication and new shopping channel.

In this paper, we will focus on the results obtained through questions related to the online purchase of sports footwear; questions designed based on the literature mentioned in the previous chapter. For demographic variables, we combined and adjusted questions from Chen et. al (2015) and Strugar et al. (2011). Part of the questionnaire on e-commerce benefits is designed according to Turban et al. (2010,

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p. 77), Laundon & Traver (2015, p. 375), Dholakia & Uusitalo (2002), Nikolaeva (2006), Bonera (2011), Strugar et al. (2011), Parker & Wang (2016). While part of the questionnaire regarding e-commerce obstacles and risks is designed according to Joines et al. (2003), Chellappa and Pavlou (2002), Panian (2002, p. 61), Suh & Han (2014), Strugar et al. (2011), Šimičević et al. (2013), Petković et al. (2016). The initial set of questions is further adjusted according to characteristics of the specific product category (sports footwear).

Firstly, Table 1 shows socio-demographic characteristics for each age group of respondents. Out of 110 members of the younger respondents, 66 (60%) are female and 44 (40%) are male. Given the level of education, 48 (43.6%) of the respondents have a high level of education (bachelor degree), and 36 (32.7%) have a high school qualification. While 14 (12.7%) have a higher level of professional education, 10 (9.1%) hold a masters degree, only 1 respondent (0.9%) has a doctorate, and only 1 (0.9%) respondent completed only elementary school. Furthermore, 35 (31.8%) of the respondents of the younger age group stated that they were studying and working occasionally. The number of those who are full-time employees and those who only studied and did not work at all, is the same, namely 29 (26.4%). Subsequently, 11 (10%) of respondents are studying and working, while 6 (5.5%) are unemployed.

Table 1. Socio-demographic characteristics of the sample

Characteristic	Relative frequencies younger respondents (N = 110)	Relative frequencies middle-aged respondents (N = 92)
GENDER		
Male	40%	46.7%
Female	60%	53.3%
EDUCATION LEVEL		
Elementary school	0.9%	1.1%
High school	32.7%	52.2%
Professional degree	12.7%	13%
Bachelor degree	43.6%	27.2%
Master degree	9.1%	6.5%
PhD	0.9%	0%
EMPLOYMENT		
Employed	26.4%	94.6%
Fully employed with student status	10%	0%
Student that works occasionally	31.8%	1.1%
Non-working student	26.4%	0%
Unemployed	5.5%	4.3%

Note: * 1 EUR = 7.5 HRK (Source: Own research)

Of the 92 middle-aged subjects, 49 (53.3%) are female and 43 (46.7%) were male. With regard to the level of education, 48 (52.2%) of respondents have a secondary education (high school), while 25 (27.2%) have a bachelor degree. There are 12 (13%) with higher professional education, 6 (6.5%), and 1 (1.1%) of respondents have completed only elementary school while no one holds a doctorate. 87 (94.6%) of the

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middle age group respondents declared themselves as employed, then 4 (4.3%) as unemployed, while 1 (1.1%) said that he/she studies and occasionally works. Table 2 shows the results for sporting activities and the purchase of their sports shoes for each age group within the sample.

Table 2. Intensity of sports activity and general purchasing habits in the field of sports footwear within the sample

	Younger consumers	Middle-aged consumers	Chi-square (p-value)
Intensity of sport activity			
Professional	0.90%	0.00%	88.152 (<0.001)
Semi-professional	63.60%	2.20%	
Recreational	7.30%	21.70%	
Inactive	28.20%	76.10%	
Frequency of footwear shopping			
Once a month	3.60%	0.00%	50.617 (< 0.001)
Several times a year	44.50%	5.40%	
Once a year	25.50%	28.30%	
Less than once a year	26.40%	66.30%	
Annual spending on own sport footwear			
Less than 500 HRK	52.70%	79.30%	20.013 (< 0.001)
500-1000 HRK	33.60%	19.60%	
More than 1000 HRK	13.70%	1.10%	

Note: 1 EUR = 7.5 HRK
Source: Own research

As shown in Table 2, out of 110 respondents belonging to the younger population, 70 (63.6%) are engaged in sports recreation, 31 (28.2%) do not deal with sports at all, 8 (7.3%) are engaged in sports semi-professionally, while only 1 person (0.9% sample) professionally deals with sports. Out of 92 respondents of the middle age population, 70 (76.1%) do not deal with sports at all, 20 (21.7%) are engaged in sports recreationally, 2 (2.2%) are engaged in sport semi-professionally, and no one is a professional athlete.

The largest proportion of younger respondents (44.5%), state that they buy sports footwear several times a year (see Table 2), which is logical as it is a younger population that generally has a higher affinity for frequent buying and changing existing clothing and shoes. Then, 26.4% buy sports footwear less than once a year, 25.5% buy once a year, while 3.6% of the respondents buy sports shoes on a monthly basis. On the other hand, middle-aged respondents mostly buy sports shoes less than once a year, 66.3% of them. Once per-year sports shoes are bought by 28.3%, while 5.4% buy them several times a year. It is obvious that this middle-aged group rarely buys sports footwear, partly because they are more concerned about it and probably are buying products of higher quality, and, therefore, they have a lower need for change due to endurance of the footwear. On the other hand, the reason could be their lower engagement in sports activities as shown in Table 2.

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It is evident that, at both age groups, most of the respondents spend up to 500 HRK per year on sports shoes (see Table 2), but in the middle-aged population, this is reflected in a considerably higher percentage. The main reason for this lies in one of the previous questions where it turned out that the number of sportsmen, whether recreational, semi-professional or professional, was considerably higher in the younger group than in the middle-aged group. As the chi-squared test indicates, described differences between observed consumer generation groups regarding the intensity of sports activity, frequency of footwear shopping and annual spending on sports footwear are statistically significant at $\alpha=0.05$ (all p-values are lower than α).

RESULTS AND DISCUSSION

Differences in Attitudes Towards E-Commerce Advantages

In Table 3 average grades and modal values regarding statements on e-commerce advantages are given for each consumer group. If e-commerce advantages are ranked according to average grades, the order of the most important advantages perceived by younger consumers is: (1) better choice of footwear than in physical stores (3.655), (2) easier and quicker collection of information about product (3.464), (3) possibility of buying at any time of day (3.436), (4) cheaper shopping than in stores (3.364) and (5) simplicity and speed of shopping (3.309). This finding slightly differs from previous research studies that isolate prices (Pilik er al, 2017) and price comparability (Strugar et. al, 2011) as the key e-commerce advantages. On the other hand, this supports Parker & Wang's (2016) findings on the importance of utilitarian motives when driving customers to online shopping.

If we turn to the middle-aged population, the difference in attitudes are obvious. We can conclude that all examined e-commerce advantages for purchasing sports footwear within this age group are irrelevant. The majority of middle-aged examinees express that each given statement on e-commerce advantage is completely irrelevant (in Table 3 see modal values for the middle-aged group).

Even though the difference between tested groups was obvious, we performed the chi-squared test and the Wilks' G2 test upon each statement. P-values of the performed test confirmed that attitudes towards e-commerce are dependent on the generation of the consumer (at significance level 0.05). Since all average grades and modal values are higher for younger consumers (see Table 3), we confirm the first hypothesis, i.e. we confirm that younger consumers have a more positive attitude towards the advantages of e-commerce application in sports footwear shopping.

Differences in Attitudes Regarding E-Commerce Obstacles

Table 4 outlines obstacles of e-commerce in the area of sports footwear purchasing. Both age groups show a relatively high level of awareness of the risks of e-commerce purchasing. In both consumer groups three main concerns regarding e-commerce of sports footwear are: (1) impossibility to try the product (younger consumers - average grade 4.273; middle-aged consumers – average grade 4.859), (2) complicated return process (young 3.882, middle-aged 4.848) and (3) fear of delivery of the wrong / damaged product (young 3.855, middle-aged 4.641). Those findings confirm previous studies by Strugar et al. (2017), Petkovic et al. (2011) and Sina & Singh (2017) who also discovered that perceived product risk is the main obstacle of e-commerce adoption and this risk is manifested in the absence of physical

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touch, damaged or wrongly dispatched products and complicated return process when product is not meeting the customer's expectations.

Table 3. Advantages of e-commerce for sport footwear purchasing

E-commerce advantages	Younger consumers		Middle-aged consumers		Chi-squared (p-value) Cramer's V	Wilks'G2 (p-value)
	Average grade	Modal value	Average grade	Modal value		
simplicity and speed of purchase	3.309	4 – important (38.2%)	1.500	1 – completely irrelevant (59.8%)	105.978 (< 0.0001) 0.724	124.012 (< 0.0001)
saving time and money for transportation to the store	2.973	3 – neutral (30.9%)	1.478	1 – completely irrelevant (58.7%)	89.299 (< 0.0001) 0.665	105.149 (< 0.0001)
saving time spent in shopping	3.018	4 – important (33.6%)	1.478	1 – completely irrelevant (58.7%)	92.587 (< 0.0001) 0.677	109.203 (< 0.0001)
better choice than in classic stores	3.655	4 – important (49.1%)	1.500	1 – completely irrelevant (59.8%)	119.880 (< 0.0001) 0.770	144.058 (< 0.0001)
ability to customize shoes	3.036	3 – neutral (30.0%)	1.478	1 – completely irrelevant (58.7%)	89.587 (< 0.0001) 0.666	105.541 (< 0.0001)
cheaper than classic shops	3.364	4 – important (42.7%)	1.478	1 – completely irrelevant (58.7%)	119.174 (< 0.0001) 0.768	141.222 (< 0.0001)
24/7 shopping	3.436	4 – important (40.0%)	1.544	1 – completely irrelevant (58.7%)	108.637 (< 0.0001) 0.733	124.111 (< 0.0001)
easier and quicker collection of information about product	3.464	4 – important (40.9%)	1.544	1 – completely irrelevant (58.7%)	114.300 (< 0.0001) 0.752	131.116 (< 0.0001)

Note: Likert 5 scale was used (1 – completely irrelevant, 5- completely relevant) (Source: Own research)

From Table 4, it is obvious that for each given statement, middle-aged consumers express a higher level of agreement, but the relevance of this difference between populations is not as obvious as it was for statements on e-commerce advantages. Therefore, for each statement, the chi-test p-value is calculated and in Table 4 we can see that the p-value is lower than 0.05, therefore we conclude that the difference in attitudes between generation groups is statistically significant at level 0.05. Therefore, we can accept the second hypothesis that older consumers express higher degree of concern towards the obstacles of e-commerce application in sports footwear shopping.

Chellappa and Pavlou (2002), Leppel & McCloskey (2011) and Suh & Han (2014) point out that there is a correlation between perceived information security and trust in e-commerce transactions, which, furthermore, has a strong impact on online purchasing decisions (Kim et al., 2008; Mandić, 2009, Šimičević et al. 2013). Therefore, based on our findings we can expect that the older population (which expresses more concern regarding e-commerce risks) is going to spend less money online and

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utilize e-commerce as a purchasing source at a lower level than the younger population. However, this claim has to be tested in detail in future research.

Differences Regarding ROBO Principle, Future E-Commerce Usage and the Possibility of Sport Footwear Customization

For modern shoppers, the Internet is a significant source of information prior to purchasing. Therefore, in the following question we wanted to examine the occurrence of the ROBO (research online, buy offline) or ROPO (research online, purchase offline) principle in both consumer groups. In Figure 1 relative frequencies are shown for both consumer groups.

Table 4. Obstacles of e-commerce for sport footwear purchasing

E-commerce obstacles	Younger consumers		Middle-aged consumers		Chi-squared (p-value) Cramer's V	Wilks'G2 (p-value)
	Average grade	Modal value	Average grade	Modal value		
fear of fraud	3.518	4 – relevant (34.5%)	3.935	4 – relevant (52.2%)	16.362 (= 0.0026) 0.724	17.805 (= 0.0013)
fear of privacy loss	3.300	4 – relevant (32.7%)	4.087	4 – relevant (40.2%)	23.292 (= 0.0001) 0.285	25.549 (< 0.0001)
suspicion of transaction security	3.482	4 – relevant (36.4%)	4.076	4 – relevant (40.2%)	14.728 (= 0.0053) 0.270	16.068 (= 0.0029)
fear of delivery of the wrong / damaged product	3.855	4 – relevant (46.4%)	4.641	5 – completely relevant (68.5%)	38.138 (< 0.0001) 0.435	42.061 (< 0.0001)
e-commerce delivery charges	3.318	4 – relevant (36.4%)	4.283	5 – completely relevant (45.7%)	42.915 (< 0.0001) 0.461	46.473 (< 0.0001)
misunderstanding of purchase conditions	3.091	4 – relevant (27.3%)	4.196	5 – completely relevant (45.7%)	42.256 (< 0.0001) 0.479	50.960 (< 0.0001)
lack of knowledge about the online shopping process	3.009	4 – relevant (26.4%)	4.250	5 – completely relevant (52.2%)	49.116 (<0.0001) 0.493	54.066 (<0.0001)
general lack of trust in e-commerce	3.291	4 – relevant (32.7%)	4.359	5 – completely relevant (48.9%)	44.822 (< 0.0266) 0.233	39.381 (< 0.0236)
inability to consult with sales staff	2.609	2 –irrelevant (26.4%)	2.663	2 – irrelevant (40.2%)	10.996 (= 0.0026) 0.724	11.275 (= 0.0013)
impossibility to try the product	4.273	5 – completely relevant (58.2%)	4.859	5 – completely relevant (87.0%)	23.124 (<0.0001) 0.338	28.120 (< 0.0001)
complicated return process	3.882	5 – completely relevant (35.5%)	4.848	5 – completely relevant (84.8%)	57.438 (< 0.0001) 0.533	70.496 (<0.0001)

Note: Likert 5 scale was used (1 – completely irrelevant, 5- completely relevant) (Source: Own research)

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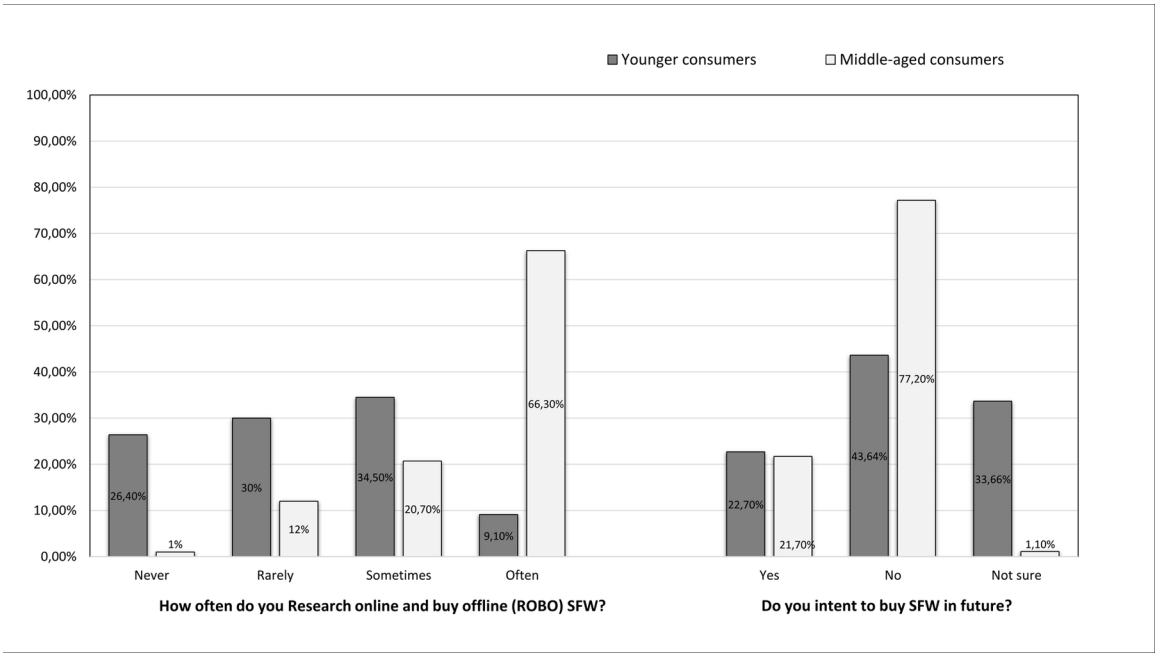
When it comes to gathering information about sports footwear online before purchasing in traditional stores, 34.5% of younger respondents reported that they behave in this way rarely. 30% do ROBO occasionally, 26.4% often collect information on the Internet, while those who never research online prior to purchasing sports footwear are in the minority (only 9.1%). In the middle-aged group, 2/3 of respondents never collect information about sports footwear on the Internet before purchasing in stores (66.3%), 20.7% do it rarely, 12% occasionally, and only 1.1% often do research online before buying sports footwear in a classical store (see ROBO columns at Figure 1).

Figure 1. Research online and buying offline (ROBO) and future intention to buy online for sport footwear (SFW) (Source: Own research)



Based on everything aforementioned we can accept the third hypothesis, which states that younger consumers use the Internet as a source of purchasing information when buying sports footwear more often than middle-aged consumers do.

In addition, we asked both consumer groups about their future intention to use e-commerce as a channel for sports footwear purchasing. The uncertainty regarding the purchase of sports footwear over the Internet in the future was shown by 43.6% respondents of the younger population, 33.6% of them believe that they will buy sports footwear online in the future, while 27.7% of respondents believe that they will never purchase this type of products online (see Figure 1). On the other hand, in the middle-aged group, a majority of respondents do not intend to buy sports shoes online in the future (77.2%), 21.7% claims that they are not sure about that, while only 1.1% expressed the intention to buy sports footwear online.

Moreover, as was discussed in the previous chapter, some producers are giving consumers the opportunity to create their own sports shoes online. In our research in two final questions, we asked respondents about their awareness of this possibility and their intention to use this possibility in the future. In Table

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5 relative frequencies are shown regarding these two questions. The younger population express a high level of awareness about the possibility of sports footwear customization online (65.5% respondents stated that they have heard of this possibility), while in the middle-aged group there is a majority that are not aware of this possibility (81.50%). A majority of young consumers have no experience, but plan to use this possibility in the future (52.70%), but even in this population the proportion of those who do not plan to use this possibility is rather high (44.5%). On the other hand, in the group of middle-aged consumers 96.7% respondents have no experience and do no plan to use this option in the future.

Table 5. Customization and online self-design of sport footwear

	Younger consumers	**Middle-aged consumers**
Awareness		
Yes	65.50%	18.50%
No	34.50%	81.50%
Use and future intention to use		
Some experience	2.80%	0.00%
No experience, but I plan to use this option in the future	52.70%	3.30%
No experience, not planning to use it in the future	44.50%	96.70%

(Source: Own research)

Based on everything aforementioned and the data presented in Figure 1 and Table 5, we confirm the fourth hypothesis that younger consumers express more positive attitudes towards future use of e-commerce in sports footwear purchasing than middle-aged consumers do. This finding supports our previously stated prediction that higher concern of the older population towards e-commerce risk can reflect their future utilization of e-commerce. Furthermore, this is in line with finding of Bong (2017) who claims that experienced e-commerce users (in our case, the younger population) differs in purchasing tendency to unexperienced e-commerce users (in our case, the older population).

Moreover, findings on age-related differences reflect broad knowledge gathered in previous studies (Dholakia and Uusitalo, 2002 and Joines et al., 2003; Sorce et al., 2005; Leppel & McCloskey, 2011; Nalbantis et al., 2017 Pilik et al., 2017, Kuoppamaki et al., 2017;) by focusing on a specific type of products, i.e. sports footwear. This product category was not investigated in previous research studies, so the presented findings are a unique contribution to understanding age-related issues in specialized retailing via online channels.

CONCLUSION

The sports footwear market shows growing trends both in traditional and in digital sales channels. In this paper, we focused on electronic commerce of sports footwear as a particular product category. Based on the critical literature review, we especially examined the generation gap in perception of benefits and risks of electronic commerce of sports footwear. Based on the research conducted on two age groups, younger consumers (aged 18-39) and middle-aged consumers (40-59 years old), we empirically proved

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all research hypotheses and conclude that younger consumers have more a positive attitude towards advantages of e-commerce application in sports footwear shopping. In addition, older consumers express a higher degree of concern towards obstacles of e-commerce application in sports footwear shopping. Moreover, younger consumers use the Internet as a source of purchasing information when buying sports footwear more often than middle-aged consumers do. Finally, younger consumers express more positive attitudes towards future use of e-commerce in sports footwear purchasing than middle-aged consumers do.

Information gathering about sports footwear over the Internet before shopping occurs much more frequently among younger people, as well as the intention to buy sports footwear online over the Internet. According to the research, the majority of young people knew about the possibility of customization of sports shoes, while almost half of them state that they intend to use this possibility in the future. In the middle-aged consumer group there is a rather small proportion of those who have heard about the option of sports shoes customization.

The contributions of our study are multiple. As stated previously, there are many studies on general e-commerce and studies confirming existing age differences in consumer behavior, but there is a notable scarcity of studies examining age-differences in consumer behavior in electronic commerce. Moreover, there are research studies that emphasize changing consumer behavior regarding the type of products being purchased both in classical and in online channels. However, there is no study explaining the challenges, benefits and obstacles of e-commerce of sports footwear as a specific product group. These findings are a valuable empirical contribution both to understanding what are perceived advantages and what are the main fears observed by consumers when dealing with sports footwear. In addition, these findings empirically confirm that there is an existing generation gap that has to be taken into account when planning the strategy of e-commerce usage for this particular product group. It gives insight into what elements a certain company has to pay attention to when targeting a certain consumer generation.

The main limitations of this study are (1) a rather small sample and (2) the narrow geographical area of the survey conducted. Therefore, in the near future the research should be conducted on a larger number of examinees and in a wider geographic area. In addition, we did not analyze attitudes by gender nor by sports footwear purpose. Future studies could explore differences among males and females, but also differences among those who use sports footwear professionally or those who use it only for recreational purposes.

REFERENCES

Aron, D., Judson, K., Aurand, T., & Geoffrey Gordon, G. (2007). Consumer Grudgeholding: Does Age Make a Difference? *American Journal of Business*, *22*(1), 45–58. doi:10.1108/19355181200700004

Babić, R., Krajnović, A., & Radman Peša, A. (2011). Dosezi elektroničke trgovine u Hrvatskoj i svijetu. *Oeconomica Jadertina*, *1*(2), 48–68.

Bonera, M. (2011). The propensity of e-commerce usage: The influencing variables. *Management Research Review*, *34*(7), 821–837. doi:10.1108/01409171111146706

Bong, M. (2017). A Study on the Effects of Information Channels, Purchasing Tendency, and Digital Divide on E-Commerce Usage. *Journal of Media Economics & Culture*, *15*(4), 7–48. doi:10.21328/JMEC.2017.11.15.4.7

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Chaffey, D. (2014). *Digital business and e-commerce management*. Boston: Pearson Ecucation.

Chellappa, R. C., & Pavlou, P. A. (2002). Perceived information security, financial liability and consumer trust in electronic commerce transactions. *Logistics Information Management*, *15*(5/6), 358–368. doi:10.1108/09576050210447046

Chen, Y. K., Chen, Y. J., Chiu, F. R., & Wang, C. Y. (2015). Towards Successful Cloud Ordering Service. *Business Systems Research Journal*, *6*(1), 1–21. doi:10.1515/bsrj-2015-0001

Croatian Bureau of Statistics. (2016). *First Release No.2.3.2.: Usage of information and communication technologies (ICT) in households and by individuals*. Retrieved from http://www.dzs.hr/Hrv_Eng/publication/2016/02-03-02_01_2016.htm

Croatian Ministry of Economy. (2017, December 18). *E-commerce in Croatia*. Retrieved from https://www.mingo.hr/page/kategorija/e-trgovina

Dean, D. H. (2008). Shopper age and the use of self-service technologies. *Managing Service Quality*, *18*(3), 225–238. doi:10.1108/09604520810871856

Delić, M., & Knežević, B. (2012). Aspects and Principles of Sustainability in Electronic Commerce. In N. Knego, S. Renko, & B. Knežević (Eds.), *Trade Perspectives 2012: Trade in the Context of Sustainable Development* (pp. 315–327). Zagreb, Croatia: University of Zagreb, Faculty of Economics and Business.

Dholakia, R. R., & Uusitalo, O. (2002). Switching to electronic stores: Consumer characteristics and the perception of shopping benefits. *International Journal of Retail & Distribution Management*, *30*(10), 459–469. doi:10.1108/09590550210445335

Eastman, J. K., & Liu, J. (2012). The impact of generational cohorts on status consumption: An exploratory look at generational cohort and demographics on status consumption. *Journal of Consumer Marketing*, *29*(2), 93–102. doi:10.1108/07363761211206348

Turban, E., King, D., Lee, J., & Viehland, D. (2010). Electronic commerce: A managerial perspective. Boston, USA: Pearson.

Turban, E., King, D., Lee, J. K., Liang, T. P., & Turban, D. C. (2015). *Electronic commerce: A managerial perspective*. Cham, Switzerland: Springer. doi:10.1007/978-3-319-10091-3

Euromonitor (2014). *Global Footwear Market Trends*, Developments and Prospects [Presentation, slide 4]. Retrieved from https://www.slideshare.net/Euromonitor/global-footwear-market-trends-developments-and-prospects

Euromonitor (2017). *Luxury and Wellness Redefine the Future of Fashion*. Retrieved from https://blog.euromonitor.com/2017/02/luxury-and-wellness-redefine-the-future-of-fashion.html

Global Market Insights. (2018). *Athletic Footwear Market size*. Retrieved from https://www.gminsights.com/industry-analysis/athletic-footwear-market

Grand View Research. (2013). *Athletic Footwear Market Analysis, Market Size, Application Analysis, Regional Outlook, Competitive Strategies And Forecasts, 2016 To 2024*. Retrieved from https://www.grandviewresearch.com/industry-analysis/athletic-footwear-market

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hamidi, H., & Moradi, S. (2017). Analysis of Consideration of Security Parameters by Vendors on Trust and Customer Satisfaction in E-Commerce. *Journal of Global Information Management*, *25*(4), 32–45. doi:10.4018/JGIM.2017100103

Harris, M., Cox, K. C., Findley Musgrove, C., & Ernstberger, K. W. (2016). Consumer preferences for banking technologies by age groups. *International Journal of Bank Marketing*, *34*(4), 587–602. doi:10.1108/IJBM-04-2015-0056

Henari, T. F., & Mahboob, R. (2008). E-commerce in Bahrain: The non-technical limitations. *Education, Business and Society*, *1*(3), 213–220. doi:10.1108/17537980810909832

Joines, J. L., Scherer, C. W., & Scheufele, D. A. (2003). Exploring motivations for consumer Web use and their implications for e-commerce. *Journal of Consumer Marketing*, *20*(2), 90–108. doi:10.1108/07363760310464578

Kim, D. J., Ferrin, D. L., & Rao, R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, *44*(2), 544–564. doi:10.1016/j.dss.2007.07.001

Kovačević, I., Bach, M. P., & Jaković, B. (2017). Always-On Sport Content Multimedia Delivery Over Internet in Croatia. In *Always-On Enterprise Information Systems for Modern Organizations. Information Science Reference*. IGI Global.

Kuoppamaki, S. M., Taipale, S., & Wilska, T. A. (2017). The use of mobile technology for online shopping and entertainment among older adults in Finland. *Telematics and Informatics*, *34*(4), 110–117. doi:10.1016/j.tele.2017.01.005

Laudon, K., & Traver, C. (2015). *E-commerce: business, technology, society*. Boston, USA: Pearson.

Leppel, K., & McCloskey, D. (2011). A cross-generational examination of electronic commerce adoption. *Journal of Consumer Marketing*, *28*(4), 261–268. doi:10.1108/07363761111143150

Littrell, M. A., Ma, Y. J., & Halepete, J. (2005). Generation X, Baby Boomers, and Swing: Marketing fair trade apparel. *Journal of Fashion Marketing and Management*, *9*(4), 407–419. doi:10.1108/13612020510620786

Malik, A., Hiekkanen, K., & Nieminen, M. (2016). Privacy and trust in Facebook photo sharing: Age and gender differences. *Program*, *50*(4), 462–480. doi:10.1108/PROG-02-2016-0012

Mandić, M. (2009). Privacy and security in e-commerce. *Tržište - Market*, 21(2), 247-260.

Meneely, L., Burns, A., & Strugnell, C. (2009). Age associated changes in older consumers retail behaviour. *International Journal of Retail & Distribution Management*, *37*(12), 1041–1056. doi:10.1108/09590550911005010

Moschis, G., Ferguson, J., & Zhu, M. (2011). Mature consumers' selection of apparel and footwear brands and department stores. *International Journal of Retail & Distribution Management*, *39*(10), 785–801. doi:10.1108/09590551111162266

Nalbantis, G., Fahrner, M., & Pawlowski, T. (2017). The Demand for Licensed Merchandise in Sports—On the Purchase Channel Choice. *Journal of Sport Management*, *31*(5), 433–451. doi:10.1123/jsm.2016-0179

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Nike web (2017, December 15). NikeID application for shoe creation. Retrieved from http://www.nike.com/us/en_us/c/nikeid

Nikolaeva, R. (2006). E-commerce adoption in the retail sector: Empirical insights. *International Journal of Retail & Distribution Management*, *34*(4/5), 369–387. doi:10.1108/09590550610660288

Panian, Ž. (2000). *Elektroničko trgovanje*. Zagreb, Croatia: Sinergija.

Panian, Ž. (2002). *Izazovi elektroničkog poslovanja*. Zagreb, Croatia: Narodne novine.

Parker, C. J., & Wang, H. (2016). Examining hedonic and utilitarian motivations for m-commerce fashion retail app engagement. *Journal of Fashion Marketing and Management: An International Journal*, *20*(4), 487–506. doi:10.1108/JFMM-02-2016-0015

Petković, G., Stojković, D., & Knežević, B. (2016). Security and Privacy Issues in Shopping through Smartphones – Comparison of Shoppers in Croatia and Serbia. In N. Knego, S. Renko, & B. Knežević (Eds.), *Trade Perspectives 2016: Safety, security, privacy and loyalty* (pp. 122–134). Zagreb, Croatia: University of Zagreb, Faculty of Economics and Business.

Pilik, M., Jurickova, E., & Kwarteng, M. A. (2017). On-line shopping behaviour in the Czech Republic under the Digital Transformation of Economy. *Economic Annals-XXI*, *165*(5-6), 119–123.

Rahulan, M., Troynikov, O., Watson, C., Janta, M., & Senner, V. (2015). Consumer behavior of generational cohorts for compression sportswear. *Journal of Fashion Marketing and Management*, *19*(1), 87–104. doi:10.1108/JFMM-05-2013-0072

Roblek, V., Pejić Bach, M., Meško, M., & Bertoncelj, A. (2013). The impact of social media to value added in knowledge-based industries. *Kybernetes*, *42*(4), 554–568. doi:10.1108/K-01-2013-0014

Rocha, M. A. V., Hammond, L., & Hawkins, D. (2005). Age, gender and national factors in fashion consumption. *Journal of Fashion Marketing and Management*, *9*(4), 380–390. doi:10.1108/13612020510620768

Segetlija, Z., Knego, N., Knežević, B., & Dunković, D. (2011). *Ekonomika trgovine*. Zagreb, Croatia: Novi informator.

Seock, Y.-K., & Sauls, N. (2008). Hispanic consumers' shopping orientation and apparel retail store evaluation criteria: An analysis of age and gender differences. *Journal of Fashion Marketing and Management*, *12*(4), 469–486. doi:10.1108/13612020810906137

Šimičević, V., Jaković, B., & Ježovita, J. (2013). Perceived Barriers to E-commerce: Empirical evidence from EU countries. *Interdisciplinary Description of Complex Systems: INDECS*, *11*(1), 123–130. doi:10.7906/indecs.11.1.10

Sinha, P., & Singh, S. (2017). Comparing Risks and Benefits for Value Enhancement of Online Purchase. *Gadjah Mada International Journal of Business*, *19*(3), 307–326. doi:10.22146/gamaijb.10512

Smith, A. D. (2004). Cybercriminal impacts on online business and consumer confidence. *Online Information Review*, *28*(3), 224–234. doi:10.1108/14684520410543670

Sorce, P., Perotti, V., & Widrick, S. (2005). Attitude and age differences in online buying. *International Journal of Retail & Distribution Management*, *33*(2), 122–132. doi:10.1108/09590550510581458

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Spremić, M., (2004). *Menadžment i elektroničko poslovanje*. Zagreb, Croatia: Narodne novine.

Srića, V., & Müller, J. (2001). *Put k elektroničkom poslovanju*. Zagreb, Croatia: Sinergija.

Strugar, I., Knežević, B., & Jaković, B. (2011). Potencijali i problemi e-trgovine u studentskoj populaciji. *Zbornik Ekonomskog fakulteta u Zagrebu*, *9*(2), 155-173.

Suh, B., & Ingoo Han, I. (2003). The Impact of Customer Trust and Perception of Security Control on the Acceptance of Electronic Commerce. *International Journal of Electronic Commerce*, *7*(3), 135–161.

Zhang, M., Ding, S., & Bian, Y. (2017). The Online Reviews' Effects on Internet Consumer Behavior: An Exploratory Study. *Journal of Electronic Commerce in Organizations*, *15*(4), 83–94. doi:10.4018/JECO.2017100107

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Chapter 62
Consumer Shopping Orientations and Online Purchases of Rural Tourism Services

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ABSTRACT

The main goal of the chapter is to find out which consumer shopping orientations can be brought in connection to purchases of the services of rural tourism in online channel. Besides theoretical framework concerning rural tourism services and their relation to sustainable development of rural areas, as well as factors of online purchases, the chapter presents the results of primary research. The research is part of wider research conducted concerning online shopping behavior in Serbia. A total of 300 respondents participated. Convenience sampling was implemented. The results confirm that online sale of rural tourism services can be explained when considering consumer shopping orientations and that these orientations can be connected to demographic characteristics of consumers. Finally, managerial implications are considered.

INTRODUCTION

There can be identified a positive connection between development of rural tourism and sustainable development of rural areas. These consequences can be identified concerning all, economic, social and ecological issues. In order to promote future development of rural tourism services, it is needed to understand their consumers and be able to communicate the value to them appropriately.

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An opportunity for communication the value of rural tourism services as well as for completing the sale process concerning them is present in online channel. The number of different factors determines the success of this channel. A classification of them can be found in the literature (e.g. Chang, Cheung, & Lai, 2005) and characteristics of a supply and internet as a sale channel, consumer opinion concerning such purchases as well as their personal characteristics can be distinguished. Consumer shopping orientations can be listed among their personal characteristics.

Having all previously listed in mind, there are several objectives of this research:

Objective One: To define theoretical framework connecting rural tourism services, sustainable development, online purchases of those services and consumer shopping orientations.
Objective Two: To explore whether there can be identified the same consumer shopping orientations (recreational, experiential, convenience and economic) in research in Serbia as in research abroad.
Objective Three: To define the nature of correlation of each of consumer shopping orientation and online purchasing of rural tourism services.
Objective Four: To explore whether, which and to which extent consumer demographic characteristics influence the level of their shopping orientations.
Objective Five: To provide adequate managerial recommendations for providers of rural tourism services.

The knowledge regarding the topics can be used for increase of sale of services of rural tourism in domestic context of the authors (Republic of Serbia).

LITERATURE REVIEW

Sustainable development presents a widely discussed concept and can be explained in the modern conditions together with "environmental science" and "circular economy" as being important in finding solutions for a better environment (Sauvé, Bernard & Sloan, 2016). Hereby, the authors start from definition of sustainable development as: "meeting the needs of the present without compromising the ability of future generations to meet their own need" (p. 2) and stress ecological, social and economic goals within it.

When it comes to rural tourism, Lane and Kastenholz (2015) identify its evolution from sightseeing to a number of experiential activities. Rasoolimanesh et al. (2016) suggest that although tourism in general influences host communities economically, socially, and environmentally, there are differences between urban and rural tourism. Lane and Kastenholz (2015) also stress that a number of topics emerge regarding rural tourism (governance, leadership, networking, product development and marketing) and suggest creation of New Generation Rural Tourism, based on recent developments in management and marketing.

Trukhachev (2015) identifies several potential contributions of rural tourism to sustainable development of rural areas (p. 3055):

- "establishment of new employment opportunities and alternative sources of income for rural people;
- retention of economically active population and young people in rural areas, lower migration outflows;

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- establishment of a market for local agricultural and organic products, local specialties and products of folk crafts;
- preservation of the natural, environmental and cultural heritage of rural areas."

Gezici and Salihoğlu (2016) stress that unlike mass tourism, which can have negative impact regarding sustainability, rural tourism belongs to touristic activities with potential opposite effects. Muresan et al. (2016) suggest that local communities notice the beneficial influences of rural tourism for sustainable development of rural areas and understand it as "opportunity to enhance the wellbeing of the community in general, and particularly their own" acting in a manner that "the greater the perceived economical, socio-cultural and infrastructure benefits, the higher the support is from the local community in building future tourism strategies" (p. 11).

In conditions of online channel existing as a tool for communication of the value of rural tourism services and completing the sale process concerning them, the research of factors affecting such purchases becomes increasingly important. As already stated, consumers' characteristics can be identified among several groups of such factors, and consumer shopping orientations are listed within them. (Chang et al., 2005). These authors also list previous researches dealing with the topic (Donthu & Garcia, 1999; Li, Kuo & Russell, 1999; Swaminathan, Lepkowska-White & Rao, 1999).

Donthu and Garcia (1999) researched the profile of respondents purchasing on Internet by using a telephone survey. Besides shopping orientations, authors consider demographic characteristics of these respondents as well. Hereby, they conclude that people purchasing on Internet are oriented to convenience, innovativeness, impulsiveness and seeking variety. They are not connected largely to the brands and prices and have lower aversion to risk. Furthermore, they are older and wealthier.

Swaminathan et al. (1999) conclude that when it comes to shopping orientations, consumers who express the need for social interaction (mostly women) buy less frequently on Internet and spend less money in such transactions, while consumers who are oriented to convenience (usually men, better educated people, wealthier people) behave in the opposite manner.

Finally, Li et al. (1999) explore four different consumer shopping orientations - recreational, experiential, convenience and economic – and their influence in becoming Internet shopper and distinguishing frequent and less frequent Internet shoppers. They supposed that convenience orientation is in favor of Internet shopping, that experiential orientation has opposite influence, while remaining two shopping orientations are neutral. The results mostly support these assumptions, except the difference of presence of the convenience orientation at occasional Web buyers and non-Web buyers.

Having all previously listed in mind, following hypotheses are set:

Hypothesis One: There can be identified the same consumer shopping orientations (recreational, experiential, convenience and economic) in research in Serbia as in the research abroad.

Hypothesis Two: Recreational shopping orientation is not correlated to online purchasing of rural tourism services.

Hypothesis Three: Experiential shopping orientation is correlated to online purchasing of rural tourism services negatively.

Hypothesis Four: Convenience shopping orientation is correlated to online purchasing of rural tourism services positively.

Hypothesis Five: Economic shopping orientation is not correlated to online purchasing of rural tourism services.

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Hypothesis Six: Consumer demographic characteristics influence the level of their recreational shopping orientation significantly.

Hypothesis Seven: Consumer demographic characteristics influence the level of their experiential shopping orientation significantly.

Hypothesis Eight: Consumer demographic characteristics influence the level of their convenience shopping orientation significantly.

Hypothesis Nine: Consumer demographic characteristics influence the level of their economic shopping orientation significantly.

Testing of these hypotheses is presented in the following parts of the manuscript.

METHODOLOGY

This section of the manuscript provides information considering methodological foundations of primary research.

Instrument

The questionnaire consists of several parts. Its first part is related to respondents' gender, age, education, marital status, and perceived living standard. The second part of the questionnaire refers to consumer shopping orientations. This part of the questionnaire is taken from Li et al. (1999). The items were rated on five-point Likert scale from „strongly disagree" to "strongly agree". For the translation into Serbian language, back-translation procedure was used. The final, third part of the questionnaire was in relation to customer online purchases of rural tourism services. Hereby, the number of such purchases in the last 12 months was measured. It should be mentioned that the questionnaire was used not only by the authors, but also by several researches from their institution within the broader research of online shopping in Serbia.

Respondents

For the purpose of data processing, conducted in 2018, the convenience sample of 300 respondents was interviewed. The precondition to become a respondent was that a person has booked and/or bought rural tourism service online at least once during previous 12 months. Structured interviews by personal communication were used. It was needed about 10 minutes to fill in the part of the questionnaire concerning research presented within this manuscript.

The sample consists of 53.7% of male and 46.3% of female, as well as of 36% of married and 64% of single people. Furthermore, 64.3% of respondents were younger than the average age within the sample (more than 27 years), 63.3% had less years of education than the average number of those years was (14.3), and 46.3% marked living standard lower than the average (3.63 on five-point Likert scale). As it can be seen, the younger people are dominant within the sample. However, that can be justified in the context of the previously stated precondition to be included in the sample.

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Procedures

The first part of the procedures is related to testing the questionnaire. The reliability and validity of the implemented scales were tested. Cronbach's alpha, Cronbach's alpha if item deleted, and Corrected item-total correlation were examined - separately for each of the researched consumer shopping orientations. Furthermore, Exploratory factor analysis by Maximum likelihood factor analysis method and Varimax rotation method was implemented on all the items of the scales for four factor solution. Before Exploratory factor analysis, adequacy of conducting it was tested by Kaiser-Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity.

The second part of the procedures is related to bringing into relation each of the consumer shopping orientations and rural tourism services online purchases. Hereby, each of the shopping orientations was presented by means of ratings of all the respondents. As already stated, rural tourism services online purchases were presented by number of such purchases in the last 12 months. For testing whether there were statistically significant relations between them, Spearman rank correlation coefficient was used.

The third part of the procedures regarding the influence of demographic characteristics of respondents (gender, age, education, marital status, perceived living standard) on each of consumer shopping orientations was analysed by multiple regression with General Linear Model. The dependent variables - consumer shopping orientations (recreational, experiential, convenience and economic) were presented by means of ratings of all respondents. Coding was performed in a manner that the value of 0 was assigned to the following levels of demographic characteristics: male, younger than the average respondent, less educated than the average respondent, married, perceiving own living standard worse than the average respondent.

RESULTS

The results are divided into three sections. Firstly, testing of the questionnaire is presented. After that, the results of testing correlations between consumer shopping orientations and rural tourism services online purchases is shown. Finally, the results of General Linear Model regarding the influence of demographic characteristics of respondents on each of consumer shopping orientations is provided.

Testing the Instrument

Table 1 presents the results of reliability analysis.

The results show that the values of Cronbach's alpha for each of the consumer shopping orientations (recreational, experiential, convenience and economic) were higher than 0.7 as suggested by Nunnally (1978).

Furthermore, there were no items whose removal could increase the value of Cronbach's alpha. Finally, the values of Corrected item-total correlation were higher than threshold of 0.3 (Nunnally & Bernstein, 1994).

The result of Kaiser-Meyer-Olkin test of 0.782 higher than 0.6 (Kaiser, 1970, 1974) and the level of significance of the Barthlett's sphericity test of 0.000, suggested that it is adequate to perform exploratory factor analysis. Its results are shown in Table 2.

Four factors explained 53.466% of the total variance.

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Table 1. Reliability analysis

Shopping Orientations	Items	Cronbach's Alpha	Corrected Item-total Correlation	Cronbach's Alpha if Item Deleted
Recreational orientation	Window-shopping is usually a pleasant experience for me.	0.795	0.665	0.693
	I like to shop around and look at displays.		0.663	0.695
	I never feel bored when I go shopping.		0.589	0.772
Experiential orientation	I like to see and touch products before I buy them.	0.792	0.665	0.684
	I hate buying things without seeing what I am getting.		0.617	0.736
	I like to try it before I buy a product.		0.624	0.730
Convenience orientation	I hate to wait in long lines for checking out goods.	0.781	0.574	0.751
	Saving time while shopping is very important to me.		0.665	0.656
	I want to be able to shop at any time of the day.		0.623	0.702
Economic orientation	Being a smart shopper is worth the extra time it takes.	0.796	0.481	0.788
	I like to shop around for the best buy.		0.609	0.747
	I like to consider a wide selection of before making a purchase.		0.572	0.759
	I feel great whenever I have gotten a good deal.		0.607	0.748
	Having a wide selection of goods to choose from is very important to me.		0.628	0.743

Source: (scales - Li et al., 1999; calculations – authors' own)

Table 2. Validity analysis

Shopping Orientations	Items	F1	F2	F3	F4
Recreational orientation	Window-shopping is usually a pleasant experience for me.	0.232	**0.770**	0.126	0.052
	I like to shop around and look at displays.	0.055	**0.770**	0.233	0.024
	I never feel bored when I go shopping.	0.069	**0.630**	0.171	0.006
Experiential orientation	I like to see and touch products before I buy them.	0.151	0.212	**0.739**	-0.040
	I hate buying things without seeing what I am getting.	0.097	0.284	**0.676**	-0.102
	I like to try it before I buy a product.	0.123	0.102	**0.718**	-0.030
Convenience orientation	I hate to wait in long lines for checking out goods.	0.272	0.020	-0.050	**0.610**
	Saving time while shopping is very important to me.	0.107	0.025	0.000	**0.838**
	I want to be able to shop at any time of the day.	0.241	0.024	-0.110	**0.689**
Economic orientation	Being a smart shopper is worth the extra time it takes.	**0.551**	0.095	-0.040	0.114
	I like to shop around for the best buy.	**0.676**	-0.019	0.228	0.192
	I like to consider a wide selection of before making a purchase.	**0.618**	0.159	0.066	0.108
	I feel great whenever I have gotten a good deal.	**0.673**	0.091	0.112	0.175
	Having a wide selection of goods to choose from is very important to me.	**0.667**	0.091	0.195	0.153

Source: (scales - Li et al., 1999; calculations – authors' own)

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When observing Rotated factor matrix, it can be seen that all the loadings on appropriate factor were higher than 0.35 (minimum recommended for a sample of 250 respondents) (Hair et al., 1998) and that when comparing different factor loadings of each item, there were no unacceptable cross-loadings (higher than 0.2) (Matsunaga, 2010).

Consumer Shopping Orientations and Rural Tourism Services Online Purchases

The average assessments for consumer shopping orientations: recreational, experiential, convenience and economic are 2.95; 3.58; 4.14 and 3.94, respectively. The average number of online purchases of rural tourism services by the respondents in the last 12 months was 2.34.

When it comes to correlation analysis, it can be concluded that there is weak, negative and statistically significant correlation between recreational shopping orientation and number of online purchases of rural tourism services by the respondents in the last 12 months: $\rho = -0.118$, $n=300$, $p=0.041<0.05$. The correlation of such purchases is also weak, negative and statistically significant with experiential shopping orientation: $\rho = -0.197$, $n=300$, $p=0.001<0.05$.

However, when it comes to correlation of convenience shopping orientation and number of online purchases of rural tourism services by the respondents in the last 12 months, it is positive and statistically significant, although weak: $\rho = 0.207$, $n=300$, $p=0.000<0.05$.

Finally, there is no correlation between economic shopping orientation and number of online purchases of rural tourism services: $\rho = 0.067$, $n=300$, $p=0.248>0.05$.

General Linear Model

The results for the dependent variable Recreational consumer shopping orientation can be presented by a regression:

RCSO = 2.903 + 0.721*gender - 0.319*age - 0.140*education - 0.161*marital status - 0.039*living standard

Table 3 shows the values of those parameters as well as their significance.

Table 3. General linear model – dependent variable recreational consumer shopping orientation

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Intercept	2.903	0.224	12.942	0.000	2.462	3.345
Gender	0.721	0.113	6.398	0.000	0.499	0.942
Age	-0.319	0.145	-2.201	0.029	-0.605	-0.034
Education	-0.140	0.157	-0.896	0.371	-0.449	0.168
Marital status	-0.162	0.184	-0.877	0.381	-0.524	0.201
Perceived living standard	-0.039	0.111	-0.348	0.728	-0.257	0.180

Source: (Authors)

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Out of the demographic characteristic of respondents, only gender and age affect statistically significantly the dependent variable. Hereby, in the units of five-point Likert scale, women are more recreationally oriented in shopping (0.721 of those units), as well as younger respondents (for 0.319 units). Other variables do not have significant influence, but it can be stated that less educated, married and respondents perceiving living standard worse than the average respondent are more oriented to recreational shopping. Table 4 presents values of dependent variable at different combinations of levels of independent variable.

Table 4. Demographic characteristics and recreational consumer shopping orientation (RCSO)

Gender	Age	Education	Marital Status	Perceived Living Standard	RCSO
male	younger than the average	less than the average	married	worse than the average	2.903
female	younger than the average	less than the average	married	worse than the average	3.624
male	older than the average	less than the average	married	worse than the average	2.584
male	younger than the average	more than the average	married	worse than the average	2.763
male	younger than the average	less than the average	single	worse than the average	2.741
male	younger than the average	less than the average	married	better than the average	2.864
female	older than the average	less than the average	married	worse than the average	3.305
female	younger than the average	more than the average	married	worse than the average	3.484
female	younger than the average	less than the average	single	worse than the average	3.462
female	younger than the average	less than the average	married	better than the average	3.585
male	older than the average	more than the average	married	worse than the average	2.444
male	older than the average	less than the average	single	worse than the average	2.422
male	older than the average	less than the average	married	better than the average	2.545
male	younger than the average	more than the average	single	worse than the average	2.601
male	younger than the average	more than the average	married	better than the average	2.724
male	younger than the average	less than the average	single	better than the average	2.702
female	older than the average	more than the average	married	worse than the average	3.165
female	older than the average	less than the average	single	worse than the average	3.143
female	older than the average	less than the average	married	better than the average	3.266
female	younger than the average	more than the average	single	worse than the average	3.322
female	younger than the average	more than the average	married	better than the average	3.445
female	younger than the average	less than the average	single	better than the average	3.423
male	older than the average	more than the average	single	worse than the average	2.282
male	older than the average	more than the average	married	better than the average	2.405
male	older than the average	less than the average	single	better than the average	2.383
male	younger than the average	more than the average	single	better than the average	2.562
female	older than the average	more than the average	single	worse than the average	3.003
female	older than the average	more than the average	married	better than the average	3.126
female	older than the average	less than the average	single	better than the average	3.104
female	younger than the average	more than the average	single	better than the average	3.283
male	older than the average	more than the average	single	better than the average	2.243
female	older than the average	more than the average	single	better than the average	2.964

Source: (Authors)

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The results for the dependent variable Experiential consumer shopping orientation are presented by a regression:

ECSO = 3.291 + 0.544*gender + 0.006*age - 0.258*education + 0.064*marital status + 0.173*living standard

Table 5 shows the values of those parameters and their significance.

Table 5. General linear model – dependent variable experiential consumer shopping orientation

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Intercept	3.291	0.177	18.644	0.000	2.944	3.638
Gender	0.544	0.089	6.136	0.000	0.369	0.718
Age	0.006	0.114	0.051	0.959	-0.219	0.231
Education	-0.258	0.123	-2.092	0.037	-0.501	-0.015
Marital status	0.064	0.145	0.445	0.657	-0.221	0.350
Perceived living standard	0.173	0.087	1.976	0.049	0.001	0.344

Source: (Authors)

Out of the demographic characteristic of respondents, gender end education affect statistically significantly the dependent variable. In the units of five-point Likert scale, women are more experientially oriented in shopping (0.544 of those units) and respondents less educated than the average consumer (for 0.258 units). Other variables do not have significant influence, but it can be stated that older than the average respondent, single and respondents perceiving living standard better than the average respondent are more oriented to experiential shopping.

Table 6 presents values of dependent variable at different combinations of levels of independent variable.

The results for the dependent variable Convenience consumer shopping orientation can be presented by a regression:

CCSO = 4.226 + 0.084*gender + 0.052*age - 0.179*education - 0.272*marital status + 0.183*living standard

Table 7 shows the values of those parameters as well as their significance. Out of the demographic characteristic of respondents, living standard and marital status affect statistically significantly the dependent variable, at the level 0.05 and 0.10, respectively. Hereby, in the units of five-point Likert scale, as standard rises, also rises the orientation to convenience shopping (0.183 of those units). Furthermore, married people are also more convenience oriented in shopping (for 0.272 units). Other variables do not have significant influence, but it can be stated that women, older than the average respondent and more educated people are more in favour to convenience shopping. Table 8 presents values of dependent variable at different combinations of levels of independent variable.

The results for the dependent variable Economic consumer shopping orientation can be presented by a regression:

EcCSO = 3.811 + 0.276*gender + 0.016*age + 0.056*education + 0.016*marital status - 0.070*living standard

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Table 6. Demographic characteristics and experiential consumer shopping orientation (ECSO)

Gender	Age	Education	Marital Status	Perceived Living Standard	ECSO
male	younger than the average	less than the average	married	worse than the average	3.291
female	younger than the average	less than the average	married	worse than the average	3.835
male	older than the average	less than the average	married	worse than the average	3.297
male	younger than the average	more than the average	married	worse than the average	3.033
male	younger than the average	less than the average	single	worse than the average	3.355
male	younger than the average	less than the average	married	better than the average	3.464
female	older than the average	less than the average	married	worse than the average	3.841
female	younger than the average	more than the average	married	worse than the average	3.577
female	younger than the average	less than the average	single	worse than the average	3.899
female	younger than the average	less than the average	married	better than the average	4.008
male	older than the average	more than the average	married	worse than the average	3.039
male	older than the average	less than the average	single	worse than the average	3.361
male	older than the average	less than the average	married	better than the average	3.470
male	younger than the average	more than the average	single	worse than the average	3.097
male	younger than the average	more than the average	married	better than the average	3.206
male	younger than the average	less than the average	single	better than the average	3.528
female	older than the average	more than the average	married	worse than the average	3.583
female	older than the average	less than the average	single	worse than the average	3.905
female	older than the average	less than the average	married	better than the average	4.014
female	younger than the average	more than the average	single	worse than the average	3.641
female	younger than the average	more than the average	married	better than the average	3.750
female	younger than the average	less than the average	single	better than the average	4.072
male	older than the average	more than the average	single	worse than the average	3.103
male	older than the average	more than the average	married	better than the average	3.212
male	older than the average	less than the average	single	better than the average	3.534
male	younger than the average	more than the average	single	better than the average	3.270
female	older than the average	more than the average	single	worse than the average	3.647
female	older than the average	more than the average	married	better than the average	3.756
female	older than the average	less than the average	single	better than the average	4.078
female	younger than the average	more than the average	single	better than the average	3.814
male	older than the average	more than the average	single	better than the average	3.276
female	older than the average	more than the average	single	better than the average	3.820

Source: (Authors)

Table 9 shows the values of those parameters as well as their significance.

Out of the demographic characteristic of respondents, only gender affects statistically significantly the dependent variable. Hereby, in the units of five-point Likert scale, women are more economically oriented in shopping (0.276 of those units). Other variables do not have significant influence, but it can be concluded that older than the average respondent, more educated, single and respondents perceiving living standard worse than the average respondent are more oriented to economic shopping. Table 10 presents values of dependent variable at different combinations of levels of independent variable.

Following sections deals with the interpretation of the results.

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Table 7. General linear model – dependent variable convenience consumer shopping orientation

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Intercept	4.226	0.186	22.757	0.000	3.860	4.591
Gender	0.084	0.093	0.898	0.370	-0.100	0.267
Age	0.052	0.120	0.431	0.666	-0.185	0.288
Education	-0.179	0.130	-1.384	0.167	-0.435	0.076
Marital status	-0.272	0.153	-1.782	0.076	-0.572	0.028
Perceived living standard	0.183	0.092	1.988	0.048	0.002	0.363

Source: (Authors)

DISCUSSION AND IMPLICATIONS

The results of the research confirm the first hypothesis i.e. that there can be identified the same consumer shopping orientations (recreational, experiential, convenience and economic) in research in Serbia as in the research abroad. Furthermore, it can be seen that the most expressed is convenience shopping orientation (mean assessment 4.14 on five-point Likert scale), followed by economic (3.94), experiential (3.58) and recreational (2.95). These results should be considered in the context of the precondition for a person to be included in the sample. Although not representative for the complete domestic market, it can be concluded that convenience is the most important aspect of shopping, at least for respondents who purchased rural tourism online services during previous 12 months period.

As for the hypotheses 2 to 5, it can be stated that when it comes to positive correlation of convenience shopping orientation to online purchasing of rural tourism services, negative correlation of experiential shopping orientation and number of such purchases, as well as no correlation of economic shopping orientation and online purchases, hypotheses are confirmed. This is also in accordance to some previous researches (Li et al., 1999). However, the negative correlation of recreational shopping orientation and online purchasing of rural tourism services was not hypothesized.

Generally, it can be concluded that, at domestic market, people who favor convenience in their shopping process are also positive towards online purchases of the researched services. This correlation is weak, but it might be stronger if the sample included those who do not buy online and their relation to convenience. Furthermore, online shopping can not fulfill the need to enjoy in shopping and to have direct experience. Because of the specifics of the rural tourism service, it might be that consumers prefer to visit certain area, compare different service providers, have direct experience and then make a decision.

Demographic characteristics influence the level of each of the four shopping orientations. This significant influence is present when it comes to gender and age in the case of recreational orientation, gender and education in the context of experiential orientation, marital status and perceived living standard in relation to convenience orientation and gender and economic orientation.

For the purpose of this research is especially important to observe demographic influences on convenience orientation, which is positively related to online tourism services purchases. Married people and those with better living standard are more oriented in that manner. It might be that obligations regarding family (especially young children) and work (which might translate into living standard) determine such respondents' preferences.

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Table 8. Demographic characteristics and convenience consumer shopping orientation (CCSO)

Gender	Age	Education	Marital Status	Perceived Living Standard	CCSO
male	younger than the average	less than the average	married	worse than the average	4.226
female	younger than the average	less than the average	married	worse than the average	4.310
male	older than the average	less than the average	married	worse than the average	4.278
male	younger than the average	more than the average	married	worse than the average	4.047
male	younger than the average	less than the average	single	worse than the average	3.954
male	younger than the average	less than the average	married	better than the average	4.409
female	older than the average	less than the average	married	worse than the average	4.362
female	younger than the average	more than the average	married	worse than the average	4.131
female	younger than the average	less than the average	single	worse than the average	4.038
female	younger than the average	less than the average	married	better than the average	4.493
male	older than the average	more than the average	married	worse than the average	4.099
male	older than the average	less than the average	single	worse than the average	4.006
male	older than the average	less than the average	married	better than the average	4.461
male	younger than the average	more than the average	single	worse than the average	3.775
male	younger than the average	more than the average	married	better than the average	4.230
male	younger than the average	less than the average	single	better than the average	4.137
female	older than the average	more than the average	married	worse than the average	4.183
female	older than the average	less than the average	single	worse than the average	4.090
female	older than the average	less than the average	married	better than the average	4.545
female	younger than the average	more than the average	single	worse than the average	3.859
female	younger than the average	more than the average	married	better than the average	4.314
female	younger than the average	less than the average	single	better than the average	4.221
male	older than the average	more than the average	single	worse than the average	3.827
male	older than the average	more than the average	married	better than the average	4.282
male	older than the average	less than the average	single	better than the average	4.189
male	younger than the average	more than the average	single	better than the average	3.958
female	older than the average	more than the average	single	worse than the average	3.911
female	older than the average	more than the average	married	better than the average	4.366
female	older than the average	less than the average	single	better than the average	4.273
female	younger than the average	more than the average	single	better than the average	4.042
male	older than the average	more than the average	single	better than the average	4.010
female	older than the average	more than the average	single	better than the average	4.094

Source: (Authors)

Previously listed results are partially in accordance to some of the researches abroad. In those researches, there is also positive relation of higher income and accepting internet shopping (Donthu & Garcia, 1999; Li, Kuo & Russell, 1999; Swaminathan, Lepkowska-White & Rao, 1999). However, the influence of gender, age and education from some of these researches is not identified in domestic conditions.

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Table 9. General linear model – dependent variable economic consumer shopping orientation

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Intercept	3.811	0.163	23.402	0.000	3.490	4.131
Gender	0.276	0.082	3.377	0.001	0.115	0.437
Age	0.016	0.105	0.152	0.879	-0.191	0.223
Education	0.056	0.114	0.495	0.621	-0.167	0.280
Marital status	0.016	0.134	0.117	0.907	-0.248	0.279
Perceived living standard	-0.070	0.081	-0.870	0.385	-0.229	0.088

Source: (Authors)

The results can have managerial implications for rural tourism service providers. Having in mind the possibilities of digital marketing and the profile of convenience shopping oriented consumers, there is possibility to target them more precisely. The information about marital status is mostly available, while the level of personal standard can be examined by, for example, identifying type of mobile phone by which person logs in to social networks. Furthermore, data about different interest and behaviors are also available in a large extent. By more precisely defining target group and look-a-like audience, service providers could be more successful in communication value. The appeal to convenience can be not only used, but also demonstrated in the process of booking and/or buying rural tourism service.

There is also a space to try to diminish negative correlations of the two shopping orientations (recreational and even experiential) with online purchases of rural tourism services. There should be tried to make the process of online selling more attractive and to implement recreational elements within it, so that it provides the same satisfaction as when not purchasing online. The dynamic development of IT technologies can be used in favor for such an attempt. Furthermore, although the experiential orientation relies on personal experience, if rural tourism services providers offer testimonials of their other guests as well as virtual visit to the place, there is also a possibility to try to address customers oriented in such manner.

FUTURE RESEARCH DIRECTIONS

The future researches can include broader range of determinants of rural tourism online purchases. Furthermore, respondents who do not perform such purchases can be included in the sample. There is also a possibility to try to compare the results from different countries. Wider approach to dependent variable measurement is also a possibility. Hereby, certain segmentation of supply side of tourism market is possible. It could also be useful to compare the views of service providers and service customers. Finally, dynamic approach and comparison of the results from different years would be beneficial.

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Table 10. Demographic characteristics and recreational economic shopping orientation (EcCSO)

Gender	Age	Education	Marital Status	Perceived Living Standard	EcCSO
male	younger than the average	less than the average	married	worse than the average	3.811
female	younger than the average	less than the average	married	worse than the average	4.087
male	older than the average	less than the average	married	worse than the average	3.827
male	younger than the average	more than the average	married	worse than the average	3.867
male	younger than the average	less than the average	single	worse than the average	3.827
male	younger than the average	less than the average	married	better than the average	3.741
female	older than the average	less than the average	married	worse than the average	4.103
female	younger than the average	more than the average	married	worse than the average	4.143
female	younger than the average	less than the average	single	worse than the average	4.103
female	younger than the average	less than the average	married	better than the average	4.017
male	older than the average	more than the average	married	worse than the average	3.883
male	older than the average	less than the average	single	worse than the average	3.843
male	older than the average	less than the average	married	better than the average	3.757
male	younger than the average	more than the average	single	worse than the average	3.883
male	younger than the average	more than the average	married	better than the average	3.797
male	younger than the average	less than the average	single	better than the average	3.757
female	older than the average	more than the average	married	worse than the average	4.159
female	older than the average	less than the average	single	worse than the average	4.119
female	older than the average	less than the average	married	better than the average	4.033
female	younger than the average	more than the average	single	worse than the average	4.159
female	younger than the average	more than the average	married	better than the average	4.073
female	younger than the average	less than the average	single	better than the average	4.033
male	older than the average	more than the average	single	worse than the average	3.899
male	older than the average	more than the average	married	better than the average	3.813
male	older than the average	less than the average	single	better than the average	3.773
male	younger than the average	more than the average	single	better than the average	3.813
female	older than the average	more than the average	single	worse than the average	4.175
female	older than the average	more than the average	married	better than the average	4.089
female	older than the average	less than the average	single	better than the average	4.049
female	younger than the average	more than the average	single	better than the average	4.089
male	older than the average	more than the average	single	better than the average	3.829
female	older than the average	more than the average	single	better than the average	4.105

Source: (Authors)

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CONCLUSION

The research presented within this manuscript firstly aimed to define theoretical framework connecting rural tourism services, sustainable development, online purchases of those services and consumer shopping orientations. Based on the secondary research, the framework consisting of those elements is established. Sustainable development, which is of the importance for current and future generations, can be established in rural areas by, among others, developing rural tourism. For the development of such tourism, it is necessary to research what is the value for consumers, as well as to create, deliver and communicate it. Online channel is an opportunity within that process, but its adequate usage is based on understanding what drives consumers toward online purchases. Hereby, among other factors, their shopping orientations are identified.

The primary research is also conducted in regard to previously listed topics. It aimed, as already stated, to identify whether there can be identified the same consumer shopping orientations (recreational, experiential, convenience and economic) in research in Serbia as in research abroad. The authors found evidence for such expectation. Furthermore, the goal was to define the nature of correlation of each of consumer shopping orientation and online purchasing of rural tourism services. Those relations are identified – positive in case of convenience, negative in case of recreational and experiential orientations. Finally, the research dealt with the question whether, which and to which extent consumer demographic characteristics influence the level of their shopping orientations. Each of the shopping orientations was influenced significantly by some of respondents' demographic characteristics. In the case of convenience orientation (which was of the special importance for this research because of its positive relation to rural tourism services online purchases), it was identified that married and people with better living standard are more in favor of this orientation.

Within the paper are also listed managerial recommendations for providers of rural tourism services. Besides, since similar researches are relatively rare in domestic conditions, this paper might be one of the steps of attracting wider scientific attention to the researched issue.

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REFERENCES

Chang, M. K., Cheung, W., & Lai, V. S. (2005). Literature derived reference models for the adoption of online shopping. *Information & Management*, *42*(4), 543–559. doi:10.1016/S0378-7206(04)00051-5

Donthu, N., & Garcia, A. (1999). The internet shopper. *Journal of Advertising Research*, *39*(3), 52–58.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Gezici, F., & Salihoğlu, G. (2016). The challenges on sustainability of alternative forms of tourism. In I. Egresi (Ed.), *Alternative tourism in Turkey* (pp. 319–333). Cham, Switzerland: Springer. doi:10.1007/978-3-319-47537-0_20

Hair, J. H., Tatham, R. L., Anderson, R. E., & Black, W. (1998). *Multivariate data analysis*. Upper Saddle River, NJ: Prentice Hall.

Kaiser, H. F. (1970). A second generation little jiffy. *Psychometrika*, *35*(4), 401–415. doi:10.1007/BF02291817

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, *39*(1), 31–36. doi:10.1007/BF02291575

Lane, B., & Kastenholz, E. (2015). Rural tourism: The evolution of practice and research approaches – towards a new generation concept? *Journal of Sustainable Tourism*, *23*(8-9), 1133–1156. doi:10.1080/09669582.2015.1083997

Li, H., Kuo, C., & Russell, M. G. (1999). The impact of perceived channel utilities, shopping orientations, and demographics on the consumer's online buying behavior. *Journal of Computer-Mediated Communication*, *5*(2), 1–20.

Matsunaga, M. (2010). How to factor-analyse your data right: Do's dont's, and how-to's. *International Journal of Psychological Research*, *3*(1), 97–110. doi:10.21500/20112084.854

Muresan, I., Oroian, C. F., Harun, R., Arion, F. H., Porutiu, A., Chiciudean, G. O., ... Lile, R. (2016). Local residents' attitude toward sustainable rural tourism development. *Sustainability*, *8*(1), 100. doi:10.3390u8010100

Nunnally, J. C. (1978). *Psychometric theory*. New York, NY: McGraw-Hill.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. New York, NY: McGraw-Hill.

Rasoolimanesh, S. M., Ringle, C. M., Jaafar, M., & Ramayah, T. (2017). Urban vs. rural destinations: Residents' perceptions, community participation and support for tourism development. *Tourism Management*, *60*, 147–158. doi:10.1016/j.tourman.2016.11.019

Sauvé, S., Bernard, S., & Sloan, P. (2016). Environmental sciences, sustainable development and circular economy: Alternative concepts for trans-disciplinary research. *Environmental Development*, *17*, 48–56. doi:10.1016/j.envdev.2015.09.002

Swaminathan, V., Lepkowska-White, E., & Rao, B. P. (1999). Browsers or buyers in cyberspace? An investigation of factors influencing electronic exchange. *Journal of Computer-Mediated Communication*, *5*(2), 0. doi:10.1111/j.1083-6101.1999.tb00335.x

Trukhachev, A. (2015). Methodology for evaluating the rural tourism potentials: A tool to ensure sustainable development of rural settlements. *Sustainability*, *7*(3), 3052–3070. doi:10.3390u7033052

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ADDITIONAL READING

Brown, M., Pope, N., & Voges, K. (2003). Buying or browsing? An exploration of shopping orientations and online purchase intention. *European Journal of Marketing*, *37*(11/12), 1666–1684. doi:10.1108/03090560310495401

Girard, T., Korgaonkar, P., & Silverblatt, R. (2003). Relationship of type of product, shopping orientations, and demographics with preference for shopping on the Internet. *Journal of Business and Psychology*, *18*(1), 101–120. doi:10.1023/A:1025087021768

Holden, E., Linnerud, K., Banister, D., Schwanitz, V. J., & Wierling, A. (2017). *The imperatives of sustainable development: needs, justice, limits*. London, UK: Routledge. doi:10.4324/9780203022177

Ling, K. C., Chai, L. T., & Piew, T. H. (2010). The effects of shopping orientations, online trust and prior online purchase experience toward customers' online purchase intention. *International Business Research*, *3*(3), 63. doi:10.5539/ibr.v3n3p63

McAreavey, R., & McDonagh, J. (2011). Sustainable rural tourism: Lessons for rural development. *Sociologia Ruralis*, *51*(2), 175–194. doi:10.1111/j.1467-9523.2010.00529.x

Roberts, L., Hall, D., & Morag, M. (2017). *New directions in rural tourism*. London, UK: Routledge. doi:10.4324/9781315248097

Seock, Y. K., & Bailey, L. R. (2008). The influence of college students' shopping orientations and gender differences on online information searches and purchase behaviours. *International Journal of Consumer Studies*, *32*(2), 113–121. doi:10.1111/j.1470-6431.2007.00647.x

Welford, R. (2016). *Corporate environmental management 3: Towards sustainable development*. London, UK: Routledge. doi:10.4324/9781315825120

KEY TERMS AND DEFINITIONS

Consumer Shopping Orientations: Part of consumer lifestyle related to shopping.

Convenience Consumer Shopping Orientation: Part of consumer lifestyle related to shopping characterized by personal convenience in the shopping process.

Economic Consumer Shopping Orientation: Part of consumer lifestyle related to shopping characterized by trying to make the optimal decision in the shopping process.

Experiential Consumer Shopping Orientation: Part of consumer lifestyle related to shopping characterized by preferring direct experience in the shopping process.

Market Segmentation: Identifying groups of similar customers at the market for facilitating adequately approaching them.

Recreational Consumer Shopping Orientation: Part of consumer lifestyle related to shopping characterized by enjoyment in shopping activities.

Rural Tourism: A number of touristic activities referring to rural areas and providing their sustainable development.

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Sustainable Development: The concept referring to environment protection and containing economic, social and ecological aspects, which tries to make a balance between the needs and actions of current and future generations, in a sense that current generations do not jeopardize future ones.

Tourism Services Online Sale: A possibility to book and/or buy touristic service from rural tourism services providers by Internet.

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Chapter 63
Enhancing Calculative Commitment and Customer Loyalty Through Online Relationship Marketing:
The Mediating Role of Online Trust

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ABSTRACT

This study examines the mediating role of online trust in enhancing calculative commitment and customer loyalty through online relationship marketing activities (engagement and interactivity). The study draws on signaling theory. Data were gathered from 429 retail bank customers in Ghana and analyzed using confirmatory factor analysis and structural path modelling. Findings suggest that engagement is assessed to be low by Ghanaian bank customers and presently has no influence on customer commitment, online trust, and customer loyalty. However, signals communicated through interactivity online is of great benefit to the banks in influencing customers' online trust, as well as their calculative commitment and loyalty. Further, though, website and email emerged as the most predominant technologies used in online relationship marketing (ORM), customers also expect banks to engage with them through social media, which has the potential to improve upon the current levels of ORM activities.

INTRODUCTION

Information Technology has been proffered in existing research to play a critical role when it comes to advancing the practice of Relationship Marketing (RM) within firms (Mishra & Li, 2008; Howcroft, Durkin, Armstrong & Emerson, 2007; Shapiro, Romano & Mittal, 2004). This phenomenon is evident in developed economies as well as developing economies (Boateng & Narteh, 2016; Verma, Sharma &

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Sheth, 2016; Guo, 2014). In a developing economy like Ghana for example, all the 33 commercial banks operating in the country have officially launched some form of presence on the internet, either through a website or at least one of the numerous social media platforms to engage with their customers. There is also evidence to attest that in the banking industry, the internet elevates customer experience in both business and retail banking and enables individual banks to differentiate themselves in their competitive space (Deloitte, 2014). In view of this, industry practitioners are constantly enquiring as to how best they can further leverage new and emerging information technologies to facilitate their relationship development efforts with customers.

RM is an organizational process that involves the creation and maintenance of long-term relations with a firm's existing customers and stakeholders and terminating some of these relationships where necessary in a manner that will be of benefit to all the parties involved (Harker, 1999; Grönroos, 1996). RM fosters partnerships, which ultimately lead to profitable exchanges (Kanagal, 2009); and helps firms, like banks, to acquire, retain and adequately satisfy their customers. Extant research has posited that there is relatively limited research on firms' RM activities online and how it influences other relationship marketing outcomes (Ghazi, Muhammed, Khalil, Fwwaz, & Raed, 2013; Huang & Shyu, 2009). For instance, some scholars have averred that there is a need to explore the complementarities between firms' online relationship building efforts and other relationship marketing outcomes, including the enhancement of customer loyalty (Brun, Rajaobelina & Ricard, 2014). As well, others such as Fam, Foscht and Collins (2004) have postulated the relevance of studying the incorporation of firms' relationship marketing activities online with other organizational practices and outcomes, to the advancement of existing knowledge on the role and potential of internet technology in relationship marketing. Authors such as Mukherjee and Nath (2007) and Kassim and Abdulla (2006), in response to the above issues, have made attempts at utilizing the Commitment-Trust Theory of Relationship Marketing (Morgan & Hunt, 1994) often with some minor modifications, to study the outcomes of firms' relationship marketing activities online. Their contributions, though valuable, tend to culminate in one result that the model can be further extended to measure the various aspects of firm-customer relationships online adequately.

More so, in broadening the appreciation of online relationship marketing practices, some authors have conceptualized and proposed certain activities - engagement and interactivity - which impact firm-customer relationships in the online context (Guo, 2014; Farquhar & Rowley, 2006). However, the relationships between these activities and customer commitment, trust and loyalty are yet to receive attention in Online Relationship Marketing (ORM) research. Also, the three dimensions of customer commitment - affective, calculative and normative - have often been overlooked in online customer relationship studies (see McCallum, Forret & Wolff, 2014). Though existing literature indicates that the ramifications of each of these three dimensions of commitment differ, they have often been lumped together and studied as one construct (see Jones, Fox, Taylor & Fabrigar, 2010). Hence, this study asserts that if online relationships are studied from the specific perspectives of customer commitment, it will arguably yield new insights. Calculative commitment is the focus for this current study since it considers the competitiveness of the firm's value proposition and is a significant predictor of customer churn rates (Gustafsson, Johnson & Roos, 2005).

On the other hand, there is relatively less representation of ORM research from developing economy contexts. Few studies have shared valuable insights that this study builds on (Mahmood, Kastner & Lartey, 2017; Boateng & Narteh, 2016; Lee, Lee, Taylor & Lee, 2011). For example, using the Ghanaian banking sector, Boateng and Narteh (2016) explored the relationships between ORM practices –

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engagement, interactivity, advocacy and personalization – and affective customer commitment, as well as the mediating role of trust. The study suggested that trust mediates the influence of engagement and personalization on affective commitment; while advocacy and collaboration have a direct relationship with affective commitment. The study calls for more studies exploring other dimensions of commitment and relationship outcomes, including customer loyalty. Then again, Mahmoud *et al.* (2017) explored the practice, challenges, and benefits of Internet-based relationship marketing (RM) within the Ghanaian telecommunication industry. The authors suggest that since ORM practices constantly evolve, more research is needed to compare these practices across industries.

Consequently, the purpose of this study tends to be in response to the above calls. The study seeks to explore the relationship between ORM practices or activities (engagement and interactivity), calculative commitment and customer loyalty; as mediated by online trust within the Ghanaian banking industry. The mediating role of trust in this instance is accentuated due to the key mediating role it is purported to play in successful relational exchanges, based on the Commitment-Trust Theory (Morgan & Hunt, 1994).

The paper is structured as follows. It consists of an introduction presented above, and a section on literature review and hypotheses culminating in a conceptual framework; followed by the research design. Next, the empirical results are presented, which discusses the findings of the measurement model and the structural model. Finally, the results are discussed, in addition to some managerial implications and future research directions.

LITERATURE REVIEW AND HYPOTHESES

Online Relationship Marketing Activities

ORM refers to the use of multifaceted interactive web features and tools on the internet to support relationship marketing in firms (Gan, Sim, Tan & Tna, 2007; Harker, 1999). Firms perform several activities online, including engaging customers through online content creation, as well as interacting with them online in real time. Online RM activities refer to the relationship activities afforded by internet applications in an online platform. Several different activities have been proposed in extant literature. These activities can be broadly categorized as: engagement, interactivity, personalization and collaboration. Engagement refers to the building of connections between the customer and the organization's offerings and services (Guo, 2014). Interactivity refers to the establishment of dialogue between the customer and the organization, which involves the sharing of information (Gan *et al.*, 2007). Personalization refers to the tailoring of interactions or information to establish transactions which are unique to the customer (Guo, 2014; Farquhar & Rowley, 2006). Collaboration establishes environs where customers become knowledgeable partners in firm value creation processes, feel assured and build bonds with other customers and also with the firm (Guo, 2014; Cobos, Wang & Okumus, 2009). The ORM activities are often conceptualized as antecedents to relationship outcomes – such as customer loyalty and behavioral intention, and they are usually mediated by customer commitment and trust (Bart, Shankar, Sultan & Urban, 2005; Gan *et al.*, 2007; Guo, 2014). It is also argued that since RM activities are uniquely developed, their applicability may differ across online communities, service settings and different industries (Ioannou & Zolkiewski, 2009; Farquhar & Rowley, 2006). As such, more research is needed to better understand the conduct of these activities and the impact on relationship outcomes.

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This study contributes to the literature by exploring the conduct of two ORM activities – engagement and interactivity - in the Ghanaian Banking industry. The rationale for the study setting is that the banking industry is arguably relationship oriented, information intensive and primarily affected by internet-oriented technological developments, making it opportune for a study, which will explore the applicability of ORM activities (Proença, Silva & Fernandes, 2010). A previous study in the Ghanaian Banking industry examined ORM activities of engagement, interactivity, advocacy and personalization and affective customer commitment (Boateng & Narteh, 2016). However, the present study takes a closer look into the impact of two ORM activities on customer loyalty as mediated by online trust and calculative commitment. Worthy of note is that the need for a study exploring the mediating roles of online trust and calculative commitment has been echoed in previous literature (Boateng & Narteh, 2016; Nusair, Bilgihan, Okumus & Cobanoglu, 2013). To recap, to allow for a more thorough examination of ORM activities, mediators and outcomes, only two ORM activities – engagement and interactivity – are explored in this study.

Engagement can be explained as the level of intensity with which individuals participate and connect with a firm's activities online (Vivek, Beatty & Morgan, 2012). Engagement online typically takes place on social media and is demonstrated through specific customer behaviors including 'liking', sharing and commenting on content posted on the firm's social media pages (Kabadayi & Price, 2014). Interactivity, on the other hand, captures the degree to which dialogue is established between firms and their customers online, through the sharing of information (Fang, 2012). Mollen and Wilson (2010) aver that reciprocal or two-way communication plays a pivotal role in the process of interactivity. Interactivity has been found to play a critical role in eliciting positive behavioral intentions among customers online (Jeon, Jang & Barrett, 2016).

The Signaling Effect of ORM Activities

The Signaling Theory (Connelly, Certo, Ireland & Reutzel, 2011) is utilized in this study to explain the signaling role of ORM activities (engagement and interactivity) in influencing firms' customer relationship marketing outcomes. Signaling theory comprises three primary elements, in addition to two other factors, which are presented by Connelly *et al.* (2011) in the form of a timeline. The timeline depicts two main actors - the signaler and the receiver, the signal itself, as well as feedback from the receiver which is sent back to the signaler; all of which co-exist in a signaling environment. A signal refers to an action or artefact that communicates information about the characteristics of an organization, product or person to the customer, which enables them to assess their reliability and legitimacy (Mavlanova, Benbunan-Fich & Koufaris, 2012). It comprises positive information that is purposefully communicated in order to portray the signaler's positive attributes and mask any potential weaknesses (Connelly *et al.*, 2011; Certo, 2003). Well received signals can influence the perceptions of trust, as well as the purchase intentions of the target audience (Mavlanova, Benbunan-Fich & Lang, 2016). A signaler, as explained in terms of consumer research, generally connotes an insider (often the organization's management) who owns information about the underlying 'quality' of a person, product or firm, which they wish to communicate to their customers (Ho & Wei, 2016; Connelly *et al.*, 2011). The receiver is the primary target of the signaler's output and is continually scanning the environment for signals from firms with which to make accurate purchase decisions (Connelly *et al.*, 2011). For the objectives of the signaler to be achieved, the signals sent need to be received and correctly understood by the receiver for it to have an effect (Mavlanova *et al.*, 2016). Per Connelly *et al.* (2011), signalers and receivers often have

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somewhat competing interests. Hence, the need for what authors like Durcikova and Gray (2009) refer to as signal honesty, where the underlying quality portrayed through the signal is one that is genuinely possessed by the signaler, so that the receiver is not misled.

Feedback involves the sending of counter signals from the receiver to the sender. It is not enough that the signaler successfully sends a signal to the receiver; the signaler also expects to receive some information back from the receiver to ascertain whether their signals have been interpreted as they intended (Taj, 2016). Hence, the inclusion of the feedback component in the signaling theory. The signaling environment refers to the context within which the signaling process takes place, fostering interaction between the various elements in the process. It is pertinent that the signaling environment is free of any form of 'noise' that could hinder the signaling process (Taj, 2016). Potential sources of 'noise' may include opposing signals from the signaler and competitors, as well as certain characteristics of the receiver. Any of these can bring about distortions in the signaling environment, which can affect how the signal is transmitted, as well as the receiver's interpretation of signals received; all of which is of key importance to the success of the entire signaling process.

Some researchers have used the Signaling Theory to understand information technology (IT) enabled signals sent by firms (the signalers), and the impact that these IT signals have on customer perceptions, as well as their attitudes and behaviors (Mavlanova *et al.*, 2016; Benlian & Hess, 2011). The theory, therefore, provides a framework that depicts how customers rely on informational cues or signals in the form of actions or artefacts that reliably communicate unobservable product or firm quality, when forming judgments on how best their needs may be satisfied (Kirmani & Rao, 2000; Boulding & Kirmani, 1993). It allows for the exploration of ORM activities as informational cues utilized by firms to influence customer perceptions and behavior. In applying the theory, Benlian and Hess (2011) noted that further research was required to investigate which specific online features and activities that are used as signals, have a positive impact on customer perceptions and behavior. Additionally, Mavlanova *et al.* (2016) call for research on online signals to be studied in varied contexts, using diverse online applications; noting that it will not only help to extend signaling theory research, but also generate interesting insights to inform online business strategy.

In this study, the signaling theory is combined with the Commitment-Trust Theory to examine the complementarities between firms' ORM activities (Engagement and Interactivity) and other relationship marketing outcomes; including Online trust, Calculative commitment and Customer loyalty. The Commitment-Trust Theory by Morgan and Hunt (1994) tends to be the dominant theory in ORM research. The theory espouses that relationship benefits, termination costs, shared values, communication and opportunistic behavior are the five precursors of relationship commitment and trust, which lead to five relationship outcomes: acquiescence, propensity to leave, cooperation, functional conflict and decision-making uncertainty — thereby placing relationship commitment and trust as key mediating variables.

The ensuing sub-sections present the hypotheses and conceptual model of the study.

Hypotheses Development

Online Trust, Engagement and Interactivity

Online trust is a component that contributes significantly to the overall success of firms' marketing activities in the online context (Bleier & Eisenbeiss, 2015). Literature argues that online trust is established mainly through customers' self-perceptions, based on their direct experiences and interactions with the

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firm online (Bock, Lee, Kuan & Kim, 2012; Kim, Ferrin & Rao, 2008). For instance, Etemad-Sajadi (2016) posits that online interactivity in real-time has a significant positive influence on online trust and customers' intentions to patronize a given brand. Furthermore, Brodie, Ilic, Juric and Hollebeek (2013) found that the customer engagement process often leads to customer commitment and trust. Therefore, it is hypothesized that:

H_1: Engagement directly influences Online trust
H_2: Interactivity directly influences Online trust

Online Trust and Calculative Commitment

Calculative commitment embodies the customers' expectations of immediate or future rewards, as well as the cost contingencies resulting from staying with their current service provider, as compared with available alternatives (Sumaedi, Juniarti, & Bakti, 2015). Thus, in this instance, rationale dominates over emotion when it comes to customers' assessment of their relationship with the firm. Trust has been identified in relationship marketing literature to have a significant impact on customer commitment (Tsao & Hsieh, 2012). Kassim and Abdullah (2010), for instance, assert that trust is a critical driver of commitment among customers who are in long-term relationships with their service providers online. Thus, it is hypothesized that:

H_3: Online trust directly influences Calculative commitment

Online Trust and Customer Loyalty

Customer loyalty can be defined as the general attachment of a buyer to a product or service (Wang & Wu, 2012). It is demonstrated through a variety of actions and comprises both attitudinal and behavioral elements. These are usually exhibited through the customer's intention to re-purchase or re-patronize a brand's products and services, as well as their desire to maintain a lasting relationship with the service provider and recommend their brand to others (Picón-Berjoyo, Ruiz-Moreno & Castro, 2016; Srivastava & Kaul, 2016). Although online trust is averred to have a positive effect on customer loyalty, the way trust may be gained online, and the potential effect it may have on firms' outcomes is yet to be fully understood (Fullerton, 2014; Urban, Amyx & Lorenzo, 2009). Hence, this study hypothesizes that:

H_4: Online trust directly influences Customer loyalty

Calculative Commitment and Customer Loyalty

Cater and Zabkar (2009) assert that customer loyalty is a consequence of all the three dimensions of commitment; namely Affective, Normative, and Calculative commitment. However, Bilgihan and Bujisic (2015) found calculative commitment to have a distinct influence on customer loyalty. Thus, the following hypothesis:

H_5: Calculative commitment directly influences Customer loyalty

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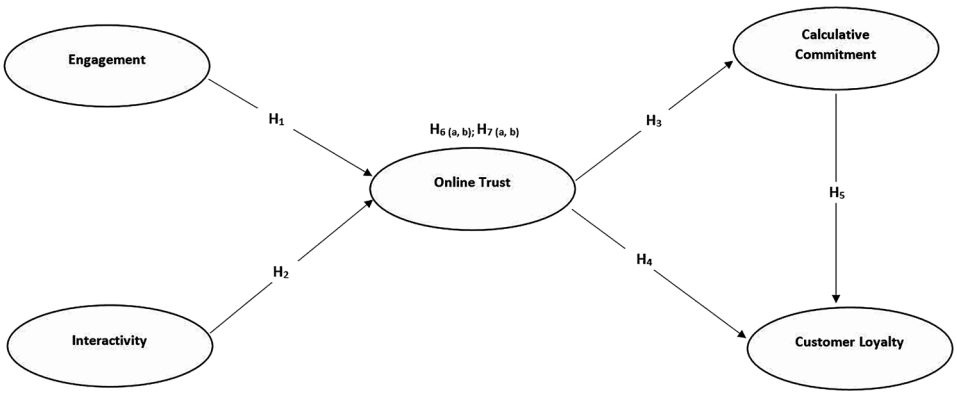
Mediating Role of Online Trust

Over the years, scholars such as Jeon *et al.* (2016) and Wang, Law, Guillet, Hung and Fong, (2015) have proffered the mediating role of online trust in firm-customer interactions within the online context. Wang *et al.* (2015), for example, as part of their research, statistically established the mediating role of online trust between hotel website quality and customers' intentions to place a booking online. This finding is corroborated by Hsu, Liu and Lee (2010), who determined that the influence of a firm's overall image on customer behavioral intention, must be mediated through customer commitment and trust. However, the mediating effects of trust in relation to online relationship strategy has not been completely examined. As such, it is hypothesized that:

H_{6a}: Online trust mediates the relationship between Engagement and Calculative commitment
H_{6b}: Online trust mediates the relationship between Engagement and Customer loyalty
H_{7a}: Online trust mediates the relationship between Interactivity and Calculative commitment
H_{7b}: Online trust mediates the relationship between Interactivity and Customer loyalty

Based on the discussion conducted in the literature review and the hypotheses postulated in the prior sections, Figure 1 presents the conceptual model for the study.

Figure 1. Conceptual model



RESEARCH DESIGN

Data Collection and the Sample

A quantitative research design was adopted, using the survey technique for data collection in order to examine the conceptual framework shown in Figure 1. The context of the study was set in the highly competitive Ghanaian banking industry (Boateng & Narteh, 2016), which has witnessed a surge in the adoption of web-based technologies such as emails and social media, with the sole intent of elevating the overall customer experience and maintaining their competitive edge (Acquaah & Yasai-Ardekani, 2008). The Ghanaian Banking industry is currently relatively saturated, with a combination of local and

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foreign multinational banks operating within the industry (Acheampong, 2013). The total number of banks operating in the industry as at 31st December 2016 was 33; 16 locally owned and 17 foreign controlled. 449 of the 500 questionnaires issued to bank customers who have previously interacted with their bank online, either via email, their website or through social media were returned. These responses were coded and entered into SPSS 20, following which the data was verified and screened for any form of error, missing data or outliers (Kline, 2011). The screening process revealed that several of the responses had more than 5% missing data. Therefore, it was decided to delete the responses that had missing values in various sections; resulting in the deletion of a total of 20 cases. Thus, excluding missing and unusable data, the resulting sample included a total of 429 respondents.

Table 1. Sample profile

	N	**Percentage (%)**
Gender		
Male	272	63.4
Female	157	36.6
Age (Years)		
18-20	2	0.5
21-30	121	28.2
31-40	182	42.4
41-50	97	22.6
Above 50	27	6.3
Educational Level		
Primary	5	1.2
Secondary	137	31.9
Tertiary-Undergraduate	103	24.0
Tertiary-Postgraduate	38	8.9
Diploma/ HND	146	34.0
Online Channels Used		
Email	429	100
Website	339	79
Social Media (Facebook/ Twitter)	165	38.5

Instrument

A self-administered survey questionnaire was used in collecting data from the identified sample. The questionnaire captured demographic information, as well as items relating to the antecedents, mediator and outcome variables presented in the conceptual framework. The measurement items were adapted from existing literature on Online Relationship Marketing (ORM) and Relationship Marketing (RM) and measured in the form of a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Engagement was measured using a ten-item scale adapted from the works of Guo (2014) and Cobos, Wang and Okumus

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(2009). Interactivity was measured using eight items adapted from the works of Cobos *et al.* (2009) and Farquhar and Rowley (2006). Online trust was assessed using nine items developed based on the work of Bilgihan and Bujisic (2015) and Brun *et al.* (2014). Calculative commitment was measured by seven items in this study, based on Brun *et al.* (2014) and Dabholkar, van Dolen and de Ruyter (2009). While Customer loyalty was measured using nine items adapted from Labrecque (2014) and Huang and Shyu (2009).

EMPIRICAL RESULTS

Structural Equation Modelling (SEM) was utilized in analyzing the data collected, as well as testing the hypothesized relationships (Kumar, Manrai & Manrai, 2017; Byrne, 2010). The two-stage approach to SEM recommended by Anderson and Gerbing (1988) was performed, using the maximum likelihood extraction method in order to estimate a measurement model and a structural model in Amos 22.

Measurement Model

The measurement model was assessed by conducting a Confirmatory Factor Analysis (CFA) utilizing all the individual constructs in the model. The psychometric properties of the model constructs, along with the factor loadings of items measuring each construct are presented in Table 2. Each variable was tested for reliability, convergent and discriminant validity; and as can be observed from Table 2 all the factor loadings are well above the cut-off point of 0.5 (Ladhari, Souiden & Dufour, 2017). Also, the Composite Reliability (CR) and Average Variance Extracted (AVE) values are above the required minimum values of 0.6 and 0.5, respectively (Bagozzi & Yi, 2012). As such, the reliability and convergent validity of the constructs are confirmed. To provide support for discriminant validity, the square root of the AVE of each construct should be greater than the correlation between the construct and other constructs in the model (Kumar *et al.*, 2017; Fornell & Larcker, 1981).

Table 3 presents the correlation, mean and standard deviation of each construct, as well as the square root of their AVEs. It can be observed from the table that the square root of the AVE of the constructs, in all instances is greater than the correlation between the constructs, thereby, indicating discriminant validity. Furthermore, the resulting model produced good fit indices: Chi square (χ^2)/ Degrees of freedom (*df*) = 2, Tucker-Lewis Index (TLI) = 0.96, Comparative Fit Index (CFI) = 0.97, Incremental Fit Index (IFI) = 0.97, Root Mean Square Error of Approximation (RMSEA) = 0.05 (Schreiber, 2008).

Structural Model

After establishing that the measurement model depicted adequate levels of reliability and validity, the structural model was assessed in order to test the hypothesized relationships. This was done by examining the p values of the paths, as well as their standardized regression weights. Based on the above, the structural model showing hypotheses $\mathbf{H_1}$ to $\mathbf{H_5}$ was tested; the outcome of which is summarized in Table 4 and graphically presented in Figure 2. The test of the general fit of the model yielded Chi square (χ^2)/ Degrees of freedom (*df*) = 2.2, with a p value less than 0.001. The value of the Tucker-Lewis Index (TLI) was 0.96, the Comparative Fit Index (CFI) was 0.97, the Incremental Fit Index (IFI) was 0.97, and the Root Mean Square Error of Approximation (RMSEA) was 0.05; all of which fall within the acceptable cut-off limits (Schreiber, 2008).

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Table 2. Constructs' psychometric properties

Construct	Factor Loading	*t*-Value	CR	AVE	α
Engagement			**0.93**	**0.76**	**0.92**
-I write comments and messages on my bank's Facebook page	0.85***	-			
-I 'like' content posted on my bank's Facebook page	0.93***	26.56			
-My bank's website has hotlinks to their Twitter/ Facebook pages	0.87***	23.48			
-Other customers provide helpful information on my bank's Facebook page	0.82***	21.53			
Interactivity			**0.96**	**0.79**	**0.96**
-My bank has site navigation tools on their website	0.89***	-			
-My bank's website has a search tool that enables me to locate items	0.93***	30.89			
-I get the desired answers to my online enquiries	0.90***	28.41			
-24-hour live chat/ help is available on my bank's website	0.85***	25.27			
-My bank's online platforms provide mechanisms that help me to evaluate and select appropriate products and services	0.90***	28.69			
-My bank offers exclusive webpages and information for customers on their website	0.87***	26.19			
Calculative Commitment			**0.87**	**0.62**	**0.86**
-The management of my personal finances would be disrupted if I decided to stop patronizing my bank's services	0.74***	-			
-I am afraid something will be lost if I stop using my bank	0.83***	16.47			
-Some aspects of my life will be affected if I cease patronizing my bank	0.80***	15.82			
-There are no banking services comparable to those offered by my bank	0.79***	15.72			
Online Trust			**0.83**	**0.56**	**0.83**
-I can count on my bank to ensure that transactions carried out on its website are without error	0.79***	-			
-My bank makes every effort to address and solve customer concerns and problems online	0.74***	15.85			
-I think that my bank would not do anything intentional on their website that would be unfair to customers	0.83***	17.99			
-I feel like my privacy is protected while transacting with my bank online.	0.59***	12.24			
Customer Loyalty			**0.86**	**0.56**	**0.85**
-I would be willing to pay a higher price for my bank's services over other banks	0.66***	-			
-I prefer my bank to its competitors	0.73***	13.05			
-My bank is the best bank for me	0.75***	13.36			
-I would be willing to defend my bank in the face of any controversy	0.81***	14.07			
-I would consider my bank as my first choice for patronizing banking services	0.77***	13.53			

***$p < 0.001$

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Table 3. Correlations, mean, standard deviation and square root of AVE

	Engagement	Interactivity	Calculative Commitment	Online Trust	Customer Loyalty
Engagement	**0.87**				
Interactivity	0.70***	**0.89**			
Calculative Commitment	0.20***	0.22***	**0.79**		
Online Trust	0.54***	0.74***	0.34***	**0.75**	
Customer Loyalty	0.29***	0.29***	0.73***	0.55***	**0.75**
Mean	2.6	3.5	3.6	4.1	4.0
Standard Deviation	1.2	1.2	0.9	0.7	0.7

***p < 0.001

As shown in Table 4, Interactivity was positively and significantly related to Online trust (**$\beta = 0.69$**, **$p < 0.001$**) and Online trust was found to be positively and significantly related to Calculative commitment (**$\beta = 0.33$**, **$p < 0.001$**), as well as Customer loyalty (**$\beta = 0.32$**, **$p < 0.001$**). Calculative commitment was also positively related to Customer loyalty (**$\beta = 0.62$**, **$p < 0.001$**). Nonetheless, Engagement was not significantly related to Online trust. Thus, hypotheses **H_2** to **H_5** were supported. But, hypothesis **H_1** which examined the relationship between Engagement and Online trust was rejected.

Table 4. Summary of hypotheses test

Relationship	β	t Value	p Value	Hypothesis	Remark
Engagement → Online Trust	0.06	0.93	0.36	H_1	Not supported
Interactivity → Online Trust	0.69	10.50	***	H_2	Supported
Online Trust → Calculative Commitment	0.33	5.93	***	H_3	Supported
Online Trust → Customer Loyalty	0.32	6.67	***	H_4	Supported
Calculative Commitment → Customer Loyalty	0.62	10.01	***	H_5	Supported

***p < 0.001

Mediating Role of Online Trust

Table 5 depicts the mediating role of Online trust between the ORM activities (engagement and interactivity), calculative commitment and customer loyalty. This was tested using the bootstrap technique in Amos, as advocated by Preacher and Hayes (2008). As observed from the table, the outcome of the structural model shows that the direct relationships between interactivity and calculative commitment, as well as interactivity and customer loyalty, are both significant without online trust as a mediator. However, the indirect effect of interactivity on calculative commitment and customer loyalty, respectively, through online trust as a mediator are both significant. This provides enough evidence for the partial mediation of online trust in the relationship between interactivity and calculative commitment, as well as that between interactivity and customer loyalty. Thereby, substantiating only hypotheses **H_{7a}** and **H_{7b}**.

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Figure 2. Structural model results

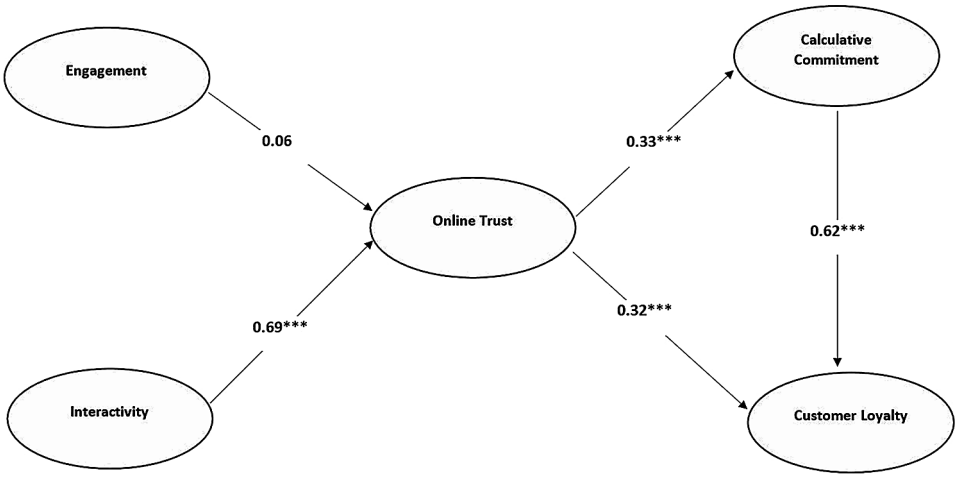

Table 5. Mediating role of online trust

Relationship	Hypothesis	Direct Without Mediator (p Value)	Direct With Mediator (p Value)	Indirect Effect	Mediation Type
Engagement → Online Trust → Calculative Commitment	$\mathbf{H}_{6a}$	0.10 (0.20)	0.10 (0.18)	0.47	No mediation
Engagement → Online Trust → Customer loyalty	$\mathbf{H}_{6b}$	0.18 (0.02)	0.16 (0.03)	0.53	No mediation
Interactivity → Online Trust → Calculative Commitment	$\mathbf{H}_{7a}$	0.15 (0.05)	-0.44 (***)	***	Partial mediation
Interactivity → Online Trust → Customer loyalty	$\mathbf{H}_{7b}$	0.17 (0.02)	-0.61 (***)	***	Partial mediation

***p < 0.001

DISCUSSION OF FINDINGS

The findings highlight the impact of ORM activities (engagement, interactivity) on calculative commitment and customer loyalty; as well as the mediating role of online trust in these relationships between firms and their customers within the Ghanaian banking industry. However, the findings failed to establish a relationship between engagement and online trust ($\mathbf{H}_1$) indicating that engagement does not exert any significant influence on bank customers' online trust. This finding came as no surprise since previous research by Hsu, Chiang and Huang (2012), as well as Wu and Chang (2005) suggests that it is only when trust exists in an online community that the customer can meaningfully engage. Thus, these findings suggest that bank customers appear to be less engaged online (see Table 1).

Though Ghanaian banks, the signalers, are providing information online, the signals are either not reaching the customers, the receivers, through the appropriate medium, or not being correctly understood by the receivers to have an effect or draw out a response. According to the tenets of signaling theory, for the objectives of the signaler to be achieved, the signals sent need to be received and correctly understood

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by the receiver in order for it to have an effect (Mavlanova *et al.*, 2016). Extant literature also argues that among other online platforms, customer engagement primarily takes place on social media (Wirtz *et al.*, 2013). Nevertheless, from Table 1, one finds that social media is the least used medium for communication with customers. Far less than 50 per cent of the customers (38.5%) surveyed communicate with banks or obtain information through social media, while that of website and email were 79% and 100%, respectively. In effect, social media is less used by Ghanaian banks.

Much of the efforts for ORM activities of Ghanaian banks is through the websites of banks and emails. It could be inferred that the lack of an engagement focus exhibited by the Ghanaian banks could be associated with the risks, security and privacy issues related to the use of online technologies for communication. For websites and emails, the signals in the form of data privacy assurances and secure transaction mechanisms like Secure Socket Layer (SSL) encryption, as well as usability functions like Help tabs and Frequently Asked Questions are used by Ghanaian banks to reinforce customer perceptions of quality. Thus, signals for security for websites and emails are fairly certain (Mavlanova, Benbunan-Fich & Koufaris, 2012; Li, Srinivasan & Sun, 2009); but that of social media is still emerging (Cheng, Fu, & de Vreede, 2017).

Hence, in contexts where cybercrime is quite prevalent (see Boateng, Longe, Isabalija, & Budu, 2011) and internet banking is growing out of its nascent stages (Boateng & Narteh, 2016), Ghanaian banks are likely to be more cautious in their online activities, especially with technologies that they are quite uncertain about. In the tenets of signaling theory, Ghanaian banks are more likely to prefer 'environments' which are assessed or perceived to be free of any form of 'noise' that could hinder their signaling process (Taj, 2016). In précis, engagement as an ORM activity is assessed to be low by Ghanaian bank customers and presently does not influence customer commitment, online trust and customer loyalty. However, per the responses captured through open-ended questions in this study, customers expect banks to leverage social media to engage more with them.

Nonetheless, hypotheses $\mathbf{H_2}$ to $\mathbf{H_5}$ were proven; indicating that interactivity has a significant positive impact on online trust. It also indicates that online trust positively influences calculative commitment and customer loyalty; while calculative commitment has a direct influence on customer loyalty. Interactivity enables banks to mitigate the negative effects of the lack of physical interaction online by providing semblances of a human presence in customer dealings with them online. These semblances communicate an air of reliability and dependability to the customer, as proffered by the Signaling theory. Thereby, corroborating the findings of Beuckels and Hudders (2016) on the positive effects of interactivity on customer attitudes.

Regarding the relationship between Online trust and calculative commitment, literature identifies both trust and commitment as essential components in any long-term relationship (Lin, Weng & Hsieh, 2003; Morgan & Hunt, 1994). Online trust is considered to be of prime importance when transacting over the internet due to issues of security and privacy in the online environment. Once bank customers are convinced of the efficiency and reliability of the bank's online channels, they are sure to remain loyal into the foreseeable future. Banks, therefore, need to enhance their trust-inducing measures online, to endear their customers to remain loyal, as opined by Ladhari and Leclerc (2013).

Even so, it is acceptable to find some customer segments committed to their service provider for calculative reasons such as high switching costs and unique product and service benefits (Rajaobelina, Brun & Toufaily, 2013). Thus, a customer will most likely remain loyal to their bank if they are locked-in by some form of contract or lack of viable alternatives. In this instance, their loyalty to their bank is not because they are emotionally attached to them, but for purely rational and economic reasons (Lariviere *et*

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al., 2014; Sashi, 2012). This assertion is supported by the outcome of the current study, which unearthed a significant positive relationship between customers' awareness of the costs associated with leaving their bank (calculative commitment) and their loyalty to them.

In addition, the findings provide evidence for online trust's partial mediation of the effect of interactivity on calculative commitment, and that of interactivity on customer loyalty ($\mathbf{H_{6a}}$ to $\mathbf{H_{7b}}$. This implies that an increase in online trust will likely influence a customer's decision of whether or not to switch banks based on their interactivity. Likewise, an increase in online trust will, to some extent, impact bank customers' decisions to remain loyal to their bank based on how interactive their bank is with them online. These outcomes confirm the findings of previous studies (Chen, Griffith & Shen, 2005; Bart *et al.*, 2005) which provide similar results for testing such relationships. For instance, Bart *et al.* (2005) found that online trust partially mediates the relationships between website characteristics and customer behavioral intent.

Therefore, customers' perceptions of how well a bank's online channels can perform their required functions, can contribute significantly to their need to stay committed to their bank, as well as their intentions to remain loyal. Hence, one concludes that ORM activities pay; as such, instituting measures to increase interactivity would generally increase online trust, calculative commitment, as well as customer loyalty.

CONCLUSION

The study advances our understanding of the online signals sent through banks' ORM activities, namely engagement and interactivity and how they affect customer loyalty, as well as customers' perceptions of online trust and calculative commitment. The findings suggest that signals communicated through ORM activities, particularly interactivity per the Signaling theory, is indeed beneficial in influencing customers' online trust, calculative commitment and loyalty. The results substantiate the mediating role of online trust in Ghanaian banks' ORM activities, where online trust was found to mediate the impact of interactivity on calculative commitment, as well as the impact of interactivity on customer loyalty. This confirms one of the main assumptions of the Commitment-Trust Theory (Morgan & Hunt, 1994). Hence, together, the Signaling theory and the Commitment-Trust theory enable us to understand the complementarities between banks' online relationship building efforts and other relationship marketing outcomes.

Banking service delivery online has become a major topic of discussion among scholars in recent years; especially in Sub-Saharan Africa (Blankson, Ketron & Darmoe, 2017; Tarus, 2015; Narteh & Owusu-Frimpong, 2011). The introduction of online technology into banking in Ghana has precipitated several advances in the industry; leading to the introduction of various innovative banking products and customer solutions. The outcome of this study corroborates this by highlighting the role of online technology in relationship marketing, which enhances customer engagement, builds trust and fosters customer loyalty. This study enables banks in Ghana, and perhaps, other sub-Saharan African countries to recognize the nature of their online interactions with customers, as well as gain an understanding of the appropriate policies and measures necessary to effectively harness these technologies in their interactions with customers. Further, though website and email emerged as the most predominantly used internet applications in ORM in the banking industry, customers also expect banks to engage with them through social media. Social media has the potential to improve upon the current levels of bank-customer

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interactivity online. Banks should, therefore, develop strategies to leverage social media appropriately in order to engage and interact better with their customers.

Finally, most of the studies on ORM are done from the perspective of the customer; future research may consider, through a qualitative approach, exploring the decisions and strategies which underpin ORM activities of firms. Such a study may explore the roles of relationship managers (who may be offline) and employees who manage content on internet applications. Since this study used cross-sectional data, a longitudinal study on how relationships are developed online over time may offer an understanding of the influences of time sequence upon the relationships discussed in this study. Future research could also be directed at other sectors to explore the applicability of the underpinning theories further, as well as to fine-tune the conceptual model used.

REFERENCES

Acheampong, N. K. (2013). The effects of foreign bank entry on financial performance of domestic-owned banks in Ghana. *The International Journal of Business and Finance Research*, *7*(1), 93–104.

Acquaah, M., & Yasai-Ardekani, M. (2008). Does the implementation of a combination competitive strategy yield incremental performance benefits? A new perspective from a transition economy in Sub-Saharan Africa. *Journal of Business Research*, *61*(4), 346–354. doi:10.1016/j.jbusres.2007.06.021

Amankwah-Amoah, J. (2013). Old habits die hard: A tale of two failed companies and unwanted inheritance. *Journal of Business Research*, *67*(9), 1894–1903. doi:10.1016/j.jbusres.2013.11.053

Anderson, J. C., & Gerbing, D. C. (1988). Structural equation modelling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411–423. doi:10.1037/0033-2909.103.3.411

Bagozzi, R. P., & Yi, Y. (2012). Specification, Evaluation, and Interpretation of Structural Equation Models. *Journal of the Academy of Marketing Science*, *40*(1), 8–34. doi:10.100711747-011-0278-x

Bart, Y., Shankar, V., Sultan, F., & Urban, G. L. (2005). Are the drivers and role of online trust the same for all websites and consumers? A large-scale exploratory empirical study. *Journal of Marketing*, *69*(4), 133–152. doi:10.1509/jmkg.2005.69.4.133

Benlian, A., & Hess, T. (2011). The signaling role of it features in influencing trust and participation in online communities. *International Journal of Electronic Commerce*, *15*(4), 7–56. doi:10.2753/JEC1086-4415150401

Beuckels, E., & Hudders, L. (2016). An experimental study to investigate the impact of image interactivity on the perception of luxury in an online shopping context. *Journal of Retailing and Consumer Services*, *33*, 135–142. doi:10.1016/j.jretconser.2016.08.014

Bilgihan, A., & Bujisic, M. (2015). The effect of website features in online relationship marketing: A case of online hotel booking. *Electronic Commerce Research and Applications*, *15*(4), 222–232. doi:10.1016/j.elerap.2014.09.001

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Blankson, C., Ketron, S., & Darmoe, J. (2017). The role of positioning in the retail banking industry of Sub-Saharan Africa. *International Journal of Bank Marketing*, *35*(4), 685–713. doi:10.1108/IJBM-04-2016-0055

Bleier, A., & Eisenbeiss, M. (2015). The importance of trust for personalized online advertising. *Journal of Retailing*, *91*(3), 390–409. doi:10.1016/j.jretai.2015.04.001

Boateng, R., Longe, O., Isabalija, R. S., & Budu, J. (2011). 'SAKAWA' - The forms of cybercrime in Ghana. *Journal of Information Technology Impact*, *11*(2), 85–100.

Boateng, S. L., & Narteh, B. (2016). Online relationship marketing and affective customer commitment – The mediating role of trust. *Journal of Financial Services Marketing*, *21*(2), 127–140. doi:10.1057/fsm.2016.5

Bock, G.-W., Lee, J., Kuan, H.-H., & Kim, J.-H. (2012). The progression of online trust in the multi-channel retailer context and the role of product uncertainty. *Decision Support Systems*, *53*(1), 97–107. doi:10.1016/j.dss.2011.12.007

Boulding, W., & Kirmani, A. (1993). A consumer-side experimental examination of signaling theory: Do consumers perceive warranties as signals of quality? *The Journal of Consumer Research*, *20*(1), 111–123. doi:10.1086/209337

Brodie, R. J., Ilic, A., Juric, B., & Hollebeek, L. (2013). Consumer engagement in a virtual brand community: An exploratory analysis. *Journal of Business Research*, *66*(1), 105–114. doi:10.1016/j.jbusres.2011.07.029

Brun, I., Rajaobelina, L., & Ricard, L. (2014). Online relationship quality: Scale development and initial testing. *International Journal of Bank Marketing*, *32*(1), 5–27. doi:10.1108/IJBM-02-2013-0022

Byrne, B. M. (2010). *Structural Equation Modelling with Amos: Basic Concepts, Applications, and Programming* (2nd ed.). New York, NY: Taylor and Francis Group.

Cater, B., & Zabkar, V. (2009). Antecedents and consequences of commitment in marketing research services: The client's perspective. *Industrial Marketing Management*, *38*(7), 785–797. doi:10.1016/j.indmarman.2007.10.004

Chen, Q., Griffith, D. A., & Shen, F. (2005). The effects of interactivity on cross-channel communication effectiveness. *Journal of Interactive Advertising*, *5*(2), 30–44. doi:10.1080/15252019.2005.10722098

Cheng, X., Fu, S., & de Vreede, G. (2017). Understanding trust influencing factors in social media communication: A qualitative study. *International Journal of Information Management*, *37*(2), 25–35. doi:10.1016/j.ijinfomgt.2016.11.009

Cobos, L., Wang, Y. C., & Okumus, F. (2009). Assessing the web-based destination marketing activities: A relationship marketing perspective. *Journal of Hospitality Marketing & Management*, *18*(4), 421–444. doi:10.1080/19368620902799643

Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling theory: A review and assessment. *Journal of Management*, *37*(1), 39–67. doi:10.1177/0149206310388419

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Dabholkar, P. A., van Dolen, W. M., & de Ruyter, K. (2009). A dual-sequence framework for b2c relationship formation: Moderating effects of employee communication style in online group chat. *Psychology and Marketing*, *26*(2), 145–174. doi:10.1002/mar.20265

Deloitte. (2014). *2015 Banking Outlook: Boosting Profitability amidst New Challenges*. Deloitte Centre for Financial Services. Retrieved from http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Financial-Services/gx-us-fsi-outlook-banking-final.pdf

Durcikova, A., & Gray, P. (2009). How knowledge validation processes affect knowledge contribution. *Journal of Management Information Systems*, *25*(4), 81–107. doi:10.2753/MIS0742-1222250403

Etemad-Sajadi, R. (2016). The impact of online real-time interactivity on patronage intention: The use of avatars. *Computers in Human Behavior*, *61*, 227–232. doi:10.1016/j.chb.2016.03.045

Fam, K. S., Foscht, T., & Collins, R. D. (2004). Trust and the online relationship - an exploratory study from New Zealand. *Tourism Management*, *25*(2), 195–207. doi:10.1016/S0261-5177(03)00084-0

Fang, Y. H. (2012). Does online interactivity matter? Exploring the role of interactivity strategies in consumer decision making. *Computers in Human Behavior*, *28*(5), 1790–1804. doi:10.1016/j.chb.2012.04.019

Farquhar, J., & Rowley, J. (2006). Relationships and online consumer communities. *Business Process Management Journal*, *12*(2), 162–179. doi:10.1108/14637150610657512

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *JMR, Journal of Marketing Research*, *18*(1), 39–50. doi:10.1177/002224378101800104

Fullerton, G. (2005). How commitment both enables and undermines marketing relationships. *European Journal of Marketing*, *39*(11/12), 1372–1388. doi:10.1108/03090560510623307

Fullerton, G. (2014). The moderating effect of normative commitment on the service quality-customer retention relationship. *European Journal of Marketing*, *48*(3/4), 657–673. doi:10.1108/EJM-06-2011-0333

Gan, L., Sim, C. J., Tan, H. L., & Tna, J. (2007). Online relationship marketing by Singapore hotel websites. *Journal of Travel & Tourism Marketing*, *20*(3-4), 1–19. doi:10.1300/J073v20n03_01

Ghazi, A. A., Muhammed, S. A., Khalil, A., Fwwaz, A., & Raed, A. (2013). Electronic networks and relationship marketing: Qualitative evidence from Jordanian travel agencies. *Journal of Relationship Marketing*, *12*(4), 261–279. doi:10.1080/15332667.2013.846245

Grönroos, C. (1996). Relationship marketing: Strategic and tactical. *Management Decision*, *34*(3), 5–14. doi:10.1108/00251749610113613

Guo, M. (2014). Relationship marketing in an online social media context: Newspaper versus television brand websites comparison. *Journal of Media Business Studies*, *11*(4), 1–26. doi:10.1080/16522354.2014.11073586

Gustafsson, A., Johnson, M. D., & Roos, I. (2005). The effects of customer satisfaction, relationship commitment dimensions, and triggers on customer retention. *Journal of Marketing*, *69*(4), 210–218. doi:10.1509/jmkg.2005.69.4.210

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Harker, M. J. (1999). Relationship marketing defined. An examination of current relationship marketing definitions. *Marketing Intelligence & Planning*, *17*(1), 13–20. doi:10.1108/02634509910253768

Howcroft, B., Durkin, M., Armstrong, G., & Emerson, E. (2007). Small business-bank relationships and the role of internet banking. *Service Industries Journal*, *27*(7), 947–961. doi:10.1080/02642060701570784

Hsu, C.-L., Liu, C.-C., & Lee, Y.-D. (2010). Effect of commitment and trust towards micro-blogs on consumer behavioral intention: A relationship marketing perspective. *International Journal of Electronic Business Management*, *8*(4), 292–303.

Hsu, C.-P., Chiang, Y.-F., & Huang, H.-C. (2012). How experience-driven community identification generates trust and engagement. *Online Information Review*, *36*(1), 72–88. doi:10.1108/14684521211206971

Huang, J.-H., & Shyu, S. H. (2009). Building personalized relationships with customers via emails. *Total Quality Management & Business Excellence*, *20*(6), 585–601. doi:10.1080/14783360902924234

Jeon, H., Jang, J., & Barrett, E. B. (2016). Linking website interactivity to consumer behavioral intention in an online travel community: The mediating role of utilitarian value and online trust. *Journal of Quality Assurance in Hospitality & Tourism*, *0*(0), 1–24.

Jones, T., Fox, G. L., Taylor, S. F., & Fabrigar, L. R. (2010). Service Customer Commitment and Response. *Journal of Services Marketing*, *24*(1), 16–28. doi:10.1108/08876041011017862

Kabadayi, S., & Price, K. (2014). Consumer – brand engagement on Facebook: Liking and commenting Behaviors. *Journal of Research in Interactive Marketing*, *8*(3), 203–223. doi:10.1108/JRIM-12-2013-0081

Kanagal, N. (2009). Role of relationship marketing in competitive marketing strategy. *Journal of Management and Marketing Research*, *2*, 1–17.

Kassim, N. M., & Abdulla, A. K. M. A. (2006). The influence of attraction on internet banking: An extension to the trust-relationship commitment model. *International Journal of Bank Marketing*, *24*(6), 424–442. doi:10.1108/02652320610701744

Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, *44*(2), 544–564. doi:10.1016/j.dss.2007.07.001

Kirmani, A., & Rao, A. R. (2000). No pain, no gain: A critical review of the literature on signaling unobservable product quality. *Journal of Marketing*, *64*(2), 66–79. doi:10.1509/jmkg.64.2.66.18000

Kline, R. B. (2011). *Principles and Practice of Structural Equation Modelling* (3rd ed.). New York, NY: Guilford Press.

Kumar, B., Manrai, A. K., & Manrai, L. A. (2017). Purchasing behavior for environmentally sustainable products: A conceptual framework and empirical study. *Journal of Retailing and Consumer Services*, *34*, 1–9. doi:10.1016/j.jretconser.2016.09.004

Labrecque, L. I. (2014). Fostering consumer-brand relationships in social media environments: The role of parasocial interaction. *Journal of Interactive Marketing*, *28*(2), 134–148. doi:10.1016/j.intmar.2013.12.003

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Ladhari, R., & Leclerc, A. (2013). Building loyalty with online financial services customers: Is there a gender difference? *Journal of Retailing and Consumer Services*, *20*(6), 560–569. doi:10.1016/j.jretconser.2013.07.005

Ladhari, R., Souiden, N., & Dufour, B. (2017). The role of emotions in utilitarian service settings: The effects of emotional satisfaction on product perception and behavioral intentions. *Journal of Retailing and Consumer Services*, *34*, 10–18. doi:10.1016/j.jretconser.2016.09.005

Lariviere, B., Keiningham, T. L., Cooi, B., Aksoy, L., & Malthouse, E. C. (2014). A longitudinal examination of customer commitment and loyalty. *Journal of Service Management*, *25*(1), 75–100. doi:10.1108/JOSM-01-2013-0025

Lee, H. J., Lee, D.-H., Taylor, C. R., & Lee, J.-H. (2011). Do online brand communities help build and maintain relationships with consumers? A Network Theory approach. *Journal of Brand Management*, *19*(31), 213–227. doi:10.1057/bm.2011.33

Li, C.-H., & Chang, C.-M. (2016). The influence of trust and perceived playfulness on the relationship commitment of hospitality online social network-moderating effects of gender. *International Journal of Contemporary Hospitality Management*, *28*(5), 924–944. doi:10.1108/IJCHM-05-2014-0227

Li, S., Srinivasan, K., & Sun, B. (2009). Internet auction features as quality signals. *Journal of Marketing*, *73*(1), 75–92. doi:10.1509/jmkg.73.1.075

Lin, N.-P., Weng, J. C. M., & Hsieh, Y.-C. (2003). Relational bonds and customer's trust and commitment - a study on the moderating effects of web site usage. *Service Industries Journal*, *23*(3), 103–124. doi:10.1080/714005111

Mahmoud, M. A., Kastner, A. N. A., & Lartey, J. O. (2017). Internet-Based Relationship Marketing: A Sub-Saharan African Perspective. *Journal of Relationship Marketing*, *16*(3), 179–196. doi:10.1080/15332667.2017.1349555

Mavlanova, T., Benbunan-Fich, R., & Koufaris, M. (2012). Signaling theory and information asymmetry in online commerce. *Information & Management*, *49*(5), 240–247. doi:10.1016/j.im.2012.05.004

Mavlanova, T., Benbunan-Fich, R., & Lang, G. (2016). The role of external and internal signals in e-commerce. *Decision Support Systems*, *87*, 59–68. doi:10.1016/j.dss.2016.04.009

McCallum, S. Y., Forret, M. L., & Wolff, H.-G. (2014). Internal and external networking Behaviour. an investigation of relationships with affective, continuance, and normative commitment. *Career Development International*, *16*(5), 595–614. doi:10.1108/CDI-08-2013-0101

Mishra, K. E., & Li, C. (2008). Relationship marketing in Fortune 500 U.S. and Chinese web sites. *Journal of Relationship Marketing*, *7*(1), 29–43. doi:10.1080/15332660802067882

Mollen, A., & Wilson, H. (2010). Engagement, telepresence and interactivity in online consumer experience: Reconciling scholastic and managerial perspectives. *Journal of Business Research*, *63*(9-10), 919–925. doi:10.1016/j.jbusres.2009.05.014

Morgan, R. M., & Hunt, S. D. (1994). The Commitment-Trust theory of relationship marketing. *Journal of Marketing*, *58*(3), 20–38. doi:10.1177/002224299405800302

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Mukherjee, A., & Nath, P. (2007). Role of electronic trust in online retailing: A re-examination of the Commitment-Trust theory. *European Journal of Marketing*, *41*(9-10), 1173–1202. doi:10.1108/03090560710773390

N'Goala, G. (2007). Customer switching resistance (CSR): The effects of perceived equity, trust and relationship commitment. *International Journal of Service Industry Management*, *18*(5), 510–533. doi:10.1108/09564230710826278

Narteh, B., & Owusu-Frimpong, N. (2011). An analysis of students' knowledge and choice criteria in retail bank selection in Sub-Saharan Africa: The case of Ghana. *International Journal of Bank Marketing*, *29*(5), 373–397. doi:10.1108/02652321111152909

Nusair, K., Bilgihan, A., Okumus, F., & Cobanoglu, C. (2013). Generation Y travelers' commitment to online social network websites. *Tourism Management*, *35*(2), 13–22. doi:10.1016/j.tourman.2012.05.005

Picón-Berjoyo, A., Ruiz-Moreno, C., & Castro, I. (2016). A mediating and multi-group analysis of customer loyalty. *European Management Journal*, *34*(6), 701–713. doi:10.1016/j.emj.2016.07.006

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for estimating indirect effects in simple mediation models. *Behavior Research Methods*, *40*(3), 879–891. doi:10.3758/BRM.40.3.879 PMID:18697684

Proença, J. F., Silva, M. M., & Fernandes, T. (2010). The impact of the Internet upon bank marketing. *Journal of Financial Services Marketing*, *15*(2), 160–175. doi:10.1057/fsm.2010.12

PwC Ghana. (2017). *Risk-based minimum regulatory capital regime: what it means for banks in Ghana.* 2017 Ghana Banking Survey. Retrieved from https://www.pwc.com/gh/en/assets/pdf/2017-banking-survey-report.pdf

Rafiq, M., Fulford, H., & Lu, X. (2013). Building customer loyalty in on online retailing: The role of relationship quality. *Journal of Marketing Management*, *29*(3/4), 494–517. doi:10.1080/0267257X.2012.737356

Rajaobelina, L., Brun, I., & Toufaily, É. (2013). A relational classification of online banking Customers. *International Journal of Bank Marketing*, *31*(3), 187–205. doi:10.1108/02652321311315294

Sashi, C. M. (2012). Customer engagement, buyer-seller relationships, and social media. *Management Decision*, *50*(2), 253–272. doi:10.1108/00251741211203551

Schreiber, J. B. (2008). Core reporting practices in structural equation modelling. *Research in Social & Administrative Pharmacy*, *4*(2), 83–97. doi:10.1016/j.sapharm.2007.04.003 PMID:18555963

Shapiro, J. M., Romano, N. C. Jr, & Mittal, B. (2004). Emergent internet technology applications for relationship marketing. *Journal of Relationship Marketing*, *2*(3/4), 85–108. doi:10.1300/J366v02n03_06

Sinha, M., & Sheth, J. (2013). Growing the pie in emerging markets: Marketing strategies for increasing the ratio of non-users to users. *Journal of Business Research*, *86*, 217–224. doi:10.1016/j.jbusres.2017.05.007

Srivastava, M., & Kaul, D. (2016). Exploring the link between customer experience-loyalty-consumer spend. *Journal of Retailing and Consumer Services*, *31*, 277–286. doi:10.1016/j.jretconser.2016.04.009

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Sumaedi, S., Juniarti, R. P., & Bakti, I. G. M. Y. (2015). Understanding trust & commitment of individual saving customers in Islamic banking. The role of ego involvement. *Journal of Islamic Marketing*, *6*(3), 406–428. doi:10.1108/JIMA-06-2013-0045

Taj, S. A. (2016). Application of signaling theory in management research: Addressing major gaps in theory. *European Management Journal*, *34*(4), 338–348. doi:10.1016/j.emj.2016.02.001

Tarus, D. K. (2015). Do diaspora remittances affect banking sector development in Sub Saharan Africa? *International Journal of Commerce and Management*, *25*(3), 356–368. doi:10.1108/IJCoMA-08-2014-0090

Tsao, W.-C., & Hsieh, M.-T. (2012). Exploring how relationship quality influences positive eWOM: The importance of customer commitment. *Total Quality Management & Business Excellence*, *23*(7-8), 821–835. doi:10.1080/14783363.2012.661137

Urban, L. G., Amyx, C., & Lorenzo, A. (2009). Online trust: State of the art, new frontiers, and research potential. *Journal of Interactive Marketing*, *23*(1), 179–190. doi:10.1016/j.intmar.2009.03.001

Verma, V., Sharma, D., & Sheth, J. (2016). Does relationship marketing matter in online retailing? A meta-analytic approach. *Journal of the Academy of Marketing Science*, *44*(2), 206–217. doi:10.100711747-015-0429-6

Vivek, S. D., Beatty, S. E., & Morgan, R. M. (2012). Consumer engagement: Exploring customer relationships beyond purchase. *Marketing Theory and Practice*, *20*(2), 122–146. doi:10.2753/MTP1069-6679200201

Wang, C. L., & Ahmed, P. K. (2007). Dynamic capabilities: A review and research agenda. *International Journal of Management Reviews*, *9*(1), 31–51. doi:10.1111/j.1468-2370.2007.00201.x

Wang, C.-Y., & Wu, L.-W. (2012). Customer loyalty and the role of relationship length. *Managing Service Quality: An International Journal*, *22*(1), 58–74. doi:10.1108/09604521211198119

Wang, L., Law, R., Guillet, B. D., Hung, K., & Fong, K. C. (2015). Impact of hotel website quality on online booking intentions: eTrust as a mediator. *International Journal of Hospitality Management*, *47*, 108–115. doi:10.1016/j.ijhm.2015.03.012

Wu, J.-J., & Chang, Y.-S. (2005). Towards understanding members' interactivity, trust, and flow in online travel community. *Industrial Management & Data Systems*, *105*(7), 937–954. doi:10.1108/02635570510616120

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Chapter 64
Hedonic and Utilitarian Values Behind Engagement of Online Consumers

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ABSTRACT

In the hyper-competitive Indian airline industry, the low-cost carriers as well as full-service airlines are in dire need of innovative marketing strategies to engage their customers. To understand the dynamics behind the process of customer engagement, the purpose of this paper is to gain insights into the lived experience of consumers about their online air-ticket bookings experiences. In total, 60 frequent air travellers were approached to participate in the study and the self-completion diary method was incorporated to record their ticket booking experiences. The responses recorded in the diaries were analyzed on the basis of their content from which eight themes were derived. The findings bring forth the importance of hedonic experiential values along with utilitarian experiential values toward the engagement of customers during the online air-ticket booking process. The current study is one of the pioneers in conceptualization of customer engagement as a third-order construct by uncovering the sub-dimensions of the second order factors—utilitarian and hedonic experiential values.

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INTRODUCTION

Consumer buying behavior has changed drastically with the advancement of technology. The growth of the internet and e-commerce has brought revolution by connecting more than two billion people worldwide (Buhalis & Law, 2008). The impact of internet on the global economy is immense with its contribution of around three percent to the global GDP as stated in a report by McKinsey Global Institute (Manyika & Roxburgh, 2011). The influence of internet on the developing countries has also been reported, and it has been observed that nearly 50 percent of the internet users thrive beyond the advanced economies such as India, which is developing quickly and is one of the emerging economies. India is characterized by significant economic potential, social, and cultural diversity. Emerging economies have been defined as those economies that comprise of the fast-growing developing markets (Gnanasambandam et al., 2012; Khanna, Palepu & Sinha, 2005). The marketers are still struggling for effective marketing strategies to reap benefits from this market (Ramamurti 2008). The reason behind it is that these markets comprise of prosperous middle-class consumers who are different from the consumers of the developing market with regard to factors like socio-economic demographics (Biswas & Roy, 2015). Therefore, they exhibit different consumption pattern and consequently the motives behind their purchase decision varies. Thus, we want to enrich this body of literature by incorporating unique characteristics of one of the emerging markets, i.e., India, which will provide guidance related to the country-industry-specific research.

Further, it is seen that about 120 million people use internet in India, which is a striking example of the growth potential of internet usage, and thereby making it the third largest internet user base in the world (Dart Consulting, 2014). Interestingly, though India is adopting internet at a significant pace, a mammoth chunk of its population (i.e., 90 percent of its population) is not connected and there is a scope of adopting the internet by the majority of its population (Dart Consulting, 2014; Gnanasambandam et al., 2012).

In this era of technology advancement, e-commerce becomes the new trend and the need of the day, which has motivated scholars to explore and examine factors related to the engagement of the consumers for online purchases (Buhalis & Law, 2008; Pappas, Kourouthanassis, Giannakos, & Lekakos, 2017; Turban et al., 2018). Online purchase behavior is a well- established phenomenon. Consumers are moving to online shopping platform for various reasons such as excitement, enjoyment, time saving, discounts and benefits, wider choice and comparison, and so forth (Anderson, Knight, Pookulangara, & Josiam, 2014; Pappas et al., 2017). The motives behind online purchase behavior may vary and is based on the types of consumer. Past studies have classified consumers on the basis of two types of shopping motivations — utilitarian and hedonic (Anderson et al., 2014; Babin, Darden, & Griffin, 1994; Childers, Carr, Peck, & Carson, 2001). Utilitarian motivation is associated with the benefit that consumer gets from consuming a product or service to accomplish a task, whereas, hedonic motivation is associated with the experience gathered from consuming a product or service (Anderson et al., 2014; Babin et al., 1994; Childers et al., 2001). These utilitarian and hedonic consumers display different shopping patterns. A consumer may be driven by a utilitarian or a hedonic motive or by both. Thakur (2016) conceptualized that customer engagement comprises experiences that arise out of hedonic and utilitarian values sought by the consumers from a product or services. Ultimately, the motives (i.e., hedonic or utilitarian) that engage consumers and influence their choice behavior are important from a marketer's perspective (Anderson et al., 2014; Devedi, Sujatha & Pathak, 2017; Pappas et al., 2017).

The current research will explore the utilitarian and hedonic motivations of online consumers who are engaged in the purchase of airline e-tickets in India. Elias et al. (2015) stated that the airline e-ticketing

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industry is one of the fastest growing industries in the world. Moreover, the Internet and Mobile Association of India [IAMAI] reported that online travel booking holds a major share of the spending related to Digital Commerce, i.e., about 61 percentage, and air ticket booking is amongst the top categories in online travel space. Past studies have noted that the majority of online shopping is associated with the purchase of air tickets (Babin et.al, 1994; Escobar-Rodríguez Carvajal-Trujillo, 2014; López-Bonilla & López-Bonilla, 2015), but there is scarcity of literature that explores the motives behind the engagement of airline e-ticket consumers from their lived experience, especially in the contextually rich market such as the emerging market of India. Hence, in this study, we conceptualized engagement in the airline e-ticket as the experiences that arise out of hedonic and utilitarian values sought by the consumers from an airline e-ticket consumption. The profile of consumers in India varies on the basis of value system, information quality of the airline e-ticketing website, and the perceived risks associated with the online customer engagement (Devedi et al., 2017; Thakur, 2016). Hence, it is possible that the consumers in India hold different motives for engaging in the purchase of e-tickets. There is a paucity of studies exploring the conceptualization of customer engagement (Brodie, Llic, Juric, & Hollebeek, 2013), thus, we endeavor to enhance this body of literature by examining the sub-dimensions of the two types of motives (i.e., hedonic and utilitarian) behind the engagement of online consumers with the airline ticket booking portals.

The requirement of in-depth understanding of these factors is highly palpable in the Indian airline industry. The Indian airline industry is undergoing several changes due to multiple players, low revenue structure, high operating cost, and volatile economic conditions (Brodie et al., 2013; Rangarajan & Prasad, 2014). The industry witnesses severe completion for acquiring customers (Hollebeek, Glynn, & Brodie, 2014). The findings of this study will aid the airline companies to understand the specific utilitarian and hedonic motivations behind the engagement of their customers toward the online purchase of air tickets. The study will provide insights into the online e-ticketing customer engagement, which can be capitalized by the airline firms to achieve continuous improvements in their services, offers, website management, and it will keep them ahead of the cut-throat competition (Brodie et al., 2013; Thakur, 2016).

LITERATURE REVIEW

Online shopping behavior has gained momentum a few decades back with the advancement in technology (Thakur, 2016; Bordie et al., 2013). Scholars have tried to understand the shopping behavior from various perspectives. For the ease of understanding the shopping patterns, consumers are categorized on the basis of their actual patronage and shopping behaviour (Stephenson & Willet, 1969; Verhoef, Reinartz, & Krafft, 2010) and the enjoyment derived from shopping (Bellenger & Korgaonkar, 1980; Thakur, 2016). Tauber (1972) for the first time explored the motivation behind shopping behaviour (To, Liao & Lin, 2007) and basically believed that "people shop not only for the utilitarian value of the products but also for the satisfaction derived during the shopping process" (To et al., 2007, p. 775). These two shoppers' motivations are rooted in the concept of "value", which is created by the holistic experience of shopping and not simply through the acquisition of product/services (Babin et. al., 1994). Holbrook and Hirschman (1982) corroborated that the motivation behind shopping should not be observed from the objective perspective alone like "focusing on an object, its price, or the functional utility provided by that object", as it will be too narrow concept "to account for all value provided by consumption experiences" (Babin et. al., 1994, p. 645). This new perspective of dichotomized motivations of hedonic

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and utilitarian behind shopping by Holbrook and Hirschman (1982) brought the paradigm shift from the functional perspective of shopping to the experiential shopping perspective. One of the subsequent studies on this perspective was carried out by Babin et al. (1994), who illustrated that "shopping with a goal" can be distinguished from "shopping as a goal" (p. 647). To explain this phenomenon, researchers conducted a qualitative inquiry on the gift purchase behavior during the festive season of Christmas. The finding of this study explicated that for some people gift purchase during Christmas is a chore, while for such an exuberant occasion, others might enjoy the whole experience of gift shopping.

Studies on this dichotomized motivation of hedonic and utilitarian are also growing in the online contexts, but researchers like Loiacono, Watson, and Goodhue (2007) decreed that online environment is not similar to the traditional retail environment. The reason is that theories developed in the face-to-face context are inappropriate for the 'idiosyncratic' online environment, where online shopping involves unique interaction of 'information system' and 'marketing' (Lociacono et al., 2007). One of the comprehensive works on the factors affecting hedonic and utilitarian motives in the online context has been conducted by To et al. (2007), who found that utilitarian motivation is affected by convenience, cost saving, information availability, and selection, whereas, hedonic motivations are affected by adventure, authority, and status. Charles et al. (2010) further examined the utilitarian and hedonic motives of consumers in the context of online shopping and concluded that online shopping experience can be enhanced through hedonic factors related to aesthetically rich shopping environment. In a similar vein, Kim and Eastin Mathew (2011) studied consumers' online shopping behaviors and tested the effect of hedonic shopping motivation. The findings indicated that hedonic shopping motivation is the major predictor of information seeking behavior and impulse buying behavior of consumers. Michael (2006) further conducted qualitative research on the online behavior of consumers and identified the list of factors that affect the online buying behavior, which include convenience, time saving, and price advantage in comparison to other products and services. These factors derive and motivate online shopping. The exploration of hedonic and utilitarian motives was further explored through cross-cultural studies such as Özen and Kodaz (2016). The researchers found that Turkish consumers use online retailers to socialize with other consumers, whereas, the US people use the online retailers to relax.

Similarly, Pappas et al. (2017) suggested that there is an interplay of online shopping motivations with the experiential factors and these can be used to predict and increase purchase intention. These experiential factors generate values for customers that help in obtaining online customer engagement (Thakur, 2016). Customer engagement has been conceptualized in varied forms such as consumer and customer engagement (Verhoef et al., 2010), community engagement (Brodie et al., 2013), customer-brand engagement (Hollebeek et al., 2014), and customer-medium engagement (Calder, Malthouse and Schaedel, 2009). The variation in conceptualizations reflects that the construct is at an evolving state. Along with varied conceptualizations, there is diverse viewpoint on the definitions of customer engagement in the marketing literature. The definition of customer engagement varies from "a psychological process" (cf. Thakur, 2016; Bowen, 2008) to "a consumer's state of being occupied, fully-absorbed or engrossed" (cf. Thakur, 2016; Pham & Avnet, 2009). Marketing scholars have conceptualized customer engagement as a multi-dimensional construct (Brodie et al., 2013; Bowen, 2008; Calder et al., 2011; Thakur, 2016) that comprises cognitive, emotional, and behavioral aspects. Hollebeek et al. (2011) defined customer engagement with the brand as "the context-dependent state of mind characterized by specific levels of cognitive, emotional, and behavioral activity". Researchers have also focused on the experimental aspect of customer engagement, as Calder, Malthouse, and Schaedel (2009) suggested that customer engagement is "the sum of the motivational experiences consumers have with a media

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product." Thakur (2016) showed that the customer uses an online platform to satisfy different motives and consequently perceive outcome values differently in different contexts.

From the above discussion, we can conclude that the existent literature connotes significant emphasis on hedonic and utilitarian motivations toward online customer engagement. However, studies hitherto have emphasized more on the quantitative validation of hedonic aspects of online customer engagement, rather than on personal experiences of consumers behind this hedonic consumption aspect. Hence, an in-depth qualitative inquiry is required to uncover the sub-dimensions of hedonic motivations along with the utilitarian motivations by exploring the deep-rooted psychological factors associated with e-ticketing consumer engagement experiences. Holbrook and Hirschman (1982) further concurred that the better way to understand mental events corresponding to any consumption act is to adopt introspective reports rather than resort to overt behavioral measures only.

Apart from the need to exactly specify the thoughts and believes of consumers about the hedonic and utilitarian motivations behind engagement into online purchases, there is a paucity of literature on the online air-ticket booking contexts of emerging markets such as India. According to Dart Consulting (2014) and Gnanasambandam et al. (2012), Indian consumers are adopting internet at a rapid pace, and there is an opportunity for Indian retailers to identify the prospects with online marketing. Indian consumers are experiencing a higher level of technology readiness in online ticket booking. With the advancement in technology readiness, it is found that consumers' motivations tend to move from utilitarian to hedonic motivations (Loiacono et. al. 2007). Thus, this study endeavors to qualitatively explore the sub-dimensions of utilitarian and hedonic motivations in understanding the conceptualization of customer engagement as a multi-dimensional construct in the context of online air-ticket booking for the emerging markets like India.

METHODOLOGY

Context

Online Airline Booking in India

The variables that motivate consumers to use the internet for shopping depends on the type of products or services (Phau & Meng, 2000). In the context of online air-ticket booking, past studies on technology readiness as well as technology acceptance revealed the importance of consumers' consumption motivations towards engagement with the booking web portals (Bigné et al., 2010; Llach et al., 2013; Al-maghrabi & Dennis, 2009; Koppius et. al., 2005; Kolsaker et al., 2004). Initially, engagement towards air-ticket booking was considered to be driven only by utilitarian motives. Technology advancement in these online portals is changing consumers' technology readiness and enabling the rapid technology acceptance. This study is one of its kinds to explore how technology readiness and technology acceptance is inducing the hedonic motivations along with utilitarian motivations behind engagement towards online ticket booking which is narrow to date was perceived to be only a utilitarian product in an emerging market such as India. Further, Boston Consulting Group said that a number of internet users in India have grown up to 580 million in 2018 from the existing 205 million in 2014 (IAMA, 2016). The report also stated that India is the second fastest growing market after China. Of this, air travel is the biggest contributor to this industry at 39%, while rail travel and hotel bookings follow it by accounting for 28%

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and 30% respectively. This makes air-ticket booking web portals as the largest selling category of Indian online travel market at 56% (Domestic Air Tickets – 50% and International Air Tickets – 6%), as per IAMAI and IMRB's "Digital Commerce" report (IAMA, 2016). Please refer exhibit 1 for the share of online travel in India.

Participant Selection

Since previous literature has not delineated the hedonic and utilitarian motivations of Indian airline consumers, this study followed an inductive approach to select information-rich cases (Corbin & Strauss, 2008). To this end, a purposeful snowball and criterion sampling technique was used to recruit airline consumers, as respondents, to explore their e-ticketing experience over a period of six months. Patton (1990) has recommended purposive snowball sampling and criterion technique as a technique to identify information-rich cases for qualitative inductive studies. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the inquiry, thus the term purposeful sampling. Studying information-rich cases yields insights and in-depth understanding rather than empirical generalizations (Patton, 2002, p. 230). Thus, information-rich cases. allows finding a more closely defined group of participants for whom the research objectives will be relevant. The respondents, therefore, were the frequent air travelers located across three major cities in India namely; Kolkata, New Delhi and Hyderabad. These cities are the major metropolitan cities of India and, most of the companies have their presence in these cities. Further, in these cities, the preferred mode of traveling among the business executives are by air given that the usage of internet services for online purchases are concentrated mostly in these regions. Selection of the cities was based on the ease of accessibility to a large online airline booking consumers, representing different parts of the country. These respondents were the business executives working in different hierarchical levels across different jobs and industries. They were categorized as frequent travelers based on the frequency of their travel visits in the last three months. The basis was that these executives would have traveled between three to five times in a month. The tickets for these travels were booked online. We ensured the ethical research practice by maintaining the anonymity of the respondents. For this consent was taken from the respondents for their participation. They were assured for the anonymity of their responses and that their participation is voluntary. Lastly, we also inform them that their responses will be used purely for academic purpose.

Data Collection Through Self-Completion Diary Method

The data were collected using self-completion diaries (Zeba & Mohnaty, 2019; Bolger et al., 2003). Diary approach gave consistency in recording the data that might have been missed out at the time of recall, as it entails real-time involvement (at or around the time of purchase) of the respondents, with minimal intervention from the researcher (other than distributing and collecting the diaries) (Bryman, 2015). The lack of intervention facilitated the subjective freedom to the respondents to express their opinions when booking tickets online. In effect, diarizing response near the time of purchase also decreases delay in time which potentially result in response bias (Bolger et al., 2003). We followed the procedure suggested by Alaszewski (2006) and in the first step of the diary method, a dairy was given to each participant and was briefed about documenting their experiences of air-ticket bookings. The respondents were also informed about the timeline for which they were supposed to record their air-ticket booking experiences as well as the deadline for returning the dairy to us. The questions asked in the dairy were largely how

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questions as Patton (2002) advised and, was followed by why questions to delve into deeper analysis about what they have experienced. The questions were related to the place and date of travel, mode of booking airline tickets, motives behind booking the tickets and the overall personal experiences behind the booking process similar. The researcher then read and analyses the complete textual data in the logs of the diaries. The respondents completed the diaries for all their ticket purchases and could mention any category without restriction as part of this exploratory approach. We requested the respondents record their ticket booking experiences for the next one month. The travels could be for any reason, whether business or personal. A discount coupon of 500 INR was given to the respondents as a token of gratitude for participating in the study. The questions provided to the respondents were semi-structured to meet the research objectives and were sufficiently general to elicit a broad spectrum of insights into the entire domain of e-ticketing. Basically, questions were largely how questions as Zeba et al. (2019) advised and, was followed by why questions to delve into deductive inferences about what they have experienced. The questions were related to the place of travel, mode of booking tickets, and personal experience and motives in the booking process.

To bring the validity and deeper understanding of the framework for reliability and validity was based on work by Whittemore, Chase, and Mandle (2001). The reliability of the findings of the present study was strengthened by documenting the stages of analysis. Further, an agreement between four coders and two experts about data interpretation has also been sought. For this four coders (including the two researchers) independently explored the themes. Then the themes identified by these independent coders were compared and contrasted and finally, an agreement was reached on the themes by seeking the advice of two experts. These experts have rich domain expertise in prominent airline firms in India. Member check was also done to contribute to the validity of the findings. Please refer Table 1 and 2 for more details on the emerged themes.

Out of the 60 participants, 35 were males and 25 were females. Around 14 respondents were working in the senior level position, 29 were working in the middle-level positions, and 17 were in the executive levels. 22 respondents were having professional degrees such as MBA and CFA. Around 20 respondents were having experience more than 15 years. To maintain confidentiality only gender, hierarchical level, education, and work experience have been asked from the respondents to understand their demographic profile.

DATA ANALYSIS

The final and the most important phases of dairy research are the analysis and interpretation of the results obtained through the dairy method. Because the qualitative data collected from the diaries do not have any in-build structure. Therefore, the next step is to find out a way to manage the raw textual data. The analysis of such qualitative data and deriving patterns from large chunks of the textual data set was done using the inductive content analysis (Vaismoradi, Turunen, & Bondas, 2013). Inductive content analysis is a method that has been widely used in analyzing the qualitative data collected from the participant's experience documented in the form of diaries. It helps in classifying the textual data into more small and meaningful phrases. The textual data collected from the diaries were being coded following the procedure given by Elo and Kyngas (2008). Each diary was read several times to get the meaning as a whole by both the researchers individually. Subsequently, each dairy was re-read and the phrases related to hedonic and utilitarian motives regarding online ticketing context were highlighted.

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While reading, the codes relating to these highlighted texts were jotted down at the margins. Through the analysis, an attempt was made to have parsimonious codes, i.e., similar codes were combined together based on the hedonic and utilitarian motives behind air-ticket booking. After the open coding of three to four dairy logs, the preliminary codes were decided upon. The remaining content of the diaries were coded with these preliminary codes and new codes were added for the texts that did not fit into these existing codes. Once all the diaries were coded, data within a particular code were examined for consistency and relevancy. Further, these entries were exchanged and the codes were checked. Some codes were combined during this process, whereas others were splited into subcategories. Ultimately, the final codes were examined for organizing them into a hierarchical structure as possible.

FINDINGS

The exhaustive description given subsequently illustrates the themes that were identified from the inductive content analysis of the data. Eight major themes emerged for utilitarian and hedonic motivations behind the customer engagement towards online air-ticket bookings. The themes for utilitarian motivations are: (i) cost saving; (ii) information seeking; (iii) contingency; and (iv) one-stop solution; whereas themes for hedonic motivations are (i) gratification; (ii) living in the moment; (iii) social interaction; and (iv) variety-seeking. Please refer to Figure 1 for the conceptual model of online customer engagement.

Figure 1. Conceptual model

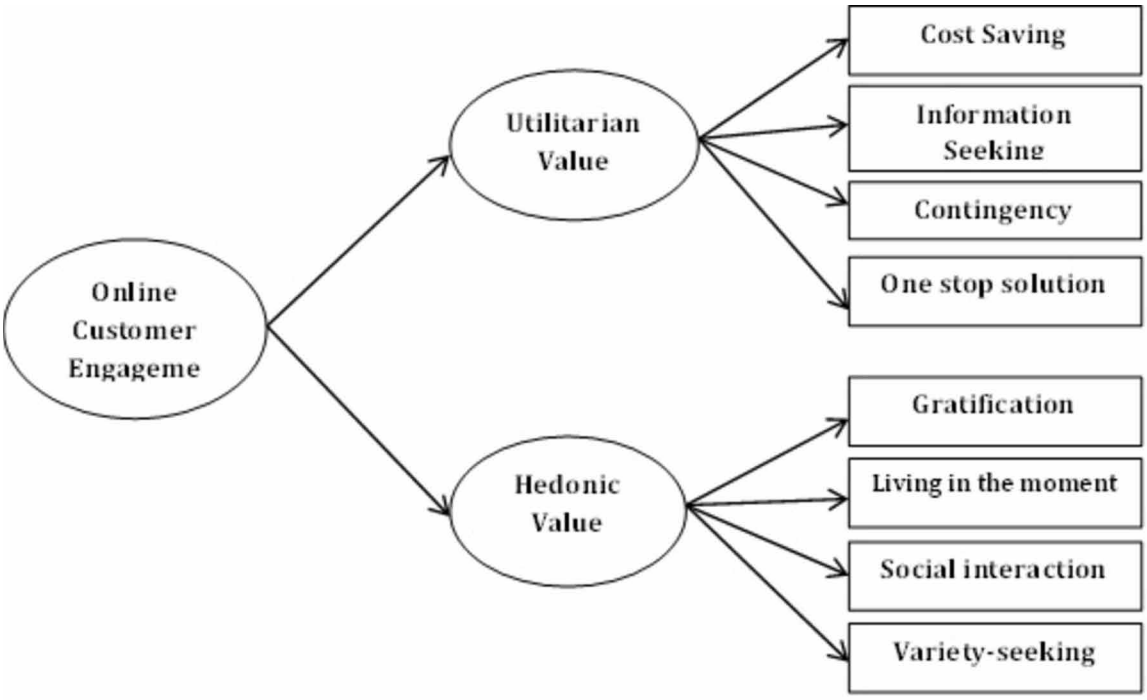

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Table 1. Themes related to utilitarian value

Responses of the Participants	Codes	Themes
I get group discount which saves agent fees	Discounts	Cost Saving
Rewards points are accumulated in my e-wallet, which I can redeem in my subsequent bookings	Frequent flyer points	
I can check the list of agents and other travel houses which are co-partner with the site.	Different modes of payment	
I can compare the prices of different flights with airline websites and booking portals. Also, round trips, with/without hotel check-in and pick-up and drop	Comparing price	
Refund status can be checked, and complaints can be sent.	Quick Response	Information seeking
At times booking amount is deducted but the booking process is not complete. Even sometimes if I am stuck during online booking, I can avail the facility of online chat with the customer care to solve the queries	Query resolution	
Whether I have carried all the necessary items for the location I am travelling is suggested in web check in (id proofs, even warm clothes, extra luggage) or during travel insurance baggage	Travel tips	
Nowadays the portals are also saving my last searches and work as a reminder while going for booking	Recent Searches	
Last minute successful booking when the plan of the trip was sudden	Instant booking	Conditional Needs
Sometimes had to go for emergency trip (such as sudden demise or family emergency)	Emergency	
Whenever I want, I can go online and book. Like suddenly I want to attend a birthday bash of a friend I can book my tickets even in odd hours, such as 9 pm…. I can book and reach by 12 pm to wish her	Wee hours	
Now I can have booked or track my flights or PNR status through mobile apps or SMS too.	Convenience	
Suddenly, I came to know that my luggage is excess and exceeding the allowed limit, I converted the excess luggage in a parcel package which was delivered at the same time when I landed.	Excess Baggage	
I can book for both flights and hotels. Even the cab for pick-up and drop to the airport. It is soooo…. easy.	Cross selling	One stop solution
I can cross check my bank accounts simultaneously and I am saved from hunting the nearby ATM. Rescheduling and cancellations are easy online.	Links to other portals	
It's easier to chalk out a multi-routes flights journey. In this shuttling, I get 2-3 hours halt in a city and so get off to explore it and then can proceed for my journey to hometown.	Multi-route planning	
I am comfortable with the easy navigation and options of making my trip and don't want to check the other websites with which I'm not accustomed.	Ease of use	
Sometimes to reach to my destination I had to take multi-mode of transport, hence I can book flights, trains, bus etc from one site and no need to move to different sites for the booking.	Multi-mode travel	

Theme 1: "Cost Saving"

To et al. (2007) empirically showed that 'cost saving' is significant to utilitarian motivations. It is because online retailers have an edge over traditional brick and mortar retailers wherein their cost of production is lesser in terms of cost of rent, store installation, decoration, and personnel (Miller, 2000). This enables retailers to pass on the cost advantage to consumers, which keeps them engaged in online purchase behavior. Customers are engaged through various benefits associated with the cost factor such

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as they can avail the cost advantage in online air-ticket booking through membership of the online ticket booking portals while traveling with family and friends. This also enables them to accumulate reward points. These points can easily be redeemed, which provide them with further price discounts. Various payment modes like credit card, net-banking, debit card, PayPal and other e-wallets give them liquidity and discounts as per their convenience. They can also compare the prices of different flights on the airline websites and other booking portals. Round trip bookings also give them added discounts.

I get group discount which saves agent fees. (Participant 1, male 30 years)

I can compare the prices of different flights with airline websites and booking portals. Also, round trips, with/without hotel check-in and pick-up and drop. (Participant 2, female, 42 years)

Table 2. Themes related to hedonic value

Responses of the Participants	Codes	Themes
While booking I can even book a cake, or gift which will be delivered at the preferred timing when I meet my spouse on our anniversary.	Simultaneous booking	Gratification
I do web check in when I am not carrying much luggage to avoid the queue for the boarding pass and proceed for the security check directly.	Customized Service	
Personalized account login option helps me in easy cancellation, provides alerts for flights 2-3 days before the scheduled dates	Personalized account	
One day my booking fails as their server was down they call back help me in completing my booking.	Augmented service	
My spouse is leaving in another city and I do not want waste the surprise break from the office. These portals are quite helpful me in planning family weekend getaway.	Getaway	
I can explore and take my own time for the different options without any rush and nag from the other people in the queue behind me… I am booking through a window. I like my privacy.	Ongoing search	Living in the moment
The personalised pages of these airline booking portals on Facebook, Twitter or other social networks, keeps me updated on the various offers and all I have to do is to like these pages.	Social Networking Experience	
I can even have the tour packages of holiday locations of the unknown country, festivals and even seasonal offers.	New experiences	
Safety of my luggage and kids by having a travelling insurance	Role shopping	Social Interaction
I can plan my travel virtually connected with my spouse/parents on the phone, video chat. As we all are able to browse the same website simultaneously	Simultaneously accessing the portal	
I can choose destinations simultaneously with my friends who stay in different parts of the world	Need for affiliation	
I seek opinion about my friends in FB to suggest on the latest deals and packages on various online portals	Interacting on social networking sites	
While booking my tickets I can choose my favourite cuisine on the flight.	Choice	Variety-seeking
These portals are quite handy when it comes to choosing my preferred seats. As I like window seats and my wife insists on seats near the emergency gate or near the exit.	Preference	
I explore several websites to get the best deal.	Bargain hunting	
Holiday Packages, Hotel Deals, other travel combo offers	Deals and offers	
I like adventure trips and these portals have some amazing ads to some of the most exotic locations in the world	Sensation	

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Theme 2: "Information Seeking"

Several studies have stated that 'information seeking' has a significant effect on utilitarian motivations. The internet is one of the most effective medium for seeking information about product specifications, details of stores, various promotions and so on (Wu, Wang, Wei, & Yeh, 2015; Wolfinbarger & Gilly, 2001). Information seeking is one of the important utilitarian values, which engages the customer in checking varied form of information related to online purchase cycle (Wu et al., 2015). For instance, we found that participants can check the status of their refunds and complaints easily from their login account any time. However, sometimes though the booking amount is deducted, the booking process is not completed. Refund details or status gets reflected in the personal login accounts, which can be easily retrieved and enquired by engaging in the online chat with customer care executives of these online portals. Certain airline websites even remind their customers to keep their passport, the requisite currency of that place, clothes pertinent to the weather, and to be aware of not exceeding the baggage limit prior to their travel; this keeps the customers connected even before experiencing the actual travel. Website visits enable the retailers to record the browsers' activity of their customers such as clicking particular buttons, logging in, or recording pages they have visited and the personal information filled by them. These act as a useful tool in engaging these customers in their subsequent visits to the portal. These portals also save their time, as the account history precludes them from re-typing their details again. For instant getaways with their spouse and family, they can book their tickets easily online.

At times booking amount is deducted but the booking process is not complete. Even sometimes if I am stuck during online booking, I can avail the facility of an online chat with the customer care to solve the queries. (Participant 5, male, 47 years)

Nowadays the portals are also saving my last searches and work as a reminder while going for booking. (Participant 15, female, 33 years)

Theme 3: "Contingency"

Contingency is a utilitarian motive in which consumers use heuristics to accomplish their purchases during an emergency (Baron, 1993; Hoffman & Novak, 1996). Consumers have a different set of engagement patterns with the online air-ticket portal, which is contingent on the situational requirements. For instance, we found that the participants encounter several emergency or urgent situations, which arose out of a sudden demise of a family member; attending celebration of friends or giving a surprise visit to their spouse. In these urgent situations, they need to book their tickets even at odd hours. These portals help them in booking at the time of emergency and contingent needs, as they operate throughout the day. Sometimes in the middle of the night, travelers find that their luggage has exceeded the allowed limit, and these portals enable them in converting their luggage into parcel bookings. These last-minute solutions turn out to be helpful to them, which keep them satisfied and connected with the web portals.

Whenever I want I can go online and book. Like suddenly I want to attend a birthday bash of a friend I can book my tickets even in odd hours, such as 9 pm I can book and reach by 12 pm to wish her. (Participant 26, male, 35 years)

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Suddenly I came to know that my luggage is excess and exceeding the allowed limit, I converted the excess luggage in a parcel package which was delivered at the same time when I landed. (Participant 42, female, 50 years)

Theme 4: "One Stop Solution"

Compared to the traditional stores, online stores have more diversified offerings at a lower cost, as they do not have inventory pressures like physical stores and can afford to stock even less-popular products for niche markets (Alba et. al., 1997; To et. al., 2007; Wolfinbarger & Gilly, 2001). We found that our participants found these air-ticketing portals as 'one-stop solutions' for all their needs They were engaged with these portals in booking hotels and cabs along with their tickets from the same air-ticket booking portal because they found these portals to be more trustworthy and authentic, as during ticket booking they can simultaneously view their bank balance. They also book multi-route flights from these portals. They pointed out that often in international travel; there is a long halt between the two connecting flights. The online portals aid in seeing the halt time while they are chalking their multi-route itinerary. This enables them to effectively utilize this halt time in activities like catching up with friends in those cities, which keeps them hooked up with the portals for their future bookings. These portals also provide consumers in selecting different modes of transport, i.e., the portal not only inform them about no direct flight but also notify them about other alternatives like bus or cab or even train to reach their destination. Online portals make the re-scheduling and cancellation hassle free.

I can book for both flights and hotels, even the cab for pick-up and drop to the airport. It is soooo…. easy.(Participant 21, female, 36 years)

It's easier to chalk out a multi-routes flights journey. In this shuttling, I get 2-3 hours halt in a city and so get off to explore it and then can proceed for my journey to hometown."(Participant 48, male, 28 years)

Sometimes to reach to my destination I had to take multi-mode of transport, hence I can book flights, trains, bus etc from one site and no need to move to different sites for the booking. (Participant 39, female, 32 years)

Theme 5: "Gratification"

Arnold and Reynolds (2003) described this hedonic motivation as 'shopping for stress relief, shopping to alleviate a negative mood, and shopping as a special treat to oneself'. This type of hedonic motivation is rooted in McGuire's (1974) tension-reduction strategies. In this study, we found that customers are actively engaged with the portals for pre-booking gifts and flowers for their friends along with their flight bookings so that gifts reach their friends at the same moment in which they reach their friend's place. This brings in the surprise element in their meeting, which generates a feeling of gratification for the ease of booking gifts with the help of the portal. Similarly, participants reported that availing web checking services allow them to avoid the last minute rush at the boarding pass counter, and they can move to security check effortlessly. These portals also give personalized account and login access through which they can refer to their last booking history, enjoy the reward points, and feel emotion-

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ally connected for the same. Further, the personalized account enables the consumers to receive alerts through mail or messages, which act as a personal assistant.

While booking I can even book a cake, or gift which will be delivered at the preferred timing when I meet my spouse on our anniversary. (Participant 33, male, 36 years)

I do web check in when I am not carrying much luggage to avoid the queue for the boarding pass and proceed for the security check directly. (Participant 42, female, 28 years)

My spouse is leaving in another city and I do not want to waste the surprise break from the office. These portals are quite helpful me in planning m family weekend getaway. (Participant 52, male, 37 years)

Theme 6: "Living in the Moment"

Babin et al. (1994) showed that consumers derive value not just from product acquisition but also from the complete shopping experience. This experiential hedonic motivation in engaging the customers (Thakur, 2016) was also found in the air- ticket booking, wherein consumers have displayed their preference for booking tickets in their desirable time, as they do not like the interruption of the fellow travelers in the conventional queue system of the window booking. In our study, participants were found to book their tickets and plan their travel at their own pace without any rush and hurry through an online portal. It is because they want to book tickets from their comfort havens, which also save them from the unpleasant experiences of traffic jams, limited parking, and long queue at the physical booking counters. Most of the websites have increased the standards of their sites aesthetics to entice and engage these types of experiential seeking customers (Thakur, 2016). Portals further aid them in selecting from various holiday locations to the unknown tourist places, unique festivals, and exotic seasonal offers, which pop-up advertisements display during the online ticket booking. Social networking sites enhance online ticket booking experience. Moreover, the participants are constantly updated and connected with the portals from which they become aware of various promotional offers.

I can explore and take my own time for the different options without any rush and nag from the other people in the queue behind me I am booking through a window. I like my privacy. (Participant 23, male, 31 years)

I can even have the tour packages of holiday locations of the unknown country, festivals and even seasonal offers. (Participant 48, female, 32 years)

Theme 7: "Social Interaction"

Social interaction is usually the main reason that motivates people to go shopping (Dawson, Bloch, & Ridgway, 1990). Social interaction has shifted from friends and relatives to interaction with virtual communities (Wolfinbarger & Gilly, 2001). Online shoppers share information and shopping experiences with people who share the same interest and remain engaged with the booking portals for their purchases (To et al., 2007). The role shopping is one of the kinds of social interaction and was evident in the study from the purchase of travel insurance by parents for their kids. These travel insurances like the one for

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students going for studies abroad is a big solace for parents, as they are assured about the safety of their child. Other instances are the travel insurance for the minor kids traveling alone because it becomes the obligation of the airline authority and insurance company to ensure that the child reaches the destination safely. Participants also share the joy of browsing the same booking portal simultaneously by two people and jointly chalking out their travel plans even if they are located in different time zones. They are also increasingly converting their business trips into pleasure trips like catching up with friends and family. In these cases, the online portal acts as a handy tool that engages them in deciding on the places to visit as well as book the tickets immediately. Word-of-mouth in social networking sites like Facebook is instrumental in engaging through opinion building about these commercial pages of airline websites and booking portals. Customers can engage them by liking these pages to get the latest deals, offers, and other related promotions as Facebook notifications.

I can plan my travel virtually connected with my spouse/parents on the phone, video chat. As we all are able to browse the same website simultaneously. (Participant 44, male, 40 years)

I seek an opinion about my friends in FB to suggest on the latest deals and packages on various online portals. (Participant 55, female, 29 years)

Theme 8: "Variety-Seeking"

The hedonic motivation can be understood from the phenomenological study of Fischer and Arnold (1990), wherein consumers have confessed that they are like a 'kid in a candy store', who expresses excitement, heightened arousal, and a deep sense of enjoyment in shopping for variety (Kahn, 1995). In this study, variety-seeking has been displayed in the selection of favorite seats near the window or emergency gate through the online portals. Panoramic views prompt and engage the customers in choosing their favourite window seats. We found that preferred seats give them privacy with their loved ones and allow in meeting the various needs of their family members. These portals are also proliferated with customized solutions that engage customers by enhancing their choice selection like selecting cuisines from continental to Indian. Participants who are food lovers reported that they take this opportunity to choose their favorite cuisine available on the menu, which makes their journey memorable, as they experienced the world class dining amidst the floating clouds. It has also been seen that customers extensively explore several websites and portals until they zero down on their travel itineraries. Airline ticketing portal also gives the hotel packages at attractive rates. We found that the participants were attracted to the images of the exotic locations advertized on these portals, which trigger the impulsivity among adventure seeking customers to be impulsively attached to the portals.

"While booking my tickets I can choose my favorite cuisine on the flight." (Participant 59, female, 44 years)

"These portals are quite handy when it comes to choosing my preferred seats. As I like window seats and my wife insists on seats near the emergency gate or near the exit." (Participant 60, male, 55 years)

"I explore several websites to get the best deal." (Participant 47, male, 35 years)

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DISCUSSION

The online shopping of consumers is driven by certain motives that can be utilitarian or hedonic or both (Anderson et al., 2016; Babin et al., 1994; Childers et al., 2001). In a recent study on online shopping context, researchers like Thakur (2016) suggested that consumer's hedonic and utilitarian experiences engages the consumer in an online shopping context. Therefore, we extended the conceptualization of customer engagement by exploring the factors that explain the hedonic and utilitarian motives behind airline e-ticket purchase. These factors are explored from the emic perspective of online air-ticket booking consumers in the emerging markets like India. Emic perspective is captured through a diary method, which allows consumers to record their lived experiences in an uncontrolled setting.

In line with Bordie et al. (2013), we provided a holistic conceptualization of online customer engagement, as this holistic conceptualization depicts that consumers hold different expectations and have varied desires behind the purchase of airline e-ticket. Particularly, the conceptualization shows that the customer engagement is a function of experiential values that vary from one person to the other. Hence, the current qualitative investigation conceptualized customer engagement as the third order construct with hedonic and utilitarian as the second-order dimensions having four sub-dimensions each. The themes for utilitarian motivations are (i) cost saving; (ii) information seeking; (iii) contingency; and (iv) one-stop solution; whereas the themes for hedonic motivations are (i) gratification; (ii) living in the moment; (iii) social interaction; and (iv) variety-seeking. Further, the conceptualization of customer engagement in the context of online air-ticket booking is an under-explored area (Ruiz-Mafe, Sanz-Blas, & Aldás-Manzano, 2009; Mohseni, Jayashree, Rezaei, Kasim, & Okumus, 2018). Besides the validation of existing models like technology acceptance model (TAM) in online airline ticket booking (Davis, 1989; Chiu et al., 2009), limited studies have qualitatively understood the specific aspects behind customer engagement. Sheth et al. (1991) suggested that in a utilitarian product/service context, the choice of consumers could be driven not only by utilitarian values but also by hedonic values, as both are equally important. Finn (2005) empirically validated this argument and showed that feelings and emotions of the consumers are apparent not only in the entertainment services (hedonic) but also in the mundane visits (utilitarian) to consumer websites such as online air-ticket booking website. The present study is one of the few studies that enrich the contributions of Sheth et al. (1991) and Finn (2005) by proving an in-depth exploration of different aspects of hedonic values along with utilitarian values in the utilitarian service context of airline ticket purchase through the lived experience of consumers in the emerging market. Hedonic values were displayed in the role shopping (shopping for travel insurance and tickets booked online for loved and dear ones), booking tickets simultaneously from different time zones in virtual world, buying tickets and checking other complementary things at the same go (buying gifts by simultaneously browsing), variety-seeking (arousal) in seats, and food selection through online portal. Hedonic values associated with online airline ticket booking were also invariably linked to social networking sites (bargain hunting and patronizing the sites on these social networking sites). Ruiz-Mafe et al. (2009) examined the drivers and barriers to online airline e-ticketing purchase from the perspective of website design and features, but they did not discuss about any specific values of the consumer engagement derived from the e-ticketing purchase behaviors. Therefore, our study suggested different aspects of hedonic and utilitarian values behind engagement toward air-ticketing purchase. Similarly, Mohseni et al. (2018) through an empirical analysis confirmed that users' characteristics and website characteristics have causal effect on online travel purchase. Nevertheless, they have studied the personality traits of online users and not their cognitive and affective desires and values behind engagement toward the purchase of air-tickets. Our study

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further added to the findings of Mohseni et al. (2018) by suggesting specific experiential values behind the hedonic and utilitarian values of online customer engagement.

Lastly, the novel way of capturing the real-time online experiences of the consumer of these airline booking portals through the diary method is another contribution of the study. Other qualitative techniques are based on experiences and recall, which might result in forgetfulness as well as articulation (Jadhav & Khanna, 2016; Ozkara, Ozmen, & Kim, 2017). The personal diary technique gives respondents control and they can account for their experiences freely in their own way. The self-completion diary method employed allows us to capture and interpret the emic perspective through the lived experiences of the consumers behind air-ticket purchasing in a meaningful way.

MANAGERIAL IMPLICATIONS

One of the implications of these findings is that like utilitarian values, hedonic experiential values should be equally given importance (Sheth et al., 1991) by considering them while designing the airline ticket booking portals to engage the customers. It should be noted that Indian consumers have reached a certain level of technology readiness; and hence, they want something beyond the usability and functional aspects of the booking portals, which can keep them attached and connected. Thus, utilitarian benefits can be considered as the basic core services. However, in order to stay ahead of the competition, it is critical for service provider to engage the consumers, so they should enhance their service offerings by including hedonic benefits as well. Hence, this study is very useful in terms of explaining the thoughts and believes of Indian air-ticket booking consumers about hedonic and utilitarian benefits. Apart from elaborating the marketers' perspective on these two types of values, this study is equally relevant to website design domain, i.e., the way websites should be designed to induce customer engagement by enhancing its quality and aesthetic appeal through the incorporations of cues and tailor-made around the sub-dimensions of hedonic and utilitarian values. Another implication of this study lies in the awareness and need for collaborating with other service providers' portals with the airline ticket booking portal. Consumers are constant bargain hunters and can be engaged and hooked to a portal that has all the links that fulfill their buying needs (from just buying a ticket to other complementary needs like car rental, hotel booking, and travel insurance). Lastly, this study has also revealed the importance of social networking sites in infusing the tendency of bargain hunting and patronizing the booking sites integrated with the social networking sites.

LIMITATIONS AND FUTURE RESEARCH

The sample of the present study includes online air ticket booking consumers only and does not capture the experiences of other potential online consumers who are frequent visitors of other portals like online book purchasing sites, online grocery portals and so forth. Future research can analyze the hedonic and utilitarian values of these potential customers from their lived experiences to enrich the domain of customer engagement in the online context. Future research can also empirically validate the conceptual model of the present study. Specifically, the third order factors of the two types of values can be used to design and develop an instrument for capturing online customer engagement. This study has taken online airline booking portal, which is viewed as more utilitarian than hedonic product or service. Thus,

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a comparative study should be undertaken by considering other portals with this online airline ticket booking, which are more of hedonic than utilitarian such as fashion apparel portals. Future research can also have dyadic perspective behind include marketer's (e.g., experts and consultants, management, website designer and travel agent) perspective as well as to understand online customer engagement. The importance of interactive social networking in fostering the business of these online booking portals can also be explored. Information system research should be done to enhance the website quality and aesthetics like the incorporation of links and innovative clicking techniques. The study can also analyze the account of the customer complaining about service failure (time involved in a search of the best deal, and technical problems like payment gateway, disconnection in the middle of the transaction). Thus, future research can examine the determinants of these service failures and their hindrance in customer engagement with the online portals.

REFERENCES

Al-maghrabi, T., & Dennis, C. (2009). Driving online shopping: Spending and behavioral differences among women in Saudi Arabia. *International Journal of Business Science and Applied Management*, *5*(1), 30–47.

Alaszewski, A. (2006). *Using diaries for social research*. Sage Publication. doi:10.4135/9780857020215

Alba, J., Lynch, J., Weitz, B., Janiszewski, C., Lutz, R., Sawyer, A., & Wood, S. (1997). Interactive home shopping: Consumer, retailer, and manufacturer incentives to participate in electronic marketplaces. *Journal of Marketing*, *61*(3), 38–53. doi:10.1177/002224299706100303

Anderson, K. C., Knight, D. K., Pookulangara, S., & Josiam, B. (2014). Influence of hedonic and utilitarian motivations on retailer loyalty and purchase intention: A Facebook perspective. *Journal of Retailing and Consumer Services*, *21*(5), 773–779. doi:10.1016/j.jretconser.2014.05.007

Arnold, M. J., & Reynolds, K. E. (2003). Hedonic shopping motivations. *Journal of Retailing*, *79*(2), 77–95. doi:10.1016/S0022-4359(03)00007-1

Babin, B. J., Darden, W. R., & Griffin, M. (1994). Work and/or fun: Measuring hedonic and utilitarian shopping value. *The Journal of Consumer Research*, *20*(4), 644–656. doi:10.1086/209376

Baron, J. (1993). Heuristics and Biases in Equity Judgments: A Utilitarian Approach. In B.A. Mellers & J. Baron (Eds.), Psychological Perspectives on Justice: Theory and Applications (pp. 109-137). New York: Cambridge University Press. doi:10.1017/CBO9780511552069.007

Bellenger, D. N., & Korgaonkar, P. K. (1980). Profiling the recreational shopper. *Journal of Retailing*, *56*(3), 77–92.

Bigné, E., Hernández, B., Ruiz, C., & Andreu, L. (2010). How motivation, opportunity and ability can drive online airline ticket purchases. *Journal of Air Transport Management*, *16*(6), 346–349. doi:10.1016/j.jairtraman.2010.05.004

Biswas, A., & Roy, M. (2015). Green products: An exploratory study on the consumer behaviour in emerging economies of the East. *Journal of Cleaner Production*, *87*, 463–468. doi:10.1016/j.jclepro.2014.09.075

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology*, *54*(1), 579–616. doi:10.1146/annurev.psych.54.101601.145030 PMID:12499517

Bowen, G. A. (2008). Naturalistic inquiry and the saturation concept: A research.

Brodie, R. J., Ilic, A., Juric, B., & Hollebeek, L. (2013). Consumer engagement in a virtual brand community: An exploratory analysis. *Journal of Business Research*, *66*(1), 105–114. doi:10.1016/j.jbusres.2011.07.029

Bryman, A. (2015). *Social research methods*. Oxford University Press.

Buhalis, D., & Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the Internet—The state of eTourism research. *Tourism Management*, *29*(4), 609–623. doi:10.1016/j.tourman.2008.01.005

Calder, B. J., Malthouse, E. C., & Schaedel, U. (2009). An experimental study of the relationship between online engagement and advertising effectiveness. *Journal of Interactive Marketing*, *23*(4), 321–331. doi:10.1016/j.intmar.2009.07.002

Childers, T. L., Carr, C. L., Peck, J., & Carson, S. (2001). Hedonic and utilitarian motivations for online retail shopping behaviour. *Journal of Retailing*, *77*(4), 511–535. doi:10.1016/S0022-4359(01)00056-2

Chiu, C.-M., Lin, H.-Y., Sun, S.-Y., & Hsu, M.-H. (2009). Understanding Customers Loyalty Intentions towards Online Shopping: An Integration of Technology Acceptance Model and Fairness Theory. *Behaviour & Information Technology*, *28*(4), 347–360. doi:10.1080/01449290801892492

Consulting, D. (2014, March 21). *Growth of Internet Users in India and Impact on Country's Economy.* Dart Consulting. Retrieved from http://www.dartconsulting.co.in/market-news/growth-of-internet-users-in-india-and-impact-on-countrys-economy/

Corbin, J., & Strauss, A. (2008). *Qualitative Research* (3rd ed.). California: Sage Publications.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Quarterly*, *13*(3), 319–340. doi:10.2307/249008

Dawson, S., Bloch, P. H., & Ridgway, N. M. (1990). Shopping motives, emotional states, and retail outcomes. *Journal of Retailing*, *66*(4), 408.

Dennis, C., Morgan, A., Wright, L. T., & Jayawardhena, C. (2010). The Influences of Social E-Shopping in Enhancing Young Women's Online Shopping Behaviour. *Journal of Customer Behaviour*, *9*(2), 151–174. doi:10.1362/147539210X511353

Devedi, P., Sujatha, R., & Pathak, R. (2017). A study on parameters of online reviews content that influence consumers buying behaviour- an Indian perspective. *Journal of Business and Retail Management Research*, *11*(4), 13–22. doi:10.24052/JBRMR/V11IS04/ASOPOORCTICCBBAAP/PD/RS/RP

Elias, N. F., Mohamed, H., & Arridha, R. R. (2015). A study on the factors affecting customer satisfaction in online airline services. *International Journal of Business Information Systems*, *20*(3), 274–288. doi:10.1504/IJBIS.2015.072249

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, *62*(1), 107–115. doi:10.1111/j.1365-2648.2007.04569.x PMID:18352969

Escobar-Rodríguez, T., & Carvajal-Trujillo, E. (2014). Online purchasing tickets for low cost carriers: An application of the unified theory of acceptance and use of technology (UTAUT) model. *Tourism Management*, *43*, 70–88. doi:10.1016/j.tourman.2014.01.017

Finn, A. (2005). Reassessing the foundations of customer delight. *Journal of Service Research*, *8*(2), 103–116. doi:10.1177/1094670505279340

Fischer, E., & Arnold, S. J. (1990). More than a labor of love: Gender roles and Christmas gift shopping. *The Journal of Consumer Research*, *17*(3), 333–345. doi:10.1086/208561

Gnanasambandam, C., Madgavkar, A., Kaka, N., Manyika, J., Chui, M., Bughin, J., & Gomes, M. (2012). *Online and upcoming: The Internet's impact on India. Technology, Media and Telecom Practice*. McKinsey and Company.

Gupta, M. (2019). Does Work Engagement Mediate the Perceived Career Support- and Career Adaptability- Work Performance Relationship? *Journal of Global Operations and Strategic Sourcing*, *12*(2), 310–327. doi:10.1108/JGOSS-08-2017-0032

Gupta, M., Pandey, J., Gaur, J., & Vohra, N. (2019). Preface to Research on Role of Technology in Workforce Management. *AJIS. Australasian Journal of Information Systems*, *23*(1), 1–5. doi:10.3127/ajis.v23i0.2185

Gupta, M., Pandey, J., & Reddy, K. P. (2018). Guest Editorial Preface on Engaging Flexible Knowledge Workers for Greater Performance. *International Journal of Knowledge Management*, *14*(4), 6–12.

Gupta, M., Shaheen, M., & Das, M. (2019). Engaging Employees for Quality of Life: Mediation by Psychological Capital. *Service Industries Journal*, *39*(5-6), 403–419. doi:10.1080/02642069.2018.1462799

Hoffman, D. L., & Novak, T. P. (1996). Marketing in hypermedia computer-mediated environments: Conceptual foundations. *Journal of Marketing*, *60*(3), 50–68. doi:10.2307/1251841

Holbrook, M. B. (Ed.). (1999). *Consumer value: a framework for analysis and research*. Psychology Press.

Holbrook, M. B., & Hirschman, E. C. (1982). The experiential aspects of consumption: Consumer fantasies, feelings, and fun. *The Journal of Consumer Research*, *9*(2), 132–140. doi:10.1086/208906

Hollebeek, L. D., Glynn, M. S., & Brodie, R. J. (2014). Consumer brand engagement in social media: Conceptualization, scale development and validation. *Journal of Interactive Marketing*, *28*(2), 149–165. doi:10.1016/j.intmar.2013.12.002

Internet and Mobile Association of India (IAMAI). (2016). *Digital Commerce-2015*. Retrieved from https://cms.iamai.in/Content/ResearchPapers/bfdce341-6f1f-416a-bf28-c7ab4eef3345.pdf

Jadhav, V., & Khanna, M. (2016). Factors influencing online buying behavior of college students: A qualitative analysis. *Qualitative Report*, *21*(1), 1.

Kahn, B. E. (1995). Consumer variety-seeking among goods and services: An integrative review. *Journal of Retailing and Consumer Services*, *2*(3), 139–148. doi:10.1016/0969-6989(95)00038-0

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Khanna, T., Palepu, K. G., & Sinha, J. (2005). Strategies that fit emerging markets. *Harvard Business Review*, *83*(6), 4–19. PMID:15938439

Kolsaker, A., Lee-Kelley, L., & Choy, P. C. (2004). The reluctant Hong Kong consumer: Purchasing travel online. *International Journal of Consumer Studies*, *28*(3), 295–304. doi:10.1111/j.1470-6431.2004.00373.x

Koppius, O., Speelman, W., Stulp, O., Verhoef, B., & van Heck, E. (August, 2005). Why are customers coming back to buy their airline tickets online? Theoretical explanations and empirical evidence. *Proceedings of the 7th international conference on Electronic commerce* (pp. 319-326). ACM. 10.1145/1089551.1089611

Llach, J., Marimon, F., Alonso-Almeida, M. D. M., & Bernardo, M. (2013). Determinants of online booking loyalties for the purchasing of airline tickets. *Tourism Management*, *35*(1), 23–31. doi:10.1016/j.tourman.2012.05.006

Loiacono, E. T., Watson, R. T., & Goodhue, D. L. (2007). WebQual: An instrument for consumer evaluation of web sites. *International Journal of Electronic Commerce*, *11*(3), 51–87. doi:10.2753/JEC1086-4415110302

López-Bonilla, J. M., & López-Bonilla, L. M. (2014). Holistic competence approach in tourism higher education: An exploratory study in Spain. *Current Issues in Tourism*, *17*(4), 312–326. doi:10.1080/13683500.2012.720248

Manyika, J., & Roxburgh, C. (2011) *The great transformer: the impact of the Internet on economic growth and prosperity*. McKinsey Global Institute.

McGuire, W. J. (1974). Psychological motives and communication gratification. *The uses of mass communications: Current perspectives on gratifications research, 3*, 167-196.

Mckinsey & Company. (2013, March). *India's Internet opportunity*. Retrieved from http://www.mckinsey.com/industries/high-tech/our-insights/indias-internet-opportunity

Michael, I. (2006). Motivators for Australian Consumers to Search and Shop Online. *Electronic Journal of Business Research Methods*, *4*(1), 47–55.

Miller, N. G. (2000). Retail leasing in a web enabled world. *Journal of Real Estate Portfolio Management*, *6*(2), 167–184.

Mohseni, S., Jayashree, S., Rezaei, S., Kasim, A., & Okumus, F. (2018). Attracting tourists to travel companies' websites: The structural relationship between website brand, personal value, shopping experience, perceived risk and purchase intention. *Current Issues in Tourism*, *21*(6), 616–645. doi:10.1080/13683500.2016.1200539

Özen, H., & Kodaz, N. (2016). Utilitarian or hedonic? A cross cultural study in online shopping. In *Thriving in a New World Economy* (pp. 234–239). Cham: Springer. doi:10.1007/978-3-319-24148-7_71

Ozkara, B. Y., Ozmen, M., & Kim, J. W. (2017). Examining the effect of flow experience on online purchase: A novel approach to the flow theory based on hedonic and utilitarian value. *Journal of Retailing and Consumer Services*, *37*, 119–131. doi:10.1016/j.jretconser.2017.04.001

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Pappas, I. O., Kourouthanassis, P. E., Giannakos, M. N., & Lekakos, G. (2017). The interplay of online shopping motivations and experiential factors on personalized e-commerce: A complexity theory approach. *Telematics and Informatics*, *34*(5), 730–742. doi:10.1016/j.tele.2016.08.021

Patton, M. (1990). Purposeful sampling. *Qualitative Evaluation and Research Methods*, *2*, 169–186.

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.

Pham, M. T., & Avnet, T. (2009). Rethinking regulatory engagement theory. *Journal of Consumer Psychology*, *19*(2), 115–123. doi:10.1016/j.jcps.2009.02.003

Phau, I., & Meng Poon, S. (2000). Factors influencing the types of products and services purchased over the Internet. *Internet Research*, *10*(2), 102–113. doi:10.1108/10662240010322894

Ramamurti, R. (2008). Why study emerging-market multinationals? In R. Ramamurti & J. Singh (Eds.), *Emerging Multinationals from Emerging Markets*. Cambridge: Cambridge University Press.

Rangarajan, S., & Prasad, V. A. (2014). The Indian airline industry–will the flight be smooth? *Emerald Emerging Markets Case Studies*, *4*(3), 1–18. doi:10.1108/EEMCS-05-2013-0057

Ruiz-Mafe, C., Sanz-Blas, S., & Aldás-Manzano, J. (2009). Drivers and barriers to online airline ticket purchasing. *Journal of Air Transport Management*, *15*(6), 294–298. doi:10.1016/j.jairtraman.2009.02.001

Sheth, J. N., Newman, B. I., & Gross, B. L. (1991). Why we buy what we buy: A theory of consumption values. *Journal of Business Research*, *22*(2), 159–170. doi:10.1016/0148-2963(91)90050-8

Sojung, K., & Eastin, M. S. (2011). Hedonic Tendencies and the Online Consumer: An Investigation of the Online Shopping Process. *Journal of Internet Commerce*, *10*(1), 68–90. doi:10.1080/15332861.2011.558458

Stephenson, P. R., & Willett, R. P. (1969). Analysis of consumers' retail patronage strategies. In P. R. McDonald (Ed.), Marketing Involvement in Society and the Economy (pp. 316-322). Chicago: American Marketing Association.

Tauber, E. (1972). Why Do People Shop? *Journal of Marketing*, *36*(4), 46–49.

Thakur, R. (2016). Understanding customer engagement and loyalty: A case of mobile devices for shopping. *Journal of Retailing and Consumer Services*, *32*, 151–163. doi:10.1016/j.jretconser.2016.06.004

Thakur, R. (2018). Customer engagement and online reviews. *Journal of Retailing and Consumer Services*, *41*, 48–59. doi:10.1016/j.jretconser.2017.11.002

To, P. L., Liao, C., & Lin, T. H. (2007). Shopping motivations on Internet: A study based on utilitarian and hedonic value. *Technovation*, *27*(12), 774–787. doi:10.1016/j.technovation.2007.01.001

Turban, E., Outland, J., King, D., Lee, J. K., Liang, T. P., & Turban, D. C. (2018). Business-to-Business E-Commerce. In *Electronic Commerce 2018* (pp. 123–166). Cham: Springer. doi:10.1007/978-3-319-58715-8_4

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing & Health Sciences*, *15*(3), 398–405. doi:10.1111/nhs.12048 PMID:23480423

Verhoef, P. C., Reinartz, W. J., & Krafft, M. (2010). Customer engagement as a new perspective in customer management. *Journal of Service Research*, *13*(3), 247–252. doi:10.1177/1094670510375461

Whittemore, R., Chase, S. K., & Mandle, C. L. (2001). Validity in qualitative research. *Qualitative Health Research*, *11*(4), 522–537. doi:10.1177/104973201129119299 PMID:11521609

Wolfinbarger, M., & Gilly, M. C. (2001). Shopping online for freedom, control, and fun. *California Management Review*, *43*(2), 34–55. doi:10.2307/41166074

Wu, L. L., Wang, Y. T., Wei, C. H., & Yeh, M. Y. (2015). Controlling information flow in online information seeking: The moderating effects of utilitarian and hedonic consumers. *Electronic Commerce Research and Applications*, *14*(6), 603–615. doi:10.1016/j.elerap.2015.09.002

Zeba, F., & Mohnaty, P. (2019). Personal Diary Method: A Way of Collecting Qualitative Data. In M. Gupta, M. Shaheen, & K. Reddy (Eds.), *Qualitative Techniques for Workplace Data Analysis* (pp. 1–317). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-5366-3.ch005

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Chapter 65
Men vs. Women:
Study of Online Shopping Habits and Factors Influencing Buying Decisions in Bahrain

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ABSTRACT

The purpose of this article is to measure the difference between Bahraini men and women in terms of their habits of online shopping and determine factors affecting their buying decision. The researchers adopted a technology acceptance model (TAM) as a research conceptual framework. A questionnaire was developed and distributed randomly to a sample of Bahrainis. Collected data was analyzed to test the research framework and hypotheses using multiple regression analysis. Results show there is a difference between men and women in term of trust, habit, satisfaction, perceived ease of use, and risk. The limitation of research stems from the majority of the participants aged between 18-28 years old, which could not represent all population age group. The article identifies key predictors of the online buying decision, enabling entrepreneurs and practitioners of online business to understand which factors will be useful to draw a rigid strategy for their online presence. Previous studies on online shopping did not give much concern to gender factor, while the current study investigates differences between men and women online shopping habits and reaching new facts about factors that influence the Bahraini buying decisions.

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INTRODUCTION

Online shopping is the process of purchasing products or accessing services through internet network, whit the broad scope of products and services available to consumers all around the world. Increasing use of online shopping has become a threat to the traditional shopping (Masoud, 2013). With online shopping, it became easier to get the desired items in different markets rather than the national one.

Online shopping is a process taken by customers of browsing and/or buying products or services by using online shops or social media, in a comfortable way at their home (Roblek et al., 2013; Jusoh and Ling, 2012). Nowadays online shopping grows to be the most popular shopping style for customers because the Internet becomes widespread dramatically (Lin, 2013). Online shopping makes shopping easier, it allows customers to choose and compare the price of product between different sellers and choose the best, so the decisions of buying can be made at home in an easier way (Ali and Sankaran, 2010).

Numerous research indicates that there is significant difference of online behavior according to gender. Hernández et al. (2011) conducted a study on age, gender and income and their impact to online shopping behavior, and revealed significant differences between men and women in their behavior. Another study conducted by Hansen and Jensen (2009), about shopping orientation and online clothing purchases supported the conclusion of differences between gender in attitude toward the shopping and Intention buy the clothing via online. The females are most responsive to the presentations and advertising whether positive or negative, in this case, they are more displayed to shopping over the internet than males (Garbarino and Strahilevitz, 2004). In addition, there are differences between males and females in their association with technology (Slyke, Comunale and Belanger, 2002). A study conducted by Herter (2013) suggest that women demonstrate higher levels of shopping satisfaction, recommendation, return intentions and hedonic shopping than men.

The online shopping in Bahrain takes place among the majority of population members. Regardless of the age and interest, people start to use online shopping frequently, through both the website and social media (Crnkovic, 2013). However, the factors that affect online buying decision are not well studied from the Bahrain context. The goal of this research is to investigate the factors that affect online shopping habits in Bahrain with the focus to male and female buyers.

This study is organized in six research structures. The first section introduces the statement of the research problem that presents the argument, which tells what is the study about and stating the research questions that arises. The second section defines and analyzes the literature review related to the habits and factors influencing online shopping buying decision in the University of Bahrain and then highlights the theories researchers used in the current study. Section three describes the research methodology. The fourth section describes the analysis researchers used and tabulates all the data that have been collected. In section five, the main results of the survey questionnaires are discussed. Finally, the last section introduces the conclusion and recommendation for further research.

DETERMINANTS OF ONLINE SHOPPING

Technology Acceptance Model (TAM) has been developed from reasoned action theory and planned behavior theory (Ibrahim, 2013). TAM is used for researching the determinants of information technology for end-user behavior, but numerous researchers suggest that there are additional influence of external variables, besides the core theory variables: perceived ease of use and perceived usefulness, intention

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to use and actual use behavior. In this paper, we develop the following TAM model in terms of adding new factors "Habit," "Trust," "Risk," "Satisfaction" and "Security." The elements of the model will be elaborated in the following discussion.

Security

The increasing use of online shopping shows an increase of consumers' concerns in terms of security of online shopping (Gehrt et al., 2012). One of the factors, which cause consumers not to use online shopping, is security, if the consumers have concerns regarding the online shopping security. The consumers may avoid using online shopping for different reasons such as fear of credit card fraud, privacy and risks of not receiving goods and services at right time (Su and Huang, 2011). In order to protect the privacy of consumers through online shopping, security has to be established with the customers, mainly by the means of technology. There are many specialized companies to provide security for online shopping sites to protect them from unauthorized persons such as providing software to security (Liu et al., 2005; Gehrt et al., 2012). Therefore, based on this research we develop the following hypothesis:

H1: Security affects "Trust factor" of Make Buying Decision.

Trust

Trust is the most important factor in online shopping (Turkyilmaz et al., 2015). As it has been defined by Oxford dictionaries that Trust is a "Firm belief in the reliability, truth, or ability of someone or something: relations have to be built on trust, they have been able to win the trust of the others". It is usually known as a relationship factor based on experience (Kim, 2012). When the organization provides a security guarantee, the customer trust in the organization website may directly affect by customer trust in online shopping (Santos and Fernandes, 2011). According to Awad and Ragowsky (2008), there is a difference in trust between men and women in online shopping, and the trust affects the behaviour difference between man and woman. As a result, the trust is very important and plays a major role in the intention of online shopping for women more than for men. Therefore, based on this research we develop the following hypothesis:

H2: Trust factor affects "Intention" of Make Buying Decision.

Risk

Perceived risk is a factor that numerous authors studies in relation to the behavior of customer in online shopping (e.g. Mandilas et al., 2013). Perceived risk is one of the factors that affect consumers' decision-making in online shopping. In addition, perceived risk has an important role in consumers' behavior. Many studies about perceived risk in online shopping showed that perceived risk have a negative effect (Masoud, 2013). However, male and female have different expectations on perceived risks of online shopping. Based on Garbarino and Strahilevitz (2004) study on how the perceived risks effects on gender in decisions purchased, suggests that there are differences between the genders in the impact of the factor perceived risks on the decisions purchasing. As a result, they found that women are considering online shopping risks more than men are. Therefore, based on this research we develop the following hypothesis:

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H3: Risk affects "Trust factor" of Make Buying Decision.

Habit

According to Hsu et al., (2015), the habit is defined as action performed frequently or reaction automatically resulting of previous experience. Habits are also used to forecast the behavior of customers in traditional retail but habits of customers in online shopping are more complex due to the increased risk and uncertainty. Habit has relation with other factors that may affect the intention of purchase such as a trust, e.g. sometimes habits have negative impact on the relationship between trust and purchase intention (Chiu et al., 2012). Therefore, based on this research we develop the following hypothesis:

H4: Habit affects "Trust factor" of Make Buying Decision.
H5: Habit affects "Perceived ease of use" of Make Buying Decision.
H6: Habit affects "Perceived usefulness" of Make Buying Decision.

Satisfaction

Customer satisfaction is an emotional reaction and it comes from the cognition from buying process to after buying. Mostly, customer satisfaction is related to factors such as price, product quality, the photo of the product, consistency of products and site design. Turkyilmaz et al., (2015), Gehrt, et. al., (2012) and Pabalkar, (2014) points out that website quality is very important for consumers' online buying, directly affecting satisfaction. The customer satisfaction is the comparison between expectation and conception of a product. For example, the customers often worry that the real products are different from the photos of the website (Lin, 2013). In reality, the product uncertainty takes the main role in online customer satisfaction. Thus, it is found that the high product uncertainty and low retailer visibility reduce customer satisfaction, and the pricing, customer service, and website design have a direct effect on customer satisfaction (Luo, Ba and Zhang, 2012). Therefore, based on this research we develop the following hypothesis:

H7: Satisfaction affects "Intention" of Make Buying Decision.

Intention

The intention is affected and formed by two variables, which are Perceived ease of use and usefulness, and then intention effect on the actual behavior (Renny et al., 2013; Mandilas et al., 2013). Yulihasri et al. (2011) said that the Perceived ease of use and usefulness are silent beliefs and they have a high significance in affecting the intention of online shopping. According to Halim et al. (2005), the relationship between satisfaction and buying intention is very strong. Therefore, based on this research we develop the following hypothesis:

H8: Perceived usefulness affects "Intention" of Make Buying Decision.
H9: Perceived ease of use affects "Intention" of Make Buying Decision.

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Buying Decision

The buying decision is an actual behavior. The actual behavior can be taken by individuals to do something. Jeddi et al. (2013), said there are processes to make the decisions which are: Identify the problem, Search for information, Evaluation of Options, Purchase, after purchasing behavior. Buying decision is affected by other variables and it has a direct relation to the buying intention (Renny et al., 2013). Therefore, based on this research we develop the following hypothesis:

H10: Intention affects Make Buying Decision.

Perceived Usefulness

Usefulness is related to time and effort saving and reducing the cost (Renny et al., 2013).

Studies about the perceived usefulness indicated that it has a stronger influence on usage (Ibrahim, 2013; Mandilas et al., 2013). Moreover, it is affected by external variables and shares in forming the intention, and it has a direct effect on intention. Therefore, based on this research we develop the following hypothesis:

H11: Perceived usefulness affects "Satisfaction factor" of Make Buying Decision.

Perceived Ease of Use

Perceived ease of use measures if the person can use and learn the systems in an easy way. Previous studies about the perceived ease of use indicated that it has a significant impact on intention either directly or indirectly across impact on perceived usefulness. However, it is affected by external variables and it contributes in forming the intention. Also, perceived ease of use has a direct effect on intention and it is related to the usability (Renny et al., 2013; Mandilas et al., 2013, Pabalkar, 2014). According to Turkyilmaz et al., (2015) and Gehrt, et. al., (2012) website ease of use and product availability are important precursors of online buying. Therefore, based on this research we develop the following hypothesis:

H12: Perceived ease of use affects "Satisfaction factor" of Make Buying Decision.

METHODOLOGY

A sample of respondents is selected from among the population of students in the University of Bahrain. The questionnaire administered online using Google Form and the link was distributed by email and social application (WhatsApp) among students. Also, a hardcopy of the questionnaire was distributed randomly among citizen. The number of participants of the online questionnaire was 251 and the number of participants in hardcopy questionnaire was 201, so the total number of participants was 452. The data was collected in ten days, from 6th to 15th of April 2015.

A structured questionnaire was used as a study tool (see Appendix). It consisted of two sections: the first section collected demographic data relevant for this study, and the second section consisted of the

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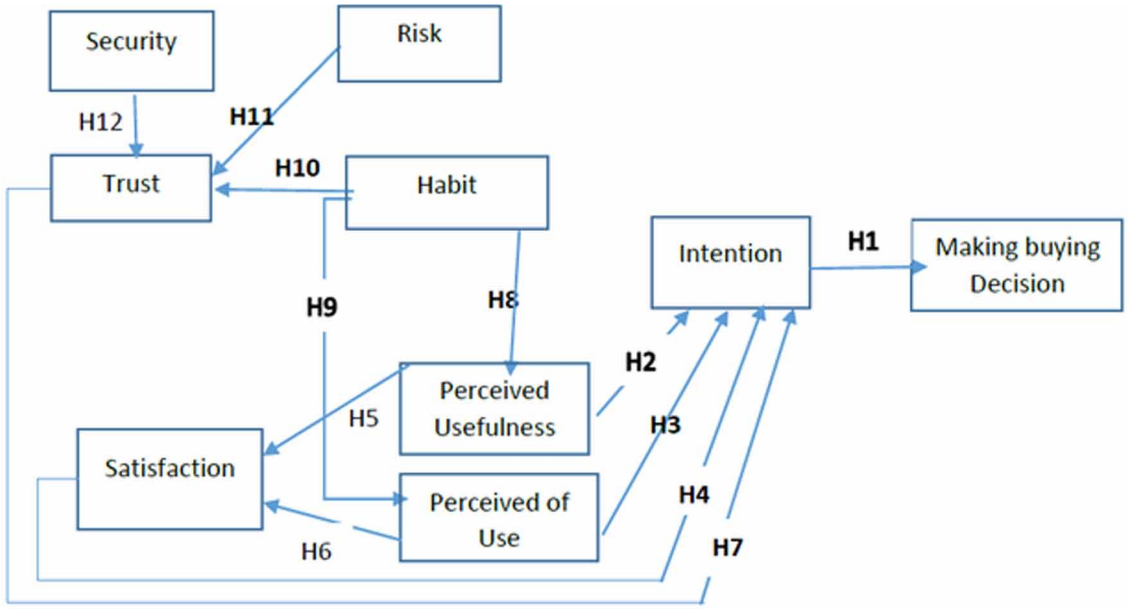
research questions that measure the online shopping use, habits and the factors affecting on the buying decision. Questions all are closed-ended questions providing multiple options to choose from a Likert scale.

The personal data and project questions from the questionnaire were analyzed using the Statistical Package for Social Science (SPSS). The response of the participant was presented in percentages. Answers were classified accordingly into the use of online shopping, men and women habits and the affecting of factors in the buying decision among Bahraini citizens. Multiple regression was used for testing the hypothesis of the research model. Figure 1 shows the proposed framework of the hypothesis.

Figure 1. The proposed framework



Results

Majority of the respondents are between the age of 18 and 28 (73.7%), and the oldest respondents are aged 49 years old or more (2.7%). More than a half of respondents are female (51.1%), while 48.9% are male. Half of the respondents have an educational background of bachelor's degree (50.2%), and 8.8% respondents come from a postgraduate education background. There are 28.1% respondents from high school, while 12.8% has diploma certificate. Most of the sample are students (56.4%), while there are the smallest number of retirees (2.7%). Government-employed represents 25%, the self-employed represents only 4.6% of the sample, while unemployed represents 11.3% of the sample. Most of the respondents use online shopping occasionally (55.3%), e.g. when there would be a big web sale or give away large discounts and coupons, while the lowest number of respondents are those that use it weekly (4.6%). 25.2% of the respondents use online shopping monthly, while 14.8% never used online shopping. Usually, items that are highly purchased online are clothes (41.5%), and the smallest number of respondents are buying food online (6.4%). 33.8% of respondents purchased accessories and 25.9% purchased electronics via online

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shopping, while 14.8% of respondents purchased other products. Amazon is the most popular website to shop online (48.9% respondents), whereas only 2.7% respondents use Home Site which makes it the lowest choice to shop online. 30.1% of respondents buy from eBay, 11.7% from Booking, 8.6% from Alibaba, 5.1% shop from Flipkart, and 17.5% shop from others online shopping sites.

Table 1 shows results of factor analysis, where the buying intention, perceived usefulness, perceived ease of use, routine habit, purposeful habit, trust, security, satisfaction and risk that have score of alpha equal or over 0.7, meaning that the reliability is acceptable. However, buying decision has a Cronbach's alpha slightly lower than 0.7 but is still in the 0.6 area, which makes it acceptable according to Nunnally and Bernstein (1994). The Factor Analysis is used to reduce the number of large items in factor to smaller number of items for each factor by combining a set of related items into one comprehensive variable. These items are represented in following codes: BD = Buying Decision; BI = Buying Intention; PU = Perceived usefulness; PEU = Perceived ease of use; HABIT = Habit; TRU = Trust; SAT= Satisfaction; and SEC = Security. Two factors related to habit are identified: routine habit and purposeful habit.

Table 1. Factor analysis and Cronbach's Alpha

Component	Items	Factor Analysis	Cronbach's Alpha
Buying Decision	BD1	.646	.615
	BD2	.731	
	BD3	.651	
	BD4	.605	
Buying Intention	BI1	.779	.816
	BI2	.719	
	BI3	.725	
	BI4	.766	
	BI5	.677	
Perceived Usefulness	PU1	.474	.744
	PU3	.848	
	PU4	.867	
Perceived Ease of Use	PEU1	.797	.764
	PEU2	.766	
	PEU3	.725	
	PEU4	.571	
Routine Habit	HABIT1	.824	.709
	HABIT5	.747	
Purposeful Habit	HABIT2	.578	.746
	HABIT3	.853	
	HABIT4	.862	
Trust	TRU1	.471	.716
	TRU2	.537	
	TRU3	.722	
	TRU4	.486	
	TRU5	.532	
Security	SEC1	.801	.837
	SEC2	.739	
	SEC3	.706	
	SEC4	.461	
Satisfaction	SAT1	.688	.814
	SAT2	.728	
	SAT3	.668	
	SAT4	.729	
	SAT5	.706	
	SAT6	.662	
Risk	RISK1	.708	.749
	RISK2	.776	
	RISK3	.766	
	RISK4	.779	

Note: PU2 item was deleted due to low loading.
Source: Authors' work

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Table 2 shows the result of the cross-tabulation of all categories maturity level to differentiate men and women online shopping habits and factors influencing their buying decision. Three levels of average values of factors were defined: low, medium, and high. Results indicate that there are not significant differences between female and male according to different elements of research model.

Table 2. Differences between female and male

	Cases						
	Male				**Female**		
	Low (%)	**Medium (%)**	**High (%)**		**Low (%)**	**Medium (%)**	**High (%)**
Buying Decision	1.4	45.0	53.6		2.8	46.5	50.7
Buying Intention	0.5	29.4	70.1		2.8	25.1	72.0
Perceived Usefulness	2.4	37.1	60.5		0.9	32.3	66.8
Perceived Ease of Use	1.6	35.1	63.4		1.0	23.7	75.4
Routine Habit	7.6	66.5	25.9		12.3	58.8	28.9
Purposeful Habit	1.8	25.7	72.5		2.0	23.0	75.0
Trust	2.9	65.9	31.2		6.3	58.9	34.8
Security	17.7	56.5	25.8		17.8	57.9	24.4
Satisfaction	1.1	29.8	69.1		3.0	40.8	56.2
Risk	12.2	50.3	37.6		5.4	40.1	54.5

Source: Authors' work

Table 3 presents descriptive statistics for all factors and their correlations. Buying decision has a weak correlation with routine habit (19.1%) and security (26.6%). It has a moderate correlation with buying intention (42.7%), perceives usefulness (33.2%), perceived ease of use (30.4%), purposeful habit (44.5%), trust (34.2%) and satisfaction (42.9%). Buying intention has a weak correlation with routine habit (29.5%). It has a moderate correlation with perceives usefulness (42%), perceived ease of use (38.7%), purposeful habit (38.1%), trust (50.2%), security (32.4%) and satisfaction (44.4%). In addition, the perceived usefulness has a weak negative correlation only with risk (-2.6%), and moderate correlation with other factors. The perceived ease of use has a weak correlation with routine habit (17.9%) and purposeful habit (25.9%), and moderate correlation with trust (36.2%), security (32.1%) and satisfaction (35.8%). On the other hand, the routine habit has a weak correlation with purposeful habit (26.9%), and moderate correlation with trust (55.9%), security (54.8%) and satisfaction (46.3%). However, the purposeful habit has a weak correlation with security (36.5%), and moderate correlation with trust (41%) and satisfaction (48.3%). The trust factor has a moderate correlation with security (63.8%) and satisfaction (59%). Lastly, there is a moderate correlation between security and satisfaction (53.2%). Not to forget, the risk factor has a weak correlation with all factors. Results indicate that there is no problem of correlation among the investigated variables.

Regression analysis was run on the factors received from factor analysis with the following results shown in Table 4. Summary results of hypothesis testing are presented in Table 5.

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Table 3. Descriptive statistics and correlation analysis of factors identified

Variables	Mean	SD	Buying Decision	Buying Intention	Perceived Usefulness	Perceived Ease of Use	Routine Habit	Purposeful Habit	Trust	Security	Satisfaction	Risk
Buying Decision	12.55	2.22	1.000									
Buying Intention	16.65	2.94	0.427**	1.000								
Perceived Usefulness	8.97	1.78	0.332**	0.420**	1.000							
Perceived Ease of Use	13.16	2.23	0.304**	0.387**	0.315**	1.000						
Routine Habit	4.33	1.62	0.191**	0.295**	0.445**	0.179**	1.000					
Purposeful Habit	9.06	1.72	0.445**	0.381**	0.326**	0.259**	0.269**	1.000				
Trust	14.43	3.19	0.342**	0.502**	0.391**	0.362**	0.559**	0.410**	1.000			
Security	10.26	2.98	0.266**	0.324**	0.377**	0.321**	0.548**	0.265**	0.638**	1.000		
Satisfaction	19.09	3.46	0.429**	0.444**	0.407**	0.358**	0.436**	0.483**	0.590**	0.532**	1.000	
Risk	11.99	2.48	0.054	-0.082*	-0.026	-0.030	0.009	-0.008	-0.070	-0.1663	-0.142**	1.000

Notes: ** Correlation is Significant at the 0.01 level, * Correlation is Significant at the 0.05 level
Source: Authors' work

Table 4. Results of multiple linear regression analysis

	Variables	Male				Female				Hypothesis
		β	t	R	R^2	β	t	R	R^2	
Model 1	(DV1: Trust)			.755	.570			.811	.657	
	Risk	.015	.339			-.035	-.878			H3
	Routine Habit	.249	4.588**			.444	9.688**			H4
	Purposeful Habit	.182	3.940**			.104	2.462*			
	Security	.519	9.307**			.441	9.614**			H1
Model 2	(DV2: Perceived Usefulness)			.365	.133			.638	.407	
	Routine Habit	.281	4.380**			.454	8.343**			H6
	Purposeful Habit	.187	2.914**			.318	5.831**			
Model 3	(DV3: Perceived Ease of Use)			.302	.092			.419	.175	
	Routine Habit	.129	1.956			.180	2.800**			H5
	Purposeful Habit	.252	3.831**			.321	4.998**			
Model 4	(DV4: Satisfaction)			.502	.252			.592	.350	
	Perceived Usefulness	.231	3.706**			.457	6.972**			H8
	Perceived Ease of Use	.357	6.024**			.194	2.963**			H9
Model 5	(DV5: Buying Intention)			.560	.314			.649	.421	
	Perceived Usefulness	.223	3.524**			.338	4.772**			H11
	Perceived Ease of Use	.200	2.994**			.154	2.431*			H12
	Trust	.184	2.518*			.123	1.699			H2
	Satisfaction	.136	1.896			.171	2.303*			H7
Model 6	(DV6: Buying Decision)			.325	.106			.594	.353	
	Buying Intention	.325	5.076**			.594	11.148**			H10

Source: Authors' work

Note: DV-dependent variable, * statistically significant at 5%; ** 1%

Model 1 shows the regression analysis with the independent variables security, risk, purposeful habit, and routine habit against the dependent variable of trust. It was found that the coefficient beta for both male and female about security, routine habit and purposeful habit have positive relationships. The male has positive 51.9%, 24.9% and 18.2% beta percentage respectively, while the female has positive 44.1%, 44.4% and 10.4% beta percentage respectively. Thus, results indicate that H1 and H4 for both male and female are supported. There is an exception to risk even with low positive 1.5% beta percentage for male, while it still makes H3 unsupported along with a negative 3.5% beta percentage for the female, which is also insignificant.

Next, Model 2 run a regression between the independent variables routine habit and purposeful habit on the dependent variable perceived usefulness. The result for the coefficient beta explained that both male and female in routine habit and purposeful habit have a positive relationship. The male shows

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28.1% and 18.7% beta percentage respectively, while female shows 45.4% and 31.8% beta percentage respectively. Hence, they are significant and for both male and female H6 are supported.

Model 3 presents the regression explaining the relationship between routine habit and purposeful habit against perceived ease of use, where the relationship result is the weakest for the male. It shows that routine habit for the female is significant with 18% beta percentage, is better than the male insignificant beta percentage of 12.9%. However, both male and female have positive 25.2% and 32.1% beta percentage on purposeful habit respectively. Thus, make the habit factor among the female buyers supports H5, while for male it is unsupported.

Besides that, Model 4 shows regression between independent variables of perceived usefulness and perceived ease of use against satisfaction as dependent variable. The coefficient beta of both male and female in perceived usefulness and perceived ease of use indicate a positive relationship. The male has positive 23.1% and 35.7% beta percentage respectively, while the female has positive 45.7% and 19.4% beta percentage respectively. This results in H11 and H12 being supported for both genders.

Model 5 present the relationship between perceived usefulness, perceived ease of use, trust, and satisfaction against buying intention. Here, the coefficient beta of the relationship for both male and female are explained as follows: The male perceived usefulness, perceived ease of use and trust all have a positive beta percentage of 22.3%, 20%, and 18.4% respectively, except satisfaction with an insignificant positive 13.6% beta percentage. Meanwhile, the female perceived usefulness, perceived ease of use and satisfaction all have a positive beta percentage of 33.8%, 15.4%, and 17.1% respectively, except trust with an insignificant positive 12.3% beta percentage. As a result, both male and female supports H8 and H9. However, H2 is supported by the male and unsupported by the female, while H7 is supported by the female and unsupported by the male.

Table 5. Overall hypotheses results

Statement of Hypothesis	Decision	
	Male	Female
H1: Security affects "Trust" of Buying Decision.	Supported	Supported
H2: Trust factor affects "Intention" of Make Buying Decision.	Supported	Unsupported
H3: Risk affects "Trust factor" of Make Buying Decision.	Unsupported	Unsupported
H4: Habit affects "Trust factor" of Make Buying Decision.	Supported	Supported
H5: Habit affects "Perceived ease of use" of Make Buying Decision.	Unsupported	Supported
H6: Habit affects "Perceived usefulness" of Make Buying Decision.	Supported	Supported
H7: Satisfaction affects "Intention" of Make Buying Decision.	Unsupported	Supported
H8: Perceived usefulness affects "Satisfaction factor" of Make Buying Decision.	Supported	Supported
H9: Perceived ease of use affects "Satisfaction factor" of Make Buying Decision.	Supported	Supported
H10: Intention affects Make Buying Decision.	Supported	Supported
H11: Perceived usefulness affects "Intention" of Make Buying Decision.	Supported	Supported
H12: Perceived ease of use affects "Intention" of Make Buying Decision.	Supported	Supported

Source: Authors' work

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Lastly, Model 6 shows the regression between the independent variables buying decision and the dependent variable buying intention. It shows the coefficient beta of the relationship for both male and female explained that Buying Intention has positive 32.5% and 59.4% beta percentage respectively. This makes Buying Intention significant, thus male and female H10 are supported.

CONCLUSION

The purpose of this research is to identify the difference between men and women according to their online behavior in Bahrain. Following differences were found: (i) there is a difference to the variable of perceived ease of use where women have higher rate than men; (ii) variable Satisfaction has the following difference with the men having a higher average value of Satisfaction compared to women; and (iii) variable Risk has higher value for women compared to men. Other variables did not reveal significant differences.

The Technology Acceptance Model (TAM) was used to determine the factors that affect the men and women behavior when shopping online. A modified version of the TAM model was constructed in order to investigate the impact of various factors to the online purchase. It was found that habit positively affects perceived usefulness and trust. In addition, perceived usefulness and perceived ease of use positively affects buying intention and satisfaction. Multiple regression analysis was used for testing the research model, indicating that online shopping is impacted by numerous factors. According to the variables that have been studied, this research concluded that there are differences between men and women in term of perceived ease of use, trust, habit, satisfaction, and risk when making decisions about online buying.

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REFERENCES

Ali, P. & Sankaran, S. (2010). Online Shopping Customer Satisfaction and Loyalty in Norway.

Awad, N. F., & Ragowsky, A. (2008). Establishing trust in electronic commerce through online word of mouth: an examination across genders. *Journal of Management Information Systems*, *24*(4), 101–121. doi:10.2753/MIS0742-1222240404

Chiu, C., Hsu, M., Lai, H., & Chang, C. (2012). Re-examining the influence of trust on online repeat purchase intention: The moderating role of habit and its antecede. *Decision Support Systems*, *53*(4), 835–845. doi:10.1016/j.dss.2012.05.021

Crnkovic, J. Y. (2013). Invited Article: The Future of CRM is UX. *Business Systems Research*, *4*(1), 4–13.

Eri, Y., Islam, M. A., & Daud, K. A. K. (2011). Factors that Influence Customers' Buying Intention on Shopping Online. *International Journal of Marketing Studies.*, *3*(1), 128–193.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Garbarino, E., & Strahilevitz, M. (2004). Gender differences in the perceived risk of buying online and the effects of receiving a site recommendation. *Journal of Business Research*, *57*(7), 768–775. doi:10.1016/S0148-2963(02)00363-6

Gehrt, K. C., Rajan, M. N., Shainesh, G., Czerwinski, D., & O'Brien, M. (2012). Emergence of online shopping in India: Shopping orientation segments. *International Journal of Retail & Distribution Management*, *40*(10), 742–758. doi:10.1108/09590551211263164

Halim, W. Z. W., & Hamed, A. B. (2005). Consumer Purchase Intention at Traditional Restaurant and Fast Food Restaurant. In ANZMAC, Conference: Consumer Behaviour (pp. 107-112).

Hansen, T., & Jensen, J. M. (2009). Shopping orientation and online clothing purchases: The role of gender and purchase situation. *European Journal of Marketing*, *43*(9/10), 1154–1170. doi:10.1108/03090560910976410

Herna'ndez, B., Jime'nez, J., & Martı'n, M. J. (2011). Age, gender and income: Do they really moderate online shopping behaviour? *Online Information Review*, *35*(1), 113–133. doi:10.1108/14684521111113614

Herter, M. (2013). "Man, I shop like a woman!" The effects of gender and emotions on consumer shopping behavior outcomes. *International Journal of Retail & Distribution Management*, *42*(9), 780–804. doi:10.1108/IJRDM-03-2013-0066

Hsu, M.-H., Chiu, C.-M., & Chuang, L.-W. (2015). Understanding the determinants of online repeat purchase intention and moderating role of habit: The case of online group-buying in Taiwan. *International Journal of Information Management*, *35*(1), 45–56. doi:10.1016/j.ijinfomgt.2014.09.002

Ibrahim, H. (2013). Technology Acceptance Model: Extension to Sport Consumption. *Procedia Engineering*, *69*, 1534–1540. doi:10.1016/j.proeng.2014.03.152

Jeddi, S., Atefi, Z., Jalali, M., Poureisa, A., & Haghi, H. (2013). Consumer behavior and Consumer buying decision process. *International Journal of Business and Behavioral Sciences.*, *3*(5).

Jusoh, Z. M., & Ling, G. H. (2012). Factors Influencing Consumers' Attitude Towards E-Commerce Purchases Through Online Shopping. *International Journal of Humanities and Social Science*, *2*(4).

Kau, A., Tang, Y., & Ghose, S. (2003). Typology of online shoppers. *Journal of Consumer Marketing*, *20*(2), 139–156. doi:10.1108/07363760310464604

Kim, J. B. (2012). *An empirical study on consumer first purchase intention in online shopping: integrating initial trust and TAM*. Springer Science + Business Media, LLC.

Lin, P.-H. (2013). Shopping Motivations on The Internet: An Empirical Study of Trust, Satisfaction and Loyalty. *International Journal of Electronic Business Management.*, *11*(4), 238–246.

Liu, C., Marchenwka, J. T., Lu, J., & Yu, C. (2005). Beyond concern – a privacy-trust behavioral intention model of electronic commerce. *Information & Management*, *42*(1), 289–304. doi:10.1016/j.im.2004.01.003

Luo, J., Ba, S., & Zhang, H. (2012). The Effectiveness of Online Shopping Characteristics and Well-Designed Websites on Satisfaction. *Management Information Systems Quarterly*, *36*(4), 1131–1144.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Mandilasa, A., Karasavvogloua, A., Nikolaidisa, M., & Tsourgiannisa, L. (2013), Predicting Consumer's Perceptions in On-line Shopping. *Procedia Technology*, *8*, 435-444.

Masoud, E. (2013), "The Effect of Perceived Risk on Online Shopping in Jordan", European Journal of Business and Management. 5 (6) ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online).

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill, Inc.

Oxford dictionaries. (n.d.). Retrieved from http://www.oxforddictionaries.com/definition/english/trust ?q=Trust&searchDictCode=all

Pabalkar, V. (2014). Drivers of eShopping behaviour, Symbiosis Institute of Management Studies Annual Research Conference (SIMSARC13). *Procedia Economics and Finance*, *11*, 600–608. doi:10.1016/S2212-5671(14)00225-1

Renny, G. S. & Siringoringo, H. (2013). Perceived Usefulness, Ease of use, and Attitude Towards Online Shopping Usefulness Towards Online Airlines Ticket Purchase. Procedia - Social and Behavioral Sciences, 81, 212-216.

Roblek, V., Pejić Bach, M., Meško, M., & Bertoncelj, A. (2013). The impact of social media to value added in knowledge-based industries. *Kybernetes*, *42*(4), 554–568. doi:10.1108/K-01-2013-0014

Santos, C. P. D., & Fernandes, D. V. D. H. (2011). Perceptions of Justice after Recovery Efforts in Internet Purchasing: The Impact on Consumer Trust and Loyalty toward Retailing Sites and Online Shopping in General. *BAR, Curitiba.*, *8*(3), 225–246.

Slyke, C., Comunale, C., & Belanger, F. (2002). Gender Differences in Perceptions of Web-Based Shopping. *Communications of the ACM*, *45*(7), 82–86. doi:10.1145/545151.545155

Su, D., & Huang, X. (2011). Research on Online Shopping Intention of Undergraduate Consumer in China--Based on the Theory of Planned Behavior. *International Business Research*, *4*, 1913–9004.

Turkyilmaz, C. A., Erdem, S., & Uslu, A. (2015). The Effects of Personality Traits and Website Quality on Online Impulse Buying, International Conference on Strategic Innovative Marketing, IC-SIM 2014, September 1-4, 2014, Madrid, Spain. *Procedia: Social and Behavioral Sciences*, *175*, 98–105. doi:10.1016/j.sbspro.2015.01.1179

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Chapter 66
Antecedents of Social Commerce Adoption in Developing Countries: An Empirical Study

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ABSTRACT

The emergence Web 2.0 technologies has transformed e-commerce into social commerce. The benefits associated with social commerce are well known. However, for businesses to reap such benefits, the factors that influence user intention to use social commerce must be understood. However, existing studies draw samples from developed countries. Given that geography and cultural factors affect technology adoption, findings from existing studies may not apply in the developing country context. This study therefore investigates the factors that influence user intention to use social commerce in developing countries. A survey questionnaire was used to gathered responses from 614 students in Ghanaian universities and analyzed using PLS-SEM. The results indicate that information quality, system quality, and service quality have significant influence on user intention to use social commerce. The findings point out the need to provide relevant support to users and ensure accurate and reliable information on social commerce platforms.

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INTRODUCTION

The emergence of new Web 2.0 technologies has transformed many aspects of our society. The pervasiveness and ubiquitous use of Social Networking Sites (SNSs) have been the main driver of this transformation. SNSs enable cost-effective yet efficient ways for online interaction and communication. This has evolved traditional e-commerce into social commerce (Hajli, 2015). Social commerce is a new e-commerce development that enables the use of Web 2.0 technologies to support online interactions where the contributions of people can be used in the acquisition of goods and services (Liang and Turban, 2011). It has transformed consumers from passive receivers to co-creators (Hajli and Sims, 2015). Indeed, social commerce was found to have increased sales from 5 billion dollars to 15 billion dollars in 2014 (Morrison, 2014). Thus, the significance of social commerce cannot be undermined.

Yet, social commerce research is scarce in Africa. Many of the existing studies on social commerce drew samples from developing countries. However, socio-cultural characteristics affect technology adoption and use (Apau, Koranteng and Adu, 2019). Since developed countries possess different characteristics compared to developing countries, existing findings may not be applicable (Wiafe et al., 2019). People in developing countries are hesitant to adopt new technologies. To add, many of these people lack the required skills to use ICT tools appropriately. Moreover, relevant research indicates that Web 2.0 technologies are widely regarded as entertainment tools (Koranteng, Wiafe & Kuada, 2019). This suggests that users may not perceive such tools as useful for commerce. Additionally, more research that delve into facet of consumer behavior in the digital economy is deemed necessary (Ling Chang, Ling Tam, & Suki, 2016; Nathan, Fook Chiun, & Suki, 2016; Suki, 2013a; 2013b; Suki, 2016; Suki & Abang Sulaiman, 2016). Therefore, there is the need to uncover which factors influence users in such areas to adopt social commerce.

This chapter, therefore, implements the Information Systems (IS) Success Model (DeLone and McLean, 2002) as a theoretical lens to understand the factors that affect users Intention to Use Social Commerce in developing countries. The next sections present a review of relevant literature and research methods. This is followed by a summary of the analysis. Then the results are discussed. Finally, conclusions and directions for future work are drawn.

LITERATURE REVIEW

The rise of Web 2.0 technologies has given birth to a new stream of e-commerce called social commerce. Social commerce is essentially the delivery of e-commerce via Social Networking Sites (SNSs) (Liang and Turban, 2011). This new technological advancement offers online shoppers the ability to interact with other shoppers and systems in profound ways such as sharing product experiences, recommendations, rating products and reviews (Hajli and Sims, 2015). Some scholars, however, believe that this has changed the structure of many business models. Nowadays, there is much focus on customer-oriented business (Zhang and Benyoucef, 2016) where marketing strategies have shifted from attracting customers' awareness of products to bonding with them after their purchases (Edelman, 2010).

For businesses to be able to harness the power of social commerce, factors that influence user behavior on these platforms must be understood. Consequently, a stream of researchers has explored user motives and behavior in social commerce context. Scholars have found that perceived effectiveness, entertainment, enjoyment, and information-seeking gratifications affects consumers' intention to adopt social

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commerce (Davis, Piven, and Breazeale, 2014; Momani, Yafooz, and Jamous, 2018). Others have used behavioral theories such as Theory of Planned Behavior and Technology Acceptance Model to explain the important roles of perceived usefulness, ease of use and attitude in social commerce adoption and use (Chen, Hsiao, and Wu, 2018; Hansen, Saridakis, and Benson, 2018; Liu, Lu, and Yu, 2018). Meanwhile, social influence and social support have all been found to affect social commerce adoption (Hajli, 2014; Liang, Ho, Li, and Turban, 2011).

This suggests that prior research predominantly emphasized individual characteristics whilst ignoring the role of system characteristics in social commerce adoption. In addition, technology acceptance is influenced by geography. Indeed, user behavior on SNSs platform differs across cultures (Koranteng, Wiafe, Katsriku & Apau, 2019). Hofstede (2001) argued that people in many African countries are likely to reject new technology due to their cultural resistance to innovation. Koranteng et al., (2019) points out that, users in these areas perceive SNS tools as useful for entertainment, however, it is unlikely users will perceive them as effective for commerce. Given these, this chapter deviates from previous studies that focused primarily on individual characteristics in developed countries to understand social commerce adoption. It employs the IS Success Model to examine how the characteristics of a social commerce platform affect users' intention to use.

Theoretical Framework and Hypotheses Formulation

Many theories have been adopted to explain information systems acceptance and use. Technology Acceptance Model (Davis, 1989), Theory of Planned Behavior (Ajzen, 1991) and Unified Theory of Acceptance and Use of Technology (Venkatesh, Morris, Davis, and Davis, 2003) are among the most popular of these theories adopted. However, these theories are limited since they fail to consider essential factors such as the role of organizational support in influencing technology adoption. Meanwhile, the IS Success Model proposed by DeLone and McLean (2002) caters for this limitation. The IS Success Model argues that Use behavior or Intention to Use a particular technology is dependent on the three quality antecedents: Information Quality, System Quality and Service Quality. Information

Quality defines the quality of output generated by the social commerce platform. System Quality evaluates technical features such as reliability, responsiveness, and availability of the platform. Service Quality is concerned with the availability of competent technical support for users who use the social commerce platform. Whereas the theory also proposes that Use Behavior could also predict user satisfaction and other net benefits, this chapter focuses on the factors that affect users Intention to Use Social Commerce. Consequently, the effects of Information Quality, System Quality and Service Quality on users Intention to Use Social Commerce are examined. This approach has successfully been employed by several studies (Jagannathan, Balasubramanian, and Natarajan, 2018; Lwoga, 2014; Lwoga and Sife, 2018). Table 1 indicates a summary of the construct definitions and their sources from literature. Figure 1 also depicts the relationships between the constructs.

Information Quality (IQ)

Information Quality denotes the characteristics of the output generated by the social commerce platform (Lwoga, 2014). It measures the degree of relevance, accuracy, understandability, completeness, timeliness and usability of the information on these sites (DeLone and McLean, 2002). According to Jagannathan et al., (2018) users may adopt a system because it provides relevant and reliable information. This may

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also affect their judgement of the systems' quality. Prior studies have found a significant relationship between Information Quality and Intention to use (Lwoga, 2014; Lwoga and Sife, 2018). It is therefore hypothesized that:

H_{1a}: Information Quality significantly affects Intention to Use social commerce.
H_{1b}: Information Quality significantly affects System Quality.

Table 1. Construct Definition

Construct	Definition	Source
Information Quality (IQ)	It defines the quality of output generated by the social commerce platform.	(Jagannathan et al., 2018)
Service Quality (SeQ)	It is concerned with the quality of the support that users receive from the social commerce platform support staff.	(DeLone and McLean, 2002)
System Quality (SQ)	It defines the usability features of a social commerce platform.	(Lwoga and Sife, 2018)
Intention to Use Social Commerce (INT)	It is the possibility that users will use the social commerce platform in the near future.	(Venkatesh et al., 2003)

Service Quality (SeQ)

Service Quality is the extent to which users perceive they get the required support they need. It is measured in terms of technical competence, empathy, reliability and responsiveness of the social commerce platform staff (DeLone and McLean, 2002). Efficient institutional support influence users' perception of the system's quality (Rana and Dwivedi, 2015). Thus, users are more likely to use social commerce when they perceived that the needed support is available. However, Lwoga and Sife (2018) found that Service Quality do not predict Use Behavior. It becomes important to confirm the effect of Service Quality on users Intention to Use Social Commerce in developing countries. It is therefore proposed that:

H_{2a}: Service Quality significantly affects Intention to Use social commerce.
H_{2b}: Service Quality significantly affects System Quality.

System Quality (SQ)

System Quality describes the characteristics of the system (DeLone and McLean, 2002). It is the measure of the systems' ease of use, flexibility, reliability and response time (Lwoga and Sife, 2018). Users are more likely to adopt social commerce when they have favorable experiences with the system (Lwoga, 2014). However, whereas Rana and Dwivedi (2015) found significant relationships between System Quality and Intention to Use, findings from Yakubu and Dasuki (2018) and Lwoga and Sife (2018) contradict this claim. Therefore, to confirm this relationship, it is postulated that:

H_3: System Quality significantly affects Intention to Use social commerce.

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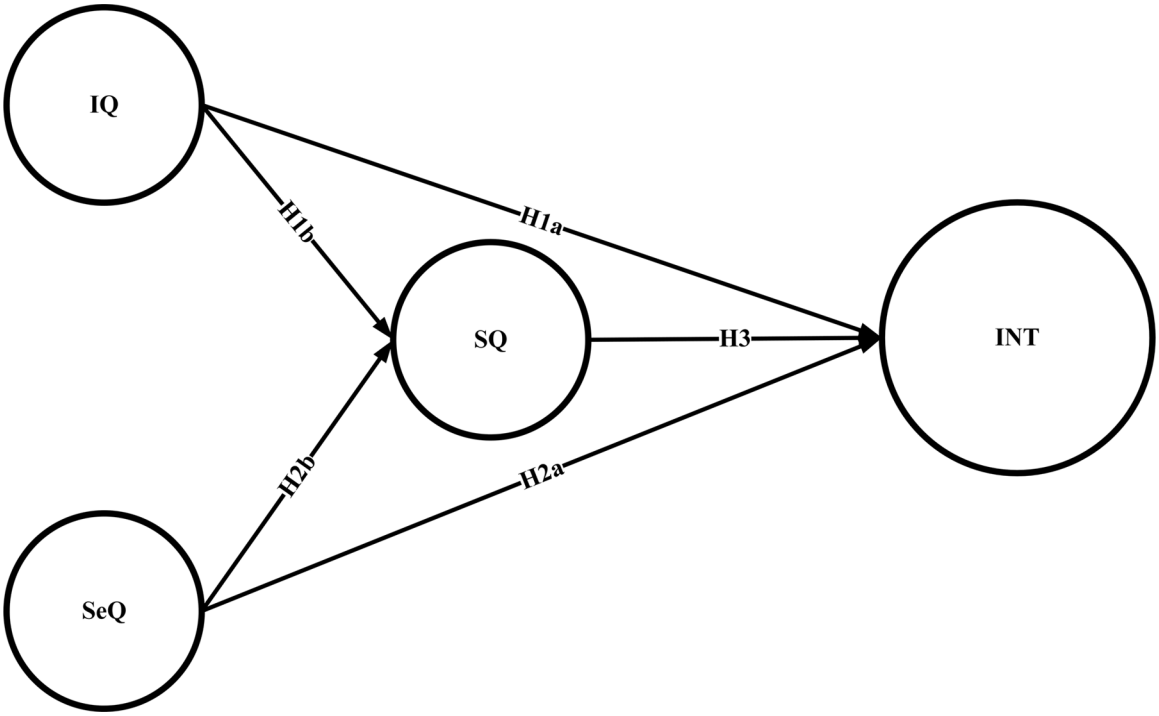
Figure 1. Hypothesized Model



METHODS

An English-based survey questionnaire was developed to empirically test the relationships between the observed variables. The questionnaire solicited respondents' opinions on four constructs; (i) Information Quality, (ii) System Quality (iii) Service Quality and (iv) Intention to Use. Each construct had a minimum of three questions. All questions were adapted from prior studies (see table 1) and adopted a seven-point Likert scale ranging from strongly agree (7) to strongly disagree (1). To ensure anonymity, only relevant demographics were gathered. Links to the questionnaire was posted on social media pages of three (3) universities in Ghana. Participants were also tasked to forward the link via SNS platforms such as Facebook and Twitter. This was to ensure that all participants were familiar with online social networking. Participation was purely voluntary.

Data Collection

After a month of data collection, 614 responses were gathered. All responses were valid because all fields of the questionnaire were compulsory. Out of the total, majority (53%), were male whereas 47% were females. Also, 73% were below 30 years whilst 27% were between 30 and 40 years. Again, majority (90%) of the respondents were undergraduate students and only 10% were postgraduate students.

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Table 2. Respondents' Demographics

Demographics	Value	Frequency	Percentage
Sex			
	Male	325	53%
	Female	289	47%
Age			
	Below 30	451	73%
	30 - 40	163	27%
Highest Education Level			
	Postgraduate	553	90%
	Undergraduate	61	10%

Analysis

The research model was estimated using Partial Least Square Structural Equation Modelling (PLS-SEM) techniques. This is because. PLS-SEM provide potent methods for evaluating the measurement and structural models. Unlike Covariance-based approaches, PLS-SEM is robust to multivariate distribution errors (Gefen, Rigdon, and Straub, 2011). Hence, appropriate for measuring the relationship between latent variables. More importantly, it enables effective mechanisms for predicting the effects of the independent constructs (Hair, Sarstedt, Hopkins, and Kuppelwieser, 2014). SmartPLS 3.0 was therefore used for the analysis.

Measurement Model

In this study, the measurement model assessment emphasized item reliability, internal consistency, convergent validity, discriminant validity and collinearity. All question item loadings were above the required value of 0.7 as recommended by Barclay, Higgins, and Thompson (1995). Internal consistency was measured with the conventional Cronbach's alpha as well as composite reliability. Bagozzi and Yi (1988), recommend that both measures must be above 0.7. This is shown in table 3. With convergent validity, the Average Variance Extracted (AVE) for each construct was juxtaposed with Wixom and Watson (2001) threshold of 0.5. Table 3 indicates that this condition was met.

Table 3. Internal Consistency, Convergent and Discriminant Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)	INT	IQ	SQ	SeQ
INT	0.732	0.733	0.849	0.653	0.808			
IQ	0.798	0.721	0.818	0.535	0.610	0.731		
SQ	0.787	0.799	0.863	0.613	0.575	0.653	0.783	
SeQ	0.800	0.832	0.869	0.626	0.684	0.616	0.585	0.791

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Furthermore, Fornell and Larcker (1981)'s criteria in addition to Henseler, Ringle, and Sarstedt (2015)'s Heterotrait-Monotrait Ratio (HTMT) were adopted to justify discriminant validity. According to, Fornell and Larcker (1981) the square of AVEs of latent variables should be greater than all other correlations when compared. The highlighted diagonal values in table 3 confirm discriminant validity. Moreover, Clark and Watson (1995) also recommend that the HTMT values require a maximum threshold of 0.85. The values in table 4 show all values were above this threshold. Finally, the possibility of collinearity was examined using Variance Inflation Factor. VIF values lesser than 3 is preferable (Hair, Hult, Ringle, and Sarstedt, 2016). The values in table 5 indicate that collinearity did not affect the results.

Table 4. Heterotrait-Monotrait Ratio (HTMT)

	INT	IQ	SQ
IQ	0.762		
SQ	0.454	0.674	
SeQ	0.472	0.309	0.716

Table 5. Variance Inflation Factor (VIF)

	INT	SQ
INT		
IQ	2.038	1.611
SQ	1.922	
SeQ	1.777	1.611

Structural Model

The structural model was estimated using the bootstrap technique (100 samples). This approach is preferred when the sample size is greater than 100 (Kock, 2010). From the analysis, the research model explained 53.9% of the variance in Intention to Use. Relationship between two constructs was significant when the p-value is less than 0.05. The outcome indicated that all proposed relationships were significant. Thus, Information Quality ($\beta = 0.226$, $p < 0.001$), System Quality ($\beta = 0.166$, $p < 0.005$) and Service Quality ($\beta = 0.447$, $p < 0.001$) had significant influence on Intention to Use social commerce.

Table 6. Significance of Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Effect Sizes
IQ -> INT	0.226	0.227	0.054	4.213	0.000	0.054
IQ -> SQ	0.472	0.475	0.053	8.864	0.000	0.265
SQ -> INT	0.166	0.164	0.059	2.806	0.003	0.031
SeQ -> INT	0.447	0.449	0.056	8.012	0.000	0.244
SeQ -> SQ	0.294	0.293	0.059	5.023	0.000	0.103

Moreover, Information ($\beta = 0.472$, $p < 0.001$) and Service Quality ($\beta = 0.294$, $p < 0.001$) also predicted System Quality. The effect sizes of constructs were also analyzed. Cohen (1988) asserts that, effect sizes can be irrelevant (i.e. f 2 < 0.02), small (^{3} 0.02), medium (^{3} 0.15) or large (^{3} 0.35). The results show that Service Quality had a medium effect (0.244) on Intention to Use., Also, both Information (0.054) and

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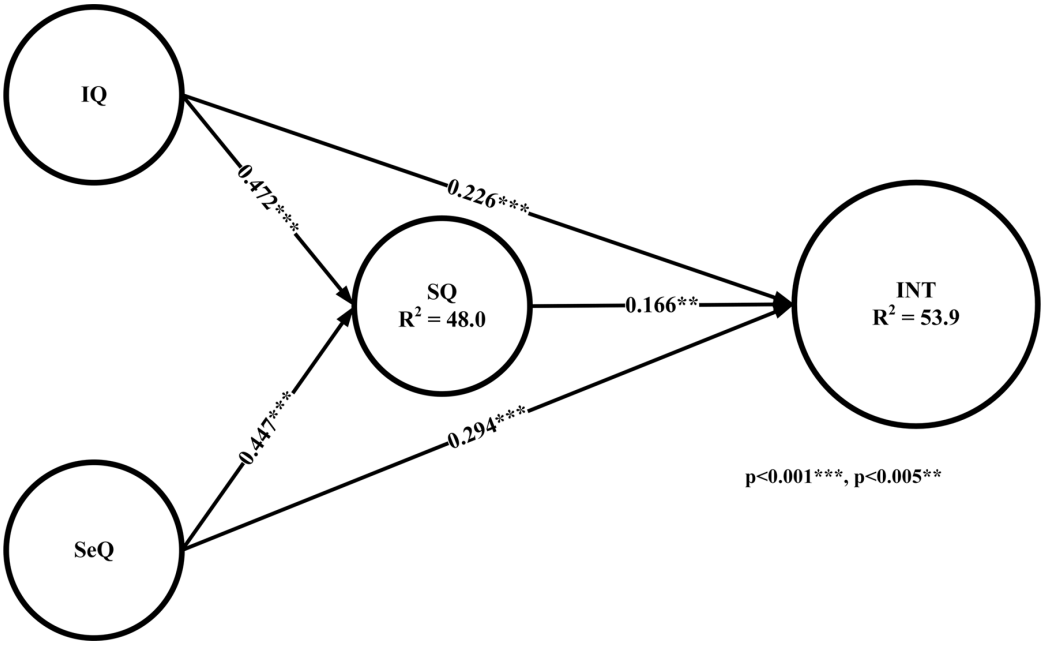
System Quality (0.031) had small effects on intention to Use. Meanwhile, Information Quality (0.265) had a medium effect whereas Service Quality effect on Systems Quality was small (0.103). Figure 2, depicts a pictorial representation of the relationships and table 6 presents a summary of the results.

Figure 2. Structural Model



DISCUSSION

In this chapter, the IS Success model was adopted to investigate the antecedents of users' Intention to Use Social Commerce in developing countries. The research model examined the direct effects of Information Quality, System Quality and Service Quality on Intention to Use Social Commerce. It also evaluated the effects of Information and Service Quality on System Quality.

The findings suggest that the quality antecedents (Information Quality, System Quality and Service Quality) explained 53.9% of the variance in Intention to Use. In addition, all proposed relationships were significant. The results indicate that Information Quality is a key predictor of System Quality and Intention to Use Social Commerce. In other words, users in developing countries are drawn to use social commerce technologies when the information available on these platforms are relevant and reliable. This is consistent with Rana and Dwivedi (2015). As a result, businesses that seek to engage users are advised to satisfy the informational needs of users by generating accurate, relevant and reliable information.

Unlike some prior studies (e.g. Lwoga and Sife, 2018), Service Quality was found to significantly influence both System Quality and Intention to Use Social Commerce. This suggests that when there are readily available and competence support to social commerce users, they are more likely to use the systems. Similarly, when system support staff show concern and empathy, users will appreciate and use the system. In an attempt to encourage usage, it is recommended that timely and relevant support is given

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to users as they use the system. For instance, an instant chat messenger could be incorporated into social commerce platforms, where support staff could instantly attend to users who need help. Finally, System Quality also had a significant effect on Intention to Use. This confirmed Rana and Dwivedi (2015)'s claims that system response time, flexibility and ease of use are relevant in IS use. However, this finding contradicts Yakubu and Dasuki (2018) findings, though their study was conducted in a developing country. This disparity may be because the stud by Yakubu and Dasuki, (2018) was conducted on an e-learning system which differs from the context of this study. Therefore, businesses that seek to engage users via social commerce must continually maintain the quality of their systems. Perhaps, users could be involved in the design of the systems interface to ensure they are flexible and easy to use.

CONCLUSION

Prior studies that investigated social commerce adoption are predominately reliant on respondents from developed countries. However, the applicability of existing theories is challenged given the factor that technology adoption differs by culture and location. This study adopted the IS Success Model to examine the factors that affect users' intention to use social commerce in developing countries. Using a survey questionnaire, responses from 614 participants were analyzed using rigorous techniques from Partial Least Square Structural Equation Modelling. The findings from this study confirm the applicability of the IS Success Model as a potent framework for examining users' Intention to Use Social Commerce in developing countries context. Moreover, Information Quality, System Quality and Service Quality were found to significantly predict Intention to Use Social Commerce. The study recommends that accurate information and reliable support from staff must be ensured to influence users' usage on social commerce. Meanwhile, the study adopted the convenience sample method. Future studies must, however, explore the model in other developing countries to confirm the applicability of the research model. Moreover, perceived risks, cyber-crime perceptions and trust have been identified to influence Use Behavior in e-commerce and other online technologies. Perhaps, these concepts could be explored within social commerce context. Also, the effectiveness of persuasive features in enhancing the use of social commerce platforms could be studied.

REFERENCES

Apau, R., & Koranteng, F. N. (2019). Impact of Cybercrime and Trust on the Use of E-Commerce Technologies : An Application of the Theory of Planned Behavior. *International Journal of Cyber Criminology*, *13*(2), 228–254. doi:10.5281/zenodo.3697886

Apau, R., Koranteng, F. N., & Adu, S. (2019). Cyber-crime and its effects on e-commerce technologies. *Journal of Information*, *5*(1), 39–59. doi:10.18488/journal.104.2019.51.39.59

Chang, L.D.M., Ling Tam, A.Y., & Suki, N.M. (2016). Moderating effect of races towards consumers' feeling of TCM usage. In N.M. Suki (Ed.), Handbook of research on leveraging consumer psychology for effective customer engagement (pp. 306-323). Hershey, PA: IGI Global.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Chen, C.-C., Hsiao, K.-L., & Wu, S.-J. (2018). Purchase intention in social commerce: An empirical examination of perceived value and social awareness. *Library Hi Tech*, *36*(4), 583–604. doi:10.1108/LHT-01-2018-0007

Davis, R., Piven, I., & Breazeale, M. (2014). Conceptualizing the brand in social media community: The five sources model. *Journal of Retailing and Consumer Services*, *21*(4), 468–481. doi:10.1016/j.jretconser.2014.03.006

DeLone, W. H., & McLean, E. R. (2002). Information systems success revisited. *Proceedings of the 35th Annual Hawaii International Conference on System Sciences*, 2966–2976. 10.1109/HICSS.2002.994345

Edelman, D. C. (2010). Branding in the digital age. *Harvard Business Review*, *88*(12), 62–69.

Hajli, M. N. (2014). The role of social support on relationship quality and social commerce. *Technological Forecasting and Social Change*, *87*, 17–27. doi:10.1016/j.techfore.2014.05.012

Hajli, N. (2015). Social commerce constructs and consumer's intention to buy. *International Journal of Information Management*, *35*(2), 183–191. doi:10.1016/j.ijinfomgt.2014.12.005

Hajli, N., & Sims, J. (2015). Social commerce: The transfer of power from sellers to buyers. *Technological Forecasting and Social Change*, *94*, 350–358. doi:10.1016/j.techfore.2015.01.012

Hansen, J. M., Saridakis, G., & Benson, V. (2018). Risk, trust, and the interaction of perceived ease of use and behavioral control in predicting consumers' use of social media for transactions. *Computers in Human Behavior*, *80*, 197–206. doi:10.1016/j.chb.2017.11.010

Hofstede, G. J. (2001). Adoption of communication technologies and national culture. *Information Systems Management*, *6*(3), 55–74. doi:10.9876im.v6i3.107

Jagannathan, V., Balasubramanian, S., & Natarajan, T. (2018). An extension to the Delone and Mclean information systems success model and validation in the internet banking context. In *Encyclopedia of Information Science and Technology* (4th ed., pp. 49–60). IGI Global. doi:10.4018/978-1-5225-2255-3.ch004

Koranteng, F. N., Wiafe, I., Katsriku, F. A., & Apau, R. (2019). *Understanding trust on social networking sites among tertiary students: An empirical study in Ghana*. Applied Computing and Informatics. doi:10.1016/j.aci.2019.07.003

Koranteng, F. N., Wiafe, I., & Kuada, E. (2019). An Empirical Study of the Relationship Between Social Networking Sites and Students' Engagement in Higher Education. *Journal of Educational Computing Research*, *57*(5), 1131–1159. doi:10.1177/0735633118787528

Liang, T.-P., Ho, Y.-T., Li, Y.-W., & Turban, E. (2011). What drives social commerce: The role of social support and relationship quality. *International Journal of Electronic Commerce*, *16*(2), 69–90. doi:10.2753/JEC1086-4415160204

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Liang, T.-P., & Turban, E. (2011). Introduction to the special issue social commerce: A research framework for social commerce. *International Journal of Electronic Commerce*, *16*(2), 5–14. doi:10.2753/JEC1086-4415160201

Liu, C., Lu, J., & Yu, C.-S. (2018). Examining WeChat social commerce continuance intention and use incorporating personality traits. *Proceedings of 2018 International Conference on Big Data Technologies*, 115–119. 10.1145/3226116.3226137

Lwoga, E. (2014). Critical success factors for adoption of web-based learning management systems in Tanzania. *International Journal of Education and Development Using ICT*, *10*(1), 4–21. https://www.learntechlib.org/p/147447/

Lwoga, E. T., & Sife, A. S. (2018). Impacts of quality antecedents on faculty members' acceptance of electronic resources. *Library Hi Tech*, *36*(2), 289–305. doi:10.1108/LHT-01-2017-0010

Momani, A. M., Yafooz, W. M., & Jamous, M. M. (2018). The influence of enjoyment factor toward the acceptance of social commerce. *International Journal of E-Business Research*, *14*(2), 76–86. doi:10.4018/IJEBR.2018040105

Morrison, K. (2014). Social commerce could become a $15 billion business by 2015. Infographic.

Nathan, R. J., Fook Chiun, D. C., & Suki, N. M. (2016). An online marketing strategies assessment for companies in airlines and entertainment industries in Malaysia. In N. M. Suki (Ed.), *Handbook of research on leveraging consumer psychology for effective customer engagement* (pp. 1–15). IGI Global.

Rana, N. P., & Dwivedi, Y. K. (2015). Citizen's adoption of an e-government system: Validating extended social cognitive theory (SCT). *Government Information Quarterly*, *32*(2), 172–181. doi:10.1016/j.giq.2015.02.002

Suki, N. M. (2013a). Students' demand for smartphones: Structural relationships of product features, brand name, product price and social influence. *Campus-Wide Information System Journal*, *30*(4), 236–248. doi:10.1108/CWIS-03-2013-0013

Suki, N. M. (2013b). Consumer shopping behaviour on the Internet: Insights from Malaysia. *Electronic Commerce Research*, *13*(4), 477–491. doi:10.100710660-013-9131-2

Suki, N. M. (2016). *Handbook of research on leveraging consumer psychology for effective customer engagement*. IGI Global. Retrieved from https://www.igi-global.com/book/handbook-research-leveraging-consumer-psychology/149284

Suki, N. M., & Abang Sulaiman, A. S. (2016). Does halal image strengthen consumer intention to patronize halal stores? some insights from Malaysia. *Journal of Islamic Marketing*, *7*(1), 120–132. doi:10.1108/JIMA-12-2014-0079

Venkatesh, M., Morris, Davis, & Davis. (2003). User acceptance of information technology: Toward a unified view. *Management Information Systems Quarterly*, *27*(3), 425–478. doi:10.2307/30036540

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Wiafe, I., Koranteng, F. N., Tettey, T., Kastriku, F. A., & Abdulai, J.-D. (2019). Factors that affect acceptance and use of information systems within the Maritime industry in developing countries. *Journal of Systems and Information Technology*.

Zhang, K. Z. K., & Benyoucef, M. (2016). Consumer behavior in social commerce: A literature review. *Decision Support Systems*, *86*, 95–108. doi:10.1016/j.dss.2016.04.001

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Chapter 67
Exploring Supportive and Deterrent Factors on Online Shopping in a Developing Country

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ABSTRACT

This study explores the influence of the reasons of individuals' supportive and deterrent behaviors against commercial usage of online media in the emerging market of Turkey. The supportive and deterrent factors are grouped in empirical categories as discouragement and encouragement, respectively. The impact of these factors on actual behavior were assessed via intermediary empirical category including the variables inefficiency, efficiency, intention, and subjective norm. A survey was conducted using a sample of 251 observations obtained from the visitors of three large/busy malls using purposive sampling. The multiple least-square regression was utilized to test the nature of the relationships between variables. Results indicated a significant discouraging impact of warranty, finance, habits, security on inefficiency perceptions, an encouraging impact of geography and convenience on efficiency perceptions. Significant behavioral impact of perceptions regarding inefficiency, efficiency, subjective norms, and intention on actual usage of online shopping was also observed.

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INTRODUCTION

E-commerce is generally defined as conducting business through the use of the Internet. The rise of gigantic e-commerce sites, such as eBay and Amazon, shows that online shopping proves to be a strong alternative in business-to-consumer and consumer-to-consumer commercial activities, especially in the last decade. The term 'online shopping' is a part of e-commerce and refers to purchasing of products and services using the Internet. Today, companies shifting reluctantly to e-commerce activities and being present in the digital world is recommended not only as an advantage in competition but also as a requirement (Laudon & Laudon, 2016).

As online shopping is becoming more common in society (Criteo, 2015), the reasons and the advantages of using the Internet in commercial activities are highlighted in different studies. Today, the available literature provides studies on conceptual discussions and reviews (Ahmad & Khan, 2015) and (Obadă, 2013); for descriptive surveys (Hassan, Tretiakov, Whiddett, & Adon, 2014) and for modeling of the relationship between individuals' behavioral attributes and the actual usage of online shopping, (Al-Alawi & Al-Ali, 2015) and (Al-Bakri & Katsioloudes, 2015). Most of these studies use a global approach and use a sample of special groups such as industry, academia and professionals. Available literature generally focuses on exploring the factors of actual usage of online commerce in general and does not pay much attention to the distinction for underlying reasons of individuals' supportive and deterrent behaviors against commercial usage of online media. Additionally, the number, nature and relative importance of factors affecting e-commerce adoption may vary depending on business conditions and circumstances in different countries (Al-Bakri & Katsioloudes, 2015). Moreover, the complexity of the area is even amplified with consideration of differences between societies (Çelik, 2011), and the accelerated changes in the technology requires further research in time to see effective internal and external changes in online consumer behaviors for industry, government, consumers and academics (Al-Alawi & Al-Ali, 2015; Obadă, 2013).

For these reasons, this study focuses on citizens' attitudes towards virtual shopping places and aims to research the supportive (positive drivers) and deterrent (negative drivers) factors in selecting online shopping alternative. The adopted research model was developed according to the purpose of this study and based on factors selected from the literature.

Internet purchasing has been developed and better established in countries providing developed infrastructure for commercial activities over the Internet (Jamil & Mat, 2011) and most of the available literature are either from Western or Far Eastern countries. Compared to the Internet potential of developed countries, the growth of the actual number of Internet users and their online purchasing activities is relatively low in developing countries. Consequently, the online commerce literature is immature and there is a clear need for detailed exploration of electronic markets from different perspectives in developing countries (Jamil & Mat, 2011). On the other hand, studies have shown that online shopping behavior may show entirely different patterns for different groups and countries due to the differences in understanding the subject knowledge, technical skills, efficiency of available business models, sufficiency of information sources and available infrastructure (Jin, Drozdenko, & Bassett, 2007). This means opportunities and circumstances to access and use information and communication technologies have an important influence on the use of online purchasing; therefore, findings may show significant differences from one case to another. With this backdrop, the research was based on the data collected in Turkey.

Based on the report by Nielson Group (Akman & Rehan, 2014; Nielsen, 2008) indicated that 'Turkish online shoppers (who represent the economic elite) topped global rankings for credit card usage

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(91%) for online purchases followed by 86% of Irish online shoppers and 84% of Indian and UAE online shoppers'. These figures show that Turkey is a developing country providing a relatively unexplored emerging market having an important potential for online shopping (Hwang, Jung, & Salvendy, 2006).

Recent literature, such as (Başev, 2014; Bulut, 2015; Günüç & Keskin, 2016; Sakarya & Soyer, 2013; Turan, 2012), provides research on online shopping adoption at an individual level. Some of these works use the available structured conceptual models, where the number of factors is limited. For instance, Başev (2014) explores Turkish consumer behavior using a sample of 10 consumers and concludes that their behavior is shaped by lifestyle. The study takes TRA as the research model with the scope of the study being a single online shopping website, namely hepsiburada.com. In another work, Turan (2012) uses TAM and TPB as the research models to explain online shopping behavior based on a sample of Turkish students and academics. In particular, this work investigates the predictive power of TAM and TPB with regard to actual online commercial behavior. On the other hand, Bulut (2015) focuses only on the usage of web sites as online shopping channels. In a more recent work, Günüç and Keskin (2016) used an open ended questionnaire to address the psychological symptoms as the research topic and considered the causes and effects of online shopping addiction. Finally, Sakarya and Soyer (2013) compared the online shopping behavior of two distant cultures, British and Turkish, and explored their respective risks and security. These studies do not provide comprehensive evidence on the impact of important supportive or deterrent factors regarding the online commercial behavior of Turkish citizens and there appears to be a gap in this respect. The current study, therefore, explores the negative and positive factors affecting the adoption of online shopping in Turkey. Rather than using a pre-defined conceptual model with a limited number of factors, we have opted for an original comprehensive model focusing on factors grouped in three empirical categories, namely encouraging, discouraging and behavioral. This approach extends the theoretical insights into the actual use of consumer' online shopping behavior.

HYPOTHESES DEVELOPMENT

The hypotheses of this study address factors influencing citizens' behavior against the dependent variable 'online shopping adoption' (actual behavior) in Turkey. The independent variables were categorized into three empirical factors: (i) discouragement (delivery, service, warranty, finance1, habits and security); (ii) encouragement (finance2, time, geographic and convenience); and (iii) behavioral (inefficiency, efficiency, subjective norm and intention). Figure 1 presents the research model. The nature of experiences related to the deterrent and supportive factors grouped in the first two empirical categories has important role in the enhancement of technical infrastructure and improvement of online commerce adoption in emerging markets like Turkey. Regarding the third empirical category, the factors 'inefficiency' and 'efficiency' appear to be the intermediary variables corresponding to the 'discouragement' and 'encouragement' empirical categories respectively. Subjective norm is a function of an underlying normative belief and it refers to the perceived social pressure and influences of actual behavior (Pudaruth & Busviah, 2018). Most studies report the intermediary role of purchase intentions before performing actual buying (Jamil & Mat, 2011). These have been added as independent outlier factors to our model (Figure 1) and the research model is hypothesized. The variable names are given inside the parentheses in the structure of each hypothesis. As can be seen, this study adopts a new research model rather than using an existing conceptual model since it will hopefully provide different perspectives for the strategists and decision makers in the field of e-commerce.

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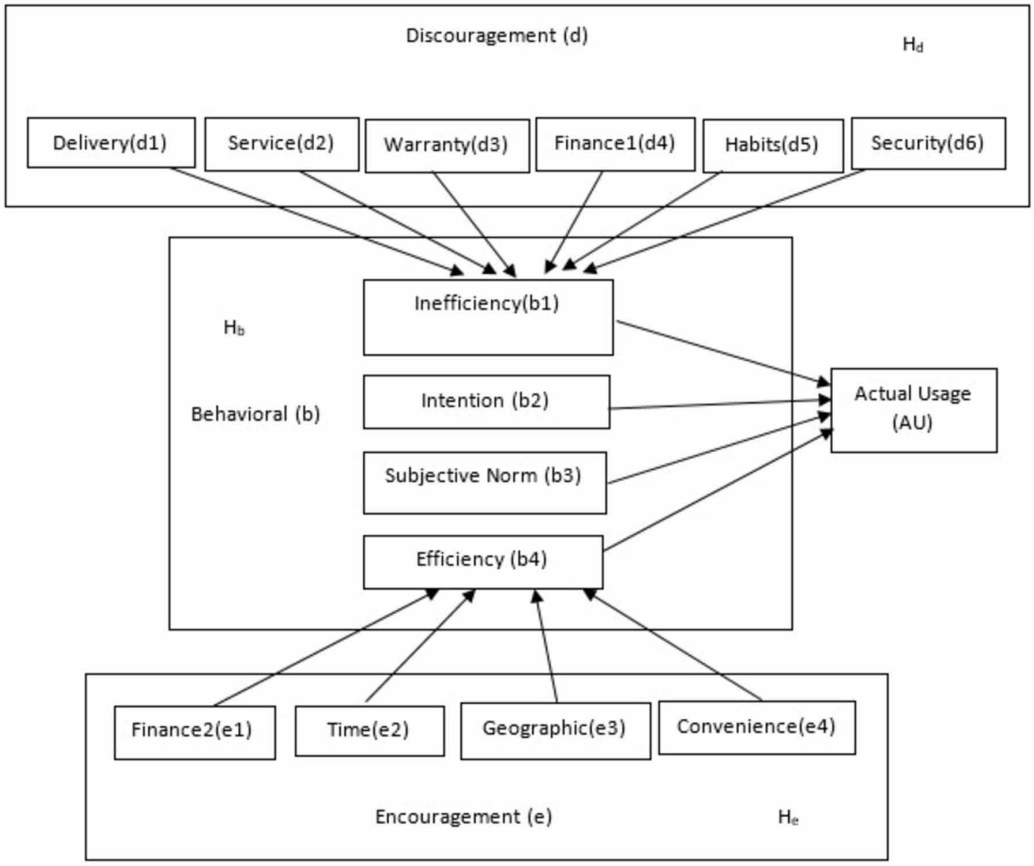
Figure 1. Research model



Discouragement

Some studies have indicated the role of trustworthiness from 'payment' to 'delivery' in electronic commerce. Singh (2013) examined the delivery quality and pointed to its importance for customer satisfaction. (Schlosser, White, & Lloyd, 2006) is another example, which reported that 'delivery problems' have a negative influence on trust and therefore should be considered in electronic commerce studies. Schlosser et al. (2006) also pointed to the importance of developing strategies for building trust, which needs a deeper understanding of any problematic issues in electronic commerce. Aydin and Derer (2015) studied the role of factors in the adoption of electronic commerce using a sample of 1170 students. They identified that 'prejudgments' and 'bad experience' have significant effects on purchase decisions. All these factors may be used as the reasons for developing the following hypothesis regarding 'delivery' problems.

H_{d1}: Delivery problems (delivery) have no discouraging influence on inefficiency (inefficiency) towards online shopping adoption.

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The ease of use of a site also plays a considerable role as user friendly online sites show more retention of customers (Etemad-Sajadi, 2016). Another point with the service is providing facilities and points of interest in the vicinity. In (Eklund & Pessi, 2001), it is reported that potential customers would like to find what they are seeking with advices. The work found the support of expert recommendations on products improves online shopping. In another work, Guo, Wang, and Leskovec (2011) analyzed a large e-commerce website which provided an instant messaging tool to connect the potential customer with the vendor. This utility was found to make the site more desirable. Furthermore, Singh (2013) pointed out service quality to be pertinent to the customers' selection process, and therefore, a major challenge to e-commerce retailers. These works take quality of online services being an effective part in online shopping. With this backdrop following hypothesis is proposed.

H_{d2}: Poor service quality (service) has no discouraging influence on inefficiency (inefficiency) towards online shopping adoption.

We take the warranty covering both wrong/faulty products and return in this work. A high rate of product returns has been reported as consumers do not always have clarity when buying (Susanna Kim, 2013). Receiving an unexpected product is not always due to a confusion in transactions; it is due to asymmetric information between the seller and the buyer (Fidan & Albeni, 2014). Basically, the customer can receive a low quality or wrong product. This is less likely to occur in traditional shopping as the customer has the opportunity to examine the product at the point of purchase. Additionally, there may be a number of problems while returning the product. The literature is criticized such as by (Fu et al., 2016) that not many systematic works are reported on explaining reasons driving return requests and propensity despite the fact that there is a considerable portion of return in online shopping. According to the results of (Berthiaume, 2015), a large majority of customers wanted free return shipping offered at the time of purchase and little or no restocking fees for online returns. Therefore, following hypothesis is postulated.

H_{d3}: Warranty problems (warranty) have no discouraging influence on inefficiency (inefficiency) towards online shopping adoption.

The delivery fee in online shopping becomes an issue because, customer does not choose the delivery method; hence delivery cost does not depend on the buyer in such purchases. In (Miyatake, Nemoto, Nakaharai, & Hayashi, 2016), the authors highlight delivery fee as a hidden cost; e.g., when purchasing more than one item from the same place, there are cases where the delivery cost may increase without any reasonable cause. The transaction cost as a separate, additional cost has been in discussion since the early years of Internet shopping; e.g. Akturk, Ketzenberg, and Heim (2018) report that customers are concerned with this fee as uncertainty. Similarly, in (T. S. H. Teo & Yu, 2005), customer perceived transaction cost is found to be associated with uncertainty and it negatively effects willingness to do online shopping. These extra costs can be visible or invisible, surprising the buyer at time of payment and need to be explored (Wu, Chen, Chen, & Cheng, 2014). We address shipping costs and any other extra costs under the finance1 factor and propose following hypothesis.

H_{d4}: Financial costs (finance1) have no discouraging influence on inefficiency (inefficiency) towards online shopping adoption.

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When customers go shopping, they usually prefer to have their hands touching a product. Negotiating on price and service is another dimension in traditional shopping. However, this does not occur in e-commerce. Activities such as negotiating on price and assessing a product in advance are basically competencies we have in traditional shopping. Additionally, looking at stores and searching for the products we want and comparing them in detail by traditional means is also our habit. Considering these points, habits basically play a considerable role in opting for or rejecting online shopping. Therefore, we propose following hypothesis.

H_{d5}: Habits (habit) have no discouraging influence on inefficiency (inefficiency) towards the actual use of online shopping.

As customers shop online, their private information such as home/work addresses and demographic information can be collected for niche marketing purposes. The aim of the website may not be to make such information public; however, customers may feel uncomfortable knowing that such information is collected and can be shared easily. A work published in 2011, (X. Wang, 2011), delves into the details of this issue in the supply chain. Basically, when the customer provides such information, this can be shared among the entities in the supply chain. For this reason, having to provide such information, especially credit card details, can increase reluctance toward online shopping. As mentioned, what the customer provides to the website may not remain only on that website not only intentionally but also due to unsafe network transactions (Sun & Wang, 2010). Regarding these works, following is used to test user behaviors in security related risks on providing both private information and credit card details.

H_{d6}: Security concerns (security) have no discouraging influence on inefficiency (inefficiency) towards actual use of online shopping.

Encouragement

Works such as (Nethra & Dhanaraj, 2016) further investigate lower prices not only on product labels but also saving money by not leaving home. For instance, Amazon's ebook reader, the Kindle, can be purchased only online because the company's business model basically disintermediates entities, such as retail shops between the company and the customer. In this manner, products can be offered at lower prices leading to customers being able to save money. However, this business strategy compels the customer to shop online. In addition to savings, large online market sites such as n11.com offer coupons, promotions and flexibility in payments regardless of the seller. Prior literature has not explored the financial advantages of online shopping significantly in our context and therefore following is proposed.

H_{e1}: Financial advantages (finance2) have no encouraging influence on efficiency (efficiency) towards actual use of online shopping.

Generally limited places can be visited in traditional shopping and the customer is restricted to the physical shops in the his/her vicinity. In market spaces in the Web, customers can investigate more alternatives in a shorter time. Additionally, access time flexibility, such as being available online while shops are closed in the off-hours, is another advantage. In (Miyatake et al., 2016), the researchers take saving

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time as not only about reducing time to shop but also as being able to order a product outside business hours. Hypothesis He2 tests the saving time influence on behavior to do online shopping.

H_{e2}: Time saving (time) advantages have no encouraging influence on efficiency (efficiency) towards actual use of online shopping.

We have taken the geography factor to refer to the location of the customer and his being able to access online stores regardless of the physical or cyberspace location. Firstly, it is worth stating that potential customers are happy to know where to find the product they are seeking. For instance, in (Eklund & Pessi, 2001), about two decades ago, the researchers found that mobile phone applications showing information about a product customers are seeking were found to be useful. In the study, e-commerce with a mobile phone was investigated and the researchers concluded that the places where the product and its shipping information are available were found to encourage online shopping. As for the effects of living in a remote or urbanized area on online shopping, (Nethra & Dhanaraj, 2016) can be given as a good matching example reporting a case study in India. The research found that although consumers were living in a city where brick and mortar shops were available, they still may prefer online shopping. Moreover, accessing from anywhere, was taken as one of the customer retention tactics; for instance, Lazazzera (2014) recommends sellers not only be available online but also connect to their customers via social networks, hence informing them the e-shop is always open and accessible. The work reports such activities could have customers shop from the same place again. Based on this discussion the advantage of geographical independence has been hypothesized as follows.

H_{e3}: Geographical independence (geography) has no encouraging influence on efficiency (efficiency) towards the actual use of online shopping.

One of the advantages of the market space against the market place is that customers can see numerous sellers of the same or alternative products on the Web. When making comparisons in the price of a product, for instance, user-agents can scan websites selling a product the customer is seeking and list them in the desired order. Convenience, in this scope, covers easily comparing alternative products/vendors and making quick and correct decisions. The concept of convenience is studied in the literature with different definitions. For example, in (Tontini, 2016), usability and information were taken as a dimensions of convenience. This dimension also includes a comparison of prices as well as information on products sold. Khanh and Gim (2014) and Sen (2014) used convenience in terms of time saving only. Our perspective differs from these studies. Therefore, following is postulated.

H_{e4}: Convenience (convenience) has no encouraging influence on efficiency (efficiency) towards actual use of online shopping.

Behavioral

It is natural that customers tend also to find the comfort of traditional shopping in online shopping. Hence, inefficiencies (H_{b1}), such as receiving lower quality product or delays in the delivery, are open to discussion. While shopping face-to-face, we see the product and we can judge its status and quality on the spot and we can take the product at the moment we decide to buy it. However, the purchaser is more

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likely to experience problems, including disappointment in the quality or sometimes receiving damaged products in online shopping. In (Susanna Kim, 2013), high rates of returns due to such problems have been reported.

The problems are not only limited to such issues; they also include problems in delivery time and place as reported in (Inside Retail, 2016), where the authors underline delivery problems to be among the main frustrations of online shoppers. We gather the problems of receiving unexpected low quality, damaged products and not receiving the product on time/place under 'inefficiency' in the following hypothesis.

H_{b1}: Inefficiency (inefficiency) has no any influence on actual use (actual usage-AU) of online shopping.

Efficiency, as in correctness and speed in online shopping, is also a factor we consider with behavior. In this scope, we name 'efficiency' as making a correct decision in a shorter time while shopping online. In support of this, Nethra and Dhanaraj (2016) underline the speed of the purchase decision in online versus traditional shopping. Their statistical analysis method differed from ours; however, they found that online shoppers tended to spend less time and effort on completing their purchases. Related to making correct decisions in less time, in (Tontini, 2016), it was found that speed and accuracy of responses as 'responsiveness of the site' should be considered as a quality dimension. This factor is one of the reasons individuals prefer online sites instead of brick and mortar shops. Therefore, following hypothesis is worth to propose.

H_{b2}: Efficiency (efficiency) has no influence on actual use (actual usage-AU) of online shopping.

The subjective norm is simply defined as the social pressure. In (Moshrefjavadi, Dolatabadi, Nourbakhsh, Poursaeedi, & Asadollahi, 2012), the researchers investigated the role of subjective norms in online shopping and found that people care about what others are thinking. In another work, Akman and Mishra (2017) argue that interviewees consider what others think and do in online shopping. Hence, we have decided to survey the influencing role of subjective norms on the actual use of online shopping.

H_{b3}: Subjective norm (subjective norm) has no any influence on actual use (actual usage-AU) of online shopping.

Identifying typical online shoppers is a common goal in many shopping sites. For this reason, the literature contains a considerable number of works on the intention of shoppers. Works such as (Järveläinen, 2007; Jusoh & Ling, 2012) attempt to find indicators in this subject, including socio-demography, patterns of online buying and purchase perception to model and predict what customers will do subsequently. In most of the models presented in the literature, 'intention' has been investigated as a separate item. Another example can be given in (Ramayah & Ignatius, 2005), where the authors investigate perceived usefulness, perceived ease of use and perceived enjoyment to predict intention of shopping online.

Hence, we have decided to investigate the role of intentions adopt online shopping.

H_{b4}: Intention (intention) has no influence on actual use (actual usage) of online shopping.

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RESEARCH METHOD

The survey instrument was prepared to contain 35 questions (Table 1). The first six questions in the personal category are related to socio-demographic characteristics and were used for descriptive purposes. The remaining questions were grouped under 14 constructs focusing on testing the hypotheses. The research sample contained 251 observations obtained from visitors (potential customers) of three of the largest/busiest shopping malls in the city. Voluntary face-to-face participation was utilized in this study and the data were collected at weekends. Of the respondents, only the users of online shopping were included in the analyses.

A pilot survey was used with experienced professionals and then finalized according to their suggestions. A five-point Likert Scale (5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree) was used for non-descriptive items. 'Actual usage' is the dependent variable; 'inefficiency', 'efficiency', 'subjective norm' and 'intention' are the mediating variables, whereas other non-descriptive variables serve as the independent variables (Table 1). In this study, the multiple least-square regression method was utilized to test the nature of the relationships between the variables, as follows:

$Y_i = a_0 + a_{i1} x_{i1} + a_{i2} x_{i2} + \ldots + a_{in} x_{in}$ i= discouragement, encouragement, behavioral; n=6,4,4,

The chi square test method was also used whenever needed.

The scale reliability measure for the whole instrument, Cronbach's alpha, was found to be 0.798, which shows sufficient internal consistency since 0.7 and above is usually the acceptable threshold (Matsunaga, 2010). The reliabilities of multi-item constructs are summarized in the last column of Table 1 and are ranging from 0.551 to 0.837, which means that the constructs are reliable. In order to ensure content validity, the items were taken from the available literature and modified according to the purpose of this study.

Table 1. List of variables and constructs

Construct/Variable name	Item	Cronbach's alpha
PART 1: Personal		
gender	Male/Female	-
age	<20, 21-30, 31-40, 41-50, >50	-
sector of work place	Public, Private, University, Student, Housewife, I do not work	-
level of education	primary/secondary, High School, University/Vocational, Master, Ph.D.	-
IT Experience	I am professional, I am confident, I am not very confident (reasonable)	-
online shopping awareness	very less, less, Moderate, Much, Very much	-
PART 2: Discouragement		
delivery	I think problems for the delivery of purchased products is discouraging towards online shopping.	0.820
	I think fear of non-delivery of order is discouraging towards online shopping.	
service	I think company's poor quality in online services is discouraging towards online shopping.	0.798
	I think having difficulties in communication with company is discouraging towards online shopping.	

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Table 1. Continued

Construct/Variable name	Item	Cronbach's alpha
warranty	I think details/problems in product warranty covering such as wrong or faulty products is discouraging towards online shopping.	0.777
	I you think details/problems in return issues is discouraging towards online shopping.	
$finance_1$	I think the risk of losing money is discouraging towards online shopping.	0.593
	I think shipping charge is discouraging towards online shopping.	
habits	I think traditional shopping habits negatively is discouraging towards online shopping.	0.765
	I think lack of competence is encouraging towards online shopping.	
security	I think the risk of unauthorized use of your private information is encouraging towards online shopping.	0.722
	I think risk of unauthorized use of your credit card is encouraging towards online shopping.	
PART 3: Encouragement		
$finance_2$	I think saving money is encouraging towards online shopping.	0.861
	I think payment benefits such as coupons promotions and elasticities in payments is encouraging towards online shopping.	
time	I think saving time is encouraging towards online shopping.	0.874
	I think access time elasticity i.e. 24/7 accessibility is encouraging towards online shopping.	
geography	I think the advantage of being independent of residential area is encouraging towards online shopping e.g. some items may not be available in rural areas.	0.755
	I think advantage of accessing from anywhere is encouraging towards online shopping.	
convenience	I think easiness in making comparison with alternative products/vendors is encouraging towards online shopping.	0.562
	I think making quick and right is encouraging towards online shopping.	
PART 4: Behavioral		
inefficiency	Compared to traditional shopping I encounter various problems in your online shopping such as expected quality and damage in delivered product.	0.831
	Compared to traditional shopping I encounter various problems in delivery time of the product in your online shopping.	
efficiency	When I do online shopping it does not take much time to reach correct purchase decisions as compared to traditional shopping.	0.656
	When I do online shopping I come up with more correct purchase decisions in a shorter period of time as compared to traditional shopping.	
subjective norm	I think most people who are important to me think that I do online shopping.	0.551
	I think that most people who are important to me do online shopping.	
intention	In general, I intend to do online shopping.	0.837
	I plan to do online shopping in the future.	
actual usage	I frequently use online shopping?	-

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RESULTS

Descriptive Results

According to the descriptive results (Table 2), most of the respondents were female (70.5%), younger than 31 years (67.7%) and working (61.8%). Of the females 68.74% reported that they use Internet for online shopping. Interestingly, this percentage is slightly less for males (63.39%). More than 30% reported lack of Internet access for both genders, which can be an indication of existence of lack of access to Internet in Turkey. Age appears to be significant in terms of the adoption of online shopping (chi square = 29.872; df = 16; p value = 0.019). Additionally, of the females who indicated their age to be less than 31, 56.6% declared usage of the Internet for commercial purposes to be 'average' or 'more'. This percentage for male respondents is higher (65.4%), meaning that younger males intend to perform online commerce more than their female counterparts. However, this difference is not significant (chi square = 2.128; df = 4; p value = 0.712). It has also been observed that only 5% of the respondents over 40 years of age declared their use of online shopping. This may be an indication of unfamiliarity of older people with online shopping and their preference for conventional shopping.

Graduates of vocational school, university or higher constitute the largest group (57.8%) in terms of education level in the sample. The chi square test does not show any difference between educational levels in terms of online shopping awareness (chi square = 13.460; df = 12; p value = 0.337). It is observed that higher educated respondents use the Internet for other (non-commercial and non-entertainment) purposes more than lower educated ones. However, the level of awareness shows differences depending on the IT experience level of the respondents (chi square = 43.241; df = 9; p value = 0.000) and higher experienced people seem to do Internet shopping significantly more than lower educated people (chi square = 24.806; df = 8; p value = 0.002). This is probably because higher IT experienced individuals more often have computers, Internet address, or e-mail at home and/or office, which may result in their disproportional Internet usage for commercial purposes in the country. This may also be the reason of the fact that existing online shopping alternatives in Turkey require increasing level of IT experience.

Test Results

Table 3 presents the results.

Discouragement

Inspection of the test results in the last column of Table 3 indicates the variables 'delivery' (coeff.= 0.046, p value = 0.353) and 'service' (coeff.= –0.018, p value = 0.755) are not supported by the test results. This means that the evidence is not sufficient to decide that delivery problems and service quality affect users' inefficiency perceptions towards the adoption of online shopping; therefore, H_{d1} and H_{d2} both failed to be rejected. The remaining factors of 'warranty' (coeff.= 0.157, p value = 0.017), 'financial' (coeff.= 0.227, p value = 0.000), 'habits' (coeff.= 0.144, p value = 0.001) and 'security' (coeff.= 0.404, p value = 0.000) show significance regarding their discouraging effects. Therefore, H_{d3}-H_{d6} are all rejected. This means that problems regarding warranty/return issues, the risks of losing money during online shopping and due to shipment charges, conventional shopping habits and lack of competence, as well as the risks

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of unauthorized use of personal information/credit card were perceived by the respondents as important drawbacks of online shopping activities.

Table 2. Descriptive results

Variable	Number	%
Gender	251	100.0
Male	73	29.1
Female	177	70.5
Unknown	1	0.4
Age	251	100.0
<21	60	23.9
21-30	110	43.8
31-40	41	16.3
41-50	31	12.4
>50	9	3.6
Sector of work place	251	100.0
Public	24	9.6
Private	92	36.7
University	39	15.5
Student	76	30.3
Housewife	8	3.2
Do not work	10	3.9
Unknown	2	0.8
Level of education	251	100.0
Primary/secondary	11	4.4
High school	95	37.8
University/vocational	108	43.0
Master	26	10.4
Doctorate	11	4.4
ICT experience level	251	100.0
I am professional	30	11.9
I am confident	150	59.8
Reasonable	63	25.1
Unknown	8	3.2
Online shopping awareness	251	100.0
Very less	17	6.8
Less	24	9.6
Moderate	100	39.8
Much	54	21.5
Very much	56	22.3
Actual usage of online shopping	251	100.0
Strongly disagree	40	15.9
Disagree	41	16.3
Sometimes	30	11.9
Agree	79	31.4
Strongly agree	61	24.5

Encouragement

Based on p values in the last column of Table 3, two out of the four hypotheses were supported by survey data at either 0.10, 0.01 or 0.001 significance levels. Surprisingly, the perceptions for the possibility of

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financial (coeff.= –0.0176, p value = 0.790) saving do not have encouraging influence towards individuals' adoption of online shopping. This means that there is no sufficient evidence to reject H_{e1}. However, although not very strong, the test results supports the encouraging effect of time saving (coeff.= 0.135, p value = 0.094) on online shopping usage of individuals. This leads to rejection of H_{e2}. Interestingly, based on the corresponding p value, the evidence is sufficient such that the advantage of being independent of individuals' residential geographic position (coeff.= 0.215, p value = 0.005) appears to be one of the encouraging factors for efficiency perception regarding online shopping. Similarly, the ease of making comparisons and the possibility of quick/right decisions with online shopping (coeff.= 0.349, p value = 0.000) also show significant influence on efficiency perception towards online shopping adoption. In other words, H_{e3} and H_{e4} are both rejected.

Behavioral

Interestingly, all the mediating factors hypothesized to test the effects on online shopping adoption, such as inefficiency (coeff.= –0.064, p value = 0.014), efficiency (coeff.= 0.096, p value = 0.002), subjective norm (coeff.= 0.210, p value = 0.000) and intention (coeff.= 0.272, p value = 0.000) are supported by the survey results and therefore we reject H_{b1}, H_{b2}, H_{b3} and H_{b4} completely. Naturally, the coefficient of inefficiency was found to be negative, meaning that individuals consider disadvantages (discouraging effects) of online shopping and abstain its adoption. Moreover, its positive coefficient (coeff.= 0.096) efficiency shows a supporting, i.e., encouraging, effect on online shopping adoption. As expected, social pressure is an important factor in online shopping adoption and it has the second highest effect (coeff.= 0.210) in this respect. Intention has the highest influence on actual behavior since its coefficient (coeff.= 0.272) is the largest among the others in this category.

Table 3. Test results

Empirical category	Predictor	Dependent variable	Hyp.	Predictor var.	
				Coeff.	p-val.
Discouragement	Delivery	Inefficiency	H_{d1}	0.046	0.353
	Service		H_{d2}	-0.018	0.755
	Warranty		H_{d3}	0.157	0.017**
	$Finance_1$		H_{d4}	0.227	0.000*
	Habits		H_{d5}	0.144	0.001*
	Security		H_{d6}	0.404	0.000*
Encouragement	$Finance_2$	Efficiency	H_{e1}	-0.017	0.790
	Time		H_{e2}	0.135	0.094***
	Geographic		H_{e3}	0.215	0.005*
	Convenience		H_{e4}	0.349	0.000*
Behavioral	Inefficiency	Actual usage	H_{b1}	-0.064	0.014*
	Efficiency		H_{b2}	0.096	0.002*
	Subjective norm		H_{b3}	0.210	0.000*
	Intention		H_{b4}	0.272	0.000*

(*), (**) and (***) indicate statistical significance at .01, .05 and .10 significance levels respectively.

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DISCUSSIONS

Discouragement

Our results indicate that individuals perceive 'warranty' and 'finance1' to be significant discouraging factors for the adoption of online shopping. This may be taken as an indication of immatureness of digital market in Turkey, hence insignificant infrastructure, design and information content of national e-commerce web sites. Consequently, potential online shoppers are puzzled and, most of the time, their requests for revisions are not taken into account by the national enterprises owning these sites. Our finding is supported by Moshrefjavadi et al. (2012), who reported that consumers take into account all the risks related to an item that they wish to purchase online. They concluded that perceived risks regarding infrastructure, return policies and financial losses, shipment charges and the possibility of non-delivery have a negative effect on human behavior. As noted by Bulut (2015), the most frequently cited risks in online commerce include product quality risks, risks in ordering and returning a product, and the risk of non-delivery. In other words, reservations regarding delivery and quality of an order have a negative impact on virtual media shopping attitudes (Moshrefjavadi et al., 2012). Moreover, fear related to financial issues has a significant negative effect on attitude (Moshrefjavadi et al., 2012). These may be explained by the findings of Bulut (2015), who noted that inherent ambiguity and risks in the online shopping process have an effect on actual behavior through perceptions. This can also be generalized by the study of Biswas and Biswas (2004) stating that people adopt negative attitudes towards online shopping when they observe problems in a retailer's trustworthiness and seriousness.

The existence of the influence of 'habits' was amongst our findings. This is compatible with Ramayah and Ignatius (2005), who stated that 'in spite of putting considerable effort to prosper online commerce by public and private sectors, traditional shopping is still an instinctive choice for most of customers'. In a report (Heffron, 2011), it was observed that more than half of the respondents preferred not to change their attitude to shopping from physical stores. This unwillingness to change behavior may be an indication of the effect of normative and collectivist culture in Turkey. This research concludes that security is also related to inefficiency perceptions which may be based on (Akman, Yazici, Mishra, & Arifoglu, 2005) pointed existence of number of legal issues including security, protection of individual rights remaining to be solved as key barriers in Turkey. Ramayah and Ignatius (2005) also supported our findings that security risks in online shopping develop cynicism in Malaysia and more than one-third of individuals are more comfortable with shopping from physical stores because they worry about personal credit card detail disclosure. As a result, with a reference to (Heffron, 2011; Y. J. Lim, Osman, Salahuddin, Romle, & Abdullah, 2016) stated that 63% of the consumers would make a survey on the Internet before they proceed to purchase traditional consumer electronics online; however, only half of the consumers will purchase online.

Encouragement

Despite existing risks and uncertainties in the online media, there are also important advantages and benefits especially in online shopping transactions. Online media are completely different from those of traditional businesses and they represent a new environment for commercial behavior encouraging individuals for its adoption (Akman & Mishra, 2017). Generally, the success in online shopping highly depends on a comprehensive understanding of the nature and extent of consumers' online information

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access and shopping attitudes, especially in online commerce website design (Moshrefjavadi et al., 2012). As stated by Moshrefjavadi et al. (2012), innovativeness positively influences online shopping behavior positively. Visual incentives, text communication and sound effects can play significant role in consumers' perceptions, demand and activities (Vijayasarathy & Jones, 2000). The current trend forces corporations and individuals to use virtual media for their online shopping activities as they exhibit money and time advantages (Z. Y. Lim, 2015). The literature also reports other tangible advantages of online shopping encouraging consumers towards its adoption. For example, according to Jusoh and Ling (2012), reductions in a buyer's working out time, better purchase judgements and more opportunities to compare alternative products can be counted as driver advantages. Additionally, they also pointed out the advantage of having geographical and time friendly characteristics (Jusoh & Ling, 2012). Moshrefjavadi et al. (2012) supported all these views by stating that 'online stores have many advantages as they are convenient and time saving, no traveling and waiting in lines is needed, and they are open in all time and they are accessible anytime and anywhere'. They also mentioned that users of online shops can benefit from extensive information pertaining to goods and services regarding delivery, payment, warranty, etc. free of charge. In other words, the interactivity is a distinguishing feature helping customers to shop effectively in terms of product or service comparisons and decision making without encountering any salesman's pressure (Moshrefjavadi et al., 2012). Our findings are in line with these studies such that 'geographic' (coeff.= 0.215; p value = 0.005) and 'convenience' (coeff.= 0.349; p value = 0.000) are significantly positively related to efficiency perception towards adoption. In other words, the efficiency advantage in comparing, evaluating and buying, and of having geographical independence have significant predictive power towards actual behavior. These finding may be partly explained by the fact that there are significant differences in shopping opportunities between metropolitan and rural areas in Turkey. On the other hand, the time saving advantage of this technology is also found significant. All these may be used as an indication of the fact that consumers are especially concerned with their tangible advantages from new commercial technologies in Turkey. Therefore, entrepreneurs, who have decided to incorporate the Internet into their marketing strategies should choose an easy-to-use platform that appeals to consumers in order to promote the advantages of online commerce adoption. Interestingly, our findings are not in favor of the variable 'finance2', which concludes that the advantages related to promotions, such as coupons, credits and discounts, do not appear to be the main concern from the consumer's point of view. This is probably due to promotions being the tools used on all marketing platforms, and hence in conventional marketing.

Behavioral

The results provide strong indications of the influence of behavioral factors on actual online shopping behavior since all the p values in Table 3 indicate significance in this category. Naturally, inefficiency has a negative coefficient (coeff.= –0.064), indicating that it has meaningful unfavorable pressure on motivation for online shopping adoption. The remaining factors, such as efficiency, intention and subjective norm, leverage the use of online shopping.

Our findings coincide with some of the available studies. Regarding inefficiency, the consumers are not happy with online commerce when they encounter problems and difficulties in its utilization, which also addresses the quality and period of delivery (Oracle, 2011). According to Punj (2012), losing time and money are two strong negative predictors of online commerce intentions, which may also arise from delivery and quality problems; also in (Punj, 2012), it is indicated that consumers from higher income

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level groups are concerned about the time-saving advantages of online shopping more so than the money-saving feature. According to his study, saving money is mainly the concern of low-income customers. These findings suggest that the main challenge for retailers is to develop online strategies and tools to avoid perceptions regarding time and money saving risks arising from inefficiency of systems. Additionally, vendors should consider the gap between different economic classes of the society in developing strategies so that users may individually and equally benefit from these technologies (Punj, 2012).

Efficiency has been reported by various researchers to affect online shopping. Firms can achieve tangible improvements with operational efficiency (Hong & Zhu, 2006). At the early years of online shopping, Hoffman, Novak, and Peralta (1999) indicated that efficiency is a critical characteristic of online commerce platforms compared to traditional physical commerce. As they noted with the advantage of interactivity, more control is provided with online media than physical stores. Better opportunity in accessing and retrieving information on products and services to be purchased is also a key feature in achieving efficiency (Hoffman et al., 1999). Online stores reduce transaction costs and provide advantages to both consumers and vendors (Laudon & Laudon, 2016). For this reason, researchers and vendors struggle to identify the appropriate conditions and factors for the promotion of online shopping (H. H. Teo, Wei, & Benbasat, 2003). Additionally, vendors of online shopping expend effort to satisfy their customers with regard to their efficient service of delivery (Ganapathi, 2015). However, perceptions regarding technical efficiencies reveal discrepancies depending on the region or country. For example, citizens average perception of technical efficiencies differ between American, European and Asian regions (Y. H. Lin & Hong, 2010), in which case the first has the highest and the last the lowest expectations. Since we found efficiency (coeff.= 0.096, p value < 0.002) to be a significant positive predictor for actual behavior, our finding is in line with these studies. However, the literature is not conclusive regarding the role of efficiency. For example, Aurifeille and Quester (2000) stated that the efficiency in online platform logistics is not perceived by consumers. In (Aghdaie, Piraman, & Fathi, 2011; Hu et al., 2009) it is reported that efficiency is not related to actual behavior. The inconsistencies between the results may be due to the different standpoints of respondents depending on socio-demographic factors. Decisions regarding the adoption of online shopping may also vary depending on the level of development of consumers' mother countries (El-Khatib, 2011).

In this study, the subjective norm is defined as perceived social pressure in individuals' online shopping adoption. Our findings provide strong indications for the significant existence of its influence on actual behavior. This means social pressure is proportional to the adoption of online shopping since its coefficient was found to be significantly positive (coeff = 0.210, p value < 0.001). Our finding may be partly explained by the fact that the role models in societies have an important impact on purchase decisions for electronic shopping (Venkatesh & Brown, 2001). Another explanation may be based on the normative and collectivist culture of citizens in the country as noted before. On the other hand, perceived risks and trust are highly important and also significantly related to collectivist behavior of consumers in online shopping, in which case people give high priority to group interests and norms (Cheung & Chang, 2009). Furthermore, online shopping is still in its infancy in Turkey and new for some groups in the society, and the role of social pressure is likely to be more critical during the early stages of the implementation of this new technology since experience is limited for developing a behavior (Moshrefjavadi et al., 2012). In (Moshrefjavadi et al., 2012) factors having an impact on the adoption of electronic shopping using a sample of 120 customers are examined. Their results are in line with our view that social pressure, has a positive influence on the adoption of online shopping. (Järveläinen, 2007; Khalifa & Limayem, 2003) are two other supporting examples from the literature. According to them,

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the opinions of friends, relatives and peers are important in developing online shopping behavior and therefore likely influence consumers' online shopping adoption. The existence of the positive effect of social pressure can increase positive perceptions towards the adoption of online shopping. There exist studies reporting conflicting findings in the literature. In (Cheung & Chang, 2009), it is reported that social exchange does not have a significant effect on online vendors and customers do not take social exchange into consideration in developing actual behavior. H.-F. Lin (2007) reported insignificance of subjective norms in online textbook purchase intention of undergraduate students. Similarly, according to M.-S. Wang, Chen, Chang, and Yang (2007), attitudes toward Internet purchasing were not affected by subjective norms. Finally, findings in (Jamil & Mat, 2011; Y. J. Lim et al., 2016) proposed that subjective norms have a marginal insignificant influence on actual online shopping behavior. The conflicting results may be explained by Cheung and Chang (2009) and Bulut (2015). It is reported in these studies that the differences between the nature of the samples, the differences in social group memberships and factors are subjected to differences in social pressure. Additionally, the concerns of customers from different cultural origins may also differ (Cheung & Chang, 2009). They may prefer to visit a market place and show unwillingness towards an online medium because of the social element of conventional shopping (Moshrefjavadi et al., 2012).

Intention has been one of the major areas studied in management information systems and marketing science (Hongyao, 2013). In his original article, Ajzen (1991) suggested intention to be a predictor of an indicator of online shopping adoption and lack of consumers' intention was reported to be a handicap in developing online shopping (Y. J. Lim et al., 2016). Our test results indicate that intention is a strong predictor (coeff.= 0.272, $p < 0.001$) of online shopping adoption. There exist parallel research findings in online commerce literature. (Chen, Shen, & Chen, 2014; Khan & Sadiq, 2015; Mulero & Adeyeye, 2013) are only three examples from recent studies. Khan and Sadiq (2015) reported that the relationship between consumer intention and usage of social commerce exists. Mulero and Adeyeye (2013) indicated a strong positive correlation between user intention and social network marketing usage. Chen et al. (2014) used the concepts of social sharing and social shopping to investigate individuals' intentions. They reported significance of intention in social shopping. The findings from these examples do not fit with some others in the literature. For example, it is an observation of Ajzen, Brown, and Carvajal (2004) that people may fail to act in accordance with their stated intentions. Soyoung Kim and Jones (2009) also supports this view by pointing out that online shopping intention does not always lead to actual adoption behavior. A possible reason for conflicting results may be factors correlated to online shopping but not included in the analyses.

CONCLUSION

From the discouragement standpoint, the findings show a significant impact of Warranty, Finance1, Habits and Security factors on inefficiency perception regarding online shopping. In other words, respondents perceive online shopping to be inefficient due to:

- problems in warranty for faulty product and return of unwanted purchase;
- risk of losing money and extra payment of shipping charges;
- traditional shopping habits and lack of competence; and
- the risk of unauthorized use of personal information and unauthorized use of credit cards.

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It is obvious that retailers should focus on avoiding discouraging factors in developing their online commerce business. The encouragement factors, Geographic and Convenience, have been found to influence efficiency perceptions for online shopping adoption. In other words, problems of residential areas in accessing market places and the advantage of having geographic independence of electronic commerce affect perception for online shopping efficiency positively. Electronic commerce entrepreneurs may use these findings to promote their online shopping businesses. Furthermore, all the intermediate factors, inefficiency, efficiency, subjective norm and intention, have been found to emerge in actual online shopping behavior. More clearly, the possibility of experiencing problems regarding quality and delivery of the product, the advantages of effective purchase decisions, social pressure and intentions for now and the future all affect online shopping adoption.

The primary limitation is that online shopping is taken as the scope of this research. An inspection can be suggested as to the effect of using social media for commercial purposes for different demographic characteristics in societies. Furthermore, online shopping can also be studied and we can compare cultural and social perspectives so that the underlying reasons in behaviors may be better investigated. As a follow-up work, enforcement can be investigated as to whether it has a considerable effect on actual behavior. However, factors to nominate enforcement should be found and surveyed separately. Thus, a new research avenue can be created that answers questions such as 'are customers pushed to purchase online?' Finally, although similarities exist in many characteristics among developing countries, a critical limitation is related to the external validity specifically, the ability to generalize our results outside Turkey.

REFERENCES

Aghdaie, S. F. A., Piraman, A., & Fathi, S. (2011). An Analysis of Factors Affecting the Consumer's Attitude of Trust and their Impact on Internet Purchasing Behavior. *International Journal of Business and Social Science*, *2*(23), 147–158.

Ahmad, A., & Khan, M. N. (2015). Mapping Online Buyer Behavior: A Critical Review of Empirical Studies. *Pacific Business Review International*, *8*(2), 37–48.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. doi:10.1016/0749-5978(91)90020-T

Ajzen, I., Brown, T. C., & Carvajal, F. (2004). Explaining the Discrepancy Between Intentions and Actions: The Case of Hypothetical Bias in Contingent Valuation. *Personality and Social Psychology Bulletin*, *30*(9), 1108–1121. doi:10.1177/0146167204264079

Akman, I., & Mishra, A. (2017). Factors Influencing Consumer Intention in Social Commerce Adoption. *Information Technology & People*, *30*(2), 356–370. doi:10.1108/ITP-01-2016-0006

Akman, I., & Rehan, M. (2014). Online purchase behaviour among professionals: A socio-demographic perspective for Turkey. *Economic Research Journal*, *27*(1), 689–699. doi:10.1080/1331677X.2014.975921

Akman, I., Yazici, A., Mishra, A., & Arifoglu, A. (2005). E-Government: A global view and an empirical evaluation of some attributes of citizens. *Government Information Quarterly*, *22*(2), 239–257. doi:10.1016/j.giq.2004.12.001

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Akturk, M. S., Ketzenberg, M., & Heim, G. R. (2018). Assessing impacts of introducing ship-to-store service on sales and returns in omnichannel retailing: A data analytics study. *Journal of Operations Management*, *61*(1), 15–45. doi:10.1016/j.jom.2018.06.004

Al-Alawi, A. I., & Al-Ali, F. M. (2015). Factors Affecting e-Commerce Adoption in SMEs in the GCC: An Empirical study of Kuwait. *Research Journal of Information Technology*, *7*(1), 1–21. doi:10.3923/rjit.2015.1.21

Al-Bakri, A. A., & Katsioloudes, M. I. (2015). The factors affecting e-commerce adoption by Jordanian SMEs. *Management Research Review*, *38*(7), 726–749. doi:10.1108/MRR-12-2013-0291

Aurifeille, J. M., & Quester, P. G. (2000). Globalisation ou internationalisation: une méthode d'analyse fondée sur les profils d'implication. In Faire de la recherche en logistique et distribution? (pp. 231-249). Paris: Vuibert.

Aydin, S., & Derer, E. (2015). Effect of Security Sense on Customers Purchasing Behaviours in E-Commerce: A Study on Suleyman Demirel University Students. *Journal of Süleyman Demirel University Institute of Social Sciences*, *1*(21), 127–150.

Başev, S. E. (2014). Online Buying Behaviour of Turkish Consumer: An Exploratory Study on Hepsiburada.Com. Global Media Journal: Turkish Edition, 5(9), 97-13.

Berthiaume, D. (2015). *Report: Online returns are a big problem*. https://www.chainstoreage.com/article/cross-channel-consistency/

Biswas, D., & Biswas, A. (2004). The diagnostic role of signals in the context of perceived risks in online shopping: Do signals matter more on the Web? *Journal of Interactive Marketing*, *18*(3), 30–45. doi:10.1002/dir.20010

Bulut, Z. A. (2015). Determinants of Repurchase Intention in Online Shopping: A Turkish Consumer's Perspective. *International Journal of Business and Social Science*, *6*(10), 55–63.

Çelik, H. (2011). Influence of social norms, perceived playfulness and online shopping anxiety on customers' adoption of online retail shopping: An empirical study in the Turkish context. *International Journal of Retail & Distribution Management*, *39*(6), 390–413. doi:10.1108/09590551111137967

Chen, J., Shen, X.-L., & Chen, Z.-J. (2014). *Understanding social commerce intention: a relational view*. Paper presented at the 47th Hawaii International Conference on System Science.

Cheung, S. H., & Chang, M. K. (2009). *Building Trust in Online Shopping: The Moderating Effect of Individualism and Collectivism*. Paper presented at the 9th International Conference on Electronic Business (ICEB), Macau, China.

Criteo. (2015). *State of Mobile Commerce Report*. http://www.criteo.com/media/1894/criteo-state-of-mobile-commerce-q1-2015-ppt.pdf

Eklund, S., & Pessi, K. (2001). *Exploring mobile e-commerce in geographical bound retailing*. Paper presented at the 34th Hawaii International Conference on System Sciences. http://021050uyd.y.http.ieeexplore.ieee.org.proxy.cankaya-elibrary.com:9797/xpl/articleDetails.jsp?arnumber=927148&queryText=e-commerce%20remote%20area&newsearch=true

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

El-Khatib, A. (2011). *10 Consumer Behavior Differences between Developed and Developing Countries.* https://wearedevelopment.net/2011/11/01/10-consumer-behavior-differences-between-developed-and-developing-countries/

Etemad-Sajadi, R. (2016). The impact of online real-time interactivity on patronage intention: The use of avatars. *Computers in Human Behavior*, *61*, 227–232. doi:10.1016/j.chb.2016.03.045

Fidan, H., & Albeni, M. (2014). Effects of Asymmetric Information on E-Commerce: A Study on Trust Propensity of Consumers. *Suleyman Demirel University The Journal of Faculty of Economics and Administrative Sciences*, *19*(2), 287–298.

Fu, Y., Liu, G., Papadimitriou, S., Xiong, H., Li, X., & Chen, G. (2016). Fused Latent Models for Assessing Product Return Propensity in Online Commerce. *Decision Support Systems*, *91*, 77–88. doi:10.1016/j.dss.2016.08.002

Ganapathi, R. (2015). A study on factors affecting online shopping behavior of consumers in chennai. *Journal of Management Research and Analysis*, *2*(2), 123–126.

Günüç, S., & Keskin, A. D. (2016). Online Shopping Addiction: Symptoms, Causes and Effects. *Addicta: The Turkish Journal on Addictions*, *3*(3), 353–364. doi:10.15805/addicta.2016.3.0104

Guo, S., Wang, M., & Leskovec, J. (2011). *The Role of Social Networks in Online Shopping: Information Passing, Price of Trust, and Consumer Choice*. Paper presented at the 12th ACM Conference on Electronic Commerce. 10.1145/1993574.1993598

Hassan, H., Tretiakov, A., Whiddett, D., & Adon, I. (2014). Extent of E-procurement Use in SMEs: A Descriptive Study. *Procedia: Social and Behavioral Sciences*, *164*, 264–270. doi:10.1016/j.sbspro.2014.11.076

Heffron, A. J. (2011). *Online for Consumer Electronics: Online Shopping and Purchasing*. NPD Group.

Hoffman, D. L., Novak, T. P., & Peralta, M. (1999). Building consumer trust online. *Communications of the ACM*, *42*(4), 80–85. doi:10.1145/299157.299175

Hong, W., & Zhu, K. (2006). Migrating to internet-based e-commerce: Factors affecting e-commerce adoption and migration at the firm level. *Information & Management*, *43*(2), 204–221. doi:10.1016/j.im.2005.06.003

Hongyao, N. (2013). *Online Purchase Intention in B2C E-Commerce: An Empirical Study*. Paper presented at the Wuhan International Conference on E-Business (WICEB). http://aisel.aisnet.org/whiceb2013/93/

Hu, Y., Sun, X., Zhang, J., Zhang, X., Luo, F., & Huang, L. (2009). *A University Student Behavioral Intention Model Of Online Shopping Based On TAM*. Paper presented at the International Conference on Information Management, Innovation Management and Industrial Engineering, Xi'an, China. 10.1109/ICIII.2009.156

Hwang, W., Jung, H.-S., & Salvendy, G. (2006). Internationalisation of e-commerce: A comparison of online shopping preferences among Korean, Turkish and US populations. *Behaviour & Information Technology*, *25*(1), 3–18. doi:10.1080/01449290512331335636

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Inside Retail. (2016). *Delivery problems major frustration for Aussie online shoppers*. https://www.insideretail.com.au/blog/2016/12/16/delivery-problems-major-frustration-for-aussie-online-shoppers/

Jamil, N. A., & Mat, N. K. N. (2011). *To investigate the drivers of online purchasing behaviour in malaysia based on theory of planned behaviour (TPB): A structural equation modeling (SEM) approach*. Paper presented at the International Conference on Management (ICM), Penang, Malaysia.

Järveläinen, J. (2007). Online Purchase Intentions: An Empirical Testing of a Multiple-Theory Model. *Journal of Organizational Computing and Electronic Commerce*, *17*(1), 53–74.

Jin, K. G., Drozdenko, R., & Bassett, R. (2007). Information Technology Professionals' Perceived Organizational Values and Managerial Ethics: An Empirical Study. *Journal of Business Ethics*, *71*(2), 149–159. doi:10.100710551-006-9131-4

Jusoh, Z. M., & Ling, G. H. (2012). Factors Influencing Consumers' Attitude Towards E-Commerce Purchases Through Online Shopping. *International Journal of Humanities and Social Science*, *2*(4), 223–230.

Khalifa, M., & Limayem, M. (2003). Drivers of Internet shopping. *Communications of the ACM, 46*(12), 233-239.

Khan, S. U. R., & Sadiq, M. (2015). *Consumer Behavior in Social-Commerce*. Paper presented at the International Conference on Global Issues in Multidisciplinary Academic Research (Gimar), Dubai, UAE.

Khanh, N. T. V., & Gim, G. (2014). Factors Affecting the Online Shopping Behavior: An Empirical Investigation in Vietnam. *International Journal of Engineering Research and Applications*, *4*(2), 388–392.

Kim, S. (2013). *Online Retailers Tackle High Rate of Customer Returns*. http://abcnews.go.com/Business/online-shopping-transactions-returned/story?id=21312312

Kim, S., & Jones, C. (2009). Online Shopping and Moderating Role of Offline Brand Trust. *Direct Marketing: An International Journal*, *3*(4), 282–300. doi:10.1108/17505930911000874

Laudon, K. C., & Laudon, J. P. (2016). *Essentials of MIS* (12th ed.). Pearson.

Lazazzera, R. (2014). *7 Customer Retention Tactics to Get Current Ecommerce Customers to Purchase More*. https://www.shopify.com/blog/15593136-7-customer-retention-tactics-to-get-current-ecommerce-customers-to-purchase-more

Lim, Y. J., Osman, A., Salahuddin, S. N., Romle, A. R., & Abdullah, S. (2016). Factors Influencing Online Shopping Behavior: The Mediating Role of Purchase Intention. *Procedia Economics and Finance*, *35*, 401–410. doi:10.1016/S2212-5671(16)00050-2

Lim, Z. Y. (2015). *Why The Weakening Ringgit Is Not All Gloom And Doom*. https://www.imoney.my/articles/why-the-weakening-ringgit-is-not-all-gloom-and-doom

Lin, H.-F. (2007). Predicting consumer intentions to shop online: An empirical test of competing theories. *Electronic Commerce Research and Applications*, *6*(4), 433–442. doi:10.1016/j.elerap.2007.02.002

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Lin, Y. H., & Hong, C.-F. (2010). *Estimating Technical Efficiency for Global E-tailing Companies for Different Regions*. Paper presented at the IEEE International Conference on Industrial Engineering and Engineering Management (IEEM), Macao, China. 10.1109/IEEM.2010.5674195

Matsunaga, M. (2010). How to Factor-Analyze Your Data Right: Do's, Don'ts, and How-To's. *International Journal of Psychological Research*, *3*(1), 97–110. doi:10.21500/20112084.854

Miyatake, K., Nemoto, T., Nakaharai, S., & Hayashi, K. (2016). Reduction in Consumers' Purchasing Cost by Online Shopping. *Transportation Research Procedia*, *12*, 656–666. doi:10.1016/j.trpro.2016.02.019

Moshrefjavadi, M. H., Dolatabadi, H. R., Nourbakhsh, M., Poursaeedi, A., & Asadollahi, A. (2012). An Analysis of Factors Affecting on Online Shopping Behavior of Consumers. *International Journal of Marketing Studies*, *4*(5), 81–98. doi:10.5539/ijms.v4n5p81

Mulero, O., & Adeyeye, M. (2013). An empirical study of user acceptance of online social networks marketing. *South African Computer Journal*, *50*, 6–14. doi:10.18489acj.v50i1.138

Nethra, S., & Dhanaraj, V. T. (2016). Factors influencing consumers' attitude towards e-commerce purchases through online shopping. *International Journal of Applied and Advanced Scientific Research*, *1*(1), 170–173.

Nielsen. (2008). *Trends in Online Shopping: a global Nielsen consumer report*. Author.

Obadă, D. R. (2013). Flow Theory and Online Marketing Outcomes: A Critical Literature Review. *Procedia Economics and Finance*, *6*, 550–561. doi:10.1016/S2212-5671(13)00173-1

Oracle. (2011). *European Consumer Views of E-Commerce: A Consumer Research Study of Buying Behavior and Trends.* An Oracle White Paper. http://www.oracle.com/us/products/applications/commerce/atg/euro-commerce-consumer-survey-333316.pdf

Pudaruth, S., & Busviah, D. (2018). Developing and Testing A Pioneer Model for Online Shopping Behavior for Natural Flowers: Evidence from Mauritius. *Studies in Business and Economics*, *13*(1), 128–147. doi:10.2478be-2018-0011

Punj, G. (2012). Income effects on relative importance of two online purchase goals: Saving time versus saving money. *Journal of Business Research, 65*(5), 634-640.

Ramayah, T., & Ignatius, J. (2005). Impact of Perceived usefulness, Perceived ease of use and Perceived Enjoyment on Intention to shop online. *ICFAI Journal of Systems Management*, *3*(3), 36–51.

Sakarya, S., & Soyer, N. (2013). Cultural Differences in Online Shopping Behavior: Turkey and The United Kingdom. *International Journal of Electronic Commerce Studies*, *4*(2), 213–238. doi:10.7903/ijecs.1049

Schlosser, A. E., White, T. B., & Lloyd, S. M. (2006). Converting web site visitors into buyers: How web site investment increases consumer trusting beliefs and online purchase intentions. *Journal of Marketing*, *70*(2), 133–148. doi:10.1509/jmkg.70.2.133

Sen, R. A. (2014). Online Shopping: A Study of the Factors Influencing Online Purchase of Products in Kolkata. *International Journal of Management and Commerce Innovations*, *2*(1), 44–52.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Singh, S. (2013). The impact of service delivery quality on customer satisfaction in Indian banks. *International Journal of Financial Services Management*, *6*(1), 60–78. doi:10.1504/IJFSM.2013.052887

Sun, P., & Wang, C. (2010). *A Study of Factors Influencing Customers' Online Shopping Behavior Based on ANP*. Paper presented at the International Conference on Management and Service Science (MASS), Wuhan, China. http://021050u54.y.http.ieeexplore.ieee.org.proxy.cankaya-elibrary.com:9797/xpl/articleDetails.jsp?arnumber=5578473&queryText=online%20shopping%20fiscal&newsearch=true

Teo, H. H., Wei, K. K., & Benbasat, I. (2003). Predicting Intention to Adopt Interorganizational Linkages: An Institutional Perspective. *Management Information Systems Quarterly*, *27*(1), 19–49. doi:10.2307/30036518

Teo, T. S. H., & Yu, Y. (2005). Online buying behavior: A transaction cost economics perspective. *Omega*, *33*(5), 451–465. doi:10.1016/j.omega.2004.06.002

Tontini, G. (2016). Identifying opportunities for improvement in online shopping sites. *Journal of Retailing and Consumer Services*, *31*, 228–238. doi:10.1016/j.jretconser.2016.02.012

Turan, A. H. (2012). Internet Shopping Behavior of Turkish Customers: Comparison of Two Competing Models. *Journal of Theoretical and Applied Electronic Commerce Research*, *7*(1), 77–93. doi:10.4067/S0718-18762012000100007

Venkatesh, V., & Brown, S. A. (2001). A longitudinal investigation of personal computers in homes: Adoption determinants and emerging challenges. *Management Information Systems Quarterly*, *25*(1), 71–102. doi:10.2307/3250959

Vijayasarathy, L. R., & Jones, J. M. (2000). Intentions to shop using internet catalogues: Exploring the effects of product types, shopping orientations, and attitudes towards computers. *Electronic Markets*, *10*(1), 29–38. doi:10.1080/10196780050033953

Wang, M.-S., Chen, C.-C., Chang, S.-C., & Yang, Y.-H. (2007). Effects of Online Shopping Attitudes, Subjective Norms and Control Beliefs on Online Shopping Intentions: A Test of the Theory of Planned Behavior. *International Journal of Management*, *24*(2), 296–302.

Wang, X. (2011). *The Motivation and Methods of Information Sharing in Supply Chain*. Paper presented at the International Conference on Management and Service Science (MASS), Wuhan, China. 10.1109/ICMSS.2011.5998267

Wu, L.-Y., Chen, K.-Y., Chen, P.-Y., & Cheng, S.-L. (2014). Perceived value, transaction cost, and repurchase-intention in online shopping: A relational exchange perspective. *Journal of Business Research, 67*, 2768-2776.

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Chapter 68
Trust, Perceived Benefit, and Purchase Intention in C2C E-Commerce:
An Empirical Examination in China

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ABSTRACT

It is a class research question about how trust and perceived benefit affect consumers' purchase intentions. This research examines the relationship in a very different context: consumer-to-consumer (C2C) e-commerce in China. Specifically, this research empirically assesses the differences in effect size due to the change of context. First, a theoretical model linking trust, perceived benefit, and their antecedents to purchase intention is developed upon the literature. Then the model is evaluated using empirical data collected at Taobao, the largest C2C e-commerce website in China. Partial least squares based structural equation modeling (PLS-SEM) results strongly support the model and research hypotheses. A developing country context can indeed affect the strength of effect. These results contribute to the literature in that they provide new insights toward a more in-depth theoretical understanding. Meanwhile, they can also provide useful guidance for managers.

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INTRODUCTION

The turn of the millennium is characterized by an extremely fast growth of the Internet. Since its inception in the early 1990s, the Internet has brought tremendous changes to virtually all aspects of human life (Bi et al., 2017, 2018; Civerchia, Bocchino, et al. 2017; Cheng et al 2018; Finogeev and Finogeev, 2017; Gholami, Taboun and Brennan, 2018; Gorkhali & Xu, 2016; Gürdür and Asplund, 2018; Kim 2017; Lai et al 2017; Li, Xu, & Zhao, 2018; Lu 2017; Peruzzini and Stjepandić, 2018; Tan, Jiang, Gu, 2017; Xiao et al 2014; Xu, He, & Li, 2014; Yang, Stankevicius, Marozas et al., 2018). Among all changes, e-commerce is obviously one of the most significant. E-commerce today has developed into a common, daily activity for consumers (Turban, King, Lee, & Viehland, 2002). The past two decades have witnessed numerous new technologies that enabled the deployment of a plethora of e-commerce websites such as Amazon and eBay. Since the Internet does not have a national or geographical boundary, businesses that provide e-commerce are enthusiastic about leveraging the opportunity to reach more customers, further reduce cost and improve profit.

Among all the interesting research questions, a crucial one has attracted many researchers' attention: What factors affect consumers' purchase behavior? It is a classic research question that dates back to the 1970s in marketing research. Built upon the Theory of Reasoned Action (TRA), marketing scholars have suggested that trust and perceived benefit significantly affect consumers' purchase intention, which in turn guides their purchase behaviors (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). As the Internet and e-commerce becomes increasingly popular and pervasive (Assarzadeh and Aberoumand, 2018; Cai et al 2014; Fan et al., 2014; Fang et al 2014; Li, Oikonomou, Tryfonas, et al., 2014; Liu et al., 2017; Lu 2018; Lu and Xu, 2018; Mao et al 2016; Qi et al 2017; Viriyasitavat and Hoonsopon, 2018; Wang, et al., 2014; Xu, 2011; Xu et al 2018; Yan, et al., 2018; Zhai et al 2016; Zheng et al 2014), information systems and information technology (IS/IT) researchers have shown that the same model is not confined to brick-and-mortar businesses, but also applies to e-commerce or online shopping (Kim, Ferrin, & Rao, 2008). There are conclusive evidences on how trust and perceived benefit affect purchase intention.

Will the relationships remain the same in a different context? Most extant studies were conducted in a developed country setting, where rules and regulations are well established, financial systems are mature, privacy protection is expected, and consumers are less concerned with security issues. In contrast, one cannot assume the same in a developing country context. Researchers have found China particularly interesting in this regard (Cui & Jiang, 2018; Li, 2013; Li & Zhou, 2013). China is a developing country, but its e-commerce growth rate is the fastest in the world. By 2013, the number of online shopping transactions in China exceeded 2.8 billion (iResearch, 2015). Accompanying with this fast growth rate though, is an increasingly severe concern of trust and security issues. Many sellers in China are small businesses or individuals without a strong brand or established credibility. News on security breach or privacy threat is commonly heard. Given such a vastly different context, naturally, the question is whether theoretical models based on TRA are still applicable.

A review of the literature shows that the answer to the question is mostly positive, but quantitative specifics are largely missing. Models based on TRA can explain consumers' purchase behaviors in a developing country context, but parameters such as antecedents and effect size may change. Unfortunately, very few studies have attempted to address the specifics. For example, studies have shown that trust and perceived benefit still affect purchase intention in a developing country context, but it is largely a myth how much effect change it will be when there is a context change. Will consumers in China value trust over perceived benefit or vice versa? There are more questions along the same line of thinking: What

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is the impact of a developing country context on the relationship between trust and its antecedents, and perceived benefit and its antecedents? Does one antecedent have a stronger or weaker effect?

The purpose of this study is to explore for answers to these questions. Empirically validated answers can lead to interesting novel insights about a proven theoretical framework. Such insights can help further theoretical development, leading to a model that can better explain and predict consumers' purchase behaviors in a developing country. This study can potentially make a solid contribution to the literature. Meanwhile, insights obtained from this study can also help managers be more effective in managing e-commerce, particularly in China.

This paper is organized as follows. The next section reviews and synthesizes the extant literature to develop a theoretical model with research hypotheses. The discussion is focused on how effect size can be different in a developing country context. Empirical research design for this study is described next. The measurement instrument is also presented. Results are obtained and deliberated using the partial least squares based structural equation modeling (PLS-SEM) method. The paper concludes with a discussion on potential contributions to both the literature and practices. The limitation of this study and future research directions are also addressed.

THEORETICAL DEVELOPMENT AND RESEARCH HYPOTHESES

Theory of Reasoned Action (TRA) Theoretical Framework

Consumer behaviors is a main research topic in the marketing field. Many research studies can trace their root back to Theory of Reasoned Action (TRA). TRA posits that behavioral intentions are immediate antecedents to behavior, and behavioral intentions are a function of information or beliefs about the likelihood that performing a particular behavior will lead to a specific outcome (Ajzen & Fishbein, 1980; Bai, 2018; Chong, et al., 2018; Fishbein & Ajzen, 1975). Researchers have used the TRA theoretical framework to study a variety of issues, for example, information technology acceptance or adoption (Venkatesh, Morris, Davis, & Davis, 2003). In the field of consumer behaviors, TRA states that consumers will assess benefits and risks associated with a purchase action, the assessment result will directly affect their purchase intention, which eventually determines whether they will conduct a purchase behavior (e.g., Jarvenpaa, Tractinsky, & Saarinen, 1999). Figure 1 summarizes the TRA theoretical framework for consumers' purchase behavior.

Developing Country Context

To date, a rich body of literature is available on consumer behavior using the TRA theoretical framework. On one direction, researchers have enriched the base model with the incorporation of antecedents. For example, many studies have identified different factors that affect consumers' Trust and Perceived Benefit (Sirdeshmukh, Singh, & Sabol, 2002). On another direction, numerous studies have taken the base model to different contexts to examine its validity and generalizability. For instance, some studies examined the model in an e-commerce context instead of physical stores (Hoffman, Novak, & Peralta, 1999; Lee & Turban, 2001). Studies have also looked at a Consumer-to-Consumer (C2C) context other than Business-to-Consumer (B2C) (Chen, Zhang, & Xu, 2009; Giraldi, Ceccacci, Bevilacqua, and Men-

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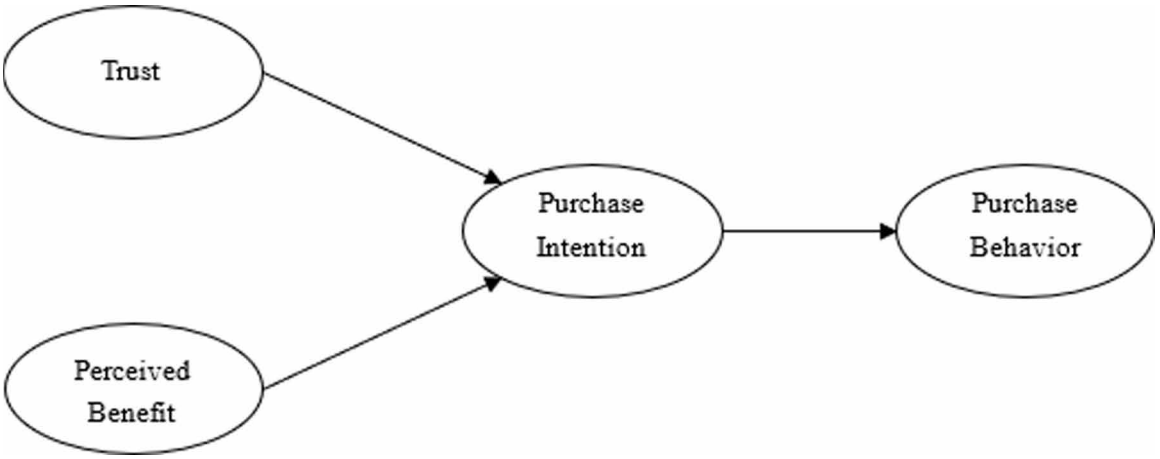
Figure 1. The base model: Consumers' purchase behavior based on TRA



goni, 2018; Kim et al., 2008; Li, Ye, Law, & Wang, 2010; Lu, Zhao, & Wang, 2010). In most cases, the TRA theoretical framework has proven its applicability.

To be effective, the base model must be "customized" to fit specific contexts. Many times the consideration of a specific context can be quite challenging. For example, Martinsons (2008) found that e-commerce in China bears the characteristics of relationship-based, hence studies need to incorporate such factors. But the unfortunate fact is that, up to date, such customization effort is rather *ad hoc*. Overall, there is a lack of systematic exploration on how contexts may affect researchers' model development and empirical results.

The context of China bears several interesting characteristics, and they will be carefully considered in this research study. Despite fast economy growth in the past several decades, China is still largely a developing country due to its large population. Generally, the literature has characterized developing countries as not having well-established financial and legal systems, and weak consumer privacy and rights protection. However, when the developing country is China, such a characterization may be an oversimplification or even a mischaracterization. For example, development and application of mobile Internet in China is by no means trailing, but to the contrary, leading developed nations in many ways (Su et al 2018). The continued high-speed economy growth in China is nothing short of miracle. This unusually long growth period has caused major changes in China. For instance, the financial system in China is a delicate mix of both a rigid banking system and a highly vigorous mobile payment system, e.g., Alipay. It will be a mistake for researchers with a developed country background to simplify the context as a "lagging-behind financial system." Another major factor is that one-child policy has been implemented in China for several decades, leading to a highly disturbing population structure in which a typical (extended) family is consisted of four grandparents, two parents, and one child. The implications are profound and multi-folded. For example, the only child of such an extended family often has enough financial resources at disposal, which usually lead to a high selectivity in his or her employment choices, making labor availability in China much more than a simple economics issue but also a societal and political issue. All in all, studies on consumers' purchase intention have not sufficiently addressed such a unique and challenging context.

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This research study starts with a base model derived from the literature. Then the model is expanded to include antecedents that are relevant to China. Specifically, the focus in on assessing the effect size. First of all, it is expected that the base model is applicable in China due to its wide generalizability: Perceived Benefit and Trust will affect consumers' Purchase Intention in a C2C setting (Kim et al., 2008; Li et al., 2010). However, the literature is yet to define whether the developing country context in China will make the effect of one factor stronger than the other or vice versa. Further, the specific context also demands a careful identification of relevant antecedents to these two factors. There potentially are many plausible antecedents to Trust and Perceived Benefit, which ones are more relevant in this specific context? Moreover, there is a lack of evidence on whether a developing country context will attenuate or strengthen the effect of certain antecedents. Therefore, a systematic exploration may answer these questions, and potentially make a significant contribution to both the literature and practices, which is exactly the purpose of this empirical study.

The Base Model

According to the extant literature, the base model should be applicable in the specific context of this study: C2C e-commerce in China. The base model, as illustrated in Figure 1, states that both Trust and Perceived Benefit have positive effect on Purchase Intention.

Purchase Intention

Purchase Intention refers to a consumer's willingness to commit to a buying transaction. In the context of online shopping, Purchase Intention represents the readiness of a consumer for an online transaction. In today's Internet environment, consumers use an e-commerce service provider's website to search and acquire information about products, and related services. Purchase Intention can be operationalized as the probability that a consumer will buy a certain product or service afterwards (Schlosser, White, & Lloyd, 2006).

C2C Trust, Perceived Benefit, and Purchase Intention

According to Merriam-Webster dictionary, trust is a "belief that someone or something is reliable, good, honest, effective, etc." Undoubtedly, trust plays a crucial role in e-commerce. Indeed, trust is a prerequisite for consumers to participate in online shopping. With trust, consumers are willing to proceed ahead with transaction even when there are uncertainties (McKnight, Choudhury, & Kacmar, 2002).

In the literature on online shopping and e-commerce, most studies on trust involve business-to-consumer (B2C) websites. This is understandable because most transactions happen in the context of B2C. However, consumer-to-consumer (C2C) websites are growing rapidly and gaining wide popularity, particularly in developing countries such as China (Chen, Zhang, Yuan, & Huang, 2007). Taobao, the largest C2C website in China, enjoyed a tremendous growth rate in the past several years. On a C2C website, consumers do not deal with a large business. Instead, a C2C website provides a platform for consumers to interact and transact with other businesses or sellers, often small in scale. Trust in this context involves not only the C2C website, but also information provided by sellers on the C2C website. Clearly, a lack of trust will prevent consumers from committing to online shopping (Hong, 2018; Jones & Leonard, 2008). Consumers evaluate online sellers for their ability to clearly describe products

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and services, to keep promises, and their goodwill to customer service (Ou, Pavlou, & Davison, 2014; Palvia, 2009). The level of trust clearly affects whether consumers will accept the C2C website and use it for transactions. In short, it is believed that a positive impact of trust on purchase intention still exists in a C2C context. It can be further argued that this relationship holds true regardless of developed or developing countries. It is stated as hypothesis H1a and fully expected to be confirmed empirically.

Hypothesis H1a*: Consumers' Trust on C2C e-commerce is positively related to their Purchase Intention*.

In the marketing literature, it is well documented that a consumer's buying behavior is closely related to benefit the consumer perceives. Perceived Benefit refers to value or functionality provided by a product or service that customers can gain by using it. In online shopping, such benefit may include not only the product or service itself, but also convenience, availability of choices, time or cost savings (Kim et al., 2008). Clearly, a higher level of Perceived Benefit will translate into a stronger Purchase Intention. If a consumer is satisfied with benefit provided by an e-commerce service provider, the consumer is likely to become a repeated customer. The opposite is also true, a lower level of Perceived Benefit will decrease the consumer's Purchase Intention, or even stop the consumer from coming back to an e-commerce service provider. In summary, a strong positive effect of Perceived Benefit on Purchase Intention exists in a C2C context, also regardless of developed or developing countries. This is stated as research hypothesis H1b.

Hypothesis H1b: *Consumers' Perceived Benefit is positively related to their Purchase Intention*.

Next, the specific context in which this research is conducted is carefully examined. Hypotheses H1a and H1b state that both Trust and Perceived Benefit have positive impact on Purchase Intention. It is reasonable to argue that Perceived Benefit has a much larger effect size than that of Trust, due to characteristics of C2C e-commerce in China. In this specific context, the role of Trust is more like an order qualifier while Perceived Benefit is an order winner in today's e-commerce in China. Back in early 2000's, e-commerce development in China was slow due to many obstacles (Wong, Yen, & Fang, 2004). More than one decade later, e-commerce has become a norm in ordinary Chinese people's life. According to Deloitte Research (2016), the transaction scale of online retail market reached RMB 3.8 trillion in 2015, representing 12.6% of total retail sales in China. Using C2C website such as Taobao has become a part of Chinese people's daily life. During this process, many C2C websites have emerged and disappeared. The remaining providers must have survived in competition, and earned consumers' trust. To that extent, Trust is a qualifier, or a threshold of the game. Without Trust, consumers will not transact on a C2C website. But once the trustworthiness of a C2C website has been established, its effect on consumers' Purchase Intention becomes rather small. Perceived Benefit, on the other side, becomes the major driving force behind consumers' online activities (Wang, Po Lo, Chi, & Yang, 2004). The above arguments are summarized as research hypothesis H1c.

Hypothesis H1c: *In a developing country context, Perceived Benefit has a much larger effect than that of Trust on consumers' Purchase Intention*.

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Antecedents of C2C Trust

The base model is then expanded to include antecedents for both Trust and Perceived Benefit. There can be many different antecedents. The identification of such antecedents is largely context dependent. For Trust, Perceived Risk is identified as one important antecedent (Lu et al., 2010). Perceived Risk is commonly defined as the felt uncertainty regarding possible negative consequences of using a product or service (Featherman & Pavlou, 2003). It is "the expectation of losses associated with purchase and acts as an inhibitor to purchase behavior" (Peter & Ryan, 1976). Clearly, Perceived Risk can have a strong negative impact on consumers' trust on a C2C e-commerce service provider. Particularly, online shopping is different from traditional shopping in that consumers usually interact with a website but not a brick-and-mortar store. This lack of visibility and transparency may cause fear against online shopping. Consumers simply will stop online shopping if Perceived Risk is too high. Such risks include but are not limited to: product risk (e.g., inaccurate product description, defective products); financial risk (e.g., fraud, ability to return and refund). In physical stores, consumers can touch, feel, or even try a product before committing to a buying decision. In online shopping, consumers must rely on information provided online, e.g., texts, pictures, videos. Their evaluation of the product becomes nothing more than a speculation. Providing personal information to a seller or a website is also a highly risky action, which is generally an irreversible action, and can lead to serious consequences such as ID theft or funds loss (Araujo & Araujo, 2003). A delivery time lag also exacerbates the perception of risks. As a result, the level of Perceived Risk directly contributes to the level of Trust consumers may have for a C2C e-commerce website or service provider (Olivero & Lunt, 2004). This is stated as hypothesis H2a.

Hypothesis H2a: *Consumers' Perceived Risk is negatively related to their trust level in C2C e-commerce.*

Perceived Security Protection is another important antecedent to C2C Trust. Perceived Security Protection refers to consumers' assessment of a C2C website whether it has deployed satisfying security measures. Such security requirements include authentication of transactions, payment security, and confidentiality of transactions and personal information (Li et al., 2010; Zhang, Bian, & Zhu, 2013). Specifically, a C2C website needs to provide a real name authentication system through ID card, credit card, or other mechanisms, so that consumers are confident that they are dealing with legitimate parties. Once fraudulent activities are detected, a consumer's interest can be protected by informing the police or relevant government agencies. A legitimate and independent third-party payment system, usually endorsed by banks in China, is also vital because consumers have a high level of trust in banks in China. Such a system can ensure consumers that the payment mechanism is safe and convenient. In short, hypothesis H2b states:

Hypothesis H2b: *Consumers' Perceived Security Protection is positively related to their Trust in C2C e-commerce.*

Perceived Privacy Protection deals with consumers' perception of how likely their personal information will be leaked to unauthorized parties. During an online shopping transaction, a seller needs to collect a buyer's name, address, phone number, and other relevant information. While such information should be kept strictly confidential, some sellers may sell this information for profit to marketers or even spammers. Consumers then have to face spam calls or even credit card fraud. To gain consumers' trust,

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a C2C service provider must demonstrate to consumers that their confidential information is indeed kept confidential. On the other hand, a lack of privacy protection will certainly lead to a lower level of trust (Kim et al., 2008). The above is stated as hypothesis H2c.

Hypothesis H2c: *Consumers' Perceived Privacy Protection is positively related to their Trust in C2C e-commerce.*

Among the three antecedents, Perceived Security Protection should have the largest effect on Trust in China. In a developing country, specifically, China, privacy is still a relative new issue. According to the national culture literature (Hofstede & Peterson, 2000), Chinese people do not have as strong a sense about privacy as Western people. Therefore, it is conceivable that Perceived Privacy Protection will not play as important a role as other factors. When compared with Perceived Risk, Perceived Security Protection is more important to Chinese people. As a nation with a long history of monarchy political system, Chinese people has the tendency to rely on authorities to protect them. To most Chinese people, product or financial risk is manageable but it is extremely difficult to deal with security protection breach without authority's intervention. Therefore, it is expected that Chinese people would place more weight on Perceived Security Protection. This is stated as research hypothesis H2d.

Hypothesis H2d: *In a developing country context, Perceived Security Protection has the largest effect on C2C Trust among all three antecedents.*

Antecedents of Perceived Benefit

Similarly, the developing country context of China is considered in identifying antecedents for Perceived Benefit. According to the marketing literature, consumers' experience has a significant impact on how their perceptions form (Jones & Leonard, 2008; Kim et al., 2008). In the context of online shopping, the experience is largely determined by two quality factors: Website Quality, and Decision Quality.

In online shopping, a website is virtually the only interface consumers interact with all the time. There is little doubt that Website Quality hence has a significant impact on consumers' perception formation. For a website that is easy to navigate, filled with up-to-date information, consumers can be more confident that the website is well maintained and the staff behind the website is strong and capable. This will easily translate into confidence of products and services provided. The perception is likely that the service provider has acquired a sufficient amount and variety of products to satisfy consumer requirements. When a website provides valuable and sufficient information, consumers no longer need to search across multiple websites. This equates to convenience and time savings, a significant benefit for consumers (Jones & Leonard, 2008; McKnight et al., 2002). In short, hypothesis H3a states:

Hypothesis H3a: *Website Quality is positively related to consumers' Perceived Benefit of C2C e-commerce.*

Another important antecedent is Decision Quality. Decision Quality refers to the degree of match or fit between different kind of customers' preferences and differentiated products. A higher Decision Quality means that consumers believe that a transaction is valuable, worthwhile, and satisfying. In other words, Decision Quality leads to Perceived Benefit (Zha, Li, & Yan, 2013). This is stated as research hypothesis H3b.

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Hypothesis H3b: *Decision Quality is positively related to consumers' Perceived Benefit of C2C e-commerce.*

It can be argued that Website Quality has a much larger effect on Perceived Benefit than that of Decision Quality. According to Bai, Law, and Wen (2008), Chinese online visitors value Website Quality very much to the extent that it drives customer satisfaction and subsequently, purchase intention. The significance of Website Quality becomes apparent when one considers the developmental trajectory of C2C e-commerce in China. Many have characterized e-commerce growth in the past decade as "wild" or even "barbarian." Numerous e-commerce websites emerged and disappeared. Unlike traditional brick-and-mortar businesses who have spent tremendous amount to establish their brand images, almost all e-commerce websites in China are "new" because none of them had a history longer than 20 years. Chinese online shoppers very much can only rely on the web interface to evaluate an e-commerce provider. This website interaction experience largely defines consumers' perception. On the other side, while it is a legitimate argument that the brand image or reputation of a supplier shapes consumers' perception, the influence is in fact minimal in China. Except a few products such as cell phones, most manufacturers are small to medium sized businesses who do not have a strong brand. Their influence, if any, is further dampened due to the large disintermediation effect of C2C e-commerce website. Essentially, Website Quality becomes the most prominent factor in determining consumers' Perceived Benefit (hypothesis H3c).

Hypothesis H3c: *Among the two antecedents, Website Quality has a much larger effect on Perceived Benefit in a developing country C2C e-commerce context.*

Putting all research hypotheses together, the result is a structural model that links antecedents to C2C Trust and Perceived Benefit, and subsequently, Purchase Intention. In Figure 2, bold factors represent having a stronger effect.

EMPIRICAL RESEARCH DESIGN

Empirical Research Setting

For this study, empirical data was collected using online survey from college students in China. An online survey questionnaire was implemented and then distributed to students via email. A total of 403 students were invited and given a two-week time window to complete the survey. The student respondents were also encouraged to share the online survey with their acquaintances, which led to more responses. The majority (>95%) of the survey respondents are college students. With active follow up activities such as reminder emails, the final sample contained 236 valid responses. The response rate is a highly respectable 58.6%.

When college students are used for empirical data collection, the concern is whether their responses represent the population of interest, which may challenge the validity and generalizability of findings. It is a serious concern for studies conducted in a developed country context. In this study though, it is likely the opposite due to the specific characteristics of China: College students well represent the population of C2C e-commerce users. First, Internet is predominantly a young people thing in China. Young people, particularly college students, are pioneers of Internet adoption and active users. This fact

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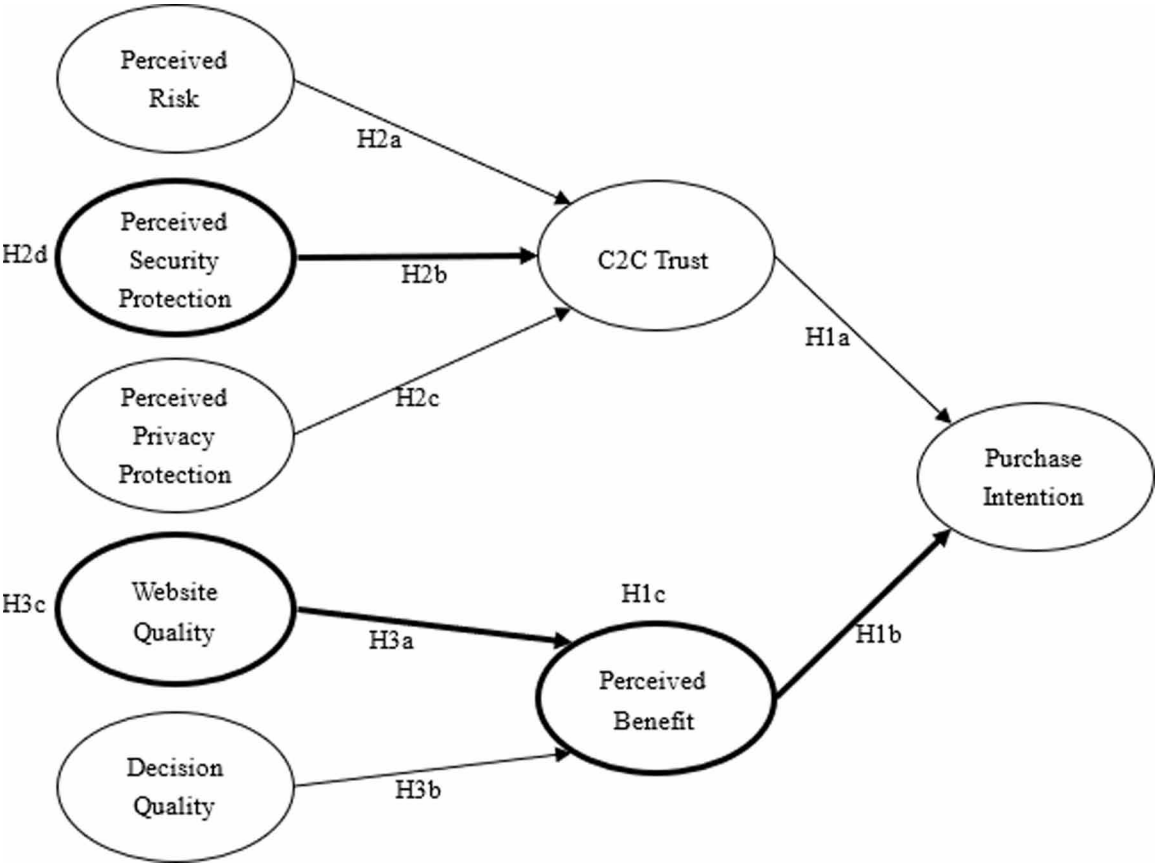
largely alleviated the concern that college students are a biased representation of the population of interest. Second, in studies conducted in developed countries, college students are a biased sample because they often have less purchasing power. This is not true in China due to the aforementioned one-child policy. The policy has effectively concentrated wealth of two generations to the only child of a family, making college students not a "poor" group most of the time. In fact, college students are very active in online shopping. In China, many major Internet companies started next to college campuses. For example, meituan.com and ele.me, two Internet companies who have successfully established their reputation as food delivery service providers, both started near college campuses. The latest example is OFO, a bike sharing company. In its early stage, OFO strictly focused on college campuses. According to a reported published online by eMarketer.com, over 60% of Taobao mobile app users are under the age of 30. Given the wealth college students possess and time they have for the Internet, the college student sample actually reflects the population of interest very well (Jones & Leonard, 2008; McKnight et al., 2002).

Figure 2. Consumers' Purchase Intention in C2C e-commerce in a developing country context



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Sample Characteristics

Table 1 below presents descriptive statistics of the samples obtained. The demographics information fits college students precisely. It is worth noting that the majority of respondents have rich experiences with the Internet and online shopping. Therefore, analyzing this sample can lead to valuable insights.

Table 1. Descriptive statistics

Classification	Frequency (%)
Gender	
Male	110(46.61%)
Female	126 (53.39%)
Age	
Under 18	9 (3.81%)
18-30	207 (87.71%)
31-40	16 (6.78%)
41-50	2 (0.85%)
Over 50	2 (0.85%)
Education level (highest level of education completed)	
High school and below	16 (6.78%)
Secondary Technical school	10 (4.24%)
College	38 (16.1%)
Undergraduate	142 (60.17%)
Postgraduate	30 (12.71%)
Experience in using the Internet	
<1 year	8 (3.39%)
1-3 year	53 (22.46%)
3-5 year	74 (31.36%)
>5 year	101 (42.8%)
Experience in shopping online	
<1 year	36 (15.255%)
1-3 year	106 (4.92%)
3-5 year	49 (20.76%)
>5 year	45 (19.07%)
>5	

Measurement Instrument

The standard procedure was followed to develop and validate a measurement instrument for the variables. Existing scales generally show better reliability and validity because they have been validated by past

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empirical studies. In this research, all constructs have existing scales in the literature. The items were adapted to suite the context of this research. For example, Taobao in China is the C2C e-commerce website selected. So the generic phrase of "Website" in the original scales was replaced by "Taobao" wherever appropriate.

Since the survey was conducted in a non-English speaking country, the measurement instrument items were carefully translated into Chinese. Again, the standard procedure was followed to have a third party back translate the Chinese items into English. A thorough examination was performed to ensure that there was no ambiguity or errors.

Table 2 presents the measurement instrument for all variables. All items used the same seven-point Likert scale (1=Disagree strongly, 2=Disagree, 3=Disagree somewhat, 4=Neutral, 5=Agree somewhat, 6=Agree, 7=Agree strongly, and N=No response), which captures more variation than a five-point scale (Ahire, Golhar, & Waller, 1996). Using the same scale also reduces the burden on respondents, which motivates a higher response rate. Note that several items are reverse-coded to detect automatic responses. They were reversed back in data analysis.

RESULTS

Partial Least Squares

Partial least squares (PLS) is an advanced statistical method that "facilitates testing of the psychometric properties of the scales used to measure a variable, as well as estimating the parameters of a structural model – that is, the magnitude and direction of the relationships among the model variables". PLS is an effective multivariate technique that has been widely applied in information systems and information technology research. Compared to the conventional covariance-based technique, PLS has the advantage of being less demanding on data. PLS can work with small data sets with many missing values. In addition, with a large sample size, PLS can leverage the statistical power to reach strong conclusions (Marcoulides & Saunders, 2006).

For this research, the sample size is more than "sufficiently large." The minimum sample size required for PLS is usually determined by the larger one of (1) ten times the measurement scale with the largest number of formative indicators, or (2) ten times the largest number of independent latent variable impacting a dependent latent variable (Chin, 1998). Since no formative indicators are used in this study, the minimum sample size required is 70 (ten times seven independent latent variables). The sample size of 236 is more than adequate.

Measurement Model Assessment

A PLS based structural equation model (PLS-SEM) is composed of both the outer model (measurement model) and inner model (structural model). A valid measurement model is the prerequisite to any meaningful results (Hair, 1995). The validity of the measurement model was first assessed, including a number of properties such as content validity, construct reliability, convergent and discriminant validity (Nunnally & Bernstein, 1994).

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Table 2. The measurement instrument

Construct		Items	AVE	α	CR
Perceived Risk, adapted from Kim et al. (2008)	PR1	Compared to traditional shopping channels, purchasing from Taobao (except for Tmall, similarly hereinafter) involves more product risk, e.g., product not working or defective product.	0.827	0.896	0.935
	PR2	Compared to traditional shopping channels, purchasing from Taobao (except for Tmall, similarly hereinafter) involves more financial risk, e.g., fraud or difficulty in returning the product.			
	PR3	Overall, shopping on Taobao involves more risks.			
Perceived Security Protection, adapted from Kim et al. (2008)	PSP1	Taobao implements security measures to protect Internet shoppers.	0.716	0.901	0.926
	PSP2	Taobao ensures that transactional information is protected from being altered or destroyed while transmitted over the Internet.			
	PSP3	I feel secured about Taobao's electronic payment system.			
	PSP4	I am willing to use my credit card to make a purchase on Taobao.			
	PSP5	I feel safe in making transactions on Taobao.			
Perceived Privacy Protection, adapted from Kim et al. (2008)	PPP1	I am concerned that Taobao is collecting too much personal information from me.	0.727	0.875	0.914
	PPP2	I am concerned that Taobao will use my personal information for other purposes (i.e. sell private personal information of consumers to other organizations or share with them) without my authorization.			
	PPP3	I am concerned that unauthorized persons (i.e. hackers) have access to my personal information.			
	PPP4	I am concerned about the privacy of my personal information during a transaction.			
Construct		**Items**	**AVE**	**α**	**CR**
Web Site Quality, adapted from Jones and Leonard (2008), and McKnight et al. (2002)	WSQ1	Taobao is of high quality.	0.731	0.908	0.931
	WSQ2	Organization and layout of Taobao make it easy to search for products.			
	WSQ3	Taobao is simple to navigate.			
	WSQ4	It is easy to find the information I wanted on Taobao.			
	WSQ5	Taobao clearly shows how I can contact or communicate with a seller.			
Decision Quality, adapted from Zha et al. (2013)	DQ1	I am confident with my online purchase decisions.	0.782	0.861	0.915
	DQ2	I am satisfied with the choices that I have made in online purchases.			
	DQ3	I will make the same purchase decision again when given the opportunity.			

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Table 2. Continued

Construct		Items	AVE	α	CR
C2C Trust, adapted from Jones and Leonard (2008)	C2CT1	Taobao is unreliable.	0.662	0.829	0.887
	C2CT2	Taobao cannot be trusted due to too many uncertainties.			
	C2CT3	In general, I cannot rely on Taobao sellers to keep the promises they have made.			
	C2CT4	Anyone trusting Taobao is asking for trouble.			
Perceived Benefit, adapted from Kim et al. (2008)	PB1	I think using Taobao is convenient.	0.703	0.894	0.922
	PB2	I can save money by using Taobao.			
	PB3	I can save time by using Taobao.			
	PB4	Taobao enables me to accomplish a shopping task more quickly than traditional stores.			
	PB5	Taobao enables me to buy more types of products than traditional stores.			
Purchase Intention, adapted from Kim et al. (2008)	PI1	I am likely to purchase products on Taobao.	0.882	0.933	0.957
	PI2	I am likely to recommend Taobao to my friends.			
	PI3	I am likely to make another purchase from Taobao if I need the products that I will buy.			

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Content Validity

Content validity, or face validity, is the fundamental requirement for any measurement item. Briefly, the the measurement items in an instrument should cover the major content of a construct (Churchill, 1979; Nunnally & Bernstein, 1994). Content validity of a measurement instrument is usually achieved through a comprehensive literature review and interviews with very knowledgeable practitioners and scholars. In this research, the constructs are from the extant literature. Their measurement items have been validated by previous studies. Hence content validity of the constructs is ensured.

Reliability and Validity

Next, the reliability of constructs were examined. Reliability assesses the consistency or stability of a measure and is inversely related to the degree to which a measure is contaminated by random error (O'Leary-Kelly & Vokurka, 1998). Traditionally, internal consistency reliability of a construct is assessed by Cronbach's alpha, which is estimated based on the inter-correlations of the indicators (Cronbach, 1951; Cronbach & Shavelson, 2004). For PLS-SEM studies, scholars have suggested to examine the composite reliability (CR) measure in addition to Cronbach's alpha (Shah & Goldstein, 2006). Cronbach's alpha assumes that all indicators are equally reliable, which is not the case in PLS-SEM. In PLS-SEM, indicators are prioritized based on their individual reliability (Hair, Hult, Ringle, & Sarstedt, 2014). Further, Cronbach's alpha is sensitive to the number of items in the scale, and tends to underestimate the internal consistency reliability. A scale is considered reliable if the CR value is between 0.60 and 0.70 for exploratory studies, and higher than 0.7 for confirmatory studies (Nunnally & Bernstein, 1994). Table 2 presents the reliability measures for each construct. All values exceeded the suggested 0.70 threshold. Therefore, the constructs are determined to be reliable.

Convergent validity is the extent to which an empirical indicator correlates positively with alternative indicators of the same construct. This is generally assessed by examining the item loadings on the construct as well as the average variance extracted (AVE). A high loading on the construct indicates good convergent validity. The suggested cut off value is that the standardized item loading should be 0.708 or higher, which indicates that the variance shared between the construct and its indicators would be at least 50% or higher. Items with loadings between 0.4 and 0.7 should be considered for elimination if this leads to an increase of the CR value to above 0.7 (Hair et al., 2014). All item loadings exceeded 0.708 to not cause any concern. In addition, AVE for each construct is greater than 0.60, providing strong support to convergent validity (Straub, Boudreau, & Gefen, 2004).

Discriminant validity is the extent to which a construct is truly distinct from other constructs. Discriminant validity can be assessed by examining the cross loadings of the indicators. An indicator's loading on its construct should be greater than cross loadings, i.e., loadings on other constructs (Jöreskog, 1971). However, this criterion is generally considered conservative and it is recommended to use the Fornell and Larcker (1981) test instead. To pass the test, the AVE values should be greater than the squared correlation with other constructs, with the rational being that a construct should share more variance with its indicators than with any other constructs (Hair et al., 2014).

All constructs passed the Fornell and Larcker (1981) test. As can be seen in Table 3, the values along the diagonal are square roots of AVE of each latent construct, and values off the diagonal are pair-wise correlation coefficients between latent constructs. All values along the diagonal are larger than corre-

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sponding correlation coefficients, hence passing the Fornell and Larcker (1981) test. Each latent construct is relatively independent and demonstrates sufficient discriminant validity.

Table 3. Correlations of latent variables

	C2CT	DQ	PB	PI	PPP	PR	PSP	WSQ
C2CT	**0.814**							
DQ	0.513	**0.884**						
PB	0.257	0.589	**0.838**					
PI	0.259	0.556	0.790	**0.939**				
PPP	0.260	-0.018	-0.281	-0.237	**0.853**			
PR	-0.272	-0.032	0.175	0.174	-0.602	**0.909**		
PSP	0.516	0.809	0.572	0.555	-0.013	0.001	**0.846**	
WSQ	0.251	0.629	0.808	0.771	-0.221	0.154	0.697	**0.855**

Structural Model Assessment

Since the measurement model was judged to be adequate, it is appropriate to assess the structural model. The path coefficients and R^2 values for all endogenous variables were examined. They are labeled in Figure 3. A standardized path coefficient represents the strength of the relationship between two adjacent constructs. As expected, all path coefficients are positive except one (PR→C2CT), which is in line with the research hypotheses. Then the statistical significance of these path coefficients was examined. Since PLS-SEM does not make data normality assumptions, traditional statistical procedures for confidence interval construction cannot be used. Instead, a bootstrapping procedure was performed to obtain the standard error of the path coefficient estimates. The bootstrapping procedure is a nonparametric resampling approach for standard error estimation. Results show that all path coefficients are significant. No path coefficient is extremely small when compared to each other, indicating that the proposed model does not have the issue of relevance of significant relationship (Hair et al., 2014).

The other important model evaluation measure is the R^2 values for each endogenous variable. As methodologists have suggested, the level of acceptable R^2 value is research model and discipline dependent. Rules of thumb have been provided for some disciplines such as Marketing (Hair, Ringle, & Sarstedt, 2011), but not for all disciplines. In this research, the R^2 values are highly respectable. The smallest R^2 values is 35.7% (C2C Trust). The other two R^2 values are more than 60%, indicating the majority of variance can be explained by the proposed model. Therefore, the proposed model is judged to have strong predictive relevance and validity. Finally, the path coefficients are compared to see if certain factors have stronger effect as hypothesized.

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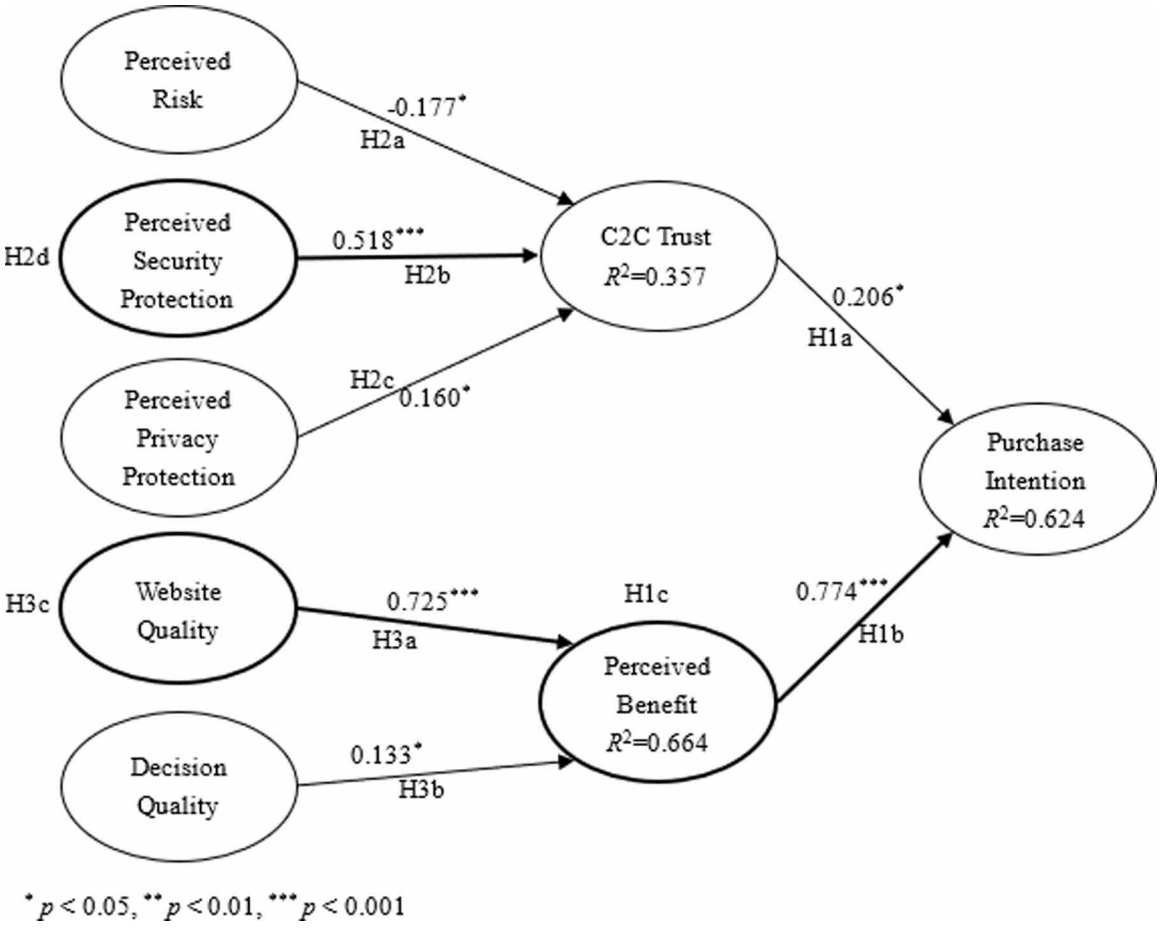
Figure 3. Empirical results



Summary of Results

Empirical results supported all research hypotheses. There is no surprise at all that both C2C Trust and Perceived Benefit have significant positive effect on Purchase Intention, supporting hypotheses H1a and H1b. The effect of C2C Trust on Purchase Intention is significant but the effect size is relatively weak (0.206). The effect of Perceived Benefit on Purchase Intention is substantially stronger at 0.774. Therefore, hypothesis H1c is supported.

The path coefficients for the three antecedents to C2C Trust are significant, in line with Hong and Cha (2013) and Kim et al. (2008). As expected, Perceived Risk negatively affects C2C Trust. Perceived Security Protection and Perceived Privacy Protection are positively associated with C2C Trust. Hypotheses H2a, H2b, and H2c are confirmed. In terms of effect size, Perceived Security Protection does have the largest effect (0.518), noticeably higher than Perceived Risk (-0.177) and Perceived Privacy Protection (0.160). Hypothesis H2d is supported.

For Perceived Benefit, the two antecedents also demonstrate a strong relationship, supporting the findings of Zha et al. (2013). Statistically significant path coefficients show that hypotheses H3a and

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H3b are supported. The effect of Website Quality on Perceived Benefit is a much stronger 0.725 than that of Decision Quality (0.133). Hypothesis H3c is supported.

Discussion

In this study, the effect of Trust on consumers' Purchase Intention is much smaller than that of Perceived Benefit. In past studies, researchers have found that the effect of Trust on consumers' purchase intention is significantly strong in the absence of Perceived Benefit (Lim, Sia, Lee, & Benbasat, 2006; McKnight et al., 2002), but the effect of Trust reduces substantially when Perceived Benefit is included in the model (Kim et al., 2008; Li et al., 2010). It is possibly due to a substitution or interaction effect between C2C Trust and Perceived Benefit. For this study, the argument is that Trust is no longer a critical concern once trustworthiness of a C2C e-commerce website is established, particularly when consumers perceive a large amount of benefit. It is plausible to interpret the result as consumers constantly adjusting their priorities in online shopping: the importance of order winners exceeds order qualifiers.

The result also indicates that, in China, consumers' Trust to C2C website is largely dependent on how strong the website has provided security protection. This result makes complete sense in this unique context. In the past ten to twenty years, e-commerce growth is "wild" and a huge amount of security breach cases have happened. Unlike in developed countries, a strong legal system is readily available to assist consumer victims. In China, it is a nightmare for consumers to deal with such problems. Therefore, it is no surprise at all that Chinese online shoppers have placed a high priority on security protection when it comes to trust of an e-commerce website.

Empirical results suggest that Website Quality is likely the strongest factor that affects consumers' Purchase Intention because both path coefficients (Website Quality → Perceived Benefit → Purchase Intention) are high. Website Quality has a much stronger effect than Decision Quality on Perceived Benefit because Chinese online shoppers' perception of benefit is greatly influenced by how well a C2C e-commerce website is constructed. To some extent, it is a good news for C2C e-commerce service providers. Website Quality is a rather objective measure while Decision Quality can be higher subjective. C2C e-commerce websites can strive to improve quality by checking against many established metrics such as response time.

CONCLUSION AND FUTURE RESEARCH

Conclusion and Contributions

This research study proposed a model linking antecedents of Trust and Perceived Benefit to consumers' Purchase Intention based on the literature. The model development process is guided by a careful consideration of a specific context: consumer-to-consumer (C2C) e-commerce in China, the largest developing country of the world. The model was then empirically examined using data collected regarding Taobao, the leading C2C e-commerce website in China. Specifically, empirical data was collected using a survey regarding consumers' experiences and perception about Taobao. The empirical data was then analyzed using the partial least squares based structural equation modeling (PLS-SEM) method.

The findings in this research supported all research hypotheses that are derived from the extant literature. In short, Trust and Perceived Benefit have a significant positive effect on consumers' Purchase

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Intention in a (C2C) e-commerce context. The antecedents identified for C2C Trust and Perceived Benefit all have significant impact. This result supports that the theory of reasoned action (TRA) model is applicable to C2C e-commerce in a developing country context. Because characteristics of developing countries can be vastly different from that of developed countries, validating the applicability of an existing theoretical framework is a contribution by itself.

A more important contribution, though, is an exploration of effect size change in light of a developing country context. In the United States and Western European countries, business regulations are well established. E-commerce service providers have an existing legal framework that they can refer to. Meanwhile, citizens' awareness of privacy and security is at a rather high level. In contrast, the development and growth of Internet e-commerce in countries such as China follows a quite different trajectory. In many ways, government and regulatory bodies cannot provide a comprehensive framework to guide e-commerce service providers without having them trial and error first. Their feedback construes the basis for rules and regulations development. Indeed, many have characterized the growth and development of Internet commerce in China as "wild" or even "barbarian." Clearly, consumers will have very different perceptions of e-commerce, when compared to those in developed countries.

Insights about effect size change due to a different context contributes to further theory development based on TRA. The effect of Perceived Benefit on Purchase Intention is much stronger than that of Trust. Clearly, in China, consumers are willing to use a C2C e-commerce website (Taobao in this study) due to benefits such as convenience, time, or cost savings. It is a novel insight that Trust matters less than Perceived Benefit in a developing country context, though it should not be interpreted as Trust does not matter. It is also highly intuitive that Perceived Security Protection has the largest effect on Trust. In a developing country such as China, security protection is clearly not as sophisticated as in developed countries. Incidents of security breach often receive high media attention in China. Researchers hence should pay more attention to security protection in further theory development. The result that Website Quality has an effect much larger than Decision Quality is in line with the developing country context, where tangibles are often valued more than intangibles. Consumers tend to anchor their perceptions more on those tangible attributes such as how well a website is constructed, and how easy they can obtain information. In summary, these insights contribute to a more in-depth understanding of consumers' Purchase Intention in a developing country context.

These results can provide useful guidance for managers. To C2C e-commerce service providers such as Taobao, this research study suggests that their priority should be on making benefits clearly visible to consumers, because Perceived Benefit is a key driver toward consumers' Purchase Intention. Among actions a service provider can take, improving Website Quality is the top priority. Consumers in China often look at websites for easy navigation, information access. When a website provides such qualities, consumers form a strong perception regarding benefits they can reap by interacting with the website, and subsequently, conduct a purchase on the website.

Limitations and Future Research

Some limitations of this empirical study should be recognized. Since the majority of empirical data for this research was collected from college students, the findings may not be generalizable beyond this type of C2C e-commerce consumers. However, as discussed earlier, college students well represent active C2C e-commerce consumers in China. It is a reasonable sampling choice. Therefore, results are

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valid, and generalizability of findings may be limited but the impact is likely minimal. Nevertheless, it is plausible to conduct the same empirical research in a more generic setting.

This research study can be extended in multiple ways in the future. It is conceivable that a comparative study can be conducted to further highlight the differences between the developing and developed countries. It is a plausible idea to incorporate factors such as national culture in a future study (Gefen & Heart, 2006). It is a fruitful path to investigate how other consumers' feedback affect or revise a consumer's perceptions. The current research study is a rather "static" one because no user feedback is taken into consideration. Incorporating a dynamic factor may lead to even more insights.

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REFERENCES

Ahire, S. L., Golhar, D. Y., & Waller, M. A. (1996). Development and validation of TQM implementation constructs. *Decision Sciences*, *27*(1), 23–56. doi:10.1111/j.1540-5915.1996.tb00842.x

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Araujo, I., & Araujo, I. (2003). Developing trust in internet commerce. *Proceedings of the 2003 conference of the Centre for Advanced Studies on Collaborative research*.

Assarzadeh, A., & Aberoumand, S. (2018). FinTech in Western Asia: Case of Iran. *Journal of Industrial Integration and Management*, *3*(3), 1850006. doi:10.1142/S2424862218500069

Bai, B., Law, R., & Wen, I. (2008). The impact of website quality on customer satisfaction and purchase intentions: Evidence from Chinese online visitors. *International Journal of Hospitality Management*, *27*(3), 391–402. doi:10.1016/j.ijhm.2007.10.008

Bai, Y. (2018). How Does Co-Creation Affect Customer's Purchase Intention? *Journal of Industrial Integration and Management*, *3*(1), 1850005. doi:10.1142/S2424862218500057

Bi, Z., Liu, Y., Krider, J., Buckland, J., Whiteman, A., Beachy, D., & Smith, J. (2018). Real-Time Force Monitoring of Smart Grippers for Internet of Things (IoT) Applications. *Journal of Industrial Information Integration*, *11*, 19–28. doi:10.1016/j.jii.2018.02.004

Bi, Z., Wang, G., Xu, L., Thompson, M., Mir, R., Nyikos, J., ... Sidwell, C. (2017). IoT-Based System for Communication and Coordination of Football Robot Team. *Internet Research*, *27*(2), 162–181. doi:10.1108/IntR-02-2016-0056

Cai, H., Xu, L., Xu, B., Xie, C., Qin, S., & Jiang, L. (2014). IoT-based Configurable Information Service Platform for Product Lifecycle Management. *IEEE Transactions on Industrial Informatics*, *10*(2), 1558–1567. doi:10.1109/TII.2014.2306391

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Chen, J., Zhang, C., & Xu, Y. (2009). The role of mutual trust in building members' loyalty to a C2C platform provider. *International Journal of Electronic Commerce*, *14*(1), 147–171. doi:10.2753/JEC1086-4415140105

Chen, J., Zhang, C., Yuan, Y., & Huang, L. (2007). Understanding the Emerging C2C Electronic Market in China: An Experience-Seeking Social Marketplace. *Electronic Markets*, *17*(2), 86–100. doi:10.1080/10196780701292468

Cheng, J., Chen, W., Tao, F., & Lin, C. (2018). Industrial IoT in 5G environment towards smart manufacturing. *Journal of Industrial Information Integration*, *10*, 10–19. doi:10.1016/j.jii.2018.04.001

Chin, W. W. (1998). The partial least squares approach for structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295–358). Hillsdale, NJ: Larence Erlbaum Associates.

Chong, D., Li, L., Wu, H., Park, J., Shi, H., & Yan, G. (2018). Social Media Sentiment and Bank Loan Contracting. *Journal of Industrial Integration and Management*, *3*(1). doi:10.1142/S2424862218500070

Churchill, G. A. (1979). *Marketing research: Methodological foundations* (2nd ed.). Hinsdale, IL: Dryden Press.

Civerchia, F., Bocchino, S., Salvadori, C., Rossi, E., Maggiani, L., & Petracca, M. (2017). Industrial Internet of Things monitoring solution for advanced predictive maintenance applications. *Journal of Industrial Information Integration*, *7*, 4–12. doi:10.1016/j.jii.2017.02.003

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*(3), 297–334. doi:10.1007/BF02310555

Cronbach, L. J., & Shavelson, R. J. (2004). My current thoughts on coefficient alpha and successor procedures. *Educational and Psychological Measurement*, *64*(3), 391–418. doi:10.1177/0013164404266386

Cui, Q., & Jiang, W. (2018). Panel data study on the appropriate proportion of personal expenses in total health expenditure in China. *Journal of Management Analytics*, *5*(1), 18–31. doi:10.1080/23270012.2017.1410862

Deloitte Research. (2016). *China E-Retail Market Report 2016*. Retrieved from https://www2.deloitte.com/content/dam/Deloitte/cn/Documents/cip/deloitte-cn-cip-china-online-retail-market-report-en-170123.pdf

Fan, Y., Yin, Y., Xu, L., Zeng, Y., & Wu, F. (2014). IoT based Smart Rehabilitation System. *IEEE Transactions on Industrial Informatics*, *10*(2), 1568–1577. doi:10.1109/TII.2014.2302583

Fang, S., Xu, L., Zhu, Y., Ahati, J., Pei, H., Yan, J., & Liu, Z. (2014). An Integrated System for Regional Environmental Monitoring and Management Based on Internet of Things. *IEEE Transactions on Industrial Informatics*, *10*(2), 1596–1605. doi:10.1109/TII.2014.2302638

Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption: A perceived risk facets perspective. *International Journal of Human-Computer Studies*, *59*(4), 451–474. doi:10.1016/S1071-5819(03)00111-3

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Finogeev, A., & Finogeev, A. (2017). Information attacks and security in wireless sensor networks of industrial SCADA systems. *Journal of Industrial Information Integration*, *5*, 6–16. doi:10.1016/j.jii.2017.02.002

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley Pub. Co.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *JMR, Journal of Marketing Research*, *18*(1), 39–50. doi:10.1177/002224378101800104

Gefen, D., & Heart, T. (2006). On the Need to Include National Culture as a Central Issue in E-Commerce Trust Beliefs. *Journal of Global Information Management*, *14*(4), 1–30. doi:10.4018/jgim.2006100101

Gholami, M., Taboun, M., Brennan, R. (2018) An ad hoc distributed systems approach for industrial wireless sensor network management. *Journal of Industrial Information Integration*. doi:10.1016/j.jii.2018.05.001

Giraldi, L., Ceccacci, S., Bevilacqua, M., & Mengoni, M. (2018). Quality Assessment of Business-to-Business (B2B) Relationships between SMEs: A Qualitative Approach Based on the Relational Capability Conception. *Journal of Industrial Integration and Management*, *3*(2), 1850008. doi:10.1142/S2424862218500082

Gorkhali, A., & Xu, L. D. (2016). Enterprise application integration in industrial integration: A literature review. *Journal of Industrial Integration and Management*, *1*(4), 1650014. doi:10.1142/S2424862216500147

Gürdür, D., & Asplund, F. (2018). A systematic review to merge discourses: Interoperability, integration and cyber-physical systems. *Journal of Industrial Information Integration*, *9*, 14–23. doi:10.1016/j.jii.2017.12.001

Hair, J. F. (1995). *Multivariate data analysis with readings* (4th ed.). Englewood Cliffs, NJ: Prentice Hall.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)* (1st ed.). Thousand Oaks, CA: Sage Publications.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139–152. doi:10.2753/MTP1069-6679190202

Hoffman, D. L., Novak, T. P., & Peralta, M. (1999). Building consumer trust online. *Communications of the ACM*, *42*(4), 80–85. doi:10.1145/299157.299175

Hofstede, G., & Peterson, M. F. (2000). Culture: National values and organizational practices. Handbook of organizational culture and climate, 401-416.

Hong, I. B. (2018). Building Initial Trust in an Intermediary in B2C Online Marketplaces: The Korean Evidence From Interpark.com. *Journal of Global Information Management*, *26*(2), 27–47. doi:10.4018/JGIM.2018040102

Hong, I. B., & Cha, H. S. (2013). The mediating role of consumer trust in an online merchant in predicting purchase intention. *International Journal of Information Management*, *33*(6), 927–939. doi:10.1016/j.ijinfomgt.2013.08.007

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

iResearch. (2015). *Online shopping market monitoring data in 2014, 2015*. Author.

Jarvenpaa, S. L., Tractinsky, N., & Saarinen, L. (1999). Consumer trust in an internet store: A cross-cultural validation. *Journal of Computer-Mediated Communication, 5*(2).

Jones, K., & Leonard, L. N. (2008). Trust in consumer-to-consumer electronic commerce. *Information & Management*, *45*(2), 88–95. doi:10.1016/j.im.2007.12.002

Jöreskog, K. G. (1971). Simultaneous factor analysis in several populations. *Psychometrika*, *57*(4), 409–426. doi:10.1007/BF02291366

Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, *44*(2), 544–564. doi:10.1016/j.dss.2007.07.001

Kim, J. (2017). A Survey of IoT Security: Risks, Requirements, Trends, and Key Technologies. *Journal of Industrial Integration and Management*, *2*(2), 1750008. doi:10.1142/S2424862217500087

Lai, C., Jackson, P., & Jiang, W. (2017). Shifting paradigm to service-dominant logic via Internet-of-Things with applications in the elevators industry. *Journal of Management Analytics*, *4*(1), 35–54. doi:10.1080/23270012.2016.1259967

Lee, M. K., & Turban, E. (2001). A trust model for consumer Internet shopping. *International Journal of Electronic Commerce*, *6*(1), 75–91. doi:10.1080/10864415.2001.11044227

Li, H., Ye, Q., Law, R., & Wang, Z. (2010). A purchasing-intention model in C2C e-commerce of China: The role of perceived risk, trust, perceived benefit and their antecedents. *Proceedings of the 12th International Conference on Electronic Commerce: Roadmap for the Future of Electronic Business*. 10.1145/2389376.2389391

Li, L. (2013). The path to Made-in-China: How this was done and future prospects. *International Journal of Production Economics*, *146*(1), 4–13. doi:10.1016/j.ijpe.2013.05.022

Li, L., & Zhou, H. (2013). Manufacturing practices in China. *International Journal of Production Economics*, *146*(1), 1–3. doi:10.1016/j.ijpe.2013.09.006

Li, S., Oikonomou, G., Tryfonas, T., Chen, T., & Xu, L. (2014). A Distributed Consensus Algorithm for Decision Making in Service-oriented Internet of Things. *IEEE Transactions on Industrial Informatics*, *10*(2), 1461–1468. doi:10.1109/TII.2014.2306331

Li, S., Xu, L. D., & Zhao, S. (2018). 5G Internet of Things: A survey. *Journal of Industrial Information Integration*, *10*, 1–9. doi:10.1016/j.jii.2018.01.005

Lim, K. H., Sia, C. L., Lee, M. K., & Benbasat, I. (2006). Do I trust you online, and if so, will I buy? An empirical study of two trust-building strategies. *Journal of Management Information Systems*, *23*(2), 233–266. doi:10.2753/MIS0742-1222230210

Liu, F., Tan, C., Lim, E., & Choi, B. (2017). Traversing knowledge networks: An algorithmic historiography of extant literature on the Internet of Things (IoT). *Journal of Management Analytics*, *4*(1), 3–34. doi:10.1080/23270012.2016.1214540

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Lu, Y. (2017). Industry 4.0: A survey on technologies, applications and open research issues. *Journal of Industrial Information Integration*, *6*, 1–10. doi:10.1016/j.jii.2017.04.005

Lu, Y. (2018). Blockchain and the related issues: A review of current research topics. *Journal of Management Analytics*, *5*(4), 231–255. doi:10.1080/23270012.2018.1516523

Lu, Y., & Xu, L. (2018). Internet of Things (IoT) Cybersecurity Research: A Review of Current Research Topics. *IEEE Internet of Things Journal*. Doi:10.1109/JIOT.2018.2869847

Lu, Y., Zhao, L., & Wang, B. (2010). From virtual community members to C2C e-commerce buyers: Trust in virtual communities and its effect on consumers' purchase intention. *Electronic Commerce Research and Applications*, *9*(4), 346–360. doi:10.1016/j.elerap.2009.07.003

Mao, J., Zhou, Q., Sarmiento, M., Chen, J., Wang, P., Jonsson, F., ... Zou, Z. (2016). A Hybrid Reader Transceiver Design for Industrial Internet of Things. *Journal of Industrial Information Integration*, *2*, 19–29. doi:10.1016/j.jii.2016.05.001

Marcoulides, G. A., & Saunders, C. (2006). Editor's comments: PLS: A silver bullet? *Management Information Systems Quarterly*, *30*(2), iii–ix. doi:10.2307/25148727

Martinsons, M. G. (2008). Relationship-based e-commerce: Theory and evidence from China. *Information Systems Journal*, *18*(4), 331–356. doi:10.1111/j.1365-2575.2008.00302.x

McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). Developing and validating trust measures for e-commerce: An integrative typology. *Information Systems Research*, *13*(3), 334–359. doi:10.1287/isre.13.3.334.81

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.

O'Leary-Kelly, S. W., & Vokurka, R. J. (1998). The empirical assessment of construct validity. *Journal of Operations Management*, *16*(4), 387–405. doi:10.1016/S0272-6963(98)00020-5

Olivero, N., & Lunt, P. (2004). Privacy versus willingness to disclose in e-commerce exchanges: The effect of risk awareness on the relative role of trust and control. *Journal of Economic Psychology*, *25*(2), 243–262. doi:10.1016/S0167-4870(02)00172-1

Ou, C. X., Pavlou, P. A., & Davison, R. (2014). Swift guanxi in online marketplaces: The role of computer-mediated communication technologies. *Management Information Systems Quarterly*, *38*(1), 209–230. doi:10.25300/MISQ/2014/38.1.10

Palvia, P. (2009). The role of trust in e-commerce relational exchange: A unified model. *Information & Management*, *46*(4), 213–220. doi:10.1016/j.im.2009.02.003

Peruzzini, M., & Stjepandić, J. (2018). Editorial to the special issue "Transdisciplinary approaches for industrial information integration engineering I". *Journal of Industrial Information Integration*, *12*, 1–2. doi:10.1016/j.jii.2018.07.003

Peter, J. P., & Ryan, M. J. (1976). An investigation of perceived risk at the brand level. *JMR, Journal of Marketing Research*, *13*(2), 184–188. doi:10.1177/002224377601300210

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Qi, J., Yang, P., Min, G., Amft, O., Dong, F., & Xu, L. (2017). Advanced Internet of Things for Personalized Healthcare Systems: A Survey. *Pervasive and Mobile Computing*, *41*, 132–149. doi:10.1016/j.pmcj.2017.06.018

Schlosser, A. E., White, T. B., & Lloyd, S. M. (2006). Converting web site visitors into buyers: How web site investment increases consumer trusting beliefs and online purchase intentions. *Journal of Marketing*, *70*(2), 133–148. doi:10.1509/jmkg.70.2.133

Shah, R., & Goldstein, S. M. (2006). Use of structural equation modeling in operations management research: Looking back and forward. *Journal of Operations Management*, *24*(2), 148–169. doi:10.1016/j.jom.2005.05.001

Sirdeshmukh, D., Singh, J., & Sabol, B. (2002). Consumer trust, value, and loyalty in relational exchanges. *Journal of Marketing*, *66*(1), 15–37. doi:10.1509/jmkg.66.1.15.18449

Straub, D., Boudreau, M.-C., & Gefen, D. (2004). Validation guidelines for IS positivist research. *Communications of the Association for Information Systems*, *13*(1), 63.

Su, W., Xu, X., Li, Y., Martínez-López, F., & Li, L. (2018). Technological Innovation: A Case Study of Mobile Internet Information Technology Applications in Community Management. *Journal of Global Information Management*, *26*(2), 193–203. doi:10.4018/JGIM.2018040109

Tan, C., Jiang, W., & Gu, B. (2017). Guest Editorial: Special issue on embracing the Internet of Things to drive data-driven decisions. *Journal of Management Analytics*, *4*(1), 1–2. doi:10.1080/23270012.2017.1281772

Turban, E., King, D., Lee, J., & Viehland, D. (2002). Electronic commerce: A managerial perspective 2002. Prentice Hall.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *Management Information Systems Quarterly*, *27*(3), 425–478. doi:10.2307/30036540

Viriyasitavat, W., Hoonsopon, D. (2018) Blockchain characteristics and consensus in modern business processes. *Journal of Industrial Information Integration*. doi:10.1016/j.jii.2018.07.004

Wang, L., Xu, L., Bi, Z., & Xu, Y. (2014). Data Cleaning for RFID and WSN Integration. *IEEE Transactions on Industrial Informatics*, *10*(1), 408–418. doi:10.1109/TII.2013.2250510

Wang, Y., Po Lo, H., Chi, R., & Yang, Y. (2004). An integrated framework for customer value and customer-relationship-management performance: A customer-based perspective from China. *Managing Service Quality: An International Journal*, *14*(2/3), 169–182. doi:10.1108/09604520410528590

Wong, X., Yen, D. C., & Fang, X. (2004). E-commerce development in China and its implication for business. *Asia Pacific Journal of Marketing and Logistics*, *16*(3), 68–83. doi:10.1108/13555850410765230

Xiao, G., Guo, J., Xu, L., & Gong, Z. (2014). User Interoperability with Heterogeneous IoT Devices through Transformation. *IEEE Transactions on Industrial Informatics*, *10*(2), 1486–1496. doi:10.1109/TII.2014.2306772

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Xu, L., Xu, E., & Li, L. (2018). Industry 4.0: State of the art and future trends. *International Journal of Production Research*, *56*(8), 2941–2962. doi:10.1080/00207543.2018.1444806

Xu, L. D. (2011). Enterprise Systems: State-of-the-Art and Future Trends. *IEEE Transactions on Industrial Informatics*, *7*(4), 630–640. doi:10.1109/TII.2011.2167156

Xu, L. D., He, W., & Li, S. (2014). Internet of Things in Industries: A Survey. *IEEE Transactions on Industrial Informatics*, *10*(4), 2233–2243. doi:10.1109/TII.2014.2300753

Yan, H., Jun, L., Bo, P. Z., Yue, X., & Su, H. (2018). Mixed time-triggered and event-triggered industrial controller in IoT environment. *Journal of Industrial Information Integration*, *11*, 11–18. doi:10.1016/j.jii.2017.06.004

Yang, B., Stankevicius, D., Marozas, V., Deng, Z., Liu, E., Lukosevicius, A., ... Min, G. (2018). Lifelogging Data Validation Model for Internet of Things enabled Healthcare System. *IEEE Transactions on Systems, Man, and Cybernetics. Systems*, *48*(1), 50–64. doi:10.1109/TSMC.2016.2586075

Zha, X., Li, J., & Yan, Y. (2013). Information self-efficacy and information channels: Decision quality and online shopping satisfaction. *Online Information Review*, *37*(6), 872–890. doi:10.1108/OIR-09-2012-0156

Zhai, C., Zou, Z., Chen, Q., Xu, L., Zheng, L., & Tenhunen, H. (2016). Delay-aware and reliability-aware contention-free MF-TDMA protocol for automated RFID monitoring in industrial IoT. *Journal of Industrial Information Integration*, *3*, 8–19. doi:10.1016/j.jii.2016.06.002

Zhang, Y., Bian, J., & Zhu, W. (2013). Trust fraud: A crucial challenge for China's e-commerce market. *Electronic Commerce Research and Applications*, *12*(5), 299–308. doi:10.1016/j.elerap.2012.11.005

Zheng, X., Martin, P., Brohman, K., & Xu, L. (2014). Cloud Service Negotiation in Internet of Things Environment: A Mixed Approach. *IEEE Transactions on Industrial Informatics*, *10*(2), 1506–1515. doi:10.1109/TII.2014.2305641

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Chapter 69
What Makes Customers Repurchase Grocery Products from Online Stores in Korea

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ABSTRACT

To understand customer repurchase intention in online stores, the present study has evolved with three variables: customer trust, loyalty, and satisfaction. A theoretical model was also developed to examine customer repurchase intention towards online shopping. The observation unit of this research is online stores and the analytical unit is the customers who have been purchasing grocery products via online. A random sampling technique was used to select the respondents and who are easily accessible. The data was collected from 645 online customers in Seoul. The data was analyzed with a structural measurement equation model by using Partial Least Square 3.0. Outcomes of study showed that, customer satisfaction and trust were the significant predictors of customer repurchase intention. The effect of customer loyalty towards repurchase intention seems to be very low. Hence, online retailers have advised to concentrate more on the activities needed to increase customer loyalty and to purchase more.

INTRODUCTION

Owing to the emergence of information and communication technology (ICT), a magic word called Internet has derived and it plays an important role in our day today lives (Pauzi et al., 2017). It connects community and communication; thus, the internet plays a predominant role in the marketing sphere. It supports marketers to reach the products to the ultimate consumers, especially for selling the novel products in online marketing (Datamonitor, 2010). Internet facilitates consumers to compare one prod-

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uct with other similar products very easily and swiftly. This kind of comparison helps the consumers to have better products with the right future at the right price. As a result, today's consumers are buying a variety of products from online stores right from electronics, stationeries, cosmetics, apparel, and so on. Thus, all the products have gained popularity among the public except groceries (Grewal et al., 2004). Usually, grocery products are classified as eatable and drinkable, and that is buying on a regular basis from the departmental stores or supermarkets in larger quantities. For a long time, people used to buy the groceries in shops directly, where they have a chance to inspect the quality and other attributes of the products before making the purchase. Moreover, consumers can arrange their own transportation for the safety of fragile products (Kelin,1998). But these kinds of facilities are not available for the grocery products in online stores. All these reasons are discouraged the consumers to buy the grocery products from online stores. As a result, consumers are hesitating to adopt online grocery shopping and hence, it leaves rooms for further improvement. The modern supermarkets and online grocery stores not only deal with perishable products but also deal with durable eatables (Schuster & Sporn, 1998).

Since online grocery shopping is a new one in the online business, and absence of consumers' interest to buy the grocery products through online, it is an important area to explore. Especially, it is indispensable to analyse the factors determine consumers' purchase intention of grocery products from online stores. Attaining new consumers and maintaining existing customers is a challenging job to the online retailers, since it has more uncertainty. Hence, online retailers should made efforts to attain new customers by minimizing the mentioned risks. Also, the online shopping consumers' behavior will be differing from the consumers who are doing traditional way of shopping. As a consequence, understanding consumer behavior is a challenging task in the online business due to the cutthroat competition and the continuous changes in the online business environment. So that the online retailers should understand the determinants of consumers online purchasing and repurchasing behaviors in order to compete the online trading challenges. In this regard, numbers of studies have suggested assessing consumers' behavior towards online shopping as well as online grocery shopping (Ahn, Ryu & Han, 2004; Hanson, 2004; Lin, 2007). Though, number of earlier studies related with online purchasing and repurchasing intention available in the literature, researches that enlighten the relationship among customers trust, satisfaction and loyalty and the manifold effects of these factors on the online repurchase intention is limited, and the findings of the studies are also inadequate.

With this backdrop the present study has proposed a research model along with three factors namely customer trust, customer loyalty and customer satisfaction and it has to be tested with theoretical models by incorporating relations among all the three variables and customer online repurchase intention. The aim of the present research is to establish the evidence that the factors mostly influence South Korean consumers' repurchase intention of grocery products in online stores and the paper is organised as follows. The first part of the paper is deals with introduction. Theoretical background and research hypotheses are presented in section two. Research methodology, measurement development, data collection procedure were presented in the third part. Fourth section deals with analysis and results of the study. Discussion and conclusions were presented in the last section.

REASONS FOR THE STUDY

South Korean e-commerce market is one of the biggest markets in the world. Due to technological advancement and the development of mobile communication it has been realizing a double-digit growth in

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the recent years. By 2021, it is also expected that the volume of online business will go up to 33 billion US dollars. According to Statista, the government transport sector in Seoul offering high-speed internet and free Wi-Fi services to the passengers (Statista, 2018). Thus, all these factors supported South Korea to be the world's best internet service provider. On the other side, South Korea is having name and fame for its internet commerce especially in grocery shopping. Out of total purchase of fast-moving consumer goods (FMCG), about 17 percent have been purchased via online shopping during 2015-16 (Korean Herald, 2018). Moreover, South Korea is also having a large number of families that purchasing FMCG products from the online market at least once a year. Due to the development of information and communication technology (ICT) online retailers in Korea offering a wide range of shopping experience to their customers. The increasing demand for fresh food supplies and less delivery period accelerate the online traders to offer best services to their customers. Thus, Koreans are enjoying the new shopping experience in their day to day transactions. In the recent years, Korea has been experiencing one-person household concept and this type of households also increasing the demand potential for online grocery products. On the other side, a lot of double-income families don't have time to purchase directly from the market, hence they prefer online stores for purchasing grocery items. Out of the total population in Korea, around 35 percent are living in one-person household lifestyle. Thus, all these factors pushed South Korea in to be the best country for online grocery shopping (Krakowiak, 2018). But still, very limited studies have concentrated on this area with different perspectives, hence the present study made an attempt to study South Korean customers' repurchase intention towards online grocery products with above mentioned attributes.

THEORETICAL BACKGROUND AND RESEARCH HYPOTHESIS

Customer Trust on Online Stores

Customers trust is described as the confidence that permits the customers to happily showing intersect on the online stores after having analyse the stores' uniqueness into the deliberation (Toufaily, Souiden, & Ladhari, 2013). However, the significance of the customer trust further stressed in the online business perspective, mainly about the products like food items and groceries (Citrin et al., 2003) since it is a critical factor that influence the success of the online grocery retail business (Toufaily, Souiden, & Ladhari, 2013). Customer trust may evolve from the subjective attitude about trust in the online sellers (Bianchi & Andrews, 2012; Toufaily, Souiden, & Ladhari, 2013) or otherwise, various attributes of the online stores may improve the customers trust during their online shopping incidents (Ogonowski et al., 2014). Once trust is instituted, automatically repurchase intention will be more likely. As such we expect a significant relationship between customer trusts and repurchase intention of online grocery stores. In accordance with we have framed a hypothesis that:

H1: Customer trust is significantly related with customer repurchase intention.

Customer satisfaction is a state of mind that derives from the consumption related feelings like contentment, revelation while shopping from particular stores (Belanche, Casalo, & Guinaliu, 2012). Customer satisfaction is an artifact conceived with both affective and cognitive experiences (Oliver, 1997). While many of the studies mentioned that customer satisfaction (Shim et al., 2001; Nesset, Nervik, & Helge-

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sen, 2011) and trust (McCole, Ramsey, & Williams, 2010; Toufaily, Souiden, & Ladhari, 2013) are the notable antecedents of the repurchase intention in online shopping. Further, the relationship between these two antecedents have established well by (Cronin, Brady, and Hult, 2002; Ha & Perks, 2005; Ha, Janda, & Muthaly, 2010). Very specifically, in the context of online grocery shopping, customers order the perishable goods like fruits, vegetables, meat and so on, believing that the online retailers will select worthy products and have they supplied it in a stipulated time. It is therefore discussed that customers who have experienced the satisfied transaction with their online grocery purchase will have higher levels of trust. Therefore:

H2: Customer trust is significantly related with customer satisfaction.

The notion of customer loyalty is administered in the present research as customers' optimistic attitude on the repurchase of grocery products. The relationship between customers trust and customers loyalty has assessed in different ways by various researchers previously. However, some of the studies have taken these variables as antecedents of customer satisfaction (Ok et al., 2005). But, still these two factors having room for further analysis since researchers come up with different outcome. While, Ok et al. (2005) mentioned that there is no significant relationship between customer trust and customer loyalty while buying things from offline stores. On the other hand, Kim and Han (2008) have established that customer trust to have an influence on customer loyalty through the data collected from online customers. Moreover, trust is a long-term orientation and onward looking in nature, then it can be analyzed logically that the trust having an influence over customer loyalty in the online retail sector (Caceres & Paparoidamis, 2007). Hence;

H3: Customer trust is significantly related with customer loyalty.

Customer Loyalty

Customer loyalty is an important domain in marketing research (Bodet, 2008). It acts as a key driver in the success of online trading (Reichheld & Schefter, 2000). Loyal customers have a strong commitment, high fondness and more affection for their chosen retailer. They also propagate more positively through word-of-mouth endorsements, never switching to rival brands, having high tolerance even in-service failure, and ready to pay the even higher price for their retailer's products (Wien & Olsen, 2014). Thus, it shows that customer faithfulness is being the success cue for online trading and also supports to attain sustainable growth, generate profits and a valuable asset to the retailers (Zeelenberg & Pieters, 2004). Similarly, Yang and Peterson (2004) revealed that loyal customers help in attracting and attaining more customers to the firm, excuse the customer service mishaps, never mind price fluctuations and being a resource for perennial profits. Customer loyalty is optimistically influenced firms to attain profits and sustainable growth (Oyvind, 2006). Customer loyalty has influenced by two approaches such as behavioral and attitudinal (Yi & La, 2004). According to behavioral approach, loyal customers are one who continuously buys a specific brand without having any brand-related information (Brunner et al., 2008). Thus, behavioral approach defines the loyalty as buying regularity or quantity of purchase of particular brand (Tellis, 1988). Bettencourt, (1997) has criticized that since the real customer loyalty is a behavior centric, it is very difficult to distinguish between original and fake loyalty, hence, experts have added an attitudinal attribute along with the behavioral one (Bodet, 2008). As per attitudinal approach, loyal

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customers have high psychological bonding and positive approach towards particular retailer (Rauyruen & Papassapa, 2007). In the same way, customer loyalty creates a desire to have an association with a service provider (Wieseke, Alavi, & Habel, 2014). Therefore:

H4: Customer loyalty significantly affects customer repurchase intention.
H5: Customer loyalty significantly affects customer satisfaction.

Customer Satisfaction

Satisfaction is a feeling that makes a customer happy about particular products or services after purchase, and it fulfills their expectations. State of mind of a buyer towards the goods or services purchased to fulfill his or her needs and wants. It is an outcome of positive words from the customers on to the goods or services sold by the firm and encourage them to praise or being a favor to it. If the customers not happy with goods or services, he or she will behave negatively and reduce purchase gradually. Contrary, if customer satisfied with the purchased goods or services, it will push them repurchase intentions, and increase the sales accordingly (Kahneman & Tversky, 1979). Parasutaman et al. (1985) said that customer satisfaction and post-purchase behavior have a considerable impact on repurchase intentions. Jong-Kun Jun (2003) similarly said that higher the satisfaction would turn the customers towards repurchase intentions. Online customer satisfaction is the extent to which customers have satisfied in the earlier dealings with particular online store (Anderson,2003). Hence:

H6: Customer satisfaction significantly affects the customer repurchase intention.

Repurchase Intention

Purchase intention is an outcome of a customer's justification towards the goods, bought from particular retailer (Lacey, Suh & Morgan, 2007). Prior research works have provided the evidence that customer satisfaction having a positive relationship with customers' repurchasing plan (Mittal & Kamakura, 2001; Yu Dean, 2001). Though, many researchers criticized this relationship (Seiders et al., 2005; Yi & La, 2004). Regardless of different perceptions, there are researches that explained the association betwixt customer satisfaction and re-buying plan (Magi Anne, 2003; Yi & La, 2004). In order to examining how customer satisfaction does relate to repurchase intention, a lot of possible mediating factors have been analyzed. Seiders et al., (2005) have analyzed the customer participation with different socio-economic factors. Bloemer and Ruyter (1998) have analyzed the concept called elaboration and found that it is a more useful tool for assessing the customer satisfaction after purchase. Because, elaboration path has emotional, and attitudinal aspects are influencing purchase intention.

Research Framework

Based on the review of the literature and the discussion made previously, research framework has developed and it explains the relationship between research factors. Figure 1 pictures the relationship between repurchase intention and research factors such as customer trust, customer loyalty, and customer satisfaction.

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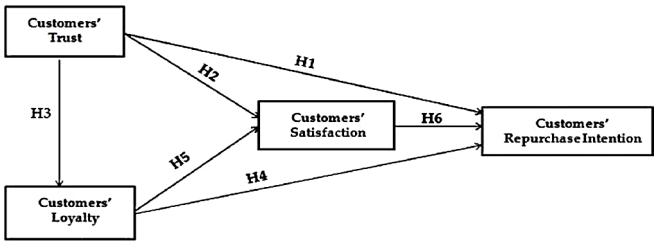
Figure 1. Research framework



RESEARCH METHODS

Measurement Development

For developing the measurement items, earlier studies were reviewed and from which measures were adapted. With a view to identify and avoid complications in the study, pilot test as well as the pre-test, was conducted with the prepared questionnaire by choosing the persons with online purchasing experience. The purpose of the pilot study is to provide information about the extent to which data collection could be anticipated to include and forecast the complicated items to be complete (Quinones et al., 1998). By using 20 university graduate students, sequence of the questions, logical consistency, the possibility of understanding and contextual coherence were assessed for refining the questionnaire. According to the results of the pilot study, the length of the questionnaire has shortened, since the longer questionnaire pressured the respondents in filling up the data and it leads to decline in the quality of data. Hence, some of the items were removed from customer trust, loyalty, satisfaction, and repurchase intention constructs.

At last, the finalized questionnaire was with 17 items under four constructs. Further, based on the comments received from the students, some of the minor modifications were made in the questionnaire. Thus, the pre-test was conducted with 117 online shopping customers in order to ensure the relevance and quality of measurement items and to establish the evidence to the proposed model. It could see from the results that, the value of factor loadings was ranged between 0.731 to 0.827, composite reliability values were ranged between 0.79 to 0.86, the values of correlation coefficient ranged between 0.43 to 0.76, and the average variance extracted value was ranged between 0.62 to 0.76. Thus, all the variables were significant, and it indicated that the finalized questionnaire was fit for formal data collection and analysis.

Thus totally 17 items were finalized under four constructs. Three items were used to measure customer trust and they adapted from Gefen (2000). Customer loyalty was measured with five items adapted from Zeithaml et al. (1996). For measuring customer satisfaction five items were developed based on Anderson and Srinivasan (2003). Finally, four items used to measure the repurchase intention of online stores and they were adapted from Kim et al. (2012) and Parasuraman et al. (2005). (Please refer the appendix for questionnaire related items). Followed by the five-point Likert scaling technique with raking ratings from strongly disagree (1) to strongly agree (5) was used to measure all constructs.

Data Collection Procedure

The survey was conducted between January 2018 and March 2018. The proposed research model was analyzed with the help of the data were collected from 645 online customers who have online shopping

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experience in Seoul, South Korea. Data for the present study were collected by random sampling technique, through online mailing method and contacting the persons directly. To ensure and validate the responsiveness of the respondents, it was mentioned in the demographic information page that, since the study is online grocery products purchase intention oriented, consumers those who have purchased the grocery products already in online stores, only eligible for filling the questionnaire. Thus, totally 700 online customers were contacted by both methods. Out of which 682 filled questionnaires were returned to us. While checking the received questionnaires, many of them were seen as improper information or with missing information and dual marking. And such kind of invalid questionnaires were omitted, thus, 645 questionnaires were found with valid information and they have included from 682. Thus, it could see that, the study has received 94.57 percent of the respondents' responses from the survey and it showed that involvement of the respondents in this research and this encouraged us to precede further analysis.

As far as the research questionnaire is concerned; it begins with the purpose of the study and confidentiality promise that the personal details will be used only for academic research purpose. The second part of the questionnaire consist the demographic profile of the respondents and it has presented in Table 1.

Table 1. Demographic profile of the respondents

Measurement Variables	Items	Number of Respondents	Percentage
Gender	Male Female	314 331 645	48.69 51.31 100.00
Age	18-25 26-30 31-35 >36	65 108 292 180 645	10.08 16.74 45.28 27.90 100.00
Education	Upto High School Graduates Masters	124 363 158 645	19.23 56.28 24.49 100.00
Position	Student Employed Housewife	113 374 158 645	17.51 57.98 24.51 100.00
No of Times online purchase made in the past Three months	1-2 3-5 6-10 11+	121 252 149 123 645	18.75 39.06 23.13 19.06 100.00

Note: $n = 645$

With a view to validating the representativeness of the given sample, it was matchup with the sample of online customers. According to Statista's report entitled 'Online shopping penetration in South Korea 2015, by gender' (2015), the greater part of the online shopping consumers is female in South Korea (57.1percent). This result also supported by the Live Republic of Korea population (2018) that out of the total population (50.2percent) is female. Thus, the majority of the study sample was female (51.31

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percent). Since in Korea, housewives are being the household representatives and thus they have been purchasing the grocery products more. Thus, the majority of the study sample was female (51.31) and it proved that the sample size was justifiable one in terms of gender. Moreover, infilling up the questionnaire related to shopping, women would have more willingness than men (Farag et al., 2007). Accordingly, this statement should be kept in mind while interpreting the results of this research.

ANALYSIS AND RESULTS

Data Analysis

There are three reasons have influenced this research work to use Structural Equation Model (SEM). The first reason that since SEM is multivariate analysis it estimates the multiple equations simultaneously (Hair et al., 2006). Secondly, in one step process SEM carryout both factor and regression analysis, as it is used to test the structural theory. And finally, based on its major strength, SEM analysis becomes a popular one among the social science researches. Thus, the structural equation modeling was performed by utilizing partial least squares (PLS) graph 3.0. Because, PLS is a specially recommended method for exploratory research and allows the modeling of latent constructs with both formative and reflective indicators. In addition, PLS is more appropriate when the objective is to predict and investigate relatively new phenomena (Chin, 1999; Palos-Sanchez et al., 2017). PLS examines both measurement model as well as structural model and supports to the concealed constructs to be the determining or reflective indicators. Thus, for testing the model, each and every construct were modeled as reflective.

Measurement Model

Reliability, validity and discriminant validity were evaluated in order to test the adequacy of the measurement model. With the help of composite reliability (CR) values, the reliability test was performed. It was understood from Table 2 that, the composite reliability values of each variable were more than 0.7 and this indicates that it is a commonly accepted level for performing explanatory research. According to Fornell & Larker (1981), there were two criteria have been followed to test the convergent validity of the measurement scales. The first criterion was, indicator loadings should be more than 0.7 and they should statistically significant. The second reason was each constructs' average variance extracts should be more than (0.05) the variance due to the measurement error for that constructs.

It could be seen from Table 2 that items of each constructs' CR value is more than 0.7 thus it supports to accept the items convergence. Moreover, the AVE values of each construct are more than 0.5. Thus, the convergent validity's two conditions were fulfilled.

With a view to assessing the extent to which one construct is differ from another; the discriminant validity test was administered on constructs. According to Fornell and Larker (1981), two kinds of tests were used in this process. The first one was used to assess the cross-loadings and their correlation among the measurement constructs. The second one was used to assess whether the square root of the AVE was more than the relationship between one construct to remaining other constructs of the model. According to Hanseler et al., (2009) a construct should have more variance with its measurements than with other constructs. To satisfy this condition the square root of the AVE should be larger than the square of correlation among the constructs and the remaining constructs. Thus, the condition became true for

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all the latent variables and it will be clear from Table 3. Hence it is concluded that the constructs have shared more variance with their indicators than the other constructs (Hanseler et al., 2009) and thus discriminant validity was confirmed based on the analysis.

Table 2. Validity and reliability results of the test variables

Variables	Indicator	Validity Test		Reliability Test		
		Loading Factor	Conclusion	AVE>0.5	CR>0.7	Conclusion
Customer Trust	CT3 CT2 CT1	.796 .769 .721	Valid Valid Valid	0.581	0.824	Reliable
Customer Loyalty	CL4 CL2 CL3 CL1 CL5	.712 .723 .687 .674 .684	Valid Valid Valid Valid Valid	0.605	0.806	Reliable
Customer Satisfaction	CS1 CS4 CS3 CS5 CS2	.731 .712 .700 .695 .689	Valid Valid Valid Valid Valid	0.565	0.837	Reliable
Repurchase Intention	RPI1 RPI4 RPI2 RPI3	0.714 0.673 0.731 0.706	Valid Valid Valid Valid	0.541	0.819	Reliable

Table 3. Discriminant validity

Constructs	CT	CL	CS	RPI	Mean	STD
CT	0.610				3.26	0.89
CL	0.420	0.642			3.01	1.03
CS	0.561	0.406	0.575		3.22	1.07
RPI	0.527	0.475	0.442	0.566	2.98	0.99

CT - Customer Trust; CL - Customer Loyalty; CS – Customer Satisfaction; RPI – Repurchase Intention

Analysis of the Structural Model

Path coefficient (β) explains the level to which predictor variables support to the internal variables' explained variance. With the multiplication value of path coefficient and the correlation coefficient of two factors, it can be measured that the variance explained in endogenous constructs by other latent variables (Falk and Miller, 1992; Palos-Sanchez et al., 2017). Chin (1998) mentioned that the path coefficient result can be accepted when the value of β is > 0.2, moreover the result will be desirable when the β value >0.3. By this way, the proposed research hypotheses were compared.

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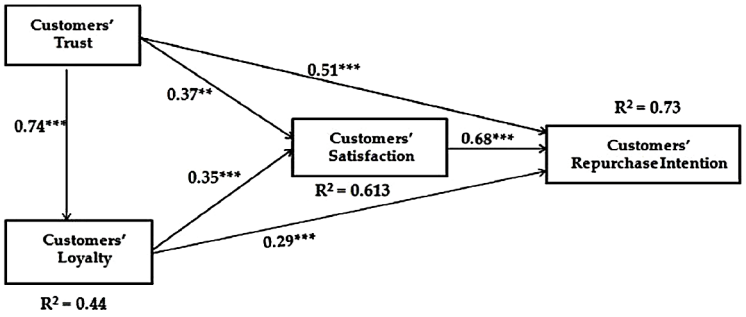
In any case, the evaluation of standardized coefficients must be supported by some valid measurements and it should describe the statistical significance of the results and the quality of adjustments performed (Palos-Sanchez et al., 2017). With a view to measuring the quality of adjustments, the't' statistics has been used in the present study. And the study has adapted bootstrap resampling test values from Palos-Sanchez et al., (2017) and they have been used as reference for testing the statistical significance of the study results. In which t = 1.647 ensures the results as 95% of the confidence, while t=2.333 guaranteed for 99% and t = 3.106 for 99.9%. The values fall in this region along with standard regression coefficients, have been collected and presented in the Table 4. Thus, hypotheses were analyzed with proposed research model.

Chin (1998) used the R^2 values of 0.67, 0.33, and 0.19 as strong, moderate and weak respectively for assessing the predictive power of the model by way of the variance explained. Further, Falk and Miller, (1992), mentioned that, though the hypothesized relationship of the variables is statically significant, its predictive level will be very low when the R^2 values are less than 0.1. Thus, the predictive, as well as the explanatory power of the proposed model, was assessed by the percentage of total variance explained.

Figure 2. SEM analysis of the research model



It was found from the model that, when the customer trust was used to predict the loyalty of the customers towards internet shopping, it explains 47 percent of the variance. Followed by, both customer trust and customer loyalty explains 61.3 percent of the variance in customer satisfaction. At last, the R^2 obtained by repurchase intention of online stores explain 73.1 percent of total variance, since it was a dependent variable. It could be understood from the model that, the predictive power of the internal variable was moderate, while customer satisfaction was moderately strong (Chin, 1998). Since the endogenous variables' R^2 value was more than the threshold value of 0.01, it confirmed the predictive value of the model (Falk and Miller, 1992).

Path Analysis and Hypothesis Testing

Table 4 presents the summary of hypothesis testing. Structural equation model (SEM) was used to analyze the proposed research model. Results indicated that model was fit and thus t-test was performed to test the hypotheses.

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Table 4. Summary of hypothesis testing

Hypothesis	Paths	Path Coefficient (β) p = >0.2	*t*-Value	Result
1	Customer Trust → Repurchase Intention	0.51	6.737***	Supported
2	Customer Trust →Customer Satisfaction	0.37	2.721**	Supported
3	Customer Trust → Customer Loyalty	0.74	9.473***	Supported
4	Customer loyalty → Repurchase Intention	0.29	7.921***	Supported
5	Customer loyalty → Customer Satisfaction	0.35	4.215***	Supported
6	Customer satisfaction → Repurchase Intention	0.68	3.088***	Supported

Note: *p < 0.05 = 1.647; **p < 0.01 = 2.333; ***p < 0.001 = 3.106

According to Table 4 and Figure 2, it could see that every hypothesis was supported to the study. Based on the standardized coefficient values, customer trust ($\beta = 0.37$, $t = 2.72$, $p < 0.01$) and customer loyalty ($\beta = 0.35$, $t = 4.215$, $p < 0.001$) were seems to be statistically significant and positively affect the customer satisfaction. Thus, H2 and H5 were supported to the study. On the other side, customer trust positively affects customer loyalty, while $\beta = 0.74$, $t = 9.473$, $p < 0.001$. Hence, H3 also supported the study. H1 customer trust with the path coefficients of $\beta = 0.51$, $t = 6.737$, $p < 0.01$ and H4 customer loyalty with $\beta = 0.29$, $t = 7.921$, $p < 0.001$ have a positive relationship with repurchase intention of the online store. Thus, H1 and H4 were also supported by the study. The last hypothesis, H6 found that there was a significant relationship between customer satisfaction and repurchase intention of the online store, since the $\beta = 0.68$, $t = 3.088$, $p < 0.001$.

DISCUSSION AND CONCLUSION

The present research aimed to examine the factors affecting customer repurchasing behavior of grocery products in online stores in South Korea. For this, the relationship among customer trust, loyalty and satisfaction towards the repurchase intention of online stores were analyzed with the proposed research model. Thus, the research contributes the literature with manifold effects of antecedents of online stores' repurchase intention. It was understood from the results of the research that, the targeted research variable customer satisfaction was positively influenced by both customer trust and customer loyalty. Through this study, we have empirically established that customer trust plays an important role in ensuring customer satisfaction. The same result also consistent with the earlier studies by (Ganesan, 1994; John and Reve, 1982; Johnson and Grayson, 2005) that higher customer trust leads to highest customer satisfaction. Hence, with a view to increasing customer satisfaction, online stores should take necessary steps to increase customer trust. The constructs of customer loyalty and satisfaction were connected conceptually in this study and the finding reveals that customer loyalty is an important antecedent in determining customer satisfaction. The result is validated and also supported by the previous study results of Liu (2007) and Kim et al. (2009). Therefore, with a view to satisfying the customers, online stores should be loyal to their customers by delivering on their promises.

Customer trust is positively related to customer loyalty in this study. This result is consistent with the study by (Chinomona & Dubihlela, 2014) that higher level of customer trust is leading to higher

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level of customer loyalty. Hence, to increase the loyalty of the consumers, online retailers should first increase the customer trust. Further, customer trust and customer loyalty have a statistically significant relationship with repurchase intention of the online store. From this work, our finding implies that customer trust one of the significant factors that increase customer repurchase intention to some extent and this findings reliable with the study by (Aren, 2013) that higher level of online repurchase intention is possible, only when increasing the customer trust. Therefore, with a view to increasing customer trust, online stores should provide good quality products with the right quantity, the right price at right time. The finding of the customer loyalty is concerned, it is consistent with the study by (Eisingerich and Bell, 2007) that customer loyalty is an important and a predominant factor that determines repurchases intention of the customers. Hence, to increase the repurchase intention of the customer, online retailers should improve customer loyalty, by displaying a variety of goods to new customers and offer a lot of incentives to existing customers. Customer satisfaction has made a positive impact on repurchase intention and it understood from the result that customers who have satisfied with the services provided by the retailers, would have repurchase intention over the same retailer. Thus, the result of this study suitable to (Pleessis, 2010; Shin et al., 2013; Moosakhani et al., 2010) and mentioned that customers who are satisfied with the functioning of online stores would have a positive mindset towards repurchase intention. From the overall observation it is concluded that, though all the variables have supported to the study, customer satisfaction (0.68 percent) is strongly influence the customer repurchase intention in the study area. Followed by customer trust (0.51 percent) stood in the second position and it influence customer repurchase intention moderately. Finally, customer loyalty (0.29 percent) also influences customer repurchase intention, but it seems to be very weak compared to other two variables. Hence, the South Korean online grocery vendors should concentrate more on the activities needed to improve customer loyalty.

From the findings of the study, we have drawn some implications for practitioners. As mentioned in the model, there are three attributes namely customer trust, loyalty and satisfaction have made impact on customer repurchase intention of the online stores. As far as the repurchase intention of the online stores is concerned, customer trust is an important influencer and it influences the customer to intend online repurchase and customer loyalty is another important factor. Therefore, online retailers should first try to increase customer perceived trust as much as possible towards online stores. With a view to increase perceived trust among the customers, online retailers must concentrate on customer data safety and security; ensure the payment systems with highest security and also updating the customer privacy policies time to time. Moreover, the online retailers should concentrate more on customers support activities by keep in touch with them round the clock. Thus, the online retailers may increase the customer perceived trust. Customer loyalty is another antecedent of the repurchase intention of the online stores. Hence, online retailers should provide promotion offers, special discounts, gift vouchers, coupons to the existing customers and thus stores may intend them to repurchase. According to the study, customer satisfaction has shown as one more important antecedent of repurchase intention of online stores. With a view to satisfying the customers, online stores should offer better quality products with right quantity and price, ensuring on time delivery, free shipping if possible. By this way online retailers may satisfy and impress their customers and intend them to repurchase.

There are limitations in this study. The first one is, research data were collected from online purchasers who live in Seoul the capital of South Korea, and hence the study may not represent the views of all the online purchasers in South Korea. Since, majority of the respondents are female in this study, the findings of the study more depend on female representation. Future research may collect more data from

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online shoppers who are living in other parts of South Korea and can conduct a cross-cultural study. Since the present study limited its coverage with three research variables, future researchers may add more variables and develop a comprehensive research model with the factors that may affect repurchase intention of online stores.

REFERENCES

Ahn, R., Ryu, S., & Han, I. (2004). The impact of the online and offline features on the user acceptance of Internet shopping malls. *Electronic Commerce Research and Applications*, *3*(4), 405–420. doi:10.1016/j.elerap.2004.05.001

Andreas, E., & Simon, B. (2007). Maintaining customer relationships in high credence services. *Journal of Services Marketing*, *21*(4), 253–262. doi:10.1108/08876040710758559

Anne, M. (2003). Share of wallet in retailing: The effects of customer satisfaction, loyalty cards and shopper characteristics. *Journal of Retailing*, *79*(2), 97–106. doi:10.1016/S0022-4359(03)00008-3

Aren, G., Güzel, M., Kabadayı, E., & Alpkan, L. (2013). Factors Affecting Repurchase Intention to Shop at the Same Site. *Procedia: Social and Behavioral Sciences*, *99*, 536–544. doi:10.1016/j.sbspro.2013.10.523

Belanche, C., Casaló, L. V., & Guinalíu, M. (2012). Website Usability, Consumer Satisfaction and the Intention to Use a Website: The Moderating Effect of Perceived Risk. *Journal of Retailing and Consumer Services*, *19*(1), 124–132. doi:10.1016/j.jretconser.2011.11.001

Bettencourt, L.A. (1997). Customer Voluntary Performance: Customer as Partners in Service Delivery. *Journal of Retailing, 73*, 383-406.

Bianchi, C. & Andrews, L. (2012). Risk, Trust, and Consumer Online Purchasing Behaviour: A Chilean Perspective. *International Marketing Review*, *29*, 253–275.

Bloemer, J. & de Ruyter, K. (1998). On the relationship between store image, store satisfaction and store loyalty. *European Journal of Marketing*, *32*, 499-513.

Brunner, T., Stocklin, M., & Opwis, K. (2008). Satisfaction, Image and Loyalty: New Versus Experienced Customers. *European Journal of Marketing*, *42*(9/10), 1095–1105. doi:10.1108/03090560810891163

Chin, W. W., & Newsted, P. R. (1999). Structural equation modeling analysis with small samples using partial least squares. Statistical strategies for small sample research, 1(1), 307-341.

Chumpitaz Caceres, R., & Paparoidamis, N. G. (2007). Service quality, relationship satisfaction, trust, commitment and business-to-business loyalty. *European Journal of Marketing*, *41*(7/8), 836–867.

Citrin, S., Stem, D. E. Jr, Spangenberg, E. R., & Clark, M. J. (2003). Consumer Need for Tactile Input: An Internet Retailing Challenge. *Journal of Business Research*, *56*(11), 915–922. doi:10.1016/S0148-2963(01)00278-8

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Cronin, B. Jr, Brady, M. K., & Hult, G. T. M. (2002). Assessing the Effects of Quality, Value, and Customer Satisfaction on Consumer Behavioral Intentions in Service Environments. *Journal of Retailing*, *76*(2), 193–218. doi:10.1016/S0022-4359(00)00028-2

Datamonitor. (2010). *The Future of Online Shopping*. Retrieved from http://acervo-digital.espm.br/cases/306402_1.pdf

Du Plessis, L. (2010). Customer relationship management and its influence on customer loyalty at Liberty Life in South Africa. University of Johannesburg.

Elissar, T., Nizar, S., & Ladhari, R. (2013). Consumer Trust toward Retail Websites: Comparison between Pure Click and Click-and-Brick Retailers. *Journal of Retailing and Consumer Services*, *20*(6), 538–548. doi:10.1016/j.jretconser.2013.05.001

Falk, R.F. & Miller, N.B. (1992). *A Primer for Soft Modeling*. Akron, OH: The University of Akron Press.

Farag, S., & Tim, D. (2007). Shopping Online and/or In-store? A Structural Equation Model of the Relationships between E-shopping and In-store shopping. *Transportation Research Part A, Policy and Practice*, *41*(2), 125–141. doi:10.1016/j.tra.2006.02.003

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *JMR, Journal of Marketing Research*, *18*(1), 39–50.

Ganesan, S. (1994). Determinants of long-term orientation in buyer-seller relationships. *Journal of Marketing*, *58*(2), 1–19.

George, J., & Torger, R. (1982). The reliability and validity of key informant data from dyadic relationships in marketing. *JMR, Journal of Marketing Research*, *19*(4), 517–525.

Grewal, D., Iyer, G., & Levy, M. (2004). Internet retailing: Enablers, limiters and market consequences. *Journal of Business Research*, *57*(7), 703–713. doi:10.1016/S0148-2963(02)00348-X

Guillaume, B. (2008). Customer satisfaction and loyalty in service: Two concepts, four constructs, several relationships. *Journal of Retailing and Consumer Services*, *15*(3), 156–162. doi:10.1016/j.jretconser.2007.11.004

Ha, H. Y., & Perks, H. (2005). Effects of consumer perceptions of brand experience on the web: Brand familiarity, satisfaction and brand trust. *Journal of Consumer Behaviour*, *4*(6), 438–445. doi:10.1002/cb.29

Ha, J., Janda, S., & Muthaly, S. K. (2010). A New Understanding of Satisfaction Model in e-Re-purchase Situation. *European Journal of Marketing*, *44*(7/8), 997–1016. doi:10.1108/03090561011047490

Hair, J. F. Black., W.C., Babin., B.J., Anderson., R.E., & Tatham., L.R. (Eds.). (2006). Multivariant data analysis. Prentice Hall.

Hansen, T. (2008). Consumer values, the theory of planned behaviour and online grocery shopping. *International Journal of Consumer Studies*, *32*(2), 128–137.

Helgesen, O. (2006). Are Loyal Customers Profitable? Customer Satisfaction, Customer (action) Loyalty and Customer Profitability at the Individual Level. *Journal of Marketing Management*, *22*(3-4), 245–266. doi:10.1362/026725706776861226

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In *New challenges to international marketing* (pp. 277–319). Emerald Group Publishing Limited.

Johnson, D., & Grayson, K. (2005). Cognitive and affective trust in service relationships. *Journal of Business Research*, *58*(4), 500–507.

Jun, J.-K. (2003). A cross-cultural comparison of internet buying behavior: effects of internet usage, perceived risks, and innovativeness. *International Marketing Review*, *20*(5), 534–553. doi:10.1108/02651330310498771

Kahneman, D., & Tversky, A. (1979). Prospect theory: An Analysis of Decision under Risk. *Econometrica*, *7*, 263–291.

Kim, C. N., Chung, N., & Lee, C.-K. (2011). The effect of perceived trust on electronic commerce: Shopping online for tourism products and services in South Korea. *Tourism Management*, *32*(2), 256–265. doi:10.1016/j.tourman.2010.01.011

Kim, W., & Han, H. (2008). Determinants of restaurant customers' loyalty intentions: A mediating effect of relationship quality. *Journal of Quality Assurance in Hospitality & Tourism*, *9*(3), 219–239.

Klein, L. R. (1998). Evaluating the potential of interactive media through a new lens: Search versus experience goods. *Journal of Business Research*, *41*(3), 195–203.

Krakowiak, D. (2017). *Single Person Household: The Epicenter of Korean Retail Industry*. Retail in Asia. Retrieved from http: //retailinasia.com/in-markets/japan-korea/korea/single-person-household-the-epicenter-of-korean-retail-industry.htm

La, Y. (2004). What Influences the Relationship between Customer Satisfactions and Repurchase Intention? Investigating the Effects of Adjusted Expectations and Customer Loyalty. *Psychology and Marketing*, *21*(5), 351–373. doi:10.1002/mar.20009

Lacey, S., Suh, J., & Morgan, R. M. (2007). Differential Effects of Preferential Treatment Levels on Relational Outcomes. *Journal of Services Research*, *9*(3), 241–256. doi:10.1177/1094670506295850

Lin, H. F. (2007). Predicting consumer intentions to shop online: An empirical test of competing theories. *Electronic Commerce Research and Applications*, *6*(4), 433–442.

McCole, R., Ramsey, E., & Williams, J. (2010). Trust considerations on attitudes towards online purchasing: The moderating effect of privacy and security concerns. *Journal of Business Research*, *63*(9-10), 1018–1024. doi:10.1016/j.jbusres.2009.02.025

Mittal, V., & Kamakura, W. A. (2001). Satisfaction, repurchase intent, and repurchase behavior: Investigating the moderating effect of customer characteristics. *JMR, Journal of Marketing Research*, *38*(1), 131–142.

Moosakhani, S., & Pourbakhsh, K. (2010). Phylogenetic Analysis of the Hemagglutinin Genes of 12 H9n2 Influenza Viruses Isolated from Chickens in Iran from 2003 to 2005. *Avian Diseases*, *54*(2), 870–874. doi:10.1637/9103-101309-Reg.1 PMID:20608532

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Nesset, N., Nervik, B., & Helgesen, Ø. (2011). Satisfaction and Image as Mediators of Store Loyalty Drivers in Grocery Retailing. *International Review of Retail, Distribution and Consumer Research*, *21*(3), 267–292. doi:10.1080/09593969.2011.588716

Ogonowski, M., Montandon, A., Botha, E., & Reyneke, M. (2014). Should New Online Stores Invest in Social Presence Elements? The Effect of Social Presence on Initial Trust Formation. *Journal of Retailing and Consumer Services*, *21*(4), 482–491. doi:10.1016/j.jretconser.2014.03.004

Ok, B., Back, K.-J., & Shanklin, C. W. (2005). Modeling roles of service recovery strategy: A relationship-focused view. *Journal of Hospitality & Tourism Research (Washington, D.C.)*, *29*(4), 484–507. doi:10.1177/1096348005276935

Oliver, R.L. (1997). *Satisfaction: A Behavioural Perspective on the Customer*. Boston, MA: McGraw Hill.

Palos-Sanchez, H.-M. (2017). The Behavioral Response to Location Based Services: An Examination of the Influence of Social and Environmental Benefits, and Privacy. *Sustainability*, *9*(11), 1988–2009. doi:10.3390u9111988

Parasuraman, Z., Zeithaml, V. A., & Berry, L. L. (1985). A Conceptual Model of Service Quality and Implications for Future Research. *Journal of Marketing*, *49*(4), 41–50. doi:10.1177/002224298504900403

Parasuraman, A., Zeithaml, V. A., & Malhotra, A. (2005). ES-QUAL: a multiple-item scale for assessing electronic service quality. Journal of service research, 7(3), 213-233. doi:10.1177/1094670504271156

Pauzi, T., & Tan, M., & Talib. (2017). Factors Influencing Consumers Intention for Online Grocery Shopping - A Proposed Framework. In *IOP Conf. Series: Materials Science and Engineering*. IOP Publishing. 10.1088/1757-899X/215/1/012013

Quinones, S., Kirshstein, R., & Loy, N. (1998). *An educator's guide to evaluating the use of technology in schools & classrooms*. Darby, PA: DIANE Publishing.

Rauyruen, P., & Miller, K. E. (2007). Relationship Quality as a Predictor of B2B Customer Loyalty. *Journal of Business Research*, *60*(1), 21–31. doi:10.1016/j.jbusres.2005.11.006

Reichheld, F. F., & Schefter, P. (2000). E-loyalty: your secret weapon on the web. Harvard business review, 78(4), 105-113.

Richard, C., & Dorah, D. (2014). Does customer satisfaction lead to customer trust, loyalty and repurchase intention of local store brands? The case of Gauteng Province of South Africa. *Mediterranean Journal of Social Sciences*, *5*, 23.

Rolph, A., & Srinivasan, K. (2003). E-Satisfaction and E-Loyalty: A Contingency Framework. *Psychology and Marketing*, *20*(2), 123–138. doi:10.1002/mar.10063

Schuster, A., & Sporn, B. (1998). Potential for Online Grocery Shopping in the Urban Area of Vienna. *Electronic Markets*, *8*(2), 13–16. doi:10.1080/10196789800000018

Seiders, V., Voss, G. B., Grewal, D., & Godfrey, A. L. (2005). Do Satisfied Customers Buy More? Examining Moderating Influences in a Retailing Context. *Journal of Marketing*, *69*(4), 26–43. doi:10.1509/jmkg.2005.69.4.26

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Shim, M. A., Eastlick, M. A., Lotz, S. L., & Warrington, P. (2001). An Online Prepurchase Intentions Model. *Journal of Retailing*, *77*(3), 397–416. doi:10.1016/S0022-4359(01)00051-3

Shin, C., Chung, K. H., Oh, J. S., & Lee, C. W. (2013). The effect of site quality on repurchase intention in Internet shopping through mediating variables: The case of university students in South Korea. *International Journal of Information Management*, *22*(3), 453–463. doi:10.1016/j.ijinfomgt.2013.02.003

Statista. (2018). *E-commerce in South Korea-Statistics & Facts*. Retrieved from https://www.statista.com/topics/2529/e-commerce-in-south-korea.htm

Tellis, G. J. (1988). Advertising exposure, loyalty, and brand purchase: A two-stage model of choice. *JMR, Journal of Marketing Research*, *25*(2), 134–144.

Wien, A. H., & Olsen, S. O. (2014). Understanding the relationship between individualism and word of mouth: A self-enhancement explanation. *Psychology and Marketing*, *31*(6), 416–425.

Wieseke, A., Alavi, S., & Habel, J. (2014). Willing to Pay More, Eager to Pay Less: The Role of Customer Loyalty in Price Negotiations. *Journal of Marketing*, *78*(6), 17–37. doi:10.1509/jm.13.0104

Wynne, C. (1998). The Partial Least Squares Approach to Structural Equation Modeling. In G.A. Marcoulides (Ed.), Modern Methods for Business Research (pp. 295-336). Mahwah, NJ: Lawrence Erlbaum.

Yang, Z., & Peterson, R. T. (2004). Customer perceived value, satisfaction, and loyalty: The role of switching costs. *Psychology and Marketing*, *21*(10), 799–822.

Yu, D., & Dean, A. (2001). The Contribution of Emotional Satisfaction to Consumer Loyalty. *International Journal of Service Industry Management*, *12*(3), 234–250. doi:10.1108/09564230110393239

Zeelenberg, M., & Pieters, R. (2004). Beyond valence in customer dissatisfaction: A review and new findings on behavioral responses to regret and disappointment in failed services. *Journal of Business Research*, *57*(4), 445–455.

Zeithaml, B., Berry, L. L., & Parasuraman, A. (1996). The Behavioral Consequences of Service Quality. *Journal of Marketing*, *60*(2), 31–46. doi:10.2307/1251929

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APPENDIX

Table 5. Questionnaire items

Measures	Items	References
Customer Trust	CT1: I feel that the purchasing process is trustable one CT2: I feel safe while providing personal information CT3: I feel that the online store is trustworthy	Gefen (2000)
Customer Loyalty	CL1: I would suggest my friends to go for this online store CL2: I would explain the positive aspects of the stores to others CL3: I would purchase more with this store in the upcoming days CL4: I would suggest this store to those who are seeking my support CL5: I would give first preference to this store for purchasing kinds of goods	Zeithaml et al. (1996)
Customer Satisfaction	CS1: I am happy with this online store to buy the grocery products CS2: I am satisfied with the information available for the products CS3: I am satisfied with this store's quick business process CS4: I am satisfied with my decision regarding made purchase from this site CS5: I am satisfied with the customer care support provided by this store	Anderson And Srinivasan (2003)
Repurchase intention of the Store	RPI1: I would like to prolong the same store for purchasing products RPI2: For my future requirements I will use this store RPI3: I have a plan to continue the same store for future purchase RPI4: I intend to recommend this store for people around me	Kim, (2005); Parasuraman et al. (2005.)

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Chapter 70
Understanding Egyptian Consumers' Intentions in Online Shopping

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ABSTRACT

The purpose of this article is to investigate the factors that impact on Egyptian consumers' attitudes and intentions to use online shopping by integrating the technology acceptance models of Davis, and Fishbein and Ajzen's theory of reasoned action. In addition, other variables will be added such as trust and perceived enjoyment for its theoretical framework. A total 306 current internet users in Egypt provided usable responses. Structural equation modelling was employed to test the proposed model and research hypotheses. The findings showed that perceived usefulness, perceived ease of use, trust and perceived enjoyment were the significant predictors of attitude toward online shopping; whereas, attitude, perceived usefulness and perceived enjoyment were the most important factors affect the behavioural intention toward online shopping. The article provides some useful suggestions for the practitioners within the online shopping field.

INTRODUCTION

Internet is the rapidest growing media during the past decade. With the increase in the numbers of humans are gravitating in the direction of greater extensive use of the internet because the accessibility of era, the availability of records, and the capability to have interaction through the internet growth and evolve. Obvious abilities of the net include avenues for amassing records, purchasing a product, or rendering a carrier (Shanthi and Kannaiah, 2015). According to the Internetworldstats report (2017) internet users in Egypt has almost reached 36.5% by the end of March 2017. Over half of internet users use e-commerce service, ranging from buying products and services to paying bills online. Electronics are the most popular products purchased online followed by software, whereas website subscriptions and

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airline ticket bookings are the top services paid online. The average spending per e-shopper was $641 USD in 2017 and Pay fort's report on the State of Payments in the Arab World, says that ecommerce will reach 2.7 billion USD by 2020.

Online shopping with no doubt the future trend, which is growing rapidly in Egypt; it was driven rapidly by the increase of computer accessibility and the take up of broadband. Actually, it becomes essential to understand the Egyptian consumers toward online shopping.

THEORETICAL BACKGROUND

Technology Acceptance Model

The Technology Acceptance Model (TAM) is an information systems theory which derived from the Theory of Reasoned Action (Fishbein &Ajzen, 1975) to use in the field of Information Systems (IS) in order to explain technology acceptance behaviour (Davis, 1989; Davis et al., 1989; Venkatesh et al., 2003). Technology Acceptance Model was initially introduced by Davis (1986) and tested by Davis et al., (1989) to explain computer usage behaviour and accepting a particular "Information Systems Product" in a job context. The TAM theory postulates that perceived usefulness and perceived ease of use determine the individual's intention to accept and use an information system, which in turn influences the individual's actual behaviour. In fact, this theory has been successfully applied to many research settings in explaining and exploring the factors affecting consumers' acceptance of various types of technology such as mobile settings (Lee et al., 2007; Zhou, 2011), technology based services (Wu et al., 2005; Lu et al., 2009; Lin et al., 2011), internet banking (Al Sukkar and Hasan, 2005, Celik, 2008), tourism setting (Kim et al., 2008; Metawie and Elseidi, 2015, Agag & El-Masry, 2016; Lin et al., 2010). In the e-commerce setting, numerous studies have validated the TAM model's robustness in predicting and explaining consumers' adoption and acceptance of new technology (Huang, 2008; Al Sukkar and Hasan, 2005, Li et al., 2017), including the online shopping (Lim and Ting, 2012, Yulihari et al, 2011; Lei, et al., 2002; Hassanein and Head, 2007; Lim, 2015; Lee, 2009; Albarq, 2014; Vijayasarathy, 2004; Wang, 2011; Chen et al., 2002). Although TAM model has been studied within the online shopping to understand and predict consumers' behaviour to use or purchase from a website shopping, other factors such as trust and enjoyment have been extended to the original TAM in order to explain better consumers' behaviour cross various online situations (Davis et al., 1992; Pavlou, 2003; Gefen, et al., 2003; Yu et al., 2005; Hassanein and Head, 2007; Ha and Stoel, 2009; Lim, 2015; Akroush and Al-Debei, 2015; Lee, 2009). Thus, the extended TAM model is appropriate framework for the present study.

RESEARCH MODEL AND HYPOTHESES

The main objective of this study is to examine factors influencing consumers' intention to use the online shopping. This study developed a model comprising the extended technology acceptance model TAM (Davis et al., 1992; Pavlou, 2003) and the theory of reasoned action (TRA; Fishbein and Ajzen, 1975) by incorporating trust, enjoyment and subjective norms in the development of a theoretical model to understand better the behaviour intentions for the Egyptian consumers within the context of online shopping. Figure 1 shows the model, which is based on the extended TAM constructs and postulated relationships.

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TAM and TRA

Both of the theory of Reasoned Action (TRA, Fishbein and Ajzen, 1975) and the Technology Acceptance Model (TAM, Davis, 1989), were employed as theoretical frameworks to measure beliefs and predict consumer behaviour either in general or in e-commerce. Based on TAM, an individual's attitude toward a technology is directly affected by his/her perceptions or beliefs about the system, which consists of perceived usefulness (PU) and perceived ease of use (PEOU). In turn, the individual's attitude either positive or negative will affect his/her behavioural intentions to use that technology which leads to its actual use (Davis, 1989; Davis et al., 1989). Building on TAM, Perceived usefulness (PU), defined as "the degree to which a person believes that using a particular system would enhance his or her performance", which directly influences both individual's attitudes and behavioural intentions to use that system, while Perceived ease of use (PEOU), defined as "the degree to which a person believes that using a particular system would be free of effort", which has an indirect effect through perceived usefulness and attitude on the behavioural intentions (Davis, 1989; Davis et al., 1989).

Regarding the e-commerce field, specific online shopping, numerous studies have verified the causal relationships among perceived usefulness (PU), perceived ease of use (PEOU), attitude, and behavioural intentions (Venkatesh and Davis, 2000; Moon and Kim, 2001; Wu and Ke, 2015; Lee, 2009; Lim and Ting, 2012; Chen et al., 2002; Yulihasri et al., 2011; Yu et al., 2005; Kim et al., 2009; Vijayasarathy et al., 2004; Ha and Stoel, 2009; Yaghoubi and Bahmani, 2010; Metawie and Elseidi, 2015). The findings of these studies all supported the assumptions proposed by TAM: that is, behavioural intentions would be determined by perceived usefulness and attitude, while attitude would be determined by both perceived ease of use and perceived usefulness, and perceived usefulness would be determined by perceived ease of use. Consequently, PE and PEOU are considered to be the most robust components in TAM to explaining and predicting the individuals' attitudes and behavioural intentions to use a particular technology.

Therefore, in accordance with the TAM, this study will test the relationships among these variables:

Hypothesis One: Consumers' attitudes toward online shopping has a direct and positive effect on consumers' behavioural intention to use the online shopping

Hypothesis Two: Perceived usefulness has a direct and positive effect on consumers' behavioural intention to use the online shopping

Hypothesis Three: Perceived usefulness has a direct and positive effect on consumers' attitudes toward online shopping

Hypothesis Four: Perceived ease of use has a direct and positive effect on consumers' attitudes toward online shopping.

Hypothesis Five: Perceived ease of use has a direct and positive effect on perceived usefulness.

However, the theory of Reasoned Action (TRA) underlines that both the attitude towards a particular behaviour and subjective norms have an impact on behavioural intentions, which in turn affects the actual behaviour, the original TAM model dropped the subjective norms from its model due to some theoretical concerns and psychometric problems (Davis et al., 1989; Celik, 2011). Nevertheless, several scholars have proposed modified TAM model by adding subjective norm as an antecedent of beliefs and the behavioural intentions to use a specific technology (Davis, et al., 1989; Taylor and Todd, 1995; Lucas and Spitler, 1999; Malhotra and Galletta, 1999; Karahanna and Straub, 1999; Venkatesh and Davis, 2000; Venkatesh and Morris, 2000; Yu, et al., 2005; Schepers and Wetzela, 2007; Venkatesh and Bala, 2008,

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Kim et al., 2009). For instance, Venkatesh and Davis (2000), extended the original TAM by incorporated additional constructs such as social influence which includes subjective norm, voluntariness and image and cognitive instrumental process with two moderators' variables (experiences and voluntariness) to introduced TAM2. They tested the impact of the three interrelated social factors on the user's behaviour to use or to reject a particular information system. The findings of their study showed that subjective norm had a significant direct effect on usage intention when system use was perceived to be mandatory, but not when system use was perceived to be voluntary. Additionally, they found that subjective norm had a strong significant on perceived usefulness. These results aligned with Karahanna and Straub (1999) who found a strong relationship between social influence and usefulness perceptions, but insignificant on system use. They indicated that social influence affects usage indirectly via the process of internalization by strengthening one's belief in the usefulness of the system.

Concerning the e-commerce context, the effects of subject norm on perceived usefulness and behavioural intentions have been widely studied (Bhattacherjee, 2000; Yu et al., 2005; Kim et al., 2008; Kim et al., 2009; Celik, 2011; Nasri, 2012; Abbad, 2013; Mandilas et al., 2013; Srinivasan, 2015; Kalinic and Marinkovic, 2016). They have revealed that subjective norm plays an important role in explaining and predicting behavioural intentions for technology use either direct or indirect through perceived usefulness.

Besides, Malhotra and Galletta (1999), examined the three different processes of social influence in term of compliance, Identification and internalization on users' attitudes and behavioural intentions to use and adopt a certain technology. The findings of their study, show a positive influence between two types of social influences (internalization and identification) on the users' attitude toward the acceptance and use of the new system, whereas, compliance have a negative influence on the attitude. Further, Schepers and Wetzels, (2007), underscored that when a person perceives that important referents think he or she should use the system, he or she assumes the referent's beliefs, generating a sense of belonging on the part of the user. They found the subjective norm had a significant and positive effect on attitude to use.

Within the e-commerce context, Kim et al., (2009) emphasized the effect that subjective norm has on customers' attitude to use the airline websites. On the basis of the aforementioned discussion the following hypotheses are presented as below:

Hypothesis Six: Subjective Norms has a direct and positive effect on perceived usefulness.

Hypothesis Seven: Subjective Norms has a direct and positive effect on consumers' attitudes toward online shopping.

Hypothesis Eight: Subjective Norms has a direct and positive effect on consumers' behavioural intention to use the online shopping

Trust

It is considered an essential component for all business transactions in which the complexity and uncertainty are existing (Luhmann, 1979, 1988; Pavlou, 2003; Kim, 2008). In the e-commerce context, particular the online shopping, trust has been received much attention by the scholars, due to its importance as a significant factor for dealing with an uncertainty present in the internet environment and the undesirable opportunistic behaviour of online vendors (Gefen et al., 2003; Pavlou, 2003, Wu et al., 2005). According to e-commerce literature, trust can be conceptualized as the perception of the trustworthiness of the vendor and consists of a set of specific beliefs including benevolence, ability, integrity, credibility and predictability that results in behavioural intention (McKnight et al, 1998; 2002; Pavlou, 2002, Gefen et

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al., 2003; Kim et al, 2004, 2012). Generally, online consumers would like to feel secure and reduce risk, so they expect that the online vendor (web retailers) will act cooperatively to fulfil their expectations and needs, to keep honesty in transactions, and to be capable of delivering ordered goods and/or services as promised without exploiting its vulnerabilities. Following previous research in e-commerce (Gefen, 2002; McKnight et al., 2002; Inghan et al., 2015) this study defines trust as a set of specific beliefs about the trustworthiness of an online vendor or a website retailer.

Trust has been widely incorporated with the TAM model in investigating the acceptance of online shopping setting (Gefen et al., 2003; Wang, 2011; Hsieh and Liao, 2011; Lee, 2009; Pavlou, 2003; Chiu et al., 2009; Yu et al.,2005; Ha and Stoel, 2009). For instance, Gefen et al, (2003) incorporated trust and TAM to develop an integrated model in the online shopping setting They considered trust as a set of specific beliefs includes integrity, benevolence, ability and predictability of e-vendors website and indicated that trust is an antecedent of perceived usefulness whereas perceived ease of use is an antecedent of trust. In the e-commerce context, particularly in the online shopping, several prior studies have confirmed the positive link between trust and the perceived usefulness (Pavlou, 2003; Ha and Stoel, 2009, Lee, 2009; Chiu et al., 2009; Yan et al., 2015; Wang, 2011; Casalo et al., 2011). On the other hand, in their study, Gefen et al., (2003) argued that ease of use the e-vendor's web site is one of the most protruding aspects of appearance in an e-vendor which creating trust in the transactions and reducing the misunderstanding between the customer and the e-vendor. Further to this, Lee (2009) concluded that perceived ease to use has a positive influence on trust in online trading because the PEOU can help promote customers' favourable impressions toward the e-vendors. In the same vein, Wang (2011), found that both of perceived ease of use and privacy significantly explain 80% of the variations in trust. Such this result indicates a fact that PEOU has been well recognized as a basic requirement for system design.

In the e-commerce field, a number of studies (Grazioli et al., 2000; Lee, 2009; Wang, 2011; Casalo et al., 2011; Belanche et al., 2012; Akroush et al., 2015; Agag and El-Marsy, 2016) have underlined the positive direct effect of trust on consumer attitude to engage in behaviour toward an online service provider, because trust in a specific online service provider helps consumers to develop a favourable attitude toward showing a given behaviour. So, trust consider to be one of the most important antecedent affecting the consumers' attitude toward online shopping. Drawing on the aforementioned discussion, the following hypotheses can be proposed:

Hypothesis Nine: Perceived ease of use has a direct and positive effect on the consumers' trust in online shopping websites.

Hypothesis Ten: Consumers' trust in online shopping websites has a direct and positive effect on the perceived usefulness.

Hypothesis Eleven: Consumers' trust in online shopping websites has a direct and positive effect on consumers' attitudes toward online shopping.

Perceived Enjoyment

Davis et al. (1992) considered perceived usefulness as an extrinsic motivation factor whereas perceived enjoyment as an intrinsic motivation factor to use information systems which added to the original TAM model. They defined perceived enjoyment as "the extent to which the activity of using a technology is recognized as enjoyable in its own right, apart from any utilitarian or practical outcomes". in the online context, Childers et al., (2001) suggested that enjoyment is a reflection of hedonic value that affects a

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consumer's intention to adopt new technology. Previous studies have indicated that perceived ease of use positively affects perceived enjoyment (Davis et al., 1992; Igbaria et al., 1995; Teo et al., 1999; Heijden, 2003; Kim et al., 2009; Agrebi and Jallais, 2015), whereas others have supported that perceived enjoyment positively and directly affects the individual's attitude and behavioural intention to use a particular technology (Davis et al., 1992; Mandilas et al., 2013; Agrebi and Jallais, 2015, Ingham et al., 2015). Heijden (2003) found support for the association of perceived ease-of-use with perceived enjoyment, the easier the system is to use, the more enjoyable it is. In addition, he found that perceived enjoyment had a significant and positive influence on the individual's attitude and intention to use a website.

Regarding the online context, Hassanein et al., (2007) and Ha et al. (2009), found that perceived enjoyment positively affects consumer attitudes to use the online shopping, whereas Ingham et al., (2015) found that perceived enjoyment had a positive and direct impact on attitude and intention toward e-shopping. Generally, a person who feel it easier to use the online shopping websites is more likely to believe that using the online shopping websites would increase his/her enjoyment and get more fun, as well as enhance his/her professional and personal life. Therefore, a person who perceives more fun and more enjoyment with using the online shopping may tend to exhibit more positive attitudes toward online shopping websites and are more willing to use it in the future. In accordance with the previous discussion and literature, the following hypotheses are proposed:

Hypothesis Twelve: Perceived ease of use has a direct and positive effect on perceived enjoyment towards online shopping

Hypothesis Thirteen: perceived enjoyment has a direct and positive effect on consumers' attitudes toward online shopping.

Hypothesis Fourteen: Perceived enjoyment has a direct and positive effect on consumers' behavioural intention to use the online shopping.

Hence, figure 1 depicts the conceptual framework which was developed based on the previous discussions.

RESEARCH METHODOLOGY

Data Collection and Sample

To accomplish the research objectives and examine the research model and hypotheses, the empirical study is based on information gathered through a structured and self-administered online survey given to the Egyptian internet users and not necessarily have much experience with online shopping. The online survey was developed using Kwiksurveys.com one of the easiest and free website to set up the questioners. An online survey is consistent with previous studies within the context of understanding the online shopping behaviour (Chiu et al., 2009; Rose et al., 2012; Wu, 2013; Albarq, 2014; Al-Debei, Akroush and Ashouri, 2015, Akroush and Al-Debei, 2015). The survey was initially prepared in English, but due to the fact that it was conducted in Egypt for the Egyptian internet users. Therefore, it was necessary that the English survey to be translated into Arabic and to ensure that both versions used equivalent meaning. A bilingual professional Arabian translator and the researchers working independently to translate the survey into Arabic. Then, the final version was translated back into English by another bilingual profes-

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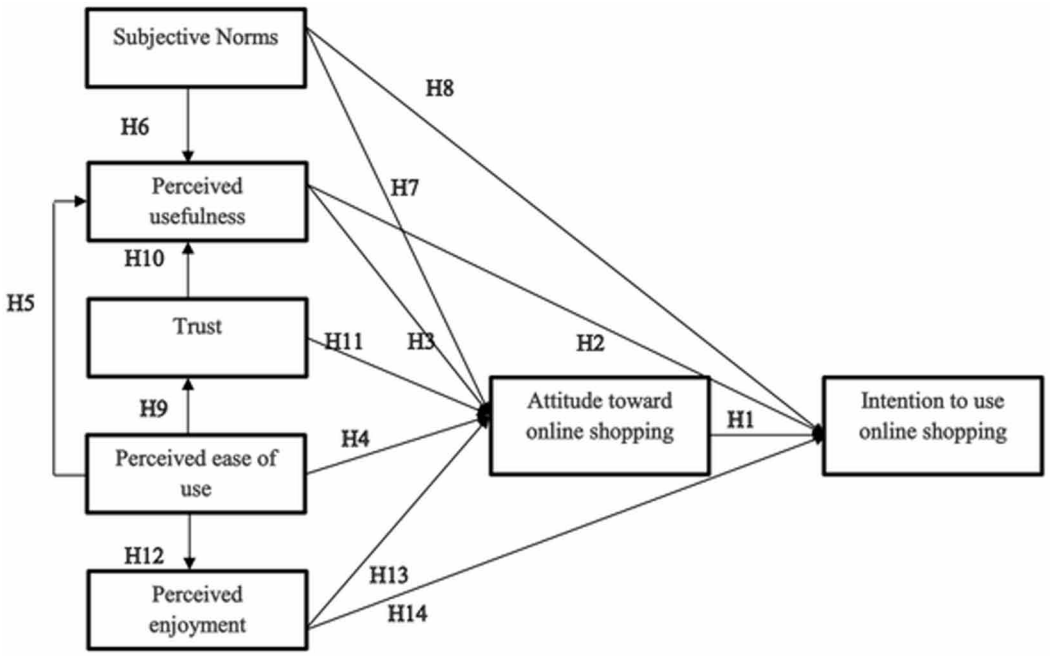
sional translator to ensure that the Arabic survey sufficiently consistent with the English version upon which it was based (Hair et al., 2010). The online survey was posted and transmitted to invite a large number of internet users in order to participate in the survey through the social media networks such as Facebook, WhatsApp, online communities, Links and e-mails. The researchers asked the participants to circulate the survey to their peers through the social media networks. It took place from June to October 2017 and it was reposted several times during this period. Nevertheless, it was difficult to identify the population frame for the internet users and online shoppers. Hence, the data for this study was collected using a convenience and snowball sampling approaches following similar procedures in previous research (Park and Kim, 2003, Al-Debei et al., 2015; Akroush et al., 2015). The unit of analysis was the Egyptian internet users who are highly experienced with the internet. A total of 306 were received and were used for analysis. About the sample, both female and male responded equally to the questionnaire (50%), and at least 41.7% of them were students. The majority of the respondents were in their twenties and thirties, and the vast majority of respondents had been using the internet for more than 6 years (58.2%)and from 4 to 6 years (29.1%) respectively, while 1.3% had been using the internet for less than one year. Most of the respondents stated that they have experienced online shopping before, as about 27.8% of the sample reported that they extremely often bought products and service on online shopping, while 24.2% have never bought any products over the internet and 17% rarely to purchase products through the online shopping websites.

Figure 1. The conceptual framework



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Measures

All measurements items for the current study were developed from previous research in the field of online shopping behaviour. However, before the final questionnaire began, a pre-test of the survey and a pilot study were performed to make sure that the questionnaire easy to understand for the respondents and verify the instruments within the target context. The pre-test involved six experts two marketing professors from reputable Egyptian Universities, two digital marketing specialist who were familiar with the online shopping in Egypt and two online shopper who purchased goods and service over the internet through the retailers' website. Whereas, the pilot study involved 20 undergraduate and postgraduate students who are highly experienced in the internet. As a result, from the pre-test and the pilot study several items were removed and several minor modifications of the wordings and the question items sequence were made to improve the questionnaire clarity.

The formal questionnaire consisted of three parts including 34 items measuring the seven constructs. All the 34 items are scored on a seven –point Likert scale with end points of (1) Strongly Disagree and (7) Strongly agree. The first part asked general questions indicating internet users' patterns of respondents while the third part identifies demographic profile of the respondents including age, gender, education level, and occupation using a nominal scale. The second part, as a key part of the survey, elaborates the dependent variable and independent variables based on the proposed model that would be tested in this study. Ten items adopted from Gefen et al., (2003) and Venkatesh & Davis (2000) measured perceived usefulness (PU) and Perceived Ease of Use (PEOU). Trust in the online shopping website (TR) was measured by five items adopted from Gefen et al., (2003), while the constructs of attitudes toward online shopping (ATT, 4 items) and subjective norms (SN, 3 items) were assessed with measures reported by Hsu et al., (2006) and Bhattacherjee (2000). The eight items used for measuring perceived enjoyment (PE) were adopted from Yu et al., (2005). Finally, the items for the dependent variable behaviour intention to use online shopping websites (IOS) were adapted from Venkatesh and Davis (1996) using four items.

DATA ANALYSIS AND RESULTS

Measurement Model Analysis

Confirmatory factor analyses using AMOS 22 was carried out for testing the measurement model based on the maximum likelihood estimation (MLE). On this basis, a CFA was conducted for each construct, and items loading and internal consistency were examined as a test reliability. Items that had communality scores greater than 0.5 was considered acceptable, and less than that were removed (Hair et al., 2010). Thus, as a result of the of CFA and modification indices of indicator variables, 12 items were omitted from all the constructs (one item from each of the following constructs: perceived usefulness, attitude toward online shopping, subjective norm and intention to use online shopping, two items from perceived ease of use, two items from trust and four items from perceived enjoyment). Table 1 demonstrates the final results of CFA which consisted of seven factors with only 22 items that loaded significantly on their respective constructs and all the measures exceed the aforementioned value, with composite reliability values are higher than the recommended value of 0.70 and the average variance extracted (AVE) for all the constructs were greater than the minimum criterion of 0.50 (Fornell and Larcker, 1981) ranging from 0.510 to 0.641indicating high internal consistency and convergent validity (Jöreskog & Sorbom,

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Table 1. Factor analysis for the measurement model

Constructs	Measures	Factor Loading	R-square	C.R.	P-Value
Perceived usefulness (PU)					
PU1	The online shopping websites enhance my effectiveness in searching and buying products.	0.731	0.534	_____	
PU2	The online shopping websites enable me to search and buy products faster	0.695	0.483	10.916	***
PU3	The online shopping websites make it easier to search for and purchase products	0.760	0.578	11.777	***
PU4	The online shopping websites improve my performance in searching for and buying products.	0.591	0.349	8.837	***
Perceived ease of use (PEOU)					
PEOU1	My interaction with the online shopping websites is clear and understandable.	0.530	0.281	_____	
PEOU3	I find the online shopping websites are easy to use	0.623	0.388	7.329	***
PEOU4	The online shopping websites are flexible to interact with	0.673	0.453	7.803	***
Attitude toward online shopping (ATT)					
ATT1	I think using online shopping would be a good idea for me.	0.845	0.714	10.724	***
ATT2	I think using online shopping would be a wise (an appropriate) idea for me.	0.586	0.343	_____	
ATT3	I like the idea of using the online shopping.	0.839	0.704	10.804	***
Subjective Norm (SN)					
SN2	People who influence me would think that I should use online shopping.	0.897	0.805	9.581	***
SN3	People whose opinions are valued to me would prefer that I should use online shopping.	0.731	0.534	_____	
Trust (TR)					
TR1	Based on my experience with the online shopping websites, I know it is honest.	0.670	0.449	_____	
TR2	Based on my experience with the online shopping websites is, I know it is trustworthy.	0.822	0.676	11.615	***
TR3	Based on my experience with the online shopping websites, I know it cares about its customers.	0.748	0.560	11.101	***
Perceived enjoyment (PE)					
PE3	Online shopping provides enjoyment, which I have not felt with existing commercial transaction.	0.560	0.314	7.308	***
PE4	Using online shopping, I feel pleasure with my family.	0.516	0.266	6.797	***
PE6	Online shopping provides more pleasure than just watching TV programs.	0.636	0.404	7.790	***
PE8	Overall, it enjoyable to use online shopping.	0.727	0.529	_____	
Intention to use online shopping (IOS)					
IOS1	I intend to use the online shopping websites in the near future	0.70	0.490	_____	
IOS2	It is likely that I will purchase through the online shopping websites in the near future.	0.919	0.845	12.690	***
IOS3	I predict to use the online shopping websites in the near future.	0.767	0.588	13.730	***

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1993). In addition, Cronbach's alpha ranged from 0.740 to 0.815 and exceed the acceptable value of 0.70 (Nunnally, 1978) and the overall alpha value is 0.90, suggesting good internal reliability (see table 2).

Furthermore, to assess discriminant validity the study was applied Fornell and Larcker (1981) method. Thus, the square roots of AVE for each construct should be greater than the square correlation coefficients between constructs, in order to meet the requirements for satisfactory discriminant validity. Table 2 reveals that the square roots of AVEs were greater than the construct's correlation with others constructs, this implied that the constructs had sufficient discriminant validity. The results of the measurement model test, show strong statistical evidences that the current model displays adequate degree of items reliability and construct validity which suggested that it is suitable to proceed with the evaluation of the structural model.

Table 2. Discriminant and convergent validity of the measurement model

Construct	Number of Items	C.R.	AVE	Cronbach's Alpha α	PU	PEOU	ATT	SN	TR	PE	IOS
PU	4	0.727	0.510	0.776	***0.714***						
PEOU	3	0.732	0.530	0.740	.278**	***0.728***					
ATT	3	0.789	0.562	0.793	.365**	.276**	***0.749***				
SN	2	0.781	0.641	0.802	.111**	.084**	.247**	***0.801***			
TR	3	0.784	0.549	0.798	.281**	.110**	.285**	.187**	***0.741***		
PE	4	0.772	0.531	0.746	.144**	.081**	.149**	.070**	.141**	***0.729***	
IOS	3	0.836	0.633	0.815	.149**	.096**	.194**	.090**	.167**	.097**	***0.796***

Cronbach alpha of all constructs is 0.90

Square roots of AVE are in diagonal italic bold cells.

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Structural Model Assessment

Structural equation modelling (SEM) was assessed to test the hypothesized model and the squared multiple correlation (R^2) to evaluate the percentage of variance in the endogenous constructs that could be explained by others previous constructs. The model fit was examined using a variety of the most common indices between the researchers with some suggested guidelines. The results show that the chi-square (χ^2) value of 133.037 with 120 degrees of freedom, was statistically insignificant ($p = 0.196$) which should be >0.05, whereas the Normed chi-square or the chi-square to degree-of-freedom ($\chi 2/df$) was 1.109, which falls within the suggested value of 3 or below (Kline, 2005). Besides, the study had been used also others goodness-of-fit measures to assess the model fit, and the overall fit indices of the measurement model are as follows {GFI (0.96); AGFI (0.93); CFI (0.99); TLI (0.99); RMSEA (0.019); RMR (0.076); PCFI (0.63)}, indicating acceptable fit of the proposed structural model and all the indices are above the threshold levels, Table 3 illustrates the results of these indices.

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Table 3. Hypotheses Testing (n=306)

Structure Paths				Regression Weights & Standardized Regression Weights					
HP	Path			Estimate	Standardized	S.E	t-statistic	p	Sig
H1	ATT	→	IOS	0.232	0.290	0.097	2.384	0.017*	Supported
H2	PU	→	IOS	0.142	0.174	0.070	2.042	0.041*	Supported
H3	PU	→	ATT	0.563	0.454	0.115	4.891	.000***	Supported
H4	PEOU	→	ATT	0.606	0.695	0.113	5.351	.000***	Supported
H5	PEOU	→	PU	0.347	0.305	0.102	3.408	.000***	Supported
H6	SN	→	PU	0.244	0.221	0.086	2.838	0.005**	Supported
H7	SN	→	ATT	0.446	-0.049	0.074	-0.692	0.489^{ns}	Rejected
H8	SN	→	IOS	0.070	0.082	0.066	1.066	0.287^{ns}	Rejected
H9	PEOU	→	TR	0.400	0.430	0.100	4.003	.000***	Supported
H10	TR	→	PU	0.592	0.485	0.112	5.277	.000***	Supported
H11	TR	→	ATT	0.299	0.319	0.104	2.888	0.004**	Supported
H12	PEOU	→	PE	0.233	0.346	0.056	4.168	.000***	Supported
H13	PE	→	ATT	0.274	0.322	0.070	3.888	.000***	Supported
H14	PE	→	IOS	0.171	0.190	0.086	1.984	0.047*	Supported
Squared multiple correlation (R^2): PU = 0.60, TR = 0.31, PE = 0.23, ATT = 0.88, IOS = 0.38									

Statistic	Suggested	Obtained
Chi-Square significance	≥ 0.05	133.037
Normed Chi-Square ($\chi 2/df$)	≤ 3	1.109
Goodness-of-fit index (GFI)	≥ 0.90	0.959
Adjusted goodness-of-fit index (AGFI)	≥ 0.80	0.928
Comparative fit index (CFI)	≥ 0.90	0.995
Tucker – Lewis index (TLI)	≥ 0.90	0.992
Root mean square error of approximation(RMSEA)	≤ 0.08	0.019
Root mean square residual (RMR)	≤ 0.10	0.076
The parsimony Comparative Fit Index (PCFI)	≥ 0.60	0.628
*p < 0.05, **p < 0.01, ***p < 0.001, ns is not significant		

The path coefficients and variance explained (R^2) of the structural model are depicted in Figure 2 and summarized in Table 3. The structural findings disclose that twelve hypotheses out of fourteen are supported, except H7 and H8 which are not supported. Consumers' attitudes toward online shopping ($\beta = 0.290$, $t = 2.384$, $p < 0.05$), perceived usefulness ($\beta = 0.174$, $t = 2.042$, $p < 0.05$), and perceived enjoyment ($\beta = 0.190$, $t = 1.984$, $p < 0.05$), are significantly and positively influencing consumers' behavioural intention to use the online shopping. These results support hypotheses H1, H2 and H14 respectively. Moreover, the squared multiple correlation value (R^2) of 0.38 for the structural equation model indicates that three exogenous constructs (attitude, perceived usefulness and perceived enjoyment) explain 38% of the variance in the behavioural intention to use the online shopping. Meanwhile, subjective norms ($\beta = 0.471$, $t = 0.925$, $p = 0.355$) has positively but not significantly affected intention to use online shopping, providing no support for H8. Consecutively, findings disclose a high explained variance of attitude ($R^2 = 0.88$), which is obtained from the effects received from perceived usefulness ($\beta = 0.454$, $t = 4.891$, $p < 0.001$), perceived ease-of-use ($\beta = 0.695$, $t = 5.351$, $p < 0.001$), trust ($\beta = 0.319$, $t = 2.888$, $p < 0.01$), and perceived enjoyment ($\beta = 0.322$, $t = 3.888$, $p < 0.001$), providing support for the hypotheses H3, H4, H11, and H13, respectively. Whereas, subjective norm has been found negatively and insignificantly affected attitude ($\beta = -0.049$, $t = -0.692$, $p = 0.489$), so hypothesis H7 is

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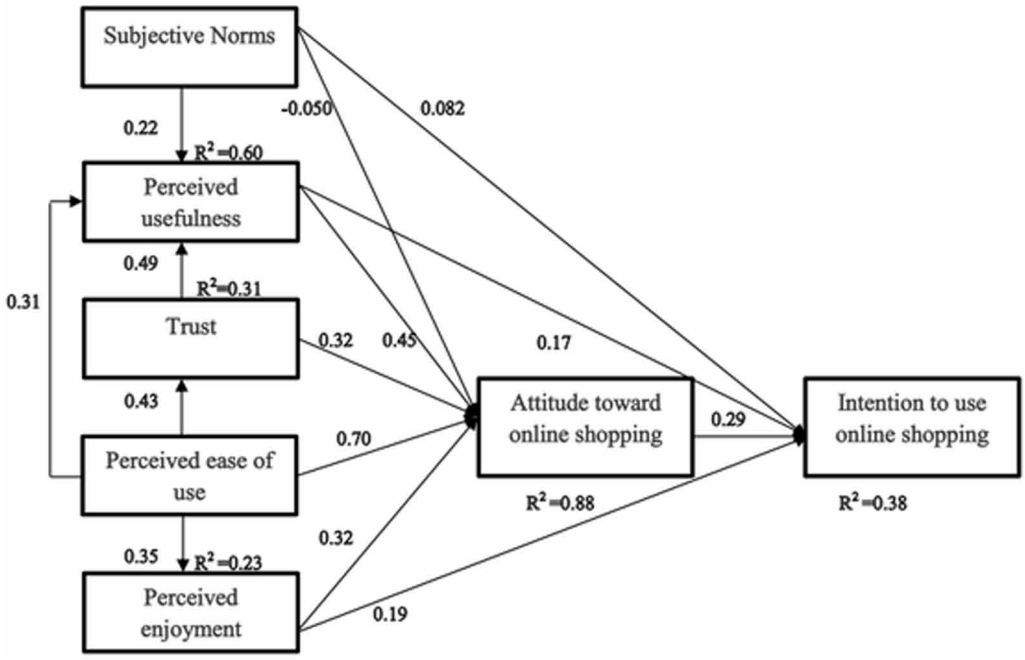
not supported. The findings reveal that trust has a stronger and positive impact ($\beta = 0.485$, $t = 5.277$, $p < 0.001$), on perceived usefulness than perceived ease-of-use ($\beta = 0.305$, $t = 3.408$, $p < 0.001$) which also moderately high variance explained ($R^2 = 0.60$). Thus, hypotheses H10, and H5 are supported. Lastly, the results also show that perceived ease–of–use ($\beta = 0.430$, $t = 4.003$, $p < 0.001$), significantly and positively influencing trust toward online shopping, while perceived ease-of-use ($\beta = 0.346$, $t = 4.168$, $p < 0.001$), has significantly and positively associated with perceived enjoyment, confirming hypotheses H9 and H12. In turn, R^2 results of 0.31 and 0.23 respectively, demonstrate that 31% of variation in trust toward online shopping is caused by the perceived ease-of- use, and 23% of variation in perceived enjoyment is determined by the perceived ease-of-use.

Figure 2. The structural model results



DISCUSSION AND IMPLICATIONS

This study aims to shed light on the factors influencing consumers' intention to use the online shopping within the context of the extended TAM. In this respect, the researcher developed a model comprising the extended technology acceptance model TAM (Davis et al., 1992; Pavlou, 2003) by including trust, enjoyment and subjective norms into the research model of this study. The findings have clearly confirmed that the attitude is important construct in influencing consumers' intention toward online shopping. This finding is consistent with those of (Chen et al., 2002; Vijayasarathy, 2004; Wu et al., 2005; Yu et al., 2005; Schepers and Wetzels, 2007; Lee, 2009; Ha and Stoel, 2009; Kim et al., 2009; Kim et al., 2009; Nour, et al., 2010; Yulihasri et al., 2011; Lim and Ting, 2012; Lim, 2015; Agag & El-Masry, 2016). Although, the previous scholars have suggested that the inclusion of attitude in TAM model is not meaningful (Davis, 1989; Davis and Bagazzi, 1989; Venkatesh et al., 2000; Albarq, 2014), however, the results of this

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study have found otherwise. This study has underscored that attitude is predicted by perceived ease of use, perceived usefulness, trust, and perceived enjoyment respectively. These results comply with many studies within the context of e-commerce specific the online shopping (Taylor and Todd, 1995; Childers et al., 2001; Vijayasarathy, 2004; Yu et al., 2005; Wu et al., 2005; Hassanein and Head, 2007; Ha and Stoel, 2009; Lee, 2009; Kim et al., 2009; Lim and Ting, 2012; Lim, 2015; Chen et al., 2002; Yulihasri et al., 2011; Ingham et al., 2015) Thus, the researcher argue that attitude should be used and included in the current model. Besides, this study showed that perceived ease of use and perceived usefulness are the strongest predictors of consumers' attitude toward online shopping than other factors, while perceived usefulness has a direct and significant effect on behavioural intention to use online shopping and perceived ease of use has a significant effect on perceived usefulness and attitude. These results supported the current study's hypotheses related to the original TAM model, however, perceived ease of use has the most effect on attitude rather than the perceived usefulness. The later finding is inconsistent with TAM model (Davis, 1989) which highlighted the importance of perceived usefulness as a key determinant of users' acceptance of IT and different with many prior studies that studied and examined TAM model either in the information system or the online shopping context (Chilers et al., 2001; Shih, 2004; Yu et al., 2005; Schepers and Wetzels, 2007; Ha and Stoel, 2009; Wang, 2011; Yulihasri et al., 2011; Hsieh and Liao, 2011; Lim and Ting, 2012;). In the meanwhile, this finding aligned with other researchers (Chen et al., 2002; Lee, 2009; Lim, 2015) who reported that perceived ease of use related to the system design and if the internet users have perceived the online system as easy to use or friendly user, they are more likely to have favourable attitude toward this system. Contrary to the relationship implied in TRA model and with others prior studies (Yu et al., 2005; Kim et al., 2009; Schepers and Wetzels, 2007; Nour and Bahmani, 2010; Mandilas, et al., 2013; Ingham et al., 2015) subjective norm was found insignificant on consumers' intentions to use online shopping. However, this result is similar with the findings obtained from previous studies (Davis et al., 1989; Venkatesh and Davis, 2000; Lee, 2009). Venkatesh and Davis (2000), asserted that subjective norm could significantly determine intention to use in a mandatory usage context, but its impact would become insignificant while users are in a voluntary usage context. On the other side, the result of this study shows that subjective norm is an antecedent of perceived usefulness which is consistent with TAM2 (Venkatesh and Davis, 2000) and other studies' findings (Taylor and Todd, 1995; Featherman and Fuller, 2002; Kim et al., 2009; Abbad, 2013; Srinivasan, 2015; Kalinic and Marinkovic, 2016). This result can be interpreted that when a person is willing to perform an action based on strong beliefs, he/she accepts and interprets information from important referents as evidence about reality. Although, the previous finding, however the result demonstrates a negative and insignificant effect on attitude toward the online shopping which is inconsistent with that of Schepers and Wetzels (2007). This could be because attitude toward online shopping is influenced by other antecedents which have much stronger affect than subjective norm. Moreover, the results reveal profoundly the effect of perceived ease of use on trust and the effect of trust on perceived usefulness which confirmed the findings of previous studies (Gefen et al., 2003; Wang, 2011) in online shopping. The finding of this study also, coincides with the results obtained from prior studies in the e-commerce (Grazioli et al., 2000; Ha and Stoel, 2009; Lee, 2009; Kim et al., 2009; Casalo, et al., 2011; Akroush et al., 2015) which have been suggested that trust in the web sites is an important determinant of attitude. It can be concluding that trust plays a dominant role in online shopping context, because consumers are unlikely to shop online if they do not trust the online websites. Furthermore, the findings indicated positive and direct effect of perceived ease of use on perceived enjoyment, whereas, perceived enjoyment have a positive and direct effect on attitude and behavioural intention. These findings conformed the other results that have

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highlighted the importance role of perceived enjoyment in online context (Davis et al., 1992; Teo et al., 1999; Heijden, 2003; Hassanein et al., 2007; Ha et al., 2009; Ingham et al., 2015). Such findings can be interpreted that when consumers believe that online shopping website is easy to use and do not require a lot of efforts, then, they are more like to have fun and enjoy online shopping, and more willing to exhibit more positive attitudes toward online shopping which in turn affect their behavioural intention to use.

This study has shed light on some important issues related to consumers' attitudes and intention toward online shopping which help marketers to improve the performance of the online shopping websites. First, although that perceived usefulness and perceived ease of use have a significant influence on consumers' attitude, this study reveals that perceived ease of use is more important influential factor than perceived usefulness. This result is particularly important for the marketers that they should ensure that their sites are easy to use, proper, has a good construction, include flexible features such as live customer support and chat rooms for shoppers that formulate favourable attitude towards the online shopping. Secondly, trust can play a critical role in forming consumers' enjoyment and attitude. In order to successfully increase consumers' intention to use online shopping, managers of those sites need to build online trust to creating positive attitude toward online shopping. The findings demonstrated that online shopping mangers can create confidence in their web sites by improving perceived ease of use which in turn affecting and increasing the consumers' intrinsic motivation (enjoyable) then consumers exhibit more positive attitude and have more tendency to using the online shopping.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The study has the following limitations. The first limitation of the current study is that most of respondents are young undergraduate and postgraduate students. Secondly, the study based on the cross sectional which represents a slice of time and does not show how consumers' attitudes and their behavioural intentions may be change over time. Another possible limitation that the study investigated the online shopping in general not a specific web site. Although the aim was to examine factors influencing consumers' intention to use the online shopping, some may not have been included. So, it would be useful for future research to study other variables such as perceived risk, security, privacy concerns, self-gratification, demographic variables and online experience to provide better understanding the factors which might be affect the behavioural intentions to use online shopping. Future research should consider longitudinal studies to investigate the changing of consumers' attitudes and behavioural intentions toward using online shopping over time. Further, cross sectional surveys present nothing more than snapshots leading to get bias results. Therefore, future research may have to test the robustness of this study by repeated regularly to provide more robust results. Future studies are highly encouraged to replicate the model in other context such as mobile commerce which allows users to interact more with others or within the online reviews or advising. Besides, future research could compare online shoppers' and nonshoppers' attitudes toward using the online shopping.

REFERENCES

Abbad, M. (2013). E-banking in Jordan. *Behaviour & Information Technology*, *32*(7), 681–694. doi:10.1080/0144929X.2011.586725

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Agag, G., & El-Masry, A. (2016). Understanding consumer intention to participate in online travel community and effects on consumer intention to purchase travel online and WOM: An integration of innovation diffusion theory and TAM with trust. *Computers in Human Behavior*, *60*, 97–111. doi:10.1016/j.chb.2016.02.038

Agrebi, S., & Jallais, J. (2015). Explain the intention to use smartphones for mobile shopping. *Journal of Retailing and Consumer Services*, *22*, 16–23. doi:10.1016/j.jretconser.2014.09.003

Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behaviour*. Englewood Cliffs, NJ: Prentice-Hall.

Akroush, M., & Al-Debei, M. (2015). An integrated model of factors affecting consumer attitudes towards online shopping. *Business Process Management Journal*, *21*(6), 1353–1376. doi:10.1108/BPMJ-02-2015-0022

Al Debei, M. M., Akroush, M. N., & Ashouri, M. I. (2015). Consumer attitudes towards online shopping, The effects of trust, perceived benefits, and perceived web quality. *Internet Research*, *25*(5), 707–733. doi:10.1108/IntR-05-2014-0146

Al Sukkar, A., & Hasan, H. (2005). Toward a model for the acceptance of Internet banking in developing countries. *Information Technology for Development*, *11*(4), 381–398. doi:10.1002/itdj.20026

Albarq, A. (2014). An Empirical Investigation to Validate the Technology Acceptance Model (TAM) in Explaining Intentions to Shop Online in Saudi Arabia Using SEM. *Jordan Journal of Business Administration*, *10*(2), 317–332. doi:10.12816/0026195

Anderson, J., & Gerbing, D. (1988). Structural equation modelling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411–423. doi:10.1037/0033-2909.103.3.411

Bagozzi, R., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, *16*(1), 74–94. doi:10.1007/BF02723327

Bhattacherjee, A. (2000). Acceptance of E-Commerce Services: The Case of Electronic Brokerages. *IEEE Transactions on Systems, Man, and Cybernetics. Part A, Systems and Humans*, *30*(4), 411–420. doi:10.1109/3468.852435

Celik, H. (2008). What determines Turkish customers' acceptance of internet banking? *International Journal of Bank Marketing*, *26*(5), 353–370. doi:10.1108/02652320810894406

Chen, L., Gillenson, M., & Sherrell, D. (2002). Enticing online consumers: An extended technology acceptance perspective. *Information & Management*, *39*(8), 705–719. doi:10.1016/S0378-7206(01)00127-6

Childers, T., Carr, C., Peck, J., & Carson, S. (2001). Hedonic and Utilitarian motivations for online retail shopping behaviour. *Journal of Retailing*, *77*(4), 511–535. doi:10.1016/S0022-4359(01)00056-2

Chiu, C., Chang, C., Cheng, H., & Fang, Y. (2009). Determinants of customer repurchase intention in online shopping. *Online Information Review*, *33*(4), 761–784. doi:10.1108/14684520910985710

Davis, E., Bagozzi, R., & Warshaw, P. (1992). Extrinsic and intrinsic motivation to use computers in the workplace. *Journal of Applied Social Psychology*, *22*(14). doi:10.1111/j.1559-1816.1992.tb00945.x

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Davis, F., Bagozzi, R., & Warshaw, P. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, *35*(8), 982–1002. doi:10.1287/mnsc.35.8.982

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Quarterly*, *13*(3), 319–340. doi:10.2307/249008

Gefen, D., Karahanna, E., & Straub, D. (2003). Trust and TAM in online shopping: An integrated model. *Management Information Systems Quarterly*, *27*(1), 51–90. doi:10.2307/30036519

Grazioli, S., & Jarvenpaa, S. (2000). Perils of internet fraud: An empirical investigation of deception and trust with experienced internet consumers. *IEEE Transactions on Systems, Man, and Cybernetics. Part A, Systems and Humans*, *30*(4), 395–410. doi:10.1109/3468.852434

Ha, S., & Stoel, L. (2009). Consumer e-shopping acceptance: Antecedents in a technology acceptance model. *Journal of Business Research*, *62*(5), 565–571. doi:10.1016/j.jbusres.2008.06.016

Hair, J., Black, W., Babin, B., & Anderson, R. (2010). *Multivariate data analysis: A global perspective* (7th ed.). Pearson Education International.

Hassanein, K., & Head, M. (2007). Manipulating perceived social presence through the web interface and its impact on attitude towards online shopping. *International Journal of Human-Computer Studies*, *65*(8), 689–708. doi:10.1016/j.ijhcs.2006.11.018

Heijden, H. (2003). Factors influencing the usage of websites: The case of a generic portal in The Netherlands. *Information & Management*, *40*(6), 541–549. doi:10.1016/S0378-7206(02)00079-4

Hsieh, J., & Liao, P.-W. (2011). Antecedents and moderators of online shopping behavior in undergraduate students. *Social Behavior and Personality*, *39*(9), 1271–1280. doi:10.2224bp.2011.39.9.1271

Huang, E. (2008). Use and gratification in e-consumers. *Internet Research*, *18*(4), 405–426. doi:10.1108/10662240810897817

Igbaria, M., Iivari, J., & Maragahh, H. (1995). Why do individuals use computer technology? A Finnish case study. *Information & Management*, *29*(5), 227–238. doi:10.1016/0378-7206(95)00031-0

Ingham, J., Cadieux, J., & Berrada, A. (2015). E-shopping acceptance: A qualitative and meta-analytic review. *Information & Management*, *52*(1), 44–60. doi:10.1016/j.im.2014.10.002

Internetworldstats.com. (2017). *Africa Internet Users, Population and Facebook 2017 Statistics.* Retrieved 27 July 2017 from http://www.internetworldstats.com/stats1.htm

Jöreskog & Sörbom. (1993). *LISREL8: Structural Equation Modelling with the SIMPLIS Command Language*. Chicago: Scientific Software.

Kalinic, Z., & Marinkovic, V. (2016). Determinants of users' intention to adopt m-commerce: An empirical analysis. *Information Systems and e-Business Management*, *14*(2), 367–387. doi:10.100710257-015-0287-2

Karahanna, E., & Straub, D. (1999). The psychological origins of perceived usefulness and ease-of-use. *Information & Management*, *35*(4), 237–250. doi:10.1016/S0378-7206(98)00096-2

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Kim, D., Ferrin, D., & Rao, H. (2008). A trust–based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, *44*(2), 544–564. doi:10.1016/j.dss.2007.07.001

Kim, H., Kim, T., & Shin, S. (2009). Modeling roles of subjective norms and eTrust in customers' acceptance of airline B2C e Commerce websites. *Tourism Management*, *30*(2), 266–277. doi:10.1016/j.tourman.2008.07.001

Kim, H., Xu, Y., & Gupta, S. (2012). Which is more important in internet shopping, perceived price or trust? *Electronic Commerce Research and Applications*, *11*(3), 241–252. doi:10.1016/j.elerap.2011.06.003

Kim, H., Xu, Y., & Koh, J. (2004). A comparison of online trust building factors between potential customers and repeat customers. *Journal of the Association for Information Systems*, *5*(10), 392–420. doi:10.17705/1jais.00056

Kim, J., Ma, Y., & Park, J. (2009). Are US consumers ready to adopt mobile technology for fashion goods? An integrated theoretical approach. *Journal of Fashion Marketing and Management*, *13*(2), 215–230. doi:10.1108/13612020910957725

Kim, T., Lee, J., & Law, R. (2008). An empirical examination of the acceptance behaviour of hotel front office systems: An extended technology acceptance model. *Tourism Management*, *29*(3), 500–513. doi:10.1016/j.tourman.2007.05.016

Lee, M., Cheung, C., & Chen, Z. (2007). Understanding user acceptance of multimedia messaging services: An empirical study. *Journal of the American Society for Information Science and Technology*, *58*(13), 2066–2077. doi:10.1002/asi.20670

Lee, M. C. (2009). Predicting and explaining the adoption of online trading: An empirical study in Taiwan. *Decision Support Systems*, *47*(2), 133–142. doi:10.1016/j.dss.2009.02.003

Li, R., Chung, T., & Fiore, A. (2017). Factors affecting current users' attitude towards e-auctions in China: An extended TAM study. *Journal of Retailing and Consumer Services*, *34*, 19–29. doi:10.1016/j.jretconser.2016.09.003

Lim, W. (2015). Antecedents and consequences of e-shopping: An integrated model. *Internet Research*, *25*(2), 184–217. doi:10.1108/IntR-11-2013-0247

Lim, W., & Ting, D. (2012). E.shopping: An Analysis of the Technology Acceptance Model. *Journal of Medical and Allied Sciences*, *6*(4), 49–62.

Lin, C.-T. (2010). Examining e-travel sites: An empirical study in Taiwan. *Online Information Review*, *34*(2), 205–228. doi:10.1108/14684521011036954

Lin, J.-S. C., & Chang, H.-C. (2011). The role of technology readiness in self-service technology acceptance. *Managing Service Quality*, *21*(4), 424–444. doi:10.1108/09604521111146289

Lu, J., Chou, H., & Ling, P. (2009). Investigating passengers' intentions to use technology-based self-check-in services. *Transportation Research Part E, Logistics and Transportation Review*, *45*(2), 345–356. doi:10.1016/j.tre.2008.09.006

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Lucas, H., & Spitler, V. K. (1999). Technology use and performance: A field study of broker workstations. *Decision Sciences*, *30*(2), 291–311. doi:10.1111/j.1540-5915.1999.tb01611.x

Luhmann, N. (1979). *Trust and Power*. Chichester: John Wiley.

Luhmann, N. (1988). Familiarity, Confidence, Trust: Problems and Alternatives. In Gambetta (Ed.), Trust: Making and Breaking Cooperative Relations (pp. 94-107). Oxford: Blackwell.

Malhotra, Y., & Galletta, D. F. (1999). Extending the technology acceptance model to account for social influence: Theoretical bases and empirical validation. In *Proceedings of the Hawaii International Conference on System Sciences*. 10.1109/HICSS.1999.772658

Mandilas, A., Karasavvoglou, A., Nikolaidis, M., & Tsourgiannis, L. (2013). Predicting Consumer's Perceptions in On-line Shopping. *Procedia Technology*, *8*, 435-444).

McKnight, D., Choudhury, V., & Kacmar, C. (2002). The impact of initial consumer trust on intentions to transact with a web site: A trust building model. *The Journal of Strategic Information Systems*, *11*(3-4), 297–323. doi:10.1016/S0963-8687(02)00020-3

Metawie, M., & Elseidi, R. I. (2015). Examining the factors that determine the behavioral intention of E-Travel sites in Egypt. *Contemporary Business Research Journal*, *29*(2), 31–66.

Moon, J.-W., & Kim, Y.-G. (2001). Extending the TAM for a World-Wide-Web context. *Information & Management*, *38*(4), 217–230. doi:10.1016/S0378-7206(00)00061-6

Nasri, W., & Charfeddine, L. (2012). Factors affecting the adoption of Internet banking in Tunisia: An integration theory of acceptance model and theory of planned behaviour. *The Journal of High Technology Management Research*, *23*(1), 1–14. doi:10.1016/j.hitech.2012.03.001

Nunnally, J. (1978). *Psychometric Theory*. New York, NY: McGraw-Hill Book Company.

Pavlou, P. (2003). Consumer acceptance of electronic commerce: Integrating Trust and Risk with the Technology Acceptance Model. *International Journal of Electronic Commerce*, *7*(3), 101–134.

Ponte, E., Carvajal-Trujillo, E., & Escobar-Rodriguez, T. (2015). Influence of trust and perceived value on the intention to purchase travel online: Integrating the effects of assurance on trust antecedents. *Tourism Management*, *47*, 286–302. doi:10.1016/j.tourman.2014.10.009

Samuel, L., Balaji, M., & Wei, K. (2015). An investigation of Online Shopping Experience on Trust and Behavioral Intentions. *Journal of Internet Commerce*, *14*(2), 233–254. doi:10.1080/15332861.2015.1028250

Schepers, J., & Wetzels, M. (2007). A meta-analysis of the technology acceptance model investigating subjective norm and moderation effects. *Information & Management*, *44*(1), 90–103. doi:10.1016/j.im.2006.10.007

Shen, X., Wang, N., Sun, Y., & Xiang, L. (2013). Unleash the power of mobile word-of-mouth, an empirical study of system and information characteristics in ubiquitous decision making. *Online Information Review*, *37*(1), 42–60. doi:10.1108/14684521311311621

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Shih, H. (2004). An empirical study on predicting user acceptance of e-shopping on the Web. *Information & Management*, *41*(3), 351–368. doi:10.1016/S0378-7206(03)00079-X

Shih, H.-P. (2004). An empirical study on predicting user acceptance of e-shopping on the web. *Information & Management*, *41*(3), 351–368. doi:10.1016/S0378-7206(03)00079-X

Srinivasan, R. (2015). Exploring the impact of social norms and online shopping anxiety in the adoption of online apparel shopping by Indian consumers. *Journal of Internet Commerce*, *14*, 177–199.

Taylor, S., & Todd, P. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research*, *6*, 144–176.

Teo, T., Lim, V., & Lai, R. (1999). Intrinsic and extrinsic motivation in Internet usage. *Omega The International Journal of Management Science*, *27*(1), 25–37. doi:10.1016/S0305-0483(98)00028-0

Venkatesh, V., & Davis, F. D. (1996). A model of the antecedents of perceived ease of use: Development and test. *Decision Sciences*, *27*(3), 451–481. doi:10.1111/j.1540-5915.1996.tb01822.x

Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, *46*(2), 186–204. doi:10.1287/mnsc.46.2.186.11926

Venkatesh, V., & Morris, M. (2000). Why don't men ever stop to ask for directions?: Gender, social influence, and their role in technology acceptance and usage behavior. *Management Information Systems Quarterly*, *24*(1), 115–139. doi:10.2307/3250981

Vijayasarathy, L. (2004). Predicting consumer intentions to use on-line shopping: The case for an augmented technology acceptance model. *Information & Management*, *41*(6), 747–762. doi:10.1016/j.im.2003.08.011

Wang, T. (2011). An Effect of Trust and Attitude in the Initial Adoption of Online Shopping: An Empirical Study. In *International Conference on information Society (I-Society)*. Retrieved July 14, 2017 from http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=5966376

Wu, I. (2013). The antecedents of customer satisfaction and its link to complaint intentions in online shopping: An integration of justice, technology, and trust. *International Journal of Information Management*, *33*(1), 166–176. doi:10.1016/j.ijinfomgt.2012.09.001

Wu, I., & Chen, J. (2005). An extension of Trust and TAM model with TPB in the initial adoption of on-line tax: An empirical study. *International Journal of Human-Computer Studies*, *62*(6), 784–808. doi:10.1016/j.ijhcs.2005.03.003

Wu, W., & Ke, C. (2015). An online shopping behavior model integrating personality traits, perceived risk, and technology acceptance. *Social Behavior and Personality*, *43*(1), 85–98. doi:10.2224bp.2015.43.1.85

Yaghoubi, N., & Bahmani, E. (2010). Factors Affecting the Adoption of Online Banking an Integration of Technology Acceptance Model and Theory of Planned Behaviour. *International Journal of Business and Management*, *5*(9), 159–165. doi:10.5539/ijbm.v5n9p159

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Yang, Q., Pang, C., Liu, L., Yen, D., & Tarn, J. (2015). Exploring consumer perceived risk and trust for online payments: An empirical study in China's younger generation. *Computers in Human Behavior*, *50*, 9–24. doi:10.1016/j.chb.2015.03.058

Yu, J., Ha, I., Choi, M., & Rho, J. (2005). Extending the TAM for a t-commerce. *Information & Management*, *42*(7), 965–976. doi:10.1016/j.im.2004.11.001

Yushihari, I., Islam, M., & Daud, A. (2011). Factors that influence customers buying intention on shopping online. *International Journal of Marketing Studies*, *3*(1), 128–143.

Zhou, T. (2011). Examining the critical success factors of mobile website adoption. *Online Information Review*, *35*(4), 636–652. doi:10.1108/14684521111161972

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Chapter 71
Exploring Online Marketing Adoption Factors Among Used Car Sellers in Ghana

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ABSTRACT

This article seeks to explore factors responsible for the adoption of online marketing by second hand (used) car dealers to sellers in Ghana. A conceptual framework was adopted from the extant literature using the Technology Acceptance Model as a theoretical base. This article adopts a quantitative research approach. Data for the study was obtained from 60 second hand car sellers through a self-administered questionnaire. Findings from this study revealed that factors responsible for online marketing adoption by second hand car dealers in Ghana are: perceived usefulness (marketing online, customer demand and increase productivity; ease of use (ability to upload pictures, interaction with clients, and online vehicles sales) of the platform. The study however, found no significant relationship between IT knowledge of the owner/manager, age of business and adoption of the online technology. This article highlights the importance of technology adoption in business among SMEs from technologically disadvantaged market.

INTRODUCTION

Businesses in the developing world are now harnessing the potential of the internet to position themselves in the electronic marketplace and to expand their market. This is because of the benefits brought about by the new technology. Today, because the Internet can facilitate the quick and efficient movement of

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information among trading partners at a greatly reduced cost, business via the internet known severally as electronic commerce, internet marketing, online marketing or electronic marketing has become one of the principal means of doing business. According to Payne (2003) it is transacting or enabling the marketing, buying, and selling of goods and/or information through an electronic media, specifically the Internet.

Indeed, businesses everywhere need to understand the why, when and how to use electronic commerce. In some industries, businesses are learning now that this is no longer an option to consider, but a requirement for survival. As Payne (2003) puts it, businesses in developing countries will soon be affected as significantly as others in the developed economies in utilizing online technologies. In this respect, Kofi Annan former UN Secretary General opined that, the ability of developing countries to adopt e-business can be another opportunity to accelerate economic growth and development.

According to Basu and Muylle (2007), online technology has dramatically changed how companies' business processes are implemented and has also enhanced industry structure and shifted the balance of power between corporations and their suppliers and customers. According to them, companies in every industry have had to evaluate the opportunities and threats presented by the internet. By thinking strategically about online platforms, managers can select technological solutions that support the company's business strategies and create value for the company and its customers (Cote, Vezina & Sabourin, 2005).

Ghanaian businesses are today able to sell and market their products and services thanks to the proliferation of online marketplace platform. There are over a dozen online marketplace platforms in Ghana marketing and selling various items from household items to business solutions. Increasingly a significant number of people in Ghana and in Africa are accessing the Internet. This is really important for the development of the continent as the internet has the potential to spur economic growth thereby reducing poverty on a large scale. Not only are consumers visiting online retail stores to purchase, businesses are also not left out in this virtual marketing. Most businesses are creating various online platforms with incentives to entice consumers to shift to buying from these businesses. The online platform has become an additional channel for businesses to market and sell their excess products.

There has been a plethora of research on online marketing adoption. Most of these studies however are in the developed countries context. There appear to be however paucity of literature on online marketing from Africa and for that matter Ghana. Again, available literature on online marketing focused on consumer adoption of online marketing consumer-oriented research (Hoffman & Novak, 1996; Lynch & Beck, 2001; Novak, Hoffman & Yung, 2000; Wolfinbarger & Gilly, 2002; Xia, 2010); and technology use (Zhou, Dai & Zhang, 2007; Zhang & Von Dran, 2002; Liao & Cheung, 2002; Palmer, 2002; McKinney, Yoon, & Zahedi, 2002). However, there appear to be scarce research on business perspective of online marketing adoption. This study therefore is positioned to fill the gap in research. Accordingly, this study examines the factors responsible for e-marketing adoption by used or second hand car dealers in Ghana. From the foregoing, this study seeks to achieve the following objectives: to:

- Identify the factors that motivate second hand car dealers in Ghana to adopt online marketing to sell their cars
- Explore the effect of company characteristics on online marketing adoption

This paper is set out as follows: the first section of the paper focused on the introductory aspects of the paper; whilst the second section showcases the literature review and conceptual framework. The third

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portion of the paper is the study methodology whilst the fourth section is the presentation and discussion of the study findings. The paper appropriately closes out with conclusions and recommendations.

REVIEW OF RELATED LITERATURE

Technology Acceptance Model

The innovation and emerging technology adoption literature implies that in order to adopt new technology in developing countries, firms need to be internally and externally ready (Chung et al., 2007). This readiness which is termed e-readiness can be defined as the ability of a company to successfully adopt, use, and benefit from the technology or innovation (Fathian, Akhavan, & Hoorali, 2008). Molla and Licker (2005) demonstrated that in initial adoption of electronic commerce in developing countries, internal (organizational) readiness is significant. The adoption of technology by SMEs is however dependent on two key factors, the perceived usefulness (PU) and perceived ease of use (PEU) of the technology (Dwivedi, Papazafeiropoulo, Parker & Castleman, 2009; Grandon & Pearson, 2004).

The Technology Adoption Model (TAM) proposed by Davis (1989) has been used widely by scholars in examining technology adoption in many fields (see Dennis, 2005). The TAM proposes that, attitude towards using a new technology is influenced by perceived usefulness and ease of use. The TAM is said to have been derived from the TRA (Dennis, Merrilees, Jayadwardhena & Wright, 2008). Usefulness refers to consumers' perceptions that the use of Internet will enhance the outcome of their shopping and information seeking (Chen, Gillenson, & Sherrell, 2002). In a similar model developed by Dennis, Merrilees, Jayadwardhena and Wright (2009), usefulness is incorporated into the image components of product selection, customer service and delivery or fulfillment in the role of functional attributed. Ease of use on the other hand concerns the degree to which e-shopping is perceived as involving a minimum of effort, for example in negativity and clarity (Chen et al., 2002).

PU is the degree to which a person believes that using a particular system would be better than alternative systems in enhancing his or her job performance (Davis, Bagozzi, & Warshaw, 1989). Lim (2010) also contends that the perceived marketing benefits of Internet technologies are pertinent towards the decisions by SMEs to accept and implement online marketing for their business transactions (Iddris & Ibrahim, 2015).

Online marketing adoption is also influenced by perceived ease of use (PEOU) which measures the extent to which an organization believes that investment in technology requires minimum effort (Davis et al., 1989). The complexity of the user interface reduces system evaluation and lessens the intention to adopt specific Internet technologies (Opia, 2008). PEOU has direct and positive impact on perceived usefulness of technology adoption (Venkatesh & Davis, 2000). Moreover, Awa, Nwibere, and Inyang (2010), underscore that PU and PEOU will have significant effects on the adoption of Internet technology by SMEs. As such businesses will adopt technologies that are attuned to their line of business but such technologies have to offer relative advantages (Rashid, 2001).

A noteworthy determinant of technology adoption is the owner-manager's knowledge about Internet marketing. Knowledge could be sourced from the SME operator's network of personal contacts (Elliott & Boshoff, 2007; Poon & Swatman, 1999). Ultimately the spillover of information from users to non-users can positively contribute to the adoption of Internet technologies (Hollenstein, 2004). In a developing economy (including African) context, owners/managers of small firms tend to be extremely

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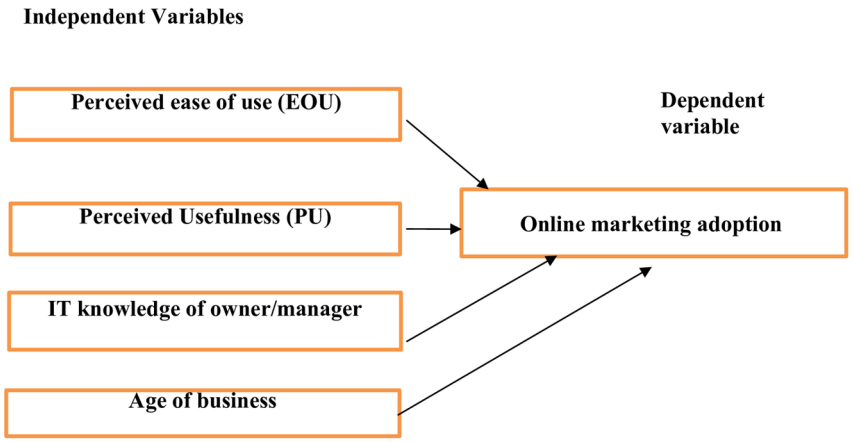
powerful in the decision to adopt/not adopt new technologies. Small business owners do not usually have sophisticated governance structures and therefore any decision that requires substantial capital outlay; usually have to be decided by the owner/manager. In certain cases, owners/managers fall on the advice of a management team.

Conceptual Framework and Model

This current study proposed a conceptual framework for the adoption of online marketing by used or second hand car dealers in Ghana. The framework consists of two main building blocks i.e. online marketing platform and online marketing adoption factors (figure 1). The online marketing platform refers to the online marketplaces that serve as vehicle for businesses to trade their products and services. There are a number of these online marketplaces including tonaton.com, cheki.com, olx.com, kaymu.com and jumia.com. These platforms serve various purposes from selling household products as well as personal products. The online marketing adoption factors according to the conceptual framework for this study are company characteristics and perception. The company characteristics include, age of the business, educational background or experience of the owner/manager, size of the business and age of the business owner/manager. The perception on the other hand refers to the perceive usage of the technology i.e. perceived usefulness and ease of use of the technology. The ease of use of the platform also relates to how easy it is to use the platform in terms of the technology usage. Usefulness of the platform on the other hand relates to how useful the platform is to the owners' businesses in terms of added advantage it gives the business (see figure 1).

Model Development

Figure 1. Conceptual model of the study



Hypothesis Development

On the basis of the dependent and independent variables, the following hypotheses have been developed:

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H1: Ease of use of the platform would influence online marketing adoption
H2: Usefulness of the platform would influence online marketing adoption
H3: IT knowledge of owner/manager would influence online marketing adoption
H4: Age of the business would influence online marketing adoption

METHODOLOGY

The study adopts a quantitative approach in exploring the e-marketing adoption factors among second-hand car sellers in Ghana. Data for the study was collected via structured questionnaire consisting of both open-ended and close ended questions. The research adopted a cross-sectional design which allows the researcher to draw one or more samples from the population at one time period and was used to provide an in-depth investigation of the relationship between variables (Sekaran, 2000). Since it is a correlational type of design, it establishes a relationship between two variables in each case, i.e. one dependent and the other an independent variable.

Population and the Sample

A target population is any indefinable total set of elements about which the researcher wishes to make inferences (Collis & Hussey, 2009). In Ghana, businesses with employees numbering between 6 to 29 employees with investments below US$100,000 are classified as small businesses. The target population was limited to Kumasi Metropolitan Area in the Ashanti region of Ghana. Kumasi was selected as it's the largest city in terms of land size and population. Sampled for the study were selected using cluster sampling and accidental sampling techniques. First and foremost, since the Metropolis is large, it was divided into six different clusters based on the business nature of these towns. Ten sellers were then selected from each of these clusters using accidental sampling based on the availability of sellers in the area. A total of sixty (60) car sellers were thus obtained for the study. Another criterion used to select these respondents was based on the display of various billboards showing they (car sellers) use a particular online portal to sell. An accompanying cover letter was attached to the questionnaire to highlight the purpose of the study.

The data was collected within three months by the researcher and trained field researchers who were offered a day's training on interview and questionnaire administration. The rationale for selecting a quantitative study was due to its cost effectiveness and easier to administer compared to a qualitative approach (Malhotra, 2010). In addition, quantitative study was selected due to the nature of data to be collected, the time available as well as the objectives of the study that underpin the adoption of online marketing by the sampled businesses.

Instrumentation and Data Collection

The survey instrument was based mostly on scales that were already developed and tested in other markets. A self-administered questionnaire based on the adapted technology adoption scales used by Davies et al. (1989) and Chau (1996). These scales were further validated within the context of e-business adoption among firms in the studies of El-Gohary (2012) and Dwivedi et al. (2009). The questionnaire was divided into two sections, namely; A and B. Section A of the questionnaire primarily obtained demographic

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information from the respondents. Section B requested information on the online marketing adoption factors. Section C on the other hand assessed the online marketing performance. The items in section B were scored on a 5-point Likert scale which ranged from 1 (strongly disagree) to 5 (strongly agree).

Data Quality Control

For quality control, a pre-test of the research instrument was done to test its face validity from experts and reliability. The questionnaire was checked for accuracy and completeness using the Cronbach's a (alpha) test. George and Mallery (2003) provide the following rules of thumb: "=.9 – Excellent, =.8 – Good, =.7 – Acceptable, =.6 – Questionable, =.5 – Poor, and=.4 – Unacceptable" since Likert scale measures are fundamentally at the ordinal level of measurement because responses indicate a ranking only.

For this study, Cronbach alphas of 0.7 or more were considered significant. Pre-testing was conducted with a convenient sample of five academics in the management and marketing fields in order to ensure that the questionnaire met expectations in providing accurate information, usage of appropriate wording, questioning sequence and to assess the extent to which respondents understood the questions clearly. The pretest also served to determine the anticipated questionnaire completion time. Based on feedback from the pretest, minor revisions were made to the questionnaire and a pilot study was conducted with 10 SMEs.

The questionnaire collected was compiled, sorted, edited, classified, coded into a coding sheet and analyzed using Statistical Package for Social Sciences (SPSS v22.0). The data collected was analyzed so as to have the required quality, accuracy, consistency and completeness. The analysis included correlation to establish the strength and direction of the relationship between the variables.

RESULTS OF THE STUDY

Demographic Characteristics

The results in the tables that follow show the general characteristics of the respondents who participated in the study.

Nature of Business

With regards to the nature of business performed by the sampled respondents; 45% respondents sell cars only; 16.7% buy and sell cars at the same time; 13.7% buy and sell cars; 11.7% sell cars and do car rentals; and 6.7% sell cars and spare parts as well as sell and do maintenance of cars respectively (refer to table 1). Most respondents sell cars and not much buying of cars.

Number of Employees

With respect to the number of employees currently working for these businesses, majority of the respondents (73.3%) have stuff strength of '10 to 19' employees; 13.4% have between '20 to 29' employees; and 10% have employees between '30 to 39'. This shows that few car dealers employ large number of people due to their working capital which is in adequate to employ more stuff.

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Table 1. Demographic characteristics of respondents

Variable		Frequency	Percentage
Nature of business	Car Selling Car selling and rentals Cars and spare parts selling Buying of cars Sales and maintenance of cars Buying and selling of cars	27 7 4 10 4 8	45 11.7 6.7 16.7 6.7 13.4
Total			**100.0**
Number of employees	10-19 20-29 30-39 40-49	44**60** 8 6 2	73.3 13.4 10 3.3
Total		60	100.0
Business ownership	Local Foreign Both	53 2 5	88.3 3.3 8.3
Total		**60**	**100.0**
Years in business	Below 5 years 5-10 years 11-15 years 16-20 years 21-25 years 26-30 years 31-35 years	11 14 22 7 3 2 1	18.3 23.3 34.1 36.7 5 3.3 1.7
Total		**60**	**100.0**

Source: (Field survey, 2017)

Business Ownership

Most car businesses are owned by locals (88.3%); and only a handful of these businesses are foreign owned (3%). However, (8.3%) of these businesses are owned jointly by both foreigners and locals (see table 1). This is good for local content trade and business development for the local people.

Years in Business

Majority of the businesses (36.7%) have been in operation for '16 to 20 years'; followed by '11 to 15 year' (34.1%); 23% have been in business for '5 to 10 years'; whiles 18.3% have been in business less than 5 years. Very few 4 (9.3%) have operated for 20 years or more; '31 to 35 years' (1.7%) and 26 to 30 years' are 2 respondents (3.3%). This shows that perhaps most businesses in this industry fold up with increasing number of years in operation (refer to table 1). This could be due to high economic fluctuations.

From table 2, it is shown that Tonaton.com is the online marketing platform mostly used by car dealers 32 (72.72%) to market and sell their cars. This is followed by Checki.com (43.18%); Olx.com (20.45%); Myjoymarketplace.com (11.36%) and Kasoa.com (0.27%). This means that Tonaton.com receives the largest patronage by these industry players and is the most widely used.

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Table 2. Online marketplace awareness and patronage

Online Marketing places	Awareness of online marketing places (n = 44)		Usage of online marketing places (n = 44)	
	Cumulative Frequency	Proportion (%)	Cumulative Frequency	Proportion (%)
Tonaton.com	32	72.72	25	56.81
Olx.com	9	20.45	5	11.36
Checki.com	19	43.18	16	36.36
Myjoymarket place	5	11.36	2	4.55
Kasoa.com	1	0.27	0	0.00

Source: (Field survey, 2017)

Marketing online is the most relevant factor for online marketing adoption with a mean score value of 4.33. This is followed by the ability to upload pictures easily (3.93%). The least factors be considered are customer demand and increased productivity with a mean score of 3.00 each. Moreover, the ease of use of the online marketing platform is very important to the car dealers with a mean score value of 3.66. The usefulness of the platform is the second to consider with a mean score value of 3.54 (see table 3)

Table 3. Reasons for online marketing adoption

Reasons for online marketing adoption	Mean
Easy to sell vehicles	3.68
Easy to interact with clients	3.83
Difficult to use	3.00
Online marketing is easy to use than offline marketing	3.48
Able to upload pictures of products easily	3.93
Easy competition	3.69
Conducting business online	3.69
Marketing online	4.33
Customer demand	3.00
Increased productivity	3.00
Ease of use of the platform	3.66
Usefulness of the platform	3.54

Source: (Field survey, 2017)

REGRESSION RESULTS

The model summary explains to what extent the independent variables together explain the dependent variable (Table 4). The R squared value of 0.365 means that together the independent variables explain about 36.5% of the online marketing adoption.

The ANOVA or analysis of variance is also a tool used to test how significant our model is in explaining the relationship between the variables (Table 5). The p value shows a significant figure (0.000) which means that our model is very strong or significant.

Equation

$$Y = \alpha + \beta_1 + \beta_2 + \beta_3 + \beta_4 + \mu$$

Y = online marketing adoption

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Table 4. Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.604[a]	.365	.319	.334	.365	7.913	4	55	.000

a. Predictors: (Constant), yrs_business, tech_know, REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1
b. Dependent Variable: online_adoption

Table 5. Analysis of Variance[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.525	4	.881	7.913	.000[b]
	Residual	6.125	55	.111		
	Total	9.650	59			

a. Dependent Variable: Online Adoption
b. Predictors: (Constant), Years in business, IT knowledge, Perceived Usefulness, Perceived Ease of Use

Table 6. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.842	.147		5.732	.000
	PU	-.139	.046	-.343	-3.020	.004
	PEOU	-.166	.044	-.410	-3.776	.000
	IT_know	.061	.074	.090	.824	.413
	Yrs_business	-.006	.006	-.109	-.982	.330

1. Dependent Variable: online_adoption

Let β_1 = Ease of use; β_2 = usefulness; β_3 = IT knowledge; β_4 = Years in business

Then Y = 0.842 - 0.139 - 0.166 + 0.61 – 0.006

The *table 6* above shows the test of hypotheses of this study. Two out four hypotheses stated (Ease of use and usefulness) showed a positive relationship between the independent variables dependent variable (online marketing adoption). Perceived Ease of use had the largest score with ρ value of ($\rho = .000 < 0.05$). This is followed by Perceived Usefulness with ($\rho = .004 < 0.05$). However, the other two hypotheses; IT knowledge and Years in Business did not have significant relationship with the dependent variable. Years in business ($\rho = .330 > 0.05$); IT knowledge ($\rho = .413 > 0.05$). This means that Years in business and IT knowledge do not contribute to our understanding on online marketing adoption by used car sellers in Ghana.

The coefficients of the regressors also show the overall effect of the independent variables on the dependent variable. On the whole all the variables returned a negative coefficient score with the dependent variable. Only one variable IT knowledge had a positive Betta score ($\beta = .061$). This means IT knowledge explains about 0.6% of online marketing adoption.

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DISCUSSION

This study sought to examine factors that influence e-Marketing adoption among second hand or used car dealers in Ghana. Two research objectives were stated. The first was to explore factors that influence adoption of online marketing by second hand car dealers in Ghana. Preliminary findings from this study with regards to factors for the online marketing adoption by Ghanaian car dealers are linked to the ease of use of the platform as well as the usefulness of the online platform. The usefulness factors include marketing online, customer demand and increase productivity. This finding supports earlier findings (Iddris and Ibrahim, 2015; Dhurup and Dlodlo, 2013; Qingfei, Shaobo & Gang, 2008).

Moreover, the ease of use of the online marketing platform is very important to the car dealers with a mean score value of 3.66. The ease of use factors include ability to upload pictures easily, easy to interact with clients, and also easy to sell vehicles online. This finding corroborates with earlier findings of (Iddris & Ibrahim, 2014; El-Gohary, 2012; Dhurup & Dlodlo, 2013; Venkatesh & Davis, 2000).

This study proposed and tested four research hypotheses to explore factors that influence e-marketing adoption among Ghanaian second-hand or used car dealers.

The first hypothesis which sought to state that the online marketing adoption would be influenced by perception of how easy it is to use the platform by second-hand car dealers was accepted. This means that there is a positive relationship between ease of use of the technology and online marketing adoption of car dealing business. This finding supports earlier findings (see Iddris & Ibrahim, 2014; El-Gohary, 2012; Dhurup & Dlodlo, 2013; Venkatesh & Davis, 2000).

Also, the second hypothesis which stated that usefulness of the sight would influence the adoption of online marketing was also accepted. This support earlier findings by (Iddris & Ibrahim, 2015; Dhurup & Dlodlo, 2013; Qingfei et al., 2008).

A number of studies have revealed that in SMEs, the role of CEOs (top management or owner/manager) is central to adoption of new technology (Fuller-Love, 2006; Smith, 2007). The third hypothesis which stated that educational status of the dealer or business owner would influence online marketing adoption was however found not to be significant. This means that knowledge of the owner/manager in IT would not necessarily influence their adoption of new technology in their business. This finding contradicts earlier findings which found that management's perception of and attitude on technology, support and commitment, knowledge and experiences influence the process of technology adoption in SMEs (see, Premkumar, 2003; Qureshi & York, 2008; Drew, 2003; Thong, Yap & Raman, 1993).

Also, the fourth hypothesis that stated that age of business would influence the technology adoption of the business in this study was also found not to be significant. This means that the age of the business in terms of number of years the business has been in business would not necessarily influence their adoption of new technology. This finding however, seems odd as there seems to be correlation between number of years or age of business and technology adoption.

CONCLUSION

This study focused on the factors that influence the recent adoption of e-marketing by used or second hand car dealers in Ghana. Hitherto, the second hand car dealers sold their products though middlemen and through their garage sales. However, in recent times these car dealers or sellers have taken to selling their cars through online portals in Ghana. This research has shown that smaller firm online marketing

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adoption is influenced by number of years in business, educational level of the SME business owner, ease of use of the platform and usefulness of the platform. Exploiting online marketing adoption by SMEs is crucial to growing the smaller firm. This therefore means that SME business owners in Ghana have seen the need to adopt technology to foster growth and become more competitive in this competitive environment. This is really encouraging considering the country's low and slow rate of technology adoption. When utilized effectively, online marketing has the potential of propelling the small businesses business growth and long-term survival.

IMPLICATIONS OF THE FINDINGS

This paper has implications for both managers and future research.

Implications for Managers

SMEs in least developed countries with infrastructural challenges and constraints, first need to develop the IT infrastructure to implement any online marketing strategy. Online marketing strategies will be expensive, and returns will be slow in the short-term but may improve in the long-term. Infrastructure access may also create competitive barriers that may not be easily overcome. As such the need to keep a patience posture and not to abandon the strategy midway due to unrealised expected outcome.

Secondly, SME owners should partner with firms with strong IT knowledge and experience to be able to learn and build their capacity to utilize online marketing strategies. Smaller firms grow successfully learning and upgrading their skills. Despite the severe resource constraints for SMEs in least developed countries, training and skills development and acquisition should be their topmost priority as these capabilities can serve as a longer-term low-cost growth catalyst, much in the same way that networking, word of mouth marketing and exploiting of relationships can help the smaller firm to develop.

Implications for Future Research

The present research, based on factor analysis and correlation analysis, will provide a platform for undertaking further research in advancing theory building into SMEs adoption of technology especially from less developed countries. Future research could also exploit the effect of online marketing adoption on profitability and growth of SMEs.

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REFERENCES

Awa, H. O., Nwibere, B. M., & Inyang, B. J. (2010). The uptake of electronic commerce by SMEs: A Meta theoretical framework expanding the determining constructs of TAM and TOE frameworks. *Journal of Global Business and Technology*, *6*(1), 1.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Basu, A., & Muylle, S. (2007). How to Plan E-Business Initiatives in Established Companies. *MIT Sloan Management Review*, *49*(1), 11–22.

Chau, P. (1996). An Empirical Assessment of a Modified Technology Acceptance Model. *Journal of Management Information Systems*, *13*(2), 185–204. doi:10.1080/07421222.1996.11518128

Chen, L., Gillenson, M. L., & Sherrell, D. L. (2002). Enticing online consumers: An extended technology acceptance perspective. *Information & Management*, *39*(8), 705–719. doi:10.1016/S0378-7206(01)00127-6

Chung, W. W., Hua Tan, K., Lenny Koh, S., Pavic, S., Koh, S., Simpson, M., & Padmore, J. (2007). Could e-business create a competitive advantage in UK SMEs? *Benchmarking. International Journal (Toronto, Ont.)*, *14*(3), 320–351.

Collis, J., & Hussey, R. (2009). *Business Research: A Practical Guide for Undergraduate and Postgraduate Students* (3rd ed.). Basingstoke: Palgrave Macmillan.

Cote, L, Vezina M., & Sabourin, V. (2005). The strategic management process in business. *Ivey Business Journal*.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Quarterly*, *13*(3), 319–340. doi:10.2307/249008

Dennis, C. (2005). *Objects of Desire: Consumer Behaviour in Shopping Centre Choice*. London: Palgrave. doi:10.1057/9780230509481

Dennis, C., Merrilees, B., Jayawardhena, C., & Wright, L. T. (2009). E-consumer behavior. *European Journal of Marketing*, *43*(9/10), 1121–1139. doi:10.1108/03090560910976393

Dhurup, M., & Dlodlo, N. (2013). Selected Special Media Antecedents: Attitudes Towards and Behavioural Impacts on Its Usage Among Consumers in A Developing Country. *Studia Universitatis Babes BolyaiOeconomica*, *3*, 90–109.

Drew, S. (2003). Strategic uses of e-commerce by SMEs in the east of England. *European Management Journal*, *21*(1), 79–88. doi:10.1016/S0263-2373(02)00148-2

Dwivedi, Y. K., Papazafeiropoulo, A., Parker, C. M., & Castleman, T. (2009). Small firm e-business adoption: A critical analysis of theory. *Journal of Enterprise Information Management*, *22*(1/2), 167–182. doi:10.1108/17410390910932812

El-Gohary, H. (2012). Factors affecting E-Marketing adoption and implementation in tourism firms: An empirical investigation of Egyptian small tourism organisations. *Tourism Management*, *33*(5), 1256–1269. doi:10.1016/j.tourman.2011.10.013

Fathian, M., Akhavan, P., & Hoorali, M. (2008). E-readiness assessment of non-profit ICT SMEs in a developing country: The case of Iran. *Technovation*, *28*(9), 578–590. doi:10.1016/j.technovation.2008.02.002

Fuller-Love, N. (2006). Management development in small firms. *International Journal of Management Reviews*, *8*(3), 175–190. doi:10.1111/j.1468-2370.2006.00125.x

George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference. 11.0 update* (4th ed.). Boston: Allyn & Bacon.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Grandon, E. E., & Pearson, J. M. (2004). Electronic commerce adoption: An empirical study of small and medium US businesses. *Information & Management*, *42*(1), 197–216. doi:10.1016/j.im.2003.12.010

Hoffman, D. L., & Novak, T. P. (1996). Marketing in hypermedia computer-mediated environments: Conceptual foundations. *Journal of Marketing*, *60*(3), 50–68. doi:10.2307/1251841

Iddris, F., & Ibrahim, M. (2015). Examining the relationships between e-Marketing adoption and Marketing Performance of Small and Medium Enterprises in Ghana. *Journal of Marketing and Consumer Research*, *10*, 160–169.

Liao, Z., & Cheung, M. T. (2002). Internet-based e-banking and consumer attitudes: An empirical study. *Information & Management*, *39*(4), 287–301. doi:10.1016/S0378-7206(01)00097-0

Lim, W. M. (2010). Factor analysis of variables affecting e-marketing adoption by UK independent hotels. In *Information and Communication Technologies in Tourism* (pp. 39-50).

Lin, J. C. C., & Lu, H. (2000). Towards an understanding of the behavioural intention to use a web site. *International Journal of Information Management*, *20*(3), 197–208. doi:10.1016/S0268-4012(00)00005-0

Lynch, P. D., & Beck, J. C. (2001). Profiles of Internet buyers in 20 countries: Evidence for region-specific strategies. *Journal of International Business Studies*, *32*(4), 725–748. doi:10.1057/palgrave.jibs.8490992

Malhotra, N. K. (2010). *Marketing research: An applied orientation* (6th ed.). New Jersey: Pearson Prentice-Hall.

McKinney, V., Yoon, K., & Zahedi, F. (2002). The measurement of web-customer satisfaction: An expectation and disconfirmation approach. *Information Systems Research*, *13*(3), 296–315. doi:10.1287/isre.13.3.296.76

Novak, T. P., Hoffman, D. L., & Yung, Y. (2000). Measuring the customer experience in online environments: A structural modeling approach. *Marketing Science*, *19*(1), 22–42. doi:10.1287/mksc.19.1.22.15184

Opia, O. (2008). An Exploratory study of the Moderating effects of Trust on E-commerce Adoption Behaviour of Nigerian small Enterprises. *African Journal of Entrepreneurship*, *1*(1), 43–51.

Palmer, J. W. (2002). Web site usability, design, and performance metrics. *Information Systems Research*, *13*(2), 151–167. doi:10.1287/isre.13.2.151.88

Payne, J. E. (2003). E-Commerce Readiness for SMEs in Developing Countries: A Guide for Development Professionals. Retrieved from http://learnlink.aed.org/Publications/Concept_Papers/ecommerce_readiness.pdf

Premkumar, G. A. (2003). Meta-analysis of research on information technology implementation in small business. *Journal of Organizational Computing and Electronic Commerce*, *13*(2), 91–121. doi:10.1207/S15327744JOCE1302_2

Qingfei, M. I. N., Shaobo, J. I., & Gang, Q. U. (2008). Mobile Commerce User Acceptance Study in China: A Revised UTAUT Model. *Tsinghua Science and Technology Journal*, *13*(3), 257–264. doi:10.1016/S1007-0214(08)70042-7

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Qureshi, S., & York, A. S. (2008). Information technology adoption by small businesses in minority and ethnic communities. In *Proceedings of the Annual Hawaii International Conference on System Sciences*, Big Island, HI, January (pp. 1530–1605). 10.1109/HICSS.2008.204

Sekaran, U. (2000). *Research Method for Business: A skill Building Approach*. New York, NY: John Wiley & Sons.

Smith, M. (2007). Real managerial differences between family and non-family firms. *Journal of. Entrepreneurial Behaviour & Research*, *13*(5), 278–295. doi:10.1108/13552550710780876

Thong, J. Y. L., Yap, C.-S., & Raman, K. S. (1993). Top management support in small business information systems implementation: How important is it? In *Proceedings of the ACM SIGCPR Conference*, Syracuse, NY, April. 10.1145/158011.158256

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, *46*(2), 186–204. doi:10.1287/mnsc.46.2.186.11926

Wolfinbarger, M., & Gilly, M. C. (2002). comQ: dimensionalizing, measuring and predicting quality of the e-tail experience (Working Paper No. 02-100). *Marketing Science Institute*, Cambridge, MA.

Xia, L. (2010). An examination of consumer browsing behaviors. *Qualitative Market Research*, *13*(2), 154–173. doi:10.1108/13522751011032593

Zhang, P., & Von Dran, G. M. (2002). User expectations and rankings of quality factors in different web site domains. *International Journal of Electronic Commerce*, *6*(2), 9–33.

Zhou, L., Dai, L., & Zhang, D. (2007). Online shopping acceptance model – a critical survey of consumer factors in online shopping. *Journal of Electronic Commerce Research*, *8*(1), 41–62.

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Section 5

Organizational and Social Implications

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Chapter 72
Examination of the Extent and Effects of Strategic Management on E-Commerce Companies

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ABSTRACT

Internet technology can be used not only in commercial applications but also in the implementation and distribution of public services like education and health, making e-commerce essential not only for the business world but also for all of society. Thus, companies can take advantage of internet opportunities in order to develop their strategies in e-commerce environment, creating working groups by bringing together employees in different geographical locations with tools such as newsgroups, communication rooms, etc., benefiting from customer suggestions. Therefore, it is important to examine and analyze the companies that have commercial activities in e-commerce environments in terms of strategic management. From a strategic point of view, the aim of companies should be to increase their activities by influencing their existing customers and continuously gaining new customers within the e-commerce environment.

INTRODUCTION

E-commerce is about the purchase and sale of products, services, and information through computer networks and is a very important phenomenon for both companies and consumers. E-commerce provides marketing platforms for products, services and information, enables customer support before and after the sale, and builds commercial communication between organizations and customers through computer networks. Furthermore, e-commerce enables instant access to information, products and services all over the world. The organisations with strong internet infrastructure can offer 24/7 e-commerce options, which eliminate 'time problems' that limit the shopping experiences of consumers/customers.

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Due to ever-increasing competition and constantly evolving market conditions, society has created the concept of a new economy. When we say new economy, we think of a situation where people's mental activities have adapted along with the formation of advanced technologies. This concept of a new economy is also considered a creation of e-commerce organisations operating over the internet (Marangoz, 2014). Most importantly, e-commerce companies offer products and/or services in the internet environment to other regions, and they have to think fast and make swift strategic decisions in order to create value. In this new economic environment, the products and services of e-commerce companies depend on two different technologies (Marangoz, 2014):

- Information
- Communication

The tools of these technologies are computer software, telecommunications, and the internet. E-commerce companies benefit from the opportunities provided by the internet environment: keeping records and information on virtual platform, the ease of accessing information in an electronic environment any place and at any time without the need of another person.

Indeed, it is specifically because the Internet allows consumers to compare products/services according to their prices and quality before making decisions and purchase dependent on budgets and requirements that e-commerce companies must consider these factors before creating their strategy (Zwass, 2003). Internet technology offers access to information regardless of location and in the event of problems experienced by customers, the ability of e-commerce companies to use internet to reach information increases a company's responding to the needs of its customers (Dixon & Quinn 2004). In this way, customers value the service they received and remain as permanent customers. Thanks to ever-developing technology, the Internet provides an infrastructure for sharing data and enables the cooperation of employees. In terms of business strategies, there are two types of e-commerce companies: companies with no physical stores or those with physical stores (Erkan, 2012). At the same time, there are two types of operational dimensions within e-commerce: Narrow or Broad sense. A Narrow business strategy allows businesses to carry out their activities freely and offer their own products and services to consumers over web-based systems (Bozkurt, 2000). In the broad sense, an e-commerce business strategy is defined as the inclusion of special e-commerce systems in addition to the shopping experience of consumers/customers over the internet. In this article, the importance of e-commerce in terms of its advantages and disadvantages, as well as its effects on an organization will be examined within the framework of strategic management.

DEFINITION OF E-COMMERCE

E-commerce in the internet environment not only enables more efficient transactions, but also provides an opportunity for companies to take advantage of cost advantages and provide better service to customers. The internet provides opportunities to companies to reduce their costs while making it possible for most services to be carried out online (Lituchy & Rail, 2000). The rapid growth of the internet enables service and manufacturing companies to create a distribution channel at a low cost and to have easier access to global markets (O'Connor, 1999).

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Nowadays, the quality of customer service can be evaluated according to the services companies offer through the Internet (Heung, 2003). With the emergence of the Internet and the continuous development of Internet technology, the search and purchase behaviour of consumers has changed significantly. The service and products of companies can be compared as there are many web portals publishing evaluations, therefore it leads companies to provide products and services that are customer-oriented. The most important privilege offered by e-commerce is that customers use the opportunities offered by technology with devices such as smart phones, tablets, laptops, etc. (it may even be possible to make purchases from smart wristwatches), and they can now receive service whenever and wherever they want (Chung & Law, 2003). Customers who are interested in technology can also select parts according to their requirements and likings and create the product themselves. The opportunities provided in the e-commerce environment change the shopping habits of the customers, allowing them to order over the internet, save time, and get the products delivered to their prepared location instead of visiting stores. In this way, customers enjoy and value the shopping experience more fully.

Law (2000) explains that the internet allows direct communication with customers and suppliers by eliminating barriers. In particular, the fact that customers give more importance to the quality of service has led companies to start offering more personalized services to their customers through their website (Lituchy & Rail, 2000). Due to the faster growth of the services sector, the use of traditional indirect distribution channels has decreased and more direct channels have developed (Williams & Palmer, 1999). As consumers & customers gain more internet experience, the probability of them getting used to electronic shopping rises (Card, Chen, & Cole, 2003). Companies that understand the importance of e-commerce see their web sites as a tool that brings 80-90% of business from around the world, with the internet being the most important primary marketing tool (Eimer, 2000).

Since 1995, with the increase in internet usage, e-commerce has become more widespread and gained importance in terms of competition between companies (Wymer, & Regan 2005). During the years that the Internet was not an option or was not widespread, the companies would offer their goods and services to markets using tools such as radio, newspaper, and television. In today's world, the wide use of the Internet gradually caused an increase in virtual markets, both in terms of the number of e-commerce businesses and the number of products & services offered to customers. In terms of business strategies, there are two types of e-commerce companies:

- Companies without physical stores
- Companies with physical stores (Erkan 2012).

Narrow e-commerce refers businesses that operate freely, offering their own products and services in web-based systems (Bozkurt, 2000). Whereas, broad e-commerce is described as shopping on the internet, which includes special electronic commerce systems. Specifically, companies should consider some important elements during their decision-making process, before starting their activities in the e-commerce environment:

- Electronic Funds Transfer (EFT)
- Electronic Banking, Electronic Data Interchange (EDI)
- Electronic Message Sending and Receiving etc.

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*Electronic Funds Transfer (EFT)***:** The EFT system is used as a transfer of money between two banks. Today, thanks to the internet banking offered by banks, payments can be made via smart phones, tablets, and laptops at any time with EFT (Coşkun, 2004).

Electronic Data Interchange (EDI): EDI was first used in North America in the 1960s, and it is also called information exchange. The aim of the system is to reduce paper consumption, help commercial transactions between companies, and provide faster shipments (Sezgin, 2013).

Sending and Receiving Electronic Messages: From the 1970s until present, messages have been sent through the internet, and the most important tool for sending messages has been e-mail. One of the main objectives in the development of the e-mail system is to prevent the consumption of paper and to quickly communicate information (Çubukcu & Bayzan, 2013).

The New Economy: The concept of the new economy was created by businesses offering their products and services through their web pages (Marangoz, 2014). In particular, the new economy is a situation where people's' mental activities increase in pace with the development of advanced technology opportunities. Thus, the emergence of the new economy concept is to increase customer potential by reaching more consumers, while improving thinking and decision making.

In the new economy, products and services are based on two different technologies (Marangoz, 2014):

- Information (structured and formatted data)
- Communication (transfer of information from sender to recipient)

The tools needed to these two technologies are computer software, telecommunications, and the internet. One of the most obvious advantages that the Internet provides is advertisement for e-commerce companies that costs less if at all (Rogers, Bennett, & Grewal, 2007) . With the increasing number of social network users over the internet, e-commerce companies have started to display their ads on social networks primarily because smart phone users share information around their social networks, increasing ad visibility with their social media activities.

The Historical Development of E-Commerce

In 1950, the production of computers started with the advent of ARPANET, the name that represented a project between the army and university in 1969, and later became known as the Internet (Erkan, 2012). With the discovery of the Internet, people began to communicate more easily, and with the development of communication opportunities, this innovation led to the development of e-commerce (Zhu & Kraemer, 2002). And, through e-commerce, companies found new markets and started to increase their market share, starting with. the company that made the first sale over the Internet an American restaurant in central Texas. Starting in 1990, with widespread internet use, e-commerce was one of the most innovative concepts in today's world. Just a couple years later, in 1994, a Pizza Hut restaurant accepted its first order via their web page, followed by the establishment of some of the most important companies of e-commerce: Amazon.com in 1994, and Ebay.com in 1995 (Worzala et al., 2002).

Marketing and trade have been reshaped through the development of the Internet (Yeşil, 2008), but within the e-commerce world, there are differences between concepts of marketing and trade. Trade is limited to the exchange of a product between seller and buyer; however, marketing is about providing product information, promotion, and after-sales activities. The gains achieved in trade and marketing are two important concepts in terms of strategic management, and on the Internet, trades between the

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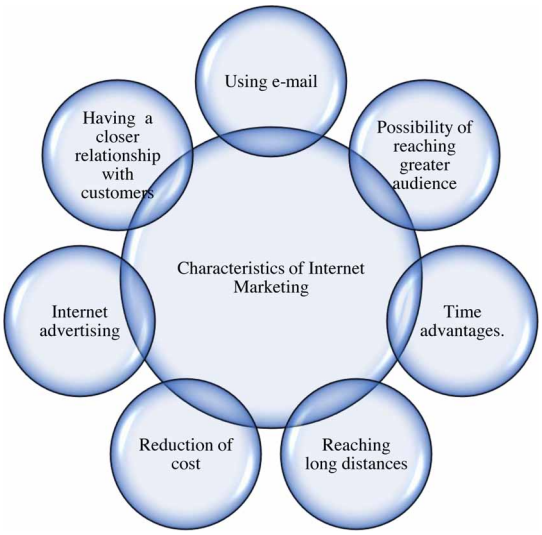
buyer and the seller mean more marketing. The traditional marketing is very costly and takes time to reach people; whereas, internet marketing can reach millions of people, if not billions, in seconds using an effective marketing method (Hart, Doherty, & Ellis-Chadwick, 2000). Internet marketing has many advantages compared to traditional marketing methods, including the necessity of face-to-face contact with customers in business relations, a key disadvantage in traditional marketing (Schibrowsky, Peltier, & Nill, 2007).

As a whole, the modern e-marketing methods are strategically important, as they are faster, less costly, and do not require face-to-face contact with customers. Therefore, when we look at the characteristics of the development of internet marketing (Figure 1), there are important elements of e-commerce environment.

Figure 1. Characteristics of Internet Marketing



Before the internet, some international brands were providing distant sales in a diverse ways.

Companies such as Oriflame and Avon were performing their marketing activities in traditional ways prior to e-commerce (Erkan 2012). Similarly, there were companies such as Shopping TV and Top Shop which carried out marketing activities with TV programs. Nowadays, these companies still continue their activities, showing the importance of e-commerce.

Scope of E-Commerce

Information technologies, communication, and similar concepts are parts of e-commerce (Yeşil, 2008). Each activity within the commercial sector has results on the internet that are seen as e-commerce. Businesses want to keep in close contact with their suppliers in order to respond to the expectations of their customers more efficiently. It is possible to look at e-commerce from two perspectives: the commercial and service vantage point. The commercial aspect of e-commerce depends on technology; whereas, the service aspect of e-commerce is related to providing information, payments and similar services over the

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internet (Forman, Goldfarb, & Greenstein, 2005). In short, e-commerce is the sale of goods and services, carrying out transactions such as insurance, distribution, etc. over the internet.

When we consider e-commerce in a broader sense, there are several issues listed below that companies should give attention to in terms of strategic management and customer satisfaction (Marangoz, 2014):

Scope of E-Commerce

- Production planning and production chain creation
- Electronic exchange of goods and services
- Bank operations in a virtual environment
- Electronic bank transactions and fund transfers
- Ordering
- Sending a bill of lading via the internet
- Customs clearance
- Public procurement on the internet
- E-mail related transactions
- E-share and stock market trading
- Transfer of intellectual property rights
- Making a deal
- Production planning
- Taxation on the internet
- Creating and transferring on-site information
- Marketing to consumers
- Keeping and monitoring of trade records
- Electronic signature and electronic notary

Scope of E-Commerce Summary

Carrying out business activities in the electronic environment is called e-commerce, which includes electronic processing and transmission of commercial transactions in text, audio, and video format. E-commerce includes all activities related to the design, production, promotion of products, commercial transactions and payments, as well as all types of activities through computer networks (King, Sen, & Xia, 2004). In summary, e-commerce covers all kinds of goods and services. In order to conduct e-commerce relations, it is necessary to have communication facilities with internet technology, and the most efficient and rapid development of the internet is definitely web pages where businesses with specialized e-commerce activities can be accessed using web search tools (Kaufmann, Cliquet, & Achabal, 2010).

Many IT companies continue their R & D activities through new e-commerce tools and environment, some of which are;

Electronic commerce has developed very rapidly because the Internet environment eliminates time and space limitations, providing low costs and commercial transactions that can be carried out by one or more people in an interactive platform. Additionally, the internet is more flexible than other e-commerce tools, resulting in the difficulties and barriers of the trading environment decreasing (Ene, 2002).

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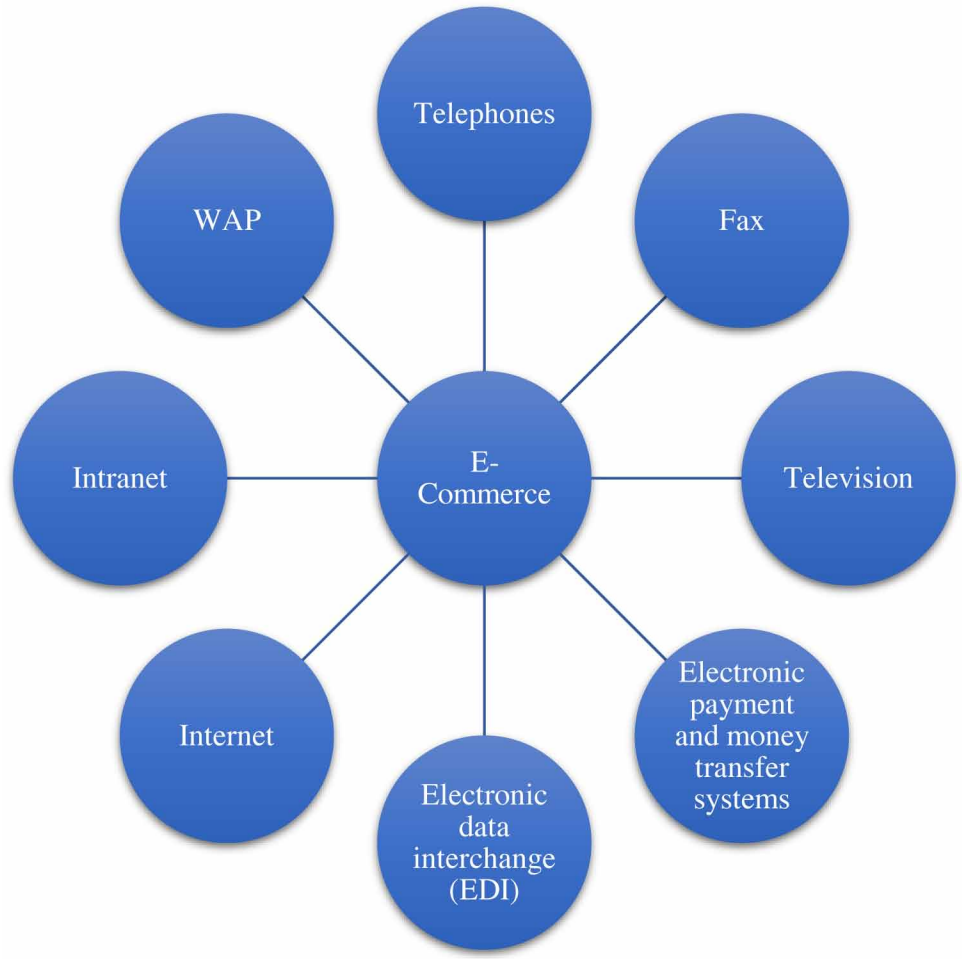
Figure 2. E-commerce Tools



The important points of e-commerce can be listed as follows: (Dolanbay, 2000)

- E-commerce is the largest business gateway to the world.
- E-commerce may require radical decisions in all working methods.
- E-commerce addresses consumers through a different culture.
- In the e-commerce system, it is almost impossible to detect the mass of consumers and the market share in advance.
- The future position of the e-commerce business will be determined by planned services.
- E-commerce requires leaving the idea of regionalism.

E-commerce activity types can be examined according to their legal status (Arıkan, 1999).

Promotion activities on the market: The buyer and seller in the e-commerce environment without face-to-face contact;

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- Sellers carry out market research, product planning, and advertising the product
- The buyer determines the best product by comparing them in an e-commerce environment.

Contractual activities: At the stage of contracting in an electronic environment;

- The buyer orders the product under the terms and conditions.
- The seller can start the transaction according to the order.

Communication between the two sides about logistics operations:

- E-commerce can provide systems that show the location of the product, transfer, and delivery processes.

Activities related to the payments:

- Payment and billing are among the activities of e-commerce in an electronic environment.

E-Commerce Standards

Some of the standards that e-commerce companies must follow (Canpolat, 2001; Çakırer, 2013):

- E-commerce companies should develop the Frequently Asked Questions (FAQ) section.
- E-commerce companies should inform their customers about the amount of existing products, delivery times, and estimated delays.
- The customer should be able to see the product stock information about the product he or she wants to buy.
- E-commerce companies should inform the customers regarding the return procedures before the purchase of the product.
- The customer must be able to see all the billing information of the company before purchasing the product.
- E-commerce companies should specify the warranty conditions for each product to their customers.
- Customers must be informed about after-sales support and services.
- E-commerce companies should put "search engines" on their websites which enable their customers to easily search for products or services.
- E-commerce companies should announce that the customer information is secure and will not be shared with third parties.
- E-commerce companies cannot request information unrelated to business transactions (such as race, religion, sect) without the consent of customers, and if they get this information with the consent of their customers, they should take preventive measures to keep it confidential
- E-commerce companies should take measures to prevent brand age and protect their logo against any abuse.
- E-commerce companies are responsible for the security of all information regarding payment, financial information, and buyer identity.
- E-commerce companies should correct the missing and/or wrong information as soon as possible.

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- E-commerce companies should provide payment facilities (Credit Card, Debit Card, EFT/Money Transfer etc.) for the customer who want to buy the product.
- E-commerce companies should get the payment of the product either during the online sale or when the product is delivered.
- E-commerce companies should indicate when the customer will be charged for the purchase of the products on the last transaction page.
- E-commerce companies must notify the customer in advance of the delivery date of the product.
- E-commerce companies should notify the customers about the products they ordered by e-mail, fax, sms, or through web pages.
- E-commerce companies should ask the billing information of the customer.
- The customer should see the latest status of the product with internet-based reporting.
- E-commerce companies should insure the product against any damage that may occur during delivery.
- E-commerce companies should tell the customer how long it takes for the product to reach the customer.
- E-commerce companies should provide cargo information about the product by e-mail, fax or web page.
- E-commerce companies should provide customers the right to return the product in a pre-specified period and offer refunds as soon as possible.
- E-commerce companies should provide information about the return conditions and the refund policy regarding the product.
- E-commerce companies should provide information about the last return date with the refund conditions.
- The customer should easily be able to access the return conditions on the e-commerce company's website.
- E-commerce company's web page should display a link to customer services.
- E-commerce companies should review and respond to questions and complaints about products and/or services from customers.
- E-commerce companies should provide the customer with the opportunity to contact the manufacturer if they cannot solve the problem regarding the product and/or service.
- E-commerce companies should inform the customer after supplying a product that is not in stock.
- E-commerce companies should inform the customer if it cannot supply the requested product.
- E-commerce companies should inform customers about changes in the policies of the company.
- E-commerce companies should not collect specific information for themselves and third parties by taking advantage of the naivety and inexperience of children under 12 years of age without the direct knowledge and consent of parents.
- E-commerce Companies definitely should not take orders from children without the consent of parents (Canpolat, 2001; Çakırer, 2013).

E-Commerce According to Activities

E-commerce activities can be examined in sections, according to their activities both indirect and direct (Ene 2002).

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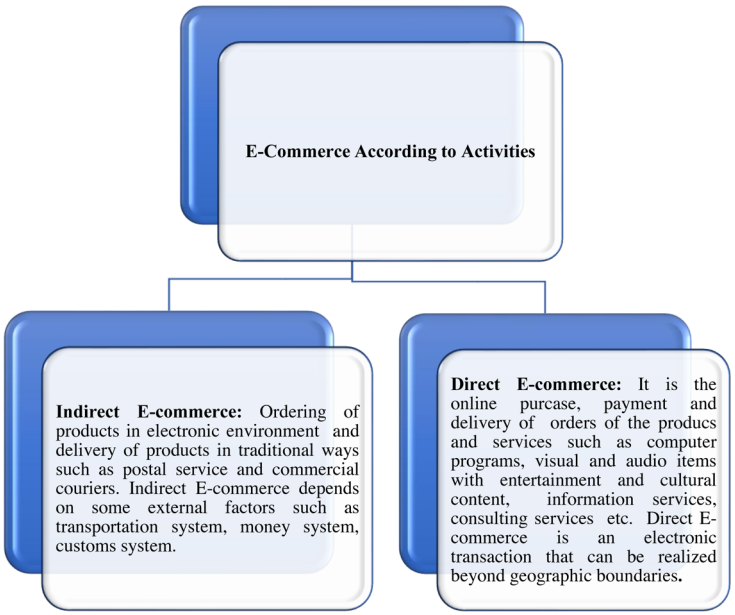
Figure 3. E-commerce activities (Ene 2002)



Indirect Parties to E-Commerce; The main indirect parties of e-commerce are buyers, sellers, manufacturers, banks, brokers, insurance companies, transport companies, non-governmental organizations, universities, customs offices, Foreign Trade Offices, and information technology companies. Networks that the parties communicate with are multiple: the Internet, Intranet and an Extranet (Özbay & Akyazı, 2004).

Effects and Benefits of E-Commerce

E-commerce has caused some economic and social changes (Arpacı & Uluçay 2012).

- Through e-commerce, economic impacts are increasing.
- Through e-commerce, competition is increasing among organisations.
- Through e-commerce, the overall costs of organisations are decreasing
- Through e-commerce, the decrease in costs is reflected in the prices of the products.
- Through e-commerce, product options are increasing.
- Through e-commerce, market power is transferred to the consumer.
- Through e-commerce, 24/7 continuous trading and shopping opportunities are offered.
- Through e-commerce, ‘transparency’ and ‘openness’ are becoming widespread.
- Through e-commerce, the importance of being geographically close to the market is disappearing.
- Through e-commerce, the efficiency of web-based marketing and online order is increasing.
- Through e-commerce, the market structure is changing.

E-commerce has different effects on companies, societies, and individuals. E-commerce companies are more adaptive to the conditions in the markets and to customer expectations, thereby gaining com-

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petitive advantages against other companies (Ngai & Wat, 2002). With e-commerce, business processes are shortened, daily work tracking takes shorter time frames, costs decrease, and productivity increases. Thanks to e-commerce, companies can increase their product options on their web pages, the quality of the products increase as the buyers have the opportunity to make comparisons, payments can be made quickly and with different methods, and the product can be delivered faster (Molla & Licker, 2005). Furthermore, the entry of low-priced and high-quality products into the market leads to increased competition among manufacturers and reduces the cost of all business transactions. Thanks to e-commerce and the development of Internet technology this development starts from computers and goes up to the smart phones and smart wristwatches today, information provided to the customers about the products in the market from all over the world and new manufacturers are allowed to enter the world market (Wade & Nevo, 2005). It is almost impossible for us to imagine what technology will come up with in the next 10 years as it continues to develops. In fact, these developments push companies to make new strategic moves and to think with a technology-focused approach. E-commerce brings manufacturers and consumers together and eliminates commercial barriers and disadvantages: distance to the market, lack of information, and an inability to produce according to demand etc. If companies do not have any knowledge and experience in e-commerce, they are still able to use the Internet for the purpose of advertising or market research in the first stage (Becker, 2007). As they gain knowledge and experience, they can start to conduct more professional e-commerce activities. E-commerce is the best solution for companies that want to sell abroad but cannot open stores. Although the initial investment costs are high, it is still an economical alternative due to the fact that the company will have less expenses over time, in terms of location, sales services, and customer service.

The Effects of E-Commerce on Economic Life

E-commerce affects almost every field of economic life and causes great changes. However, some units of business life are more affected by this change.

Economic Life Activities Affected by E-Commerce

E-commerce activities that affect economic life (Korkmaz, 2002);

- Marketing, sales, and promotion
- Pre-sale and supply
- Financing and insurance
- Business transactions: order, delivery, and payment
- Service and maintenance
- Mutual product development and work
- Using public and private services
- Public transactions, taxes, customs etc.
- Delivery and logistics
- Public procurement
- Accounting
- Automated trading of electronic products
- Settlement of disputes.

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Changes Brought by E-Commerce

Changes brought by e-commerce (Kepenek, 1999)

E-Commerce carries the marketplace from a physical place to a virtual platform. The latest reorganization of shopping activities and the maintenance of trade-related services will require the training of skilled manpower to carry out these functions.

E-Commerce has an accelerating and disseminating effect on trading and related transactions. In particular, the process of the transactions change depending on the developing technological infrastructure of the organisations.

E-Commerce increases the operating density of the economy as economic relations between businesses and consumers are reinforced by e-commerce, enabling businesses and consumers to operate on a world scale.

Businesses should be transparent towards their customers and suppliers. As a whole, the most beneficial aspect of e-commerce is that it is expected to strengthen competition, and the most disadvantageous aspect is the need to protect private information against possible attacks.

E-Commerce changes the relative importance of time since there is a principal that the economic activities are realized in a short period of time, thereby shortening the processing times.

Benefits of E-Commerce

E-commerce enables the commercial transactions & activities between the buyer and seller to be realized over the internet. Companies can engage in marketing activities about their products and/or services through the internet network, and can respond to requests and complaints from their customers, provide after-sales services, and thus, have the chance to collect significant data regarding customer satisfaction (Young, Clark, & McIntyre, 2006). The most important advantage of e-commerce is that it breaks down the traditional trade concepts and enables the buyers and sellers from all over the world to meet 24/7 (Hoffman & Novak, 2000). Thanks to the internet, companies can expand their customer portfolio by crossing borders. E-commerce is not only a matter of concern to companies, but it also concerns all consumers and customers who benefit from the opportunities and advantages of E-commerce (Gibbs & Kraemer, 2004). There are definitely positive changes through e-commerce (Afra, 2014):

- Through e-commerce, companies are growing beyond the borders and competition is increasing.
- E-commerce reduces the costs of companies.
- Through e-commerce, consumers have the opportunity to buy quality and cheap products at any time.
- E-commerce systems reduce companies' inventory costs.
- Through e-commerce, consumers have the chance to compare products and prices.
- E-commerce facilitates the planning of production, and therefore, the efficiency of production increases.
- E-commerce allows companies to provide efficient and effective customer service.
- E-commerce reduces the costs of sales, marketing, and distribution.
- Through e-commerce, companies can quickly and effectively adapt to the changes that will occur in the market as well as the introduction of products.
- Through e-commerce, trade is made easier and more efficacious.

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- Through e-commerce, companies develop their commercial activities and become global, gathering more shares from international trade.

Effects of E-Commerce on Management

E-commerce has a positive effect on working areas of the companies and on the speed of communication with their customers (Korkmaz, 2002). Consumers and customers are able to make purchases in the e-commerce environment at any time for the products and/or services they want to buy. Buyers have the opportunity to make comparisons between products and/or services, while companies with intranet network have access to up-to-date promotional advertisements and prices for products and/or services (Porter & Michael; ilustraciones Gibbs, 2001). With the widespread use of the internet, it is possible to reach the requested information anywhere and at any time (Forman, 2005). With the increasing use of this opportunity, the e-commerce companies have developed online customer service operating from their web pages in order to provide better quality service to their customers (Kantarcı et al., 2017). The internet not only offers advantages to buyers, but also allows business people to access information about the production and sales numbers from web pages at any time (Luo, Hongxin, Zhao, & Du, 2005). It has become even more important for buyers and sellers to reach information comfortably, and in today's world, the companies with different locations can collect data from each location and create working groups with Internet technology. Data from different locations and working groups create a platform where new strategically ideas and opinions are generated.

STRATEGIC MANAGEMENT AND ITS ELEMENTS AS A CONCEPT

When examining the concept strategy, we see the term 'strategos', which Greek means 'General'. What is the strategy in literature? It is a question that does not have a mutual or clear answer. According to Mintzberg and colleagues, one of the famous strategy theorists, the concept of strategy refers to "army" and "governing" (Mintzberg et al., 2003). The reason behind Mintzberg's thinking is that the concept of "General" is related to both the army and the concept of governance. Naturally it was difficult to explain in a single concept. When we look at the concept of strategy in terms of business management, it is explained as the process that defines business goals and policies. However, since the concept of strategy includes very different ideas and opinions, it has been considered from different perspectives and different definitions in the literature.

According to Eren (2010), it has been defined as a selection of elective decisions on how to optimize the operations of an organisation that has an important effect on the organization and general objectives of the business, helping a business to find solutions to complex business situations. Ülgen and Mirze (2010) define strategy as the whole of result-oriented and dynamic decisions, which are taken with a visionary perspective by analyzing the competitors, in order to reach the objectives of the business. In short, it can be explained as leaders and managers who analyze the external environment of the business, bring the resources together, and organise them effectively to achieve the long term aims of the organisation.

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Basic Elements of Strategic Management

Strategic management begins with the strategic consciousness of an organisation. The initiation of strategic consciousness starts when the managers think about the various strategies of competitors, how they can develop counter moves against these strategies, and how they can benefit from opportunities and threats in the competitive environment (Hitt, Ireland, & Hoskisson, 2012). From this perspective, the basic elements of strategic management include important elements such as the mission and vision of the organisation, the strategic consciousness of top managers, strategic choices, and the analysis of the external environment.

Figure 4. Basic Elements of Strategic Management

If senior executives want to be successful architects and coordinators, they need to be global leaders with both intuitive and participatory aspects in analyzing and making decisions with the data they obtained (Dinçer, 2007).

Senior executives need to respond to two key questions in the strategic management process (Dinçer, 2007):

a) What is our type of business and what is the work being done?

This question is entirely related to the mission of the business and how the organisation defines itself. For this reason, organisations have to define their missions to society in a clear, understandable, and open manner.

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b) Why are we doing this?

In order to define objectives, an organisation should answer the question of why it is carrying out the work. Companies wishing to operate in the field of e-commerce should strategically determine what they want to do, why they want to operate in this field, what their objectives are. After defining the mission, vision, goals and objectives, prospective e-commerce companies should be careful in terms of analysis, finding the right direction, determination of strategies, and the final steps of evaluation and implementation (Martin & Pénard, 2005). In terms of strategic management, e-commerce companies need to identify their vision. Today, vision is one of the most misunderstood and overused words. Vision means a picture shared by all employees about the organization's future; the place where the organization wants to be in the future its horizon. In other words, the vision is a cognitive design that combines the beliefs of how to reach a desired situation, how to be at a targeted place in the future (Güçlü, 2003).

In terms of strategic management, e-commerce companies need to analyze their external environment. If this analysis is not carried out, we cannot say that the life of the companies operating in the field of e-commerce will be very long because the changes and developments of the external environment are considered one of the most decisive elements of strategic management in terms of decision-making and implementation. The continuous changes in the environment and the long time horizon of strategic management increase the uncertainty and thus highlight the importance for the organisation (Mariz-Pérez & García-Álvarez, 2009). Therefore, for the decision-making mechanisms in strategic management, it is important for e-commerce companies to identify opportunities and threats through the analysis of the external environment. The external environment analysis is important for choosing the appropriate strategy for the success and development of the company in the long term (Üzün, 2000).

Types of Strategies

The selection of appropriate strategies is the most important phase of the strategic management process. However, prior to the selection, strategies should be defined and upper and lower strategies should be defined as well. We can classify strategies into two main categories (Ülgen & Mirze, 2010);

- Basic Strategies
- Strategies according to Management Levels.

Basic Strategies

Basic Strategies about the work and activities that organisations should or should not do in the future in order to sustain their lives and gain a competitive advantage (Porter 2008).

The first of the strategies is the **Growth Strategy** and refers to the numerical and qualitative development of organisations. The organisations can go further by building their existing assets and capabilities in order to improve their activities in the sector, thereby gaining more returns.

The second basic strategy is the **Downsizing Strategy** whereby organisations can withdraw from sectors where business is inefficient and focus on attracting more efficient areas: Organisations can consciously reduce some of their activities in order to generate more revenue.

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The third basic strategy is **Stable Strategies**. Organisations can choose stable strategies if competition is very intense and if other strategies will not produce gains above average, or if there is no new opportunities in the market.

Finally, businesses can use any of the basic strategies simultaneously or consecutively. While implementing a stable strategy in one sector, it may turn to growth strategies in another sector. In such cases, the companies implement '**mixed strategies**'.

Strategy According to the Management Levels

It is also necessary to classify the strategies according to responsible management levels. Strategies can be classified into three groups according to management levels, the purpose of implementation, and perspectives (Ülgen & Mirze, 2010). Corporate Governance Strategies are related to the issues that senior executives of an organisation are constantly thinking and seeking solutions to, such as what business areas to operate, how to implement activities in order to survive in the long term, and how to increase value by having a competitive advantage in the future. Therefore, this strategy is about the main areas of activity within organisations, and how they should implement their activities.

Functional Strategies are prepared and implemented at the middle or lower management levels and are functional or departmental strategies, such as marketing, production, finance, human resources, research and development, etc. which are usually dealt with at the middle management levels (Ülgen & Mirze, 2010).

The Strategic use of E-Commerce

The first thing that comes to mind about e-commerce is the strategic threats and opportunities in business life. At the beginning of the list of strategic issues lies communication formed with business partners, competitors, and potential customers. It can be said that e-commerce is a structure that provides a new and powerful information system and communication channel to consumers and organisations with the help of information and communication technologies. This allows buyers and sellers to come together in more efficient ways and to create new markets and opportunities for the re-organization of economic processes, personalization of products, re-definition of distribution approaches to products and services (Ada et al., 2008). The strategic use of the Internet is evident by the fact that there is now 24 hours of uninterrupted communication and an unlimited flow of information. Another important issue in the use of e-commerce is the innovative change in the supply chain that are mainly made by using electronic channels with digital and electronic products, forcing the restructuring of the traditional supply chain rules (Sadowski et al., 2002). One of the most important issues here is the savings on stock costs. The acceleration of orders and their provisions leads to a remarkable reduction in inventory. Reducing inventory costs, especially in times of crisis, eliminates a huge burden for organisations and transfers resources from stock costs to more efficient areas in organisations (Bozkurt, 2000).

The third important issue in the strategic use of e-commerce is the cost issue, which can be great opportunity but also an important threat. However, this cost is not the cost of investment, it is the cost of learning and managing the technological infrastructure. For companies, transitioning to e-commerce requires the right timing. The use of this infrastructure solely for the purpose of reducing commercial costs can create a lower optimization hazard (Porter, 2002).

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The effect of e-commerce on the competitiveness of companies is very robust leading to reduced costs, the elimination of barriers to access the market, ability of customers and producers to reach information easily, and more conscious consumers and changes in consumer habits causing competition to intensify (Phan, 2003). This situation forces companies to restructure and review market strategies. In addition, the fact that small, medium-sized, and large enterprises have equal conditions in terms of market entry conditions makes competition more ruthless. This point is already the most important feature that distinguishes the internet from other technological innovations. The adaptation of all economic actors to the transformation created by the internet and information technology, the development of new technologies, and the fact that everyone can reach these opportunities through less expensive technology increases everybody's chance to have a place in the global market (İşler, 2008).

The Driving Force And Scope Of E-Commerce Strategies

In previous studies, different perspectives of trade strategies have been shown. For example, many researchers have explored the ways in which the internet offers strategic opportunities as opposed to traditional trade (Levenburg, 2005; Pavitt, 1997). Another important research group examined the possible economic effects of trade on the internet and how internet-based e-commerce can affect pricing and competition (Wood et al., 2005). Furthermore, in terms of opportunities created by e-commerce, an important feature discovered was the power shift towards the consumer and the effect of changing power structures in the supply chain (Priluck, 2001). As the volume of shopping in the e-commerce environment grows, the internet has the potential to change physical retail transactions (Burt & Sparks, 2003).

The adoption of the internet among companies engaged in trade has so far varied. Although some companies are relatively aggressive, there are some aims to provide a wide range of product portfolios, to exist in the e-commerce environment, and to develop websites accordingly (Dholakia & Kshetri, 2004). Some small-scale companies that did not adopt the e-commerce environment preferred to continue their traditional trading practices and faced leaving the market. As a matter of fact, trading companies have seen the internet as a channel for reaching larger markets and have begun to invest continuously in their infrastructure on the Internet, which broadens and significantly affects trade volumes.

Success Of E-Commerce Strategies

The success of e-commerce strategies comes from the fact that it adopts a customer oriented method. In other words, the strategies identified in the e-commerce environment aim to measure the attitudes and reactions of the buyers and sellers and their strategic position in terms of various elements (Doherty, Ellis-Chadwick, & Hart, 2003). These attitudes and reactions may even cause changes in the design of web pages in the e-commerce environments of companies (Cliquet et al., 2007). The ease of use, quality of the web pages, the loyalty of the customers and their intention to continue shopping online, the perception of consumers, and the interaction and shopping pleasure are current strategic issues (Wolfinbarger & Gilly, 2003). In their study, Goode and Harris (2007) state that consumers place importance on the reputation, reliability, site design, and security provided by e-commerce companies. There are a reasonable number of studies about the success and failure of e-commerce initiatives (Lunce et al., 2006), with an important empirical study on the success of e-commerce companies having been conducted by Zhuang and Lederer (2003). However, this study only focused on the benefits of e-commerce and was not able to answer exactly what the cause of success was.

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E-Commerce Strategies

The e-commerce strategy is the adoption of long-term activities in order to achieve a competitive advantage in a changing environment through the structuring of resources and skill of the organization to meet the expectations of stakeholders (Johnson, Scholes, & Whittington, 2008). The E-commerce strategy is vital for companies and provides a framework for operational planning, enhancing organizational efficiency, and clarifying the direction of organizational activities. In addition, e-commerce helps companies to achieve long-term benefits (Chang, Jackson, & Grover, 2003).

For e-commerce strategies, companies should consider their internal environment, including strategic investment logic and internal coordination capability (McAfee & Brynjolfsson, 2008). For the implementation of e-commerce strategies, the external environment should be taken into account, including market environment, market position of the organization in the value chain, and customer participation (El Sawy, Malhotra, Gosain, & Young, 1999; Urban, Sultan, & Qualls, 2000; Venkatesan & Kumar, 2004). The business transactions, application principles, and corresponding strategies can be developed considering the business environment and product characteristics for various e-commerce activities (Lee & Whang, 2001; Chatterjee, Grewal, & Sambamurthy, 2002). In addition, companies should develop approaches to evaluate the stages of e-commerce development and the implementation of e-commerce strategies (Barua, Konana, Whinston, & Yin, 2004; Hackbarth & Kettinger, 2004). The development of e-commerce strategies and the implementation of E-commerce provide frameworks for managing organizational changes in this process (Grandon & Pearson, 2004). For the successful implementation of e-commerce strategies, important factors are the use of technology and adaptive changes in business processes and in organizational structures (Benjamin & Levinson, 1993).

The lack of knowledge in the implementation of the e-commerce strategy will limit the skills of organizations in e-commerce initiatives because insufficient organizational skills block the organizational transformation processes (Gilbert, 2005). In particular, traditional companies that are not involved in e-commerce should understand the importance of acquiring information to overcome such obstacles. In order to overcome the difficulties arising from insufficient organizational skills, a successful e-commerce strategy should be implemented (Johnson, 1988).

The rapid change and development of technology and internet has also begun to change the consumer understanding of shopping. Thanks to smart phones and smart watches of the future, consumers will be able to take advantage of time saving advantages of online shopping (Levy & Weitz, 2004). Reasons for the activity of companies to participate in e-commerce field are multiple:

- A constantly expanding e-commerce market,
- Having a widespread consumer network in the field of e-commerce,
- Having ubiquitous access without any boundaries through internet technology
- Change of consumer habits due to the Internet and technology,
- Expectations of Companies to increase their revenues as a result of e-commerce activities where they can offer online purchases on their web pages.

Companies not only offer online shopping on their web pages in terms of selling products and/or services in the e-commerce environment, but also aim to provide satisfaction and loyalty for customers who buy from the company (Tek & Orel, 2008). Because, unlike traditional shopping methods, a variety of products and services can be provided without physical shelf limitation.

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The power, scope, and interaction created by the Internet is considered to provide customers with a unique opportunity to experience shopping in the e-commerce environment (Doherty & Ellis-Chadwick, 2006). In particular, e-commerce provides an extremely rich and flexible new trade channel by providing information over the internet, making customer communication easier, enabling market research activities, allowing the collection of data over the internet for more swift strategic decisions, and introducing products and services through social networks (Basu & Muylle, 2003).

From a strategic point of view, the Internet offers these opportunities to companies:

- Expansion of target markets
- Improving communication with customers
- Ensuring product diversity
- Ensuring cost efficiency
- Development of customer relations
- Offering personalized offers (Srinivasan et al., 2002).

Indeed, with the rapid growth of internet usage, there has been an increase in the volume of online shopping (Forsythe & Shi, 2003). In spite of the apparent commercial potential of the internet, many of the companies that did not have a visionary perspective and could not see that the future was technology-focused went bankrupt when the '.com' exploded in 2001. Although e-commerce provides sustainable growth for companies, technology-oriented companies that develop technological infrastructure have become dominant in their sector (Min & Wolfinbarger, 2005; Evanschitzky et al., 2004).

SOLUTIONS AND RECOMMENDATIONS

There are still a number of issues that continue to be explored for companies that have operations in the field of e-commerce. Many factors such as management support, competitive pressures and technical infrastructure continue to be strategically examined. There is too much variation between studies and therefore further studies are needed in this area in terms of identifying and adopting new strategic approaches in e-commerce. Especially, it should not be forgotten that there are differences between Western culture and Eastern culture. Valid strategic management theories may cause the emergence of new theories due to cultural differences and Strategic approaches in the field of e-commerce should take cultural differences into consideration (Venkatesan & Kumar, 2004). For example, Japan might be a technology giant, but many Japanese people still use classic mobile phones which were used before smart phones. In this case, can companies that want to operate in the field of e-commerce and develop strategies offer online shopping through smart phones? Can they implement effective strategies that need to be realized through smart phones in this country? It is important to remember that this situation consists entirely of cultural differences. In the early days of the e-commerce market, many companies made a strategic mistake lagging behind the leading companies by not creating a web page on the Internet. However, companies should also offer good and secure web pages on the Internet because when consumers & customers find the web page very simple they may think the company is not reliable or secure (Rao & Frazer, 2006). At the same time, consumers see complaint portals as important reference points showing how reliable and high quality the work of e-commerce companies is.

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Within this framework, there are important determinants to be considered in terms of the success of e-commerce strategies:

- Identify different factors in the e-commerce strategies that can be implemented against competitors for the success of the organisation.
- Analyze whether the identified factors are appropriate to the organizational structure of the firm
- Examine the composition of the strategic success arising from the identified factors
- Evaluate the relationship between the scope of e-commerce strategy and its perceived success.

Opinions will always be needed regarding how e-commerce companies should approach strategy development. It is possible that today's strategies may not be valid tomorrow. When we want to criticize theoreticians in the field of strategic management, they want us to provide evidence, but the real evidence is that they forget the theories were examined in which country, in which market conditions, in which companies, in which sector. The general acceptance of a theory is determined by the extent to which it can be proven to be appropriate for every company, every sector, and every culture.

FUTURE RESEARCH DIRECTIONS

Although it is accepted that the determinants of the success of e-commerce strategies are cost and marketing, it is also strongly associated with resources. If e-commerce companies want to be successful, they should be able to distribute resources and skills to several internet transactions at the same time, and they should manage an efficient budget because the concerns over cost can have a negative impact on success. The underlying factor behind the success of e-commerce companies is the powerful management support and strategic adaptation to the e-commerce field. It is important to remember that there is a very strong and positive relationship between a visionary strategic perspective and e-commerce success. In e-commerce companies, managers must be aware of the slight differences between the determinants of success and the factors that influence the scope of a strategy. And, the management team must initiate strategic moves when they receive full organizational support in order to be successful in e-commerce. The scope and the success of e-commerce is related to a company's internet-oriented thinking, ability to carry out research activities for future use, and the steps to expand the number of users and carry out original activities.

Companies wishing to operate in the field of e-commerce should aim to benefit from sales but be cautious and adopt e-commerce models that actively involve the Web (internet) (Trice 2001). Furthermore, companies need to invest in the design, implementation, and advertising of a web site. This investment will vary according to the target audience and the organisation objectives. However, it is very important to provide a web site which generates the perception of a safe, quality, virtual environment. Investment in new technologies in the field of e-commerce will mean that the company can have more flexibility and better capacity against its competitors. The advantage of a web site is that it allows the realization of new developments and changes ahead of competitors, also forcing the organisation to rethink their business methods and processes. The most important benefit of e-commerce strategy is bringing a company ahead of competition and creating a positive impact on a firm's growth potential. Furthermore, the creation of a functional and useful web page is very important in the implementation phase. The length of time spent by consumers on the website is related to the user-friendliness and the product diversity of the web page.

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CONCLUSION

From a strategic point of view, the key factors for success are the decisive steps of senior management (however, these decisive steps must definitely be future-oriented, and the data must be very well analyzed), the realization of strategic cohesion, and the distribution of company resources and capabilities. The internet is an important, highly dynamic and global phenomenon, therefore it is important for the companies to follow their competitors, identify their weaknesses and plan counter strategic steps. In order to determine the mutual and different driving forces of e-commerce companies, it is important to analyze many factors. For example, as mentioned before, to perform similar studies in various sectors and in various countries. It is not acceptable to put forward acceptable theory from a study conducted in only one country since the theory has meaning when it is accepted by everyone. Also, the determinants of an e-commerce strategy may be related to the direction of managerial orientation or the intensity of competition. For example, companies in weak competitive markets may need greater incentives and encouragement to invest in an e-commerce strategy when the return on investment is uncertain. E-commerce companies should strategically measure the intensity of competition accurately or take into account the adoption of a specific e-commerce strategy. Therefore, in e-commerce strategy, it is useful to collect additional data about cost and performance, as well as about other multi-channel strategies (e.g. mobile commerce, social use) (Ayanso & Yoogalingam, 2009).

E-commerce companies start their activities by establishing their own websites for both communication and sales purposes. Before starting this activity, however, they should consider the multivariate concepts, such as brand value, brand image, reputation, customer satisfaction, accessibility, quality, performance, etc., which are good indicators of whether a company will stay in the market. The purpose of communication is to reach the widest audience possible and provide information about products and services. When the success of communication reflects on sales, a company starts to actively compete and take a share in the market. Finally, the companies with strong customer service may have to adopt special e-commerce strategies. Companies will have an opportunity to make comparisons between customer behaviour on the company's web site and in the store. This comparison can be related to product perceptions, shopping experiences and customer service (Jarvenpaa & Todd, 1996), customer satisfaction (Cao, Gruca, & Klemz, 2003), and behavioural loyalty (Huang, 2011). This information makes it possible to develop strategies in the e-commerce field by analyzing the reasons for different customer behaviours.

REFERENCES

Ada, E., Ventura, K., Aracioglu, B., Savasci, I., & Kazancoglu, Y. (2008). KOBI'lerin Rekabet Gucu ve E-Ticarete Gecis Sureci: Bir Model Onerisi. *Ege Academic Review*, *8*(1), 53–68.

Afra, S. (2014). *Dijital Pazarın Odak Noktası eTicaret: Dünya'da Türkiye'nin Yeri, Mevcut Durum ve Geleceğe Yönelik Adımlar*. İstanbul, Turkey: TÜSİAD.

Arıkan, A. S. (1999). *Dünyada ve Türkiye'de Elektronik Ticaret Çalışmalarına Hukuki Bir Yaklaşım*. Ankara, Turkey: Yetkin Yayınları.

Arpacı, T., & Uluçay, U. (2012). Dünyada ve Türkiye'de E-Ticaret: Tüketicilerin İnternet Üzerinden Alışveriş Alışkanlıkları Üzerine Bir Uygulama.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Ayanso, A., & Yoogalingam, R. (2009). Profiling retail web site functionalities and conversion rates: A cluster analysis. *International Journal of Electronic Commerce*, *14*(1), 79–114. doi:10.2753/JEC1086-4415140103

Barua, A., Konana, P., Whinston, A. B., & Yin, F. (2004). An empirical investigation of net-enabled business value. *Management Information Systems Quarterly*, *28*(4), 585–620. doi:10.2307/25148656

Basu, A., & Muylle, S. (2003). Online support for commerce processes by web retailers. *Decision Support Systems*, *34*(4), 379–395. doi:10.1016/S0167-9236(02)00065-9

Becker, A. (Ed.). (2007). Electronic Commerce: Concepts, Methodologies, Tools, and Applications: Concepts, Methodologies, Tools, and Applications. Hershey, PA: IGI Global.

Benjamin, R. I., & Levinson, E. (1993). A framework for managing IT-enabled change. *Sloan Management Review*, *34*(4), 23–33.

Bozkurt, V. (2000). Elektronik Ticaret, stanbul: Alfa Basım Yayım Dağıtım Ltd.

Burt, S., & Sparks, L. (2003). E-commerce and the retail process: A review. *Journal of Retailing and Consumer Services*, *10*(5), 275–286. doi:10.1016/S0969-6989(02)00062-0

Çakırer, M. A. (2013). *Elektronik ticaret*. Ekin Basım Yayın Dağıtım.

Canpolat, Ö. (2001). *E-ticaret ve Türkiye'deki gelişmeler*. Sanayi ve Ticaret Bakanlığı.

Cao, Y., Gruca, T. S., & Klemz, B. R. (2003). Internet pricing, price satisfaction, and customer satisfaction. *International Journal of Electronic Commerce*, *8*(2), 31–50. doi:10.1080/10864415.2003.11044291

Card, J. A., Chen, C. Y., & Cole, S. T. (2003). Online travel products shopping: Differences between shoppers and nonshoppers. *Journal of Travel Research*, *42*(2), 133–139. doi:10.1177/0047287503257490

Chang, K. C., Jackson, J., & Grover, V. (2003). E-commerce and corporate strategy: An executive perspective. *Information & Management*, *40*(7), 663–675. doi:10.1016/S0378-7206(02)00095-2

Chatterjee, D., Grewal, R., & Sambamurthy, V. (2002). Shaping up for e-commerce: Institutional enablers of the organizational assimilation of web technologies. *Management Information Systems Quarterly*, *26*(2), 65–89. doi:10.2307/4132321

Chung, T., & Law, R. (2003). Developing a performance indicator of hotel websites. *International Journal of Hospitality Management*, *22*(1), 119–125. doi:10.1016/S0278-4319(02)00076-2

Cliquet, G., Hendrikse, G., Tuunanen, M., & Windsperger, J. (Eds.). (2007). Economics and management of networks: Franchising, strategic alliances, and cooperatives. Berlin, Germany: Springer Science & Business Media. doi:10.1007/978-3-7908-1758-4

Coşkun, A. G. D. N. (2004). Elektronik ticaretin gelişiminde temel dinamikler ve gelişimi önündeki engeller. Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 13(2).

Çubukcu, A., & Bayzan, Ş. (2013). Türkiye'de dijital vatandaşlık algısı ve bu algıyı internetin bilinçli, güvenli ve etkin kullanımı ile artırma yöntemleri. *Middle Eastern & African Journal of Educational Research*, *5*, 148–174.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Delone, W. H., & Mclean, E. R. (2004). Measuring e-commerce success: Applying the DeLone & McLean information systems success model. *International Journal of Electronic Commerce*, *9*(1), 31–47. doi:10.1080/10864415.2004.11044317

Dholakia, R. R., & Kshetri, N. (2004). Factors impacting the adoption of the Internet among SMEs. *Small Business Economics*, *23*(4), 311–322. doi:10.1023/B:SBEJ.0000032036.90353.1f

Dinçer, Ö. (2007). *Stratejik Yönetim ve İşletme Politikası*. İstanbul, Turkey: Alfa Yayınları.

Dixon, H., & Quinn, B. (2004). Franchising and the Internet: An exploratory study of franchisor Web sites. *Internet Research*, *14*(4), 311–322. doi:10.1108/10662240410555324

Doherty, N., Ellis-Chadwick, F., & Hart, C. (2003). An analysis of the factors affecting the adoption of the Internet in the UK retail sector. *Journal of Business Research*, *56*(11), 887–897. doi:10.1016/S0148-2963(01)00275-2

Doherty, N. F., & Ellis-Chadwick, F. E. (2006). New perspectives in internet retailing: A review and strategic critique of the field. *International Journal of Retail & Distribution Management*, *34*(4/5), 411–428. doi:10.1108/09590550610660305

Dolanbay, C. (2000). E-Ticaret: Strateji ve Yöntemler. Meteksan Sistem Yayınları, 229-230.

Eimer, M. (2000). B&B internet marketing: The inside story. *Library Journal*, *125*(18), 150.

El Sawy, O. A., Malhotra, A., Gosain, S., & Young, K. M. (1999). IT-intensive value innovation in the electronic economy: Insights from Marshall Industries. *Management Information Systems Quarterly*, *23*(3), 305–335. doi:10.2307/249466

Ene, S. (2002). *Elektronik ticarette tüketicinin korunması ve bir uygulama*. Pusula Yayıncılık ve İletişim.

Eren, E. (2010). *Staretjik Yönetim ve İşletme Politikası*. İstanbul, Turkey: Beta Yayınevi.

Erkan, M. (2012). *E-ticaret çağı: profesyoneller için Türkiye'de ve dünyada e-ticaret*. Optimist Yayın Dağıtım.

Evanschitzky, H., Gopalkrishnan, R., Hesse, J., & Dieter, A. (2004). E-satisfaction: A re-examination. *Journal of Retailing*, *80*(3), 239–247. doi:10.1016/j.jretai.2004.08.002

Forman, C. (2005). The corporate digital divide: Determinants of Internet adoption. *Management Science*, *51*(4), 641–654. doi:10.1287/mnsc.1040.0343

Forman, C., Goldfarb, A., & Greenstein, S. (2005). How did location affect adoption of the commercial Internet? Global village vs. urban leadership. *Journal of Urban Economics*, *58*(3), 389–420. doi:10.1016/j.jue.2005.05.004

Forsythe, S. M., & Shi, B. (2003). Consumer patronage and risk perceptions in Internet shopping. *Journal of Business Research*, *56*(11), 867–875. doi:10.1016/S0148-2963(01)00273-9

Gibbs, J. L., & Kraemer, K. L. (2004). A cross-country investigation of the determinants of scope of e-commerce use: An institutional approach. *Electronic Markets*, *14*(2), 124–137. doi:10.1080/10196780410001675077

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Gilbert, C. G. (2005). Unbundling the structure of inertia: Resource versus routine rigidity. *Academy of Management Journal*, *48*(5), 741–763. doi:10.5465/amj.2005.18803920

Goode, M. M., & Harris, L. C. (2007). Online behavioural intentions: An empirical investigation of antecedents and moderators. *European Journal of Marketing*, *41*(5/6), 512–536. doi:10.1108/03090560710737589

Grandon, E. E., & Pearson, J. M. (2004). Electronic commerce adoption: An empirical study of small and medium US businesses. *Information & Management*, *42*(1), 197–216. doi:10.1016/j.im.2003.12.010

Güçlü, N. (2003). Stratejik yönetim. Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi, 23(2).

Hackbarth, G., & Kettinger, W. J. (2004). Strategic aspirations for net-enabled business. *European Journal of Information Systems*, *13*(4), 273–285. doi:10.1057/palgrave.ejis.3000511

Hart, C., Doherty, N., & Ellis-Chadwick, F. (2000). Retailer adoption of the Internet–Implications for retail marketing. *European Journal of Marketing*, *34*(8), 954–974. doi:10.1108/03090560010331441

Heung, V. C. (2003). Barriers to implementing E-commerce in the travel industry: A practical perspective. *International Journal of Hospitality Management*, *22*(1), 111–118. doi:10.1016/S0278-4319(02)00075-0

Hitt, M. A., Ireland, R. D., & Hoskisson, R. E. (2012). Strategic management cases: competitiveness and globalization. Boston, MA: Cengage Learning.

Hoffman, D. L., & Novak, T. P. (2000). How to acquire customers on the web. *Harvard Business Review*, *78*(3), 179–188. PMID:11183979

Huang, C. Y. (2011). Excess loyalty in online retailing. *International Journal of Electronic Commerce*, *16*(2), 115–134. doi:10.2753/JEC1086-4415160206

İşler, D. B. (2008). Rekabetçi Avantaj Yaratma Çerçevesinde Kobi'lerde E-Ticaret ve E-Ticaretin Stratejik Kullanımı. Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 13(3).

Jarvenpaa, S. L., & Todd, P. A. (1996). Consumer reactions to electronic shopping on the World Wide Web. *International Journal of Electronic Commerce*, *1*(2), 59–88. doi:10.1080/10864415.1996.11518283

Johnson, G. (1988). Rethinking incrementalism. *Strategic Management Journal*, *9*(1), 75–91. doi:10.1002mj.4250090107

Johnson, G., Scholes, K., & Whittington, R. (2008). Exploring corporate strategy: text & cases. London, UK: Pearson Education.

Kantarcı, Ö., Özalp, M., Sezginsoy, C., Özaşkınlı, O., & Cavlak, C. (2017). *Dijitalleşen dünyada ekonominin itici gücü: E-ticaret*. İstanbul, Turkey: TUSIAD Yayınları.

Kaufmann, P. J., Cliquet, G., & Achabal, D. D. (2010). Implementing multi-channel strategies: Issues and opportunities for franchise system websites. In *Proceedings of the 24th ISoF Conference*, Sydney, Australia.

Kepenek, Y. (1999). *Ekonomik Yönleriyle Elektronik Ticaret*. Ankara, Turkey: ODTÜ İktisat Bölümü ve Tekpol.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

King, R. C., Sen, R., & Xia, M. (2004). Impact of web-based e-commerce on channel strategy in retailing. *International Journal of Electronic Commerce*, *8*(3), 103–130. doi:10.1080/10864415.2004.11044297

Korkmaz, N. (2002). *Sorularla internet ve e-ticaret rehberi*. İTO.

Law, R. (2000). Internet and travel and tourism marketing part I. *Journal of Travel & Tourism Marketing*, *9*(3), 65–71. doi:10.1300/J073v09n03_05

Lee, H. L., & Whang, S. (2001). Winning the last mile of e-commerce. *MIT Sloan Management Review*, *42*(4), 54–62.

Levenburg, N. M. (2005). Delivering customer value online: An analysis of practices, applications, and performance. *Journal of Retailing and Consumer Services*, *12*(5), 319–331. doi:10.1016/j.jretconser.2004.11.001

Levy, M., & Weitz, B. A. (2004). *Retailing Management*. New York, NY: McGraw Hill Irwin.

Lituchy, T. R., & Rail, A. (2000). Bed and breakfast, small inns, and the internet: The impact of technology on the globalization of small businesses. *Journal of International Marketing*, *8*(2), 77–86. doi:10.1509/jimk.8.2.86.19625

Lunce, S. E., Lunce, L. M., Kawai, Y., & Maniam, B. (2006). Success and failure of pure-play organizations: Webvan versus Peapod, a comparative analysis. *Industrial Management & Data Systems*, *106*(9), 1344–1358. doi:10.1108/02635570610712618

Luo, Y., Hongxin Zhao, J., & Du, J. (2005). The internationalization speed of e-commerce companies: An empirical analysis. *International Marketing Review*, *22*(6), 693–709. doi:10.1108/02651330510630294

Marangoz, M. (2014). İnternette Pazarlama, Beta yayınları.

Mariz-Pérez, R., & García-Álvarez, T. (2009). The Internationalization strategy of Spanish indigenous franchised chains: A resource-based view. *Journal of Small Business Management*, *47*(4), 514–530. doi:10.1111/j.1540-627X.2009.00281.x

Martin, L., & Pénard, T. (2005). Investing in a website: a top dog or a resource-based strategy for firms?.

McAfee, A., & Brynjolfsson, E. (2008). Investing in the IT that makes a competitive difference. *Harvard Business Review*, *86*(7/8), 98. PMID:18271321

Min, S., & Wolfinbarger, M. (2005). Market share, profit margin, and marketing efficiency of early movers, bricks and clicks, and specialists in e-commerce. *Journal of Business Research*, *58*(8), 1030–1039. doi:10.1016/j.jbusres.2004.02.005

Mintzberg, H., Ghoshal, S., Lampel, J., & Quinn, J. B. (2003). The strategy process: concepts, contexts, cases. London, UK: Pearson Education.

Molla, A., & Licker, P. S. (2005). Perceived e-readiness factors in e-commerce adoption: An empirical investigation in a developing country. *International Journal of Electronic Commerce*, *10*(1), 83–110. doi:10.1080/10864415.2005.11043963

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Ngai, E. W., & Wat, F. K. T. (2002). A literature review and classification of electronic commerce research. *Information & Management*, *39*(5), 415–429. doi:10.1016/S0378-7206(01)00107-0

O'Connor, P. (1999). *Electronics information distribution in tourism and hospitality*. Oxford, UK: CAB International.

Özbay, S., & Akyazı, S. (2004). Elektronik ticaret: e-ticaret.

Pavitt, D. (1997). Retailing and the super high street: The future of the electronic home shopping industry. *International Journal of Retail & Distribution Management*, *25*(1), 38–43. doi:10.1108/09590559710156099

Phan, D. D. (2003). E-business development for competitive advantages: A case study. *Information & Management*, *40*(6), 581–590. doi:10.1016/S0378-7206(02)00089-7

Porter, M. E. (2001). *Michael; ilustraciones Gibbs*. Strategy and the Internet.

Porter, M. E. (2002). Strateji ve İnternet. Stratejide İlerlemeler (11-59). İstanbul, Turkey: MESS Yayınları.

Porter, M. E. (2008). *Competative Strategy. Çev. Gülen Ulubilgen*. İstanbul, Turkey: Sistem Yayıncılık.

Priluck, R. (2001). The impact of Priceline. com on the grocery industry. *International Journal of Retail & Distribution Management*, *29*(3), 127–134. doi:10.1108/09590550110385883

Rao, S., & Frazer, L. (2006). Australian franchisor websites: Moving towards network behaviour. *Journal of Theoretical and Applied Electronic Commerce Research*, *1*(1).

Rogers, J., Bennett, C., & Grewal, S. (2007). E-commerce for successful franchisors. *Franchising World*, *39*(8), 23.

Sadowski, B. M., Maitland, C., & van Dongen, J. (2002). Strategic use of the Internet by small-and medium-sized companies: An exploratory study. *Information Economics and Policy*, *14*(1), 75–93. doi:10.1016/S0167-6245(01)00054-3

Schibrowsky, J. A., Peltier, J. W., & Nill, A. (2007). The state of internet marketing research: A review of the literature and future research directions. *European Journal of Marketing*, *41*(7/8), 722–733. doi:10.1108/03090560710752366

Sezgin, A. G. (2013). Dünyada ve Türkiye de E-ticaret Sektörü. Türkiye İş bankası İktisadi Araştırmalar Bölümü.

Srinivasan, S. S., Anderson, R., & Ponnavolu, K. (2002). Customer loyalty in e-commerce: An exploration of its antecedents and consequences. *Journal of Retailing*, *78*(1), 41–50. doi:10.1016/S0022-4359(01)00065-3

Tek, O. B., & Orel, F. D. (2008). *Perakende Pazarlama Yönetimi*. İzmir, Turkey: Birleşik Matbaacılık.

Trice, M. B. (2001). Managing Internet Issues Within the Franchise System: A Legal Perspective. *Franchising World*, *33*(5), 37–38.

Ülgen, H., & Mirze, S. K. (2010). *İşletmelerde Stratejik Yönetim (5. Baskı)*. İstanbul, Turkey: Beta Basım Yayım Dağıtım.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Urban, G. L., Sultan, F., & Qualls, W. J. (2000). Placing trust at the center of your Internet strategy. *Sloan Management Review*, *42*(1), 39–48.

Üzün, C. (2000). *Stratejik Yönetim ve Halkla İlişkiler*. İzmir, Turkey: Eylül Yayınları.

Venkatesan, R., & Kumar, V. (2004). A customer lifetime value framework for customer selection and resource allocation strategy. *Journal of Marketing*, *68*(4), 106–125. doi:10.1509/jmkg.68.4.106.42728

Wade, M. R., & Nevo, S. (2005). Development and validation of a perceptual instrument to measure e-commerce performance. *International Journal of Electronic Commerce*, *10*(2), 123–146. doi:10.2753/JEC1086-4415100205

Williams, A. P., & Palmer, A. J. (1999). Tourism destination brands and electronic commerce: Towards synergy. *Journal of Vacation Marketing*, *5*(3), 263–275. doi:10.1177/135676679900500306

Wolfinbarger, M., & Gilly, M. C. (2003). eTailQ: Dimensionalizing, measuring and predicting etail quality. *Journal of Retailing*, *79*(3), 183–198. doi:10.1016/S0022-4359(03)00034-4

Wood, C. M., Alford, B. L., Jackson, R. W., & Gilley, O. W. (2005). Can retailers get higher prices for "end-of-life" inventory through online auctions? *Journal of Retailing*, *81*(3), 181–190. doi:10.1016/j.jretai.2005.07.001

Worzala, E. M., McCarthy, A. M., Dixon, T., & Marston, A. (2002). E-commerce and retail property in the UK and USA. *Journal of Property Investment & Finance*, *20*(2), 142–158. doi:10.1108/14635780210420034

Wymer, S. A., & Regan, E. A. (2005). Factors influencing e-commerce adoption and use by small and medium businesses. *Electronic Markets*, *15*(4), 438–453. doi:10.1080/10196780500303151

Yeşil, A. (2008). *E-ticaret-internet ortamında ticaret*. İstanbul, Turkey: Kum Saati Yayınları.

Young, J. A., Clark, P. W., & McIntyre, F. S. (2006). The web as an e-commerce medium: An exploratory study of consumer perceptions in a restaurant setting. *Journal of Marketing Channels*, *14*(1-2), 5–22. doi:10.1300/J049v14n01_02

Zhu, K., & Kraemer, K. L. (2002). E-commerce metrics for net-enhanced organizations: Assessing the value of e-commerce to firm performance in the manufacturing sector. *Information Systems Research*, *13*(3), 275–295. doi:10.1287/isre.13.3.275.82

Zhuang, Y., & Lederer, A. L. (2003). An instrument for measuring the business benefits of e-commerce retailing. *International Journal of Electronic Commerce*, *7*(3), 65–99. doi:10.1080/10864415.2003.11044274

Zwass, V. (2003). Electronic commerce and organizational innovation: Aspects and opportunities. *International Journal of Electronic Commerce*, *7*(3), 7–37. doi:10.1080/10864415.2003.11044273

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Chapter 73
Examination of Effects of Competitive Strategies on the E-Commerce Companies in Terms of Achieving Sustainable Competitive Advantage

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ABSTRACT

E-commerce brings companies and customers together in an exchange market environment, beyond any physical, cultural, and legal boundaries, and on an unimaginable scale, which was considered to be technically impossible before. The companies' online facilities have been improved and become accessible to everyone through smart phones, tablets, etc. as the web pages and social networks started to direct individuals towards e-commerce. E-commerce not only raises economic concerns related to competition and pricing, but also reveals new social and environmental threats that can be quite widespread and viral. Several studies have been conducted to examine the transformation of traditional business models into e-businesses, the impact of e-commerce businesses on traditional business activities, or opportunities brought by technological innovations. For this reason, the effects of the competitive strategies will be explained in terms of ensuring sustainable competitive advantage within e-commerce companies.

INTRODUCTION

E-commerce is becoming increasingly important for companies due to increasing technological opportunities. The companies that want to reach more customers and present their product range can use their web pages to conduct marketing and sales activities and share corporate information. As a result, technological and managerial strategies are becoming increasingly widespread in the political, social,

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and regulatory environments of e-commerce. The growing development of e-commerce has caused an intensely competitive environment where only strong companies can survive and the weaker ones are eliminated. The power wars in a competitive environment can create new markets, increase or decrease existing legal regulations, create market entry barriers, affect prices, decrease or increase competition costs, and re-structure interactions between companies and customers (Chen, 2001). E-commerce brings companies and customers together in an exchange market environment, beyond any physical, cultural, and legal boundaries, and on an unimaginable scale, which was considered to be technically impossible before. Because of competition, consumers can make a selection by comparing products and/or services as they wish. E-commerce is defined as the transactions of financial, marketing, and human resources management or similar functional activities by means of information technologies and through web-based networks (Zhang & Gai, 2005).

E-commerce companies use IT and communication technologies to interact with their customers for commercial purposes in order to gain a competitive advantage. According to the definition of e-commerce, it includes sales activities by telephone or e-mail or through online shopping systems over the Internet. The most important factor behind the thrive of e-commerce is the accessibility of the thousands of networks by individuals around the world. E-commerce began to boom, especially after the development of the World-Wide-Web and establishments of sector networks. The companies' online facilities have been improved and become accessible to everyone through smart phones, tablets, etc. as the web pages and social networks started to direct individuals towards e-commerce. Furthermore, e-commerce companies have changed the market rules and the role of information technology (IT) in the sectors. Before, information technology was just another option within market strategy; however, in today's world, information technology has a power all its own since the Internet is accessible by everyone (Venkatraman & Henderson, 1998). Indeed, some companies established their market strategies based on information technology. When we look at today's successful e-commerce models, we see that marketing and technological activities interlock with each other in a competitive environment (Ghosh, 1998).

E-commerce not only raises economic concerns related to competition and pricing, but also reveals new social and environmental threats that can be quite widespread and viral. One of the advantages is that e-commerce reduces the cost of organising activities in every sector and this is an issue companies should give necessary importance to. In the last decade, significant studies have been carried out on e-commerce technologies and multi-dimensional applications. It is clear that ever-expanding and developing e-commerce opportunities affect the organizational management field; therefore, studies on new e-business technologies and e-business modelling have been carried out (Brynjolfsson & Hitt, 2003; Rust & Kannan, 2003; Yunus, Moingeon, & Lehmann-Ortega, 2010). Several studies have been conducted to examine the transformation of traditional business models into e-businesses, the impact of e-commerce businesses on traditional business activities, or opportunities brought by technological innovations. There are entangled applications such as Internet business models, web business models, e-commerce business models, and e-market business models (Koellinger, 2008).

The e-commerce concept can transform organisations and industries into virtual networks where customers and suppliers come together to create value-added processes, a concept that challenges long-accepted business models. Thus, it is important to analyse the transformational effects of e-commerce on the critical and fundamental processes of organizations (Fahey et al., 2001). E-business strategies, funding, and governance are considered critical issues that require efficient planning, and effective control of information technologies in private and public organizations (Gottschalk, 2006). For this reason,

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the effects of the competitive strategies will be explained in terms of ensuring sustainable competitive advantage within e-commerce companies.

WHAT IS E-COMMERCE?

According to the world trade organization, the definition of e-commerce is the advertising, sales, and distribution of products and services through the Internet network (Ussahawanitchakit & Intakhan, 2011). E-commerce is the realization of all commercial activities through computer networks, as from the design of the products to the production and promotion. Furthermore, E-commerce is the implementation of all business activities in an electronic environment (Ramanathan, 2010) and refers to all business transactions of processing, transmission, and storage of digital information in the form of text, sound, and image either over the Internet (reached by all the individuals and institutions) or over the intranet (accessed by limited number of users) (Chaffey, 2007). E-commerce can be defined as the process of delivering products and services to the customer after payment transactions, performing after-sales support, and also providing information and search opportunities to consumers, organisations, and public institutions by means of presenting data in Internet or intranet environments (Canpolat, 2001).

Different Definitions of E-Commerce

In terms of communication; e-commerce is the promotion of products and services by telephone, fax, computer networks, Internet or similar electronic tools for the purpose of sales.

In terms of business; e-commerce uses information technologies for the work- related activities of companies (Dal & Özbek, 2006).

E-commerce is the advertising, sales, and distribution of products and services through communication networks (Canpolat, 2001).

E-commerce is the new commercial understanding of the new century where the exchange of products and services is carried out on electronic environments, a result of the rapid changes and developments of information technologies (Mucuk, 2012).

E-commerce is all kinds of transactions related to commercial activities through computer networks (Erbaşlar & Dokur, 2012).

These definitions include wide and multi-dimensional relationships between provider and the consumer and also all the possible commercial transactions. Therefore, it can be said that e-commerce covers large scopes of transactions conducted in an electronic environment for providing information, carrying out promotions, and advertising and public information activities for commercial purposes (Canpolat, 2001). E-commerce activities started with telephone, fax, telex, television sales and electronic payments and money transfer systems (EFT) but reached a point where all commercial activities can be carried out over the Internet as a result of the developments in information technologies (Coşkun, 2004).

Today, the 'Information Society' or 'Knowledge Society' is seen as post- industrial societies, with the advancement of knowledge causing significant developments in commercial activities as technological developments are used to process and manage information or resources (Marangoz, 2014). E-commerce is a concept that includes the sale and purchase of all kinds of products and services with the use of computer technology, electronic communication channels, and related technologies (smart card, electronic fund transfer EFT, POS terminals, fax, etc.) (Ersoy, 1999). E-commerce refers to the purchase

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and sales of products and services and payment transactions over the Internet. The economy generated by e-commerce is called 'digital economy' or 'e-economy' (Erbaşlar & Dokur, 2012). Globalization makes it necessary for companies to closely follow the developments in information and communication technologies in order to obtain a permanent and firm position in competitive markets.

In a highly competitive environment, e-commerce is the most efficient and fastest way for companies to reach and communicate with their customers if they use the right tools. In particular, e-commerce enables companies to operate in global markets, easily make differentiations, reduce operational costs, expand their customer portfolio and control the risk structure, as well as having a key role in the efficient use of distribution channels. E-commerce is about the management of consumption activities between manufacturers, consumers, and the public and private organizations in an electronic environment (Erbaşlar & Dokur, 2012). E-commerce is the realisation of promotions, sales, insurance, and the distribution and payment of products and services through Internet networks.

E-commerce is the implementation of commercial transactions in an electronic environment and has three stages;

- Advertising and market research
- Order and payment
- Delivery

With the rapid expansion and development of Internet technology, e-commerce has become a new and very effective tool of commercial transactions and has emerged as a result of technological developments and the liberalization of trade.

The Actions of E-Commerce (Akgöz, 2009)

- Providing/getting information and conducting search activities in an electronic environment.
- Meeting of both parties in an electronic environment and during the transaction of payments
- Fulfilment of the commitment to the delivery of goods or services to the customer
- After-sales maintenance, support, etc.

E-commerce is about the activities carried out by the companies in an electronic environment in order to provide faster services, decrease service costs, and improve the quality of products. E-commerce enables products and services to be bought, sold, and shared over the Internet and by means of other electronic services (Görkey, 2001). E-commerce companies responds faster to customers' expectations and needs in line with the rapid changes and developments in a global world. E-commerce also offers the possibility of choosing the best supplier from widespread sales networks (Akgöz, 2009).

Common grounds of e-commerce (Erbaşlar & Dokur, 2012);

1. E-commerce can be carried out via Internet or intranet.
2. Interest holders of e-commerce including producers, consumers, public and private sector companies, and other organisations.
3. Tools of e-commerce: TV, Radio, Fax, EFT, EDI, ATM, Telephone, Internet.

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These definitions not only cover the relationships between the seller and the buyer but also cover a wide and multi-dimensional relationship, together with all possible commercial transactions. Therefore, the context of e-commerce include activities such as promotions, advertising, training, and public information (Canpolat, 2001).

E-commerce Activities are Carried out in 4 Stages (Akgöz, 2009)

- **1st Stage:** Sharing information and documents of foreign trade in the Internet. For example, standards such as BM / EDI-FACT, SWIFT must be introduced.
- **2nd Stage:** Transactions for ordering, proforma invoice, e-contract, insurance, transportation and payments should be carried out in an electronic environment.
- **3rd Stage:** Legal structures should be established such as e-signature, e-tax, customs, and exchange legislation.
- **4th Stage:** Necessary importance should be given to e-security. Internet security should be provided and foreign trade operations should be conducted over a secure electronic environment.

According to this view, the presentation of the product, supplying to customers, company searches, transportation, payments, transactions and customs operations are an inseparable part of the process (Akgöz, 2009).

The acquisition, internalization, production and efficient use of information have a key role in the success of organisations and the national economy. In the information age, digital data regarding the world economy has significant value for organizations. A new and rather large sector has been structured for knowledge ownership, information sharing, and the reshaping of information. The information has become an essential capital of organizational life and is considered raw material like any product or service or other production tool that can be obtained from suppliers if necessary (Marangoz, 2014).

The characteristics of the new world economy (also called 'digital economy' by some researchers) are briefly stated below (Fırlar, 2010):

- Knowledge is the main source of production.
- The most important resource of a knowledge-based economy is brain power, which is the tool encompassing the production of information.
- A virtual world is formed by the digitalization of knowledge, so the relationship, interaction, etc. between all beings in the real world changes accordingly.
- New management processes of organizations are shaped according to micro-partitioning and are structured on an individual basis.
- In the new economy, communication provides the transfer of the knowledge and the role and function communication changes according to the digital network.
- The communication sector is leading the way in the economies of almost all world countries.
- One of the main rules of the new economy is planned obsolescence of products and the innovation and servicing of new products.
- In the new economy, the individuals/customers can participate in the production process through the elimination of boundaries by means of new information technologies and personal-oriented products that will therefore gain importance.

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- Speed is another key factor in the effectiveness of organizational success and economic activity. In this respect, the importance of web-based interactive environments is increasing daily.
- In the new economy, organizations must operate in an environment that is constantly changing and developing without borders due to globalization.

The common feature of these factors is the importance of generating information, specifically because of the intense use of communication and computer technologies. Therefore, the concepts of an old or new economy do not refer to an economy as getting older or younger. These concepts are about the changes in the same economy in terms of value creation, relationships with customers and employees, methods of conduct, behaviour, and management methods, etc. (Marangoz, 2014). Increasing global competition and the formation of advanced technologies manifests itself in every aspect of the economy and the production, distribution, and consumption of goods and services are deeply affected by this processes.

Today, there are three concepts that direct the new economy (Dal & Özbek, 2006);

a) Informatics
b) Communication
c) Information.

Changes in macro factors affects the organisations and create pressure for the following reasons (Dal & Özbek, 2006);

a) Globalization
b) Rapid changes in technology
c) Increased production
d) Increased use of computers by individuals and organisations
e) Constantly up-to-date concepts of new products and services
f) Fast and short delivery of new products and services to the consumers
g) The opening of new business areas such as e-commerce, the opportunity of the seller and the buyer to meet without any intermediary and beyond the national boundaries
h) Emergence of new business opportunities
i) Expansion of value-added concepts such as communication and information exchange for the products and services
j) Intense competition
k) Focus on consumer-oriented marketing approaches
l) Investing in research and development activities

DEVELOPMENT OF E-COMMERCE

There are two important elements in the development of e-commerce.

The first is development in the IT sector. The development of new communication environments, the increasing interest in information communication technologies from all sections of society, and the increasing power of social media adds a new dimension to the concept of socialization (Vural & Bat,

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2010). Investments in information technologies increase each year and positively affects e-commerce because, information technologies form the basis of development tools of e-commerce (Coşkun, 2004).

Second is the globalization of the markets, which accelerates the development of e-commerce or vice versa. The globalization of markets accelerates the development of e-commerce, at which point e-commerce eliminates the borders of the country leading to an ease in customs rules, and an increase in globalization (Coşkun, 2004).

History of the Development of E-commerce

According to Smith (2011), the timeline of e-commerce development:

1946: ENIAC (first computer) was structured at the University of Pennsylvania.
1957: The Soviet Union launched the first artificial satellite (Sputnik).
1958: USA established ARPA to gain the science and technological leadership and to withstand the technological superiority of the Soviet Union.
1969: ARPANET (pioneer of the Internet) was founded at UCLA, Stanford, UC-Santa Barbara and the University of Utah.
1970: Application of EDI-Electronic Information Exchange
1973: The first international communication to the ARPANET was implemented at the University College of London.
1974: BBN company announced the establishment of Telnet, the first commercial version of ARPANET.
1982: ARPA established TCP and IP.
1984: The number of Internet users exceeded 1000.
1987: The number of Internet users exceeded 10000.
1989: The number of Internet users exceeded 100000.
- In the 1990s, the development and dissemination of the World Wide Web (www) began.

1990: The ARPANET was shut down.
1992: www (world wide web) was founded in Cern.
1994: Pizza Hut started to sell its products over the Internet.
1994: The first cyber bank First Virtual was founded.
1997: B2B (Business to Business) trading activity started.
2000: The number of Internet users exceeded 360 million.
2011: The number of Internet users exceeded 2 billion.
2011: More than 200 countries connected.
2017: The number of Internet users is about 3.7 billion (Kemp 2017).

It is a fact that the number of Internet users increased almost six-times in a period of 10 years between 2000-2010. It is expected that the volume of e-commerce will continue to increase as Internet technology is more widely used (Porter, 2001). The reason for this expectation is that Internet technology will positively affect the general development of e-commerce.

The advantages of e-commerce, such as the wide range of products offered to customers, price comparison and time savings, are important factors in e-commerce development (Hamad, Elbeltagi, & El-Gohary, 2018). In the coming years, it is thought that e-commerce will continue to grow due to fac-

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tors such as the tendency of the young population to use the Internet, the increase in the mobile device usage rate, and the growth of emerging markets.

The most significant difference of e-commerce from traditional trade is in communication and approval processes. Transactions carried out in the traditional method are not expected to be faster than any e-commerce methods, such as e-mail or other types of electronic data transmissions ((Elibol & Kesici, 2004; Erbaşlar & Dokur, 2012).

Table 1.

Traditional Trade	E-commerce
Information about the products can be obtained by talking to the companies or examining magazines, brochures, and catalogues.	The customers can easily obtain information about the products or services of companies through their web pages on the Internet.
The customers should file a request and fill in a form regarding the product or service in order to purchase.	E-mail makes it possible to perform processes easily and quickly.
The Purchasing Department starts the price survey with the approval of the form from the customer. Catalogues and price lists are reviewed and interviews are made.	The web sites of companies already provide requested information that is easily reachable.
Forms are filled, faxed, or mailed to the supplier at the time of ordering.	E-mail or electronic data exchange (EDI) methods makes the ordering process more convenient.

E-commerce has caused radical changes in the marketing methods, shopping life, and payment of purchased products as a result of the widespread use of computers, the Internet, and the high volume of commercial networks. In the Internet environment, consumers can browse the web pages of companies, order products and services from shopping sites, and then have the products and services delivered to their location (Damanpour & Damanpour 2001).

It is very easy for stakeholders (internal and external) to reach business registry and partnership data by visiting the website of the company (Marangoz, 2014).

The main objective of e-commerce is to make commercial transactions in the electronic environment easy, reliable, fast and efficient (Kiennan, 2002).

E-commerce is not a one-sided activity and provides advantages to customers and sellers.

E-Commerce Types

E-commerce is about the sales and marketing of products and services over the Internet and transmissions between two or more parties. A classification of e-commerce is made in terms of the parties of the trade who are the businesses, consumers, and the government (Doğaner, 2007). Considering this trilateral mechanism, e-commerce types are:

Companies can gain a competitive advantage by maintaining their loyal customers who are constantly shopping through their websites (Guthrie & Austin, 1996). In periods of intense competition or economic/financial problems, companies tend to establish e-commerce activities by setting up websites in order to reduce costs and survive in the market, thus they also increase the possibility of achieving sustainable competitive advantages (Morrison & King, 2002; Tse, 2003). The reason for the private property arrangement of B&B is the lack of systematic performance data caused by competition and differing

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financial situations (Poorani & Smith, 1995). Therefore, it is necessary to pay attention to the financial performance of B&B. In short, it is important to achieve a sustainable competitive advantage in terms of organizational learning skills, as they have an impact on organizational performance in the field of e-commerce (Ruiz-Mercader, Merono-Cerdan, & Sabater-Sanchez 2006).

Selecting Definitive Partners for Strategic Alliances

Another way to succeed in competition in the field of e-commerce is building strategic alliances. The aim of strategic alliances is to eliminate or wipe out the other competitors in the market. B2B companies are rival companies that combine their power to distribute their products in bulk, and also, they have access to new geographical markets through strategic alliances (Hamad, Elbeltagi, Jones, & El-Gohary, 2015). B2B allows information to be disseminated easily and swiftly. In a competitive environment, a partner company should only leave the strategic alliance after gaining basic competencies, knowledge, and developing a stronger strategic position (Stiles, 2001).

Figure 1. Characteristics of e-commerce
Source: Dolanbay, C. (2000). Elektronik ticaret stratejiler ve yöntemler, Ankara: Meteksan.

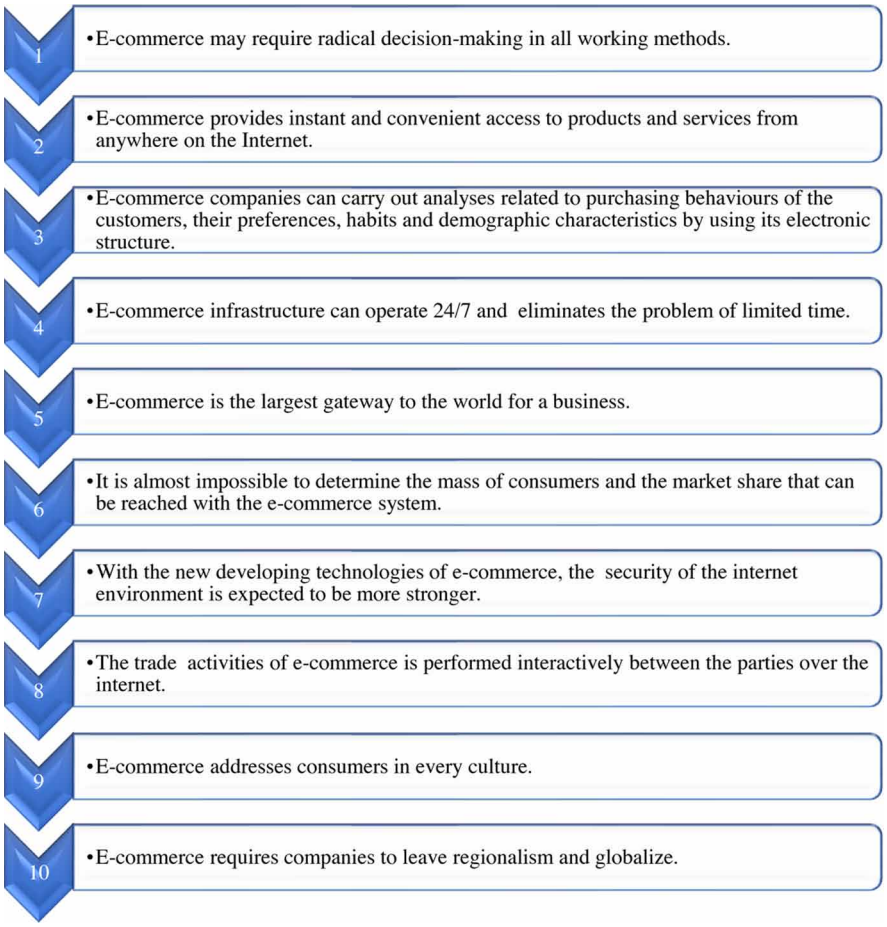

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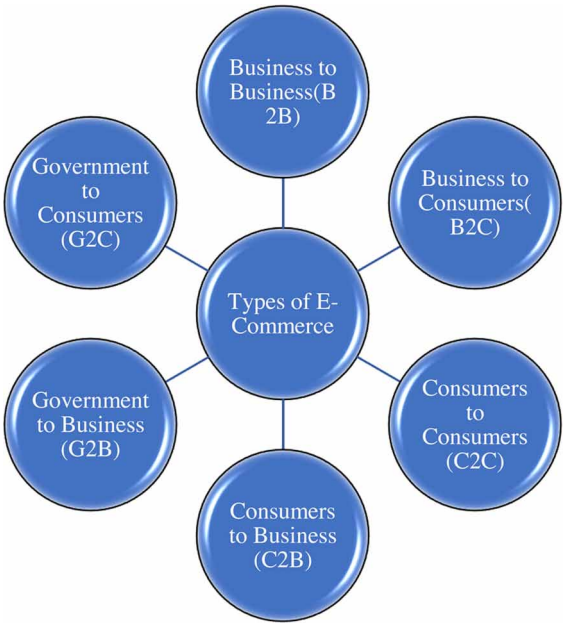
Figure 2. E-Commerce Types. Source: Doğaner, M., (2007). A study on the development of electronic commerce in Turkey and electronic trade from business to consumer. Master Thesis. Konya: Selcuk University Faculty of Economics and Administrative Sciences.



E-commerce is an important element for organisations to gain cost effectiveness against their competitors (Oum & Zhang, 2001). With B2B, partners have the opportunity to share strategic resources and capabilities that are scarce or absent in one or both companies (Gultai, 1999). Therefore, strategic alliance relations secure a wider distribution area, increase the efficiency of distribution, and facilitate the management of strategic resources, capabilities, and qualifications from a single source (Rowley, 2002). According to the findings of Stafford (1994), three strategic factors are necessary in order to be successful in competition: strategic goals, resources, and a corporate culture. Geringer (1991) explained that the collaboration, experience, and similarities in organizational culture can affect alliance performances. A strategic alliance is perhaps the most important step in forming a successful partnership in a highly competitive environment (Elmuti, & Kathawala 2001).

Achieving Expected Performance for Strategic Alliances

The growing reputation of a strategic alliance can reduce the damage caused by opportunist companies in a competitive environment. Trust is the essential factor for a strategic alliance to be successful in a competitive environment (Dale, 2003). However, inter-company diversity can lead to the opportunistic behaviour of a partner and this may adversely affect alliance performance in terms of the cost of transactions (Park & Ungson, 1997). Profit, growth, adaptability, and participation are often mentioned during the evaluation of alliance performance (Boersma & Ghauri, 1997). In strategic alliances, profit and growth are also often used as measurement elements (Hyder & Abraha, 2004). It is necessary to analyze the success of a strategic alliance by comparing alliances to competitors in a competitive environment (Tinnila, 2002). A strategic alliance provides both low transaction costs and a simultaneous tracking of

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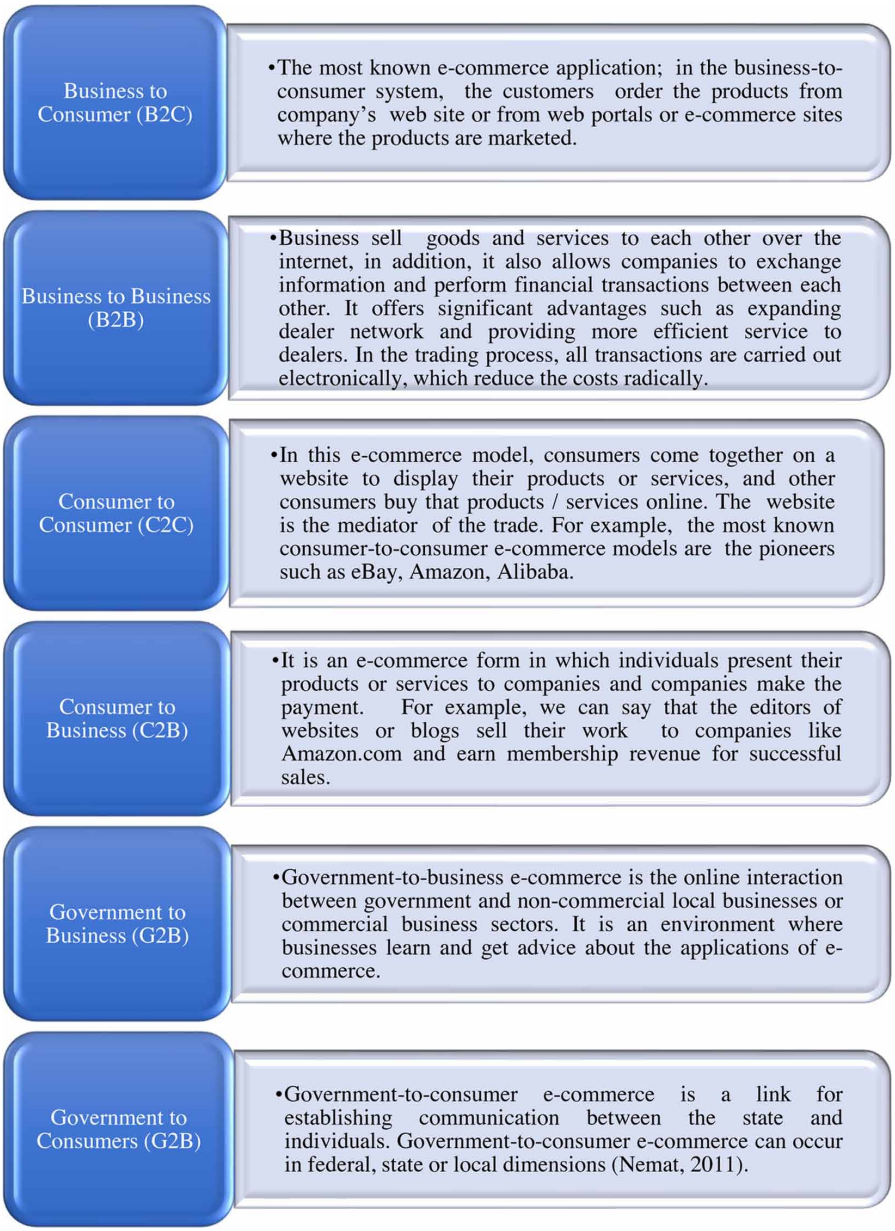
products or services with high added value. In a highly competitive environment, e-commerce companies are expected to increase their competitive advantages by adopting to B2B strategic alliances (Wise & Morrison, 2000). In short, the performance of strategic alliances is influenced by the industry environment, the experience of cooperation of alliance members, and by the motivation of selected partners (Harrigan, 1988; Kalakota, 2000; Chen & Tseng, 2005). At the same time, environmental characteristics affect alliance formation and motivation (Xie & Johnston, 2004). In a strategic alliance, high-quality partnerships increase performance (Lee & Lim, 2005).

Figure 3. Different Types Of E-Commerce
Source: Nemat, R. (2011). Taking a look at different types of e-commerce. World Applied Programming, 1(2), 100-104.



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Strategic Planning in E-Commerce

In the 21st century, e-commerce businesses can achieve success by integrating new job- processes into their organizations, giving importance to human resources, determining necessary skills/talents and bringing appropriate management roles and knowledge management systems (Okrent & Vokurka, 2004). Furthermore, in order to be successful in the field of e-commerce, organizations need to learn about new planning perspectives and manage innovation cycles suitable for e-commerce (Zahra & Gerard, 2002).

There is a strategically accepted fact that the Internet is now widespread throughout all countries. As a result, the e-commerce sector can be managed from even a home office environment, and this situation may have a devastating effect on companies in the normal trading environment, possibly bringing alarming change and threatening businesses. 'Alarming change' means that if companies do not conduct e-commerce activities through their web pages and continue their traditional trading activities, they may disappear from the competitive market. We know that there are 3 important strategies for achieving competitive advantage: cost leadership, differentiation, and focus strategies. It is only a matter of time before the new strategic approaches arise in the face of the change brought by e-commerce companies and their destructive impact (Lumpkin, Droege, & Dess, 2002). For example, if you look at potential customer populations and annual revenues of companies such as Amazon, Alibaba, or E-bay, which only trade over the Internet, you can better understand the impact of these potentially destructive changes of these companies.

From a strategic point of view, organizations must be able to adeptly measure, evaluate, and manage their skills. These skills are necessary for organizations to create value and to respond to the needs of customers (McAdam, & Galloway, 2005). In order to be successful in a competitive environment, the organizations need to control strategic processes (planning processes, management changes, accountability, and returns on investment) (Ho et al., 2004). In order to evaluate the assets, resources, and qualifications of the organization, e-business strategies must be aligned with organizational strategies, and the results of the implemented strategies should be related to organizational efficiency (Chang et al., 2003).

STRENGTH AND WEAKNESSES OF E-COMMERCE

Although e-commerce provides a number of advantages to businesses and individuals, there are also some questions about the reliability of e-commerce transactions as individuals have to share their personal information and credit card details on the Internet.

Strengths of E-Commerce

Advantages of e-Commerce (Budak 2010):

E-Commerce allows businesses to operate in the global market, allowing businesses to reach out to almost all countries and different cultures, and sell their products/services.

E-Commerce provides businesses not only new customers but also an opportunity to work with better suppliers and select partners, access to low-cost financing resources, and a qualified workforce.

E-Commerce businesses process, transmit, and record information in the electronic environment, instead of written paper format, reducing costs and eliminating time losses.

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E-Commerce systems use visual images and personal support services in order to enable companies to promote their products and services at the most appropriate cost.

E-commerce provides an opportunity to offer quality after-sales support services to increase customer satisfaction and loyalty.

E-Commerce allows companies to identify and respond to customer demands and needs quickly and effectively.

The Advantages of e-Commerce for Customers (Yeşil, 2008):

E-Commerce allows customers to shop at almost any place where the Internet is available.

E-Commerce provides consumers/customers with an opportunity to compare products and services, and select the reasonable priced ones.

E-Commerce companies use the complaints and suggestions of the customers for the purpose of improving customer service.

Weaknesses of E-Commerce

The web pages created by the e-commerce companies may have a number of security-related problems, which may lead to theft crime in the Internet environment.

Another security problem may arise if e-commerce companies share personal information of their customers.

In an e-commerce environment, communities should be made aware of fraudsters who use credit card copying technology on the Internet.

Customers can not try or test the products online, therefore returns and refund transactions are carried out, subsequently resulting in a loss of time and money. This is one of the issues that receives the most complaints from customers.

Tax problems that may arise due to the gains of enterprises in e-commerce,

The need for human resources in the field of e-commerce technology can be seen as a weakness as it brings extra costs to companies.

Advantages and Disadvantages Of E-Commerce

Advantages of E-Commerce

The advantages of e-commerce for businesses are as follows:

- **Customer Relationship Management:** Through e-commerce, companies are able to manage customer experiences easily, and provide solutions to any problems. Companies can create a more effective brand perception by online advertising through their e-commerce sites (Porter, 2005).
- **Reduction in Offline Store Cost:** Online stores reduce the costs of rent, office, and staff expenses. In the supply chain, it is very important to ensure accurate and fast information flow from the customer to suppliers and the delivery of correct materials from the supplier to the customer (Pavic, Koh, Simpson, & Padmore, 2007). The lack of stock requirements and the need of fewer numbers of staff can even make it possible to organise e-commerce sales from home.

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- **Effective Use of Time:** Online, time effectiveness is an element of commercial transactions between the seller and the buyer (Porter, 2001).
- **Documentation Process***:* E-commerce activities are conducted with e-documents, which reduce stationery costs and make it possible for transactions to be carried out with minimum errors.
- **International Sales and Marketing:** Through online stores, companies have an opportunity to virtually conduct their sales and marketing activities in an international market without making any physical investments (Porter, 2001).
- **Competitive Advantage:** Online trading companies, unlike offline trading companies, provide competitive advantages by promoting their products and services more easily in the national and international arena without time and space restrictions (Lumpkin, Droege, & Dess, 2002).
- **365 Days 24 Hours Open Store:** E-commerce companies can provide uninterrupted service 365 days, 24/7 hours. If the website's software and technical infrastructure is strong, the companies can ensure uninterrupted regular services to their customers at all times (Hidayanto, Ovirza, Anggia, Budi, & Phusavat, 2017). E-commerce decreases informality in the economy and increases competition. In addition, within related sectors, it creates new employment areas through dynamic new business lines and specializations. Furthermore, it contributes to regional development, education, and social solidarity (Afra, 2014).
- **The benefits of e-commerce for the customer are as follows:** Consumers can carry out online transactions around the clock, save time, and get the product they want through the Internet. Thanks to e-commerce, consumers can easily compare different types of brand products. Furthermore, consumers can read the comments of previous buyers of products or services, gleaning different perspectives.

Disadvantages of E-Commerce

E-commerce has several disadvantages for customers and sellers.

Disadvantages of e-commerce for sellers are as follows:

- **Security Problem:** The biggest disadvantage of e-commerce is the security vulnerability, as there is a possibility that the web sites can be hacked and user information can be captured by the hackers (Baldwin & Currie, 2000).
- **E-Commerce Costs:** The databases and applications of e-commerce companies should be very well maintained. The need for serious infrastructure and the cost for effective e-commerce activity is a disadvantage for the seller.
- **Security-Reliability:** The biggest disadvantage of e-commerce for customers is that of security vulnerability, there is risk that all personal information such as identity details, home address, phone number, etc., can be served to third parties (Baldwin & Currie, 2000).
- **Quality Uncertainties:** It may not always be enough to obtain information about the product in a virtual environment. The return process of the unwanted products often creates a great time loss for customers (Corbitt, Thanasankit, & Yi, 2003).
- **Delivery Delays:** Delivery delays may occur due to weather conditions, public holidays, and a lack of product in a seller's stock. Delivery delays can cause customer dissatisfaction.

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Competition Concepts and Competition Strategies

Competition has five points.

First, the goal. There must be an objective, and the existence of others might cause difficulties in the realization of this objective.

The second is rule and restrictions. In a competitive environment, the prevention of opponents into the game or their elimination by either force, abuse of the dominant position, agreement between the competitors, or cheating etc. is prohibited. If a race does not have any rules and restrictions, we cannot call it a competition. In such cases, it can be said that there is a violation in competition or unfair competition.

The third is the guarantee of fundamental freedoms and human rights. It is not enough to recognise freedom on paper. The full guarantee of freedom is possible by the existence of a well-functioning, independent, and effective justice system.

Fourth, there should be no discrimination. The position of the state in the competitive environment is very important. The state should not give privilege or priority to some players for various reasons and should not discriminate or tolerate incompliances with rules and obligations.

Fifth, the number of players should be more than one. In a competitive environment, in some cases, certain number of players are required to play, so the players can not dominate the game and can not affect the result of the game. In fact, all the players should have free access to the game, and none of the players should dominate the play on their own. In some exceptional cases, even if there is only a single player, it still may be considered a competitive environment if the entry into the race is free. However, in such special cases, the existing player should feel the competitive pressure from the potential players who want to enter the market (http://www.rekabetdernegi.org/rekabethakkinda.htm, Access: 01.02.2019).

Benefits of Competition

Competitive power is the key to the success for companies in national and international fields. Companies should give necessary importance to research and development, information, and training of employees in order to improve their technological infrastructure. In today's intense competitive environment, only robust companies can survive, whereas weaker ones are forced out of the market, both in production and service sectors. Therefore, these factors become more significant as they provide flexibility for the companies. Flexibility is an essential factor in a competitive environment because it allows companies to survive in the market by differentiating their products or services. Furthermore, the companies need to work efficiently to be successful in a competitive environment, and in this way, they can transform their savings into investments and ensure capital accumulation in a country (Su, Guo, & Sun, 2017). The companies in the e-commerce sector have flexibility, which is a significant step towards efficiency. In comparison with traditional companies, the e-commerce companies have many advantages such as reduction of costs, allowing flexibility and providing product/service diversity. Companies operating in the field of e-commerce can gain more advantages and achieve sustainability if they can open up to international economic areas and integrate with the world (Mess, 1997).

Competitive Advantage

There are other factors that may be important for the competitive advantage. One of them is the content of the web page. The Internet makes it possible for companies to display large amounts of content at a

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very low cost. For example, REI.com is a supplier of recreation equipment and ready-to-wear clothes and has more than 78,000 items on its 45,000-page web site. However, the company could not manage its website content effectively in order to gain added value. Similarly, Garden.com had a strong start in 1999, raising tremendous venture capital but failing to create detailed and compelling content (but its name is still used by Burpee, a 125-year-old garden products supplier).

Three types of content can improve the value of a web site: customer feedback, expertise, and entertainment programming:

Customer Feedback

Buyers often rely on other buyers' comments more than a company's promise. The customer comments and customer feedback can help to improve the content of a website.

For example, if you want to buy a piece of furniture online, you can't touch, feel or try it. In this case, you can make the purchase decision by reading or evaluating the objective references of other buyers who have previously purchased the product you want to buy. Such references can create trust or play a significant role in the purchasing decision by highlighting the 'unwanted or unappreciated' sides of the product or services as experienced by the previous buyers. This can also be a competitive advantage source for the competitors because they follow each other. It is necessary for the companies to examine the responses of customers and read their experiences to understand their opinions about the products and services in order to create new product or improve services in a competitive environment (Kakalejčík, Bucko, & Vejačka, 2019).

Expertise

The Internet is a very important learning tool and it is constantly developing. Fifty percent of users regard the Internet as a kind of library, because search-oriented web pages such as Google, Yandex, etc. allow access to a vast amount of information quite quickly. As a result, users have the opportunity to improve their knowledge. Furthermore, some websites provide valuable new or objective information. At the same time, its problem-solving function often educates consumers on various options and outcomes. For example, several online web pages such as Sikayetvar.com, Sikayetim.com, or Sikayet.com can provide information about products and services, and customers can read about the problems they face before buying them. The expertise function is not limited to regions. In the case of B2B businesses, web sites share their expertise by creating communities or professional groups in the industry (Kaplan, & Sawhney, 2000).

Entertainment Programming

The Internet is used for entertainment purposes by more and more people. Technologies such as streaming media allow the Internet to send TV-like images and sound allowing computers to broadcast breaking news, offer video games and movies, and provide fun time online. In fact, we can say that TV viewing has been reduced and online activity has been increased among people with high-speed broadband service because the technology has an interactive approach, which means the viewers not only passively watch but are involved in creating art and playing a game etc. Of course, e-commerce companies noticed this trend and have started to create web content that is not only informative but also fun.

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These three types of contents-customer feedback, expertise, and entertainment programming- are sources of potential competitive advantage and can strengthen the value creation process. However, if they are used negatively, they can also reduce performance. Strategically displayed quality content enables companies to effectively differentiate their offer of product or services. This can be particularly important in an environment where differentiation strategies provide more gains compared to a low-cost strategy.

STRATEGIES TO GAIN A COMPETITIVE ADVANTAGE

There are many methods and strategies to achieve a competitive advantage. The analysis of the competitive situation of a company within the market is called competition analysis. The determination of the competitive situation of a company reveals whether the investment was successful and if it has the ability to gain above average profits (Lu & Wang, 2016). This skill increases the chance of being successful in the free market. Competitive strategies also allow companies to find the most suitable position within a competitive environment and achieve their main objectives (Porter, 2008).

There are many methods and strategies for companies to achieve a competitive advantage. Competitive strategies that can be implemented according to their sector;

1. Competitive Strategy: Porter's Model
2. Competitive Strategy: Resource-Based Model
3. Competition Strategy: Game Theory Approach

According to the Porter's competition strategy, it is necessary for companies to determine conditions affecting competition in order to ensure a competitive advantage (Porter, 2008). After that, the generic competition strategies can be implemented in every sector.

Figure 4. Competitive strategies

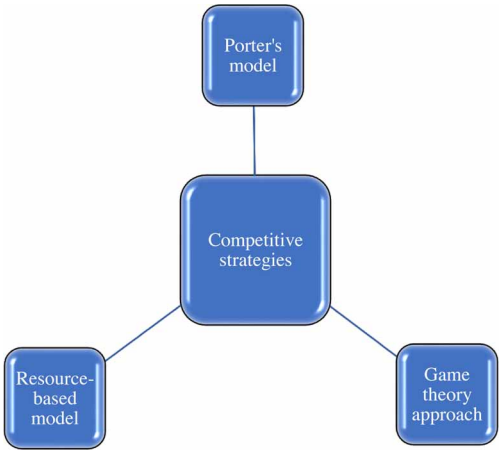
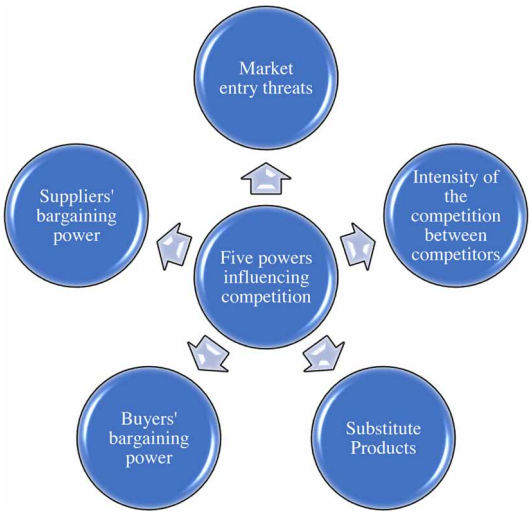


Figure 5. There are five powers that influence competition (Porter 2008)



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Main Conditions Affecting Competition

If the company(s) are entering the sector for the first time, they need to obtain a market share in order to stay in the market. From the moment they enter the competition, the companies should bring their resources. However, every company may not enter the market as they wish. This situation is called market entry barriers which is explained below (Porter, 2008):

Economies of Scale

The increase of absolute production volume per period can cause a decrease in unit costs per product. Companies may reverse their decisions for two reasons:

- They cannot take the risk of the reactions from companies already in the market.
- Or, they can't afford the cost resulting from the disadvantageous situation.

Product Differentiation

Newly entered companies may have to spend more money to create satisfaction and gain loyalty of the customers as this is a barrier for companies.

Capital Requirements

New companies in the market should spend on advertising and/or R&D activities in order to compete. This means that they should have more financial resources. For companies that are unable to handle this burden, insufficient capital is an barrier to entry.

Transition Costs

If a company does not like its supplier or does not agree with its supplier, the transition process to a new supplier may create a barrier to entry as it may be reflected in costs.

Access to Distribution Channels

When the company enters the market, it must have a good distribution channel to respond to the demand from the buyers. The need to guarantee the delivery of the product to the buyer may create a barrier to entry.

Cost Disadvantages

One of the biggest entry barriers for new entrants to the market is the position of the companies that have already taken place in the market. Their superiority gained from experience, image, reputation, or location can be a barrier to the market for possible entrants.

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Government Policies

A number of state policies, restrictions, prohibitions, penalties, etc. or similar elements can be entry barriers for new entrants to the market.

Intense Competitiveness Between Competitors

From the moment of market entry, there will be competitive manoeuvres of competitors within the market. In many sectors, the competition of companies can have a significant impact on competitors in the market. In the face of these moves, opponents will tend to retaliate against their counterparts. In fact, as a result of these mutual moves, the firms become dependent on each other because they re-develop and renew themselves through retaliation.

Substitute Products

If the products of a company are also available from the competitors, and if buyers have the right to choose, this may cause a reduction in profits. The most important move of the company (s) against substitution products is to explain to consumers the difference of their products from other products in a positive way. Because, what is important for consumers is the relationship between price/performance/quality (Porter, 2008).

The Bargaining Power of Buyers

One of the most important situations for companies is that there are buyers who will benefit from competition in the market because buyers have the right to buy a product according to their budgets. The buyers gain this power as a result of competition among companies (Porter, 2008).

The Bargaining Power of Suppliers

When companies enter the market, they may see that suppliers can play with the price or decrease the quality of products and services. In this case, the suppliers can have power in the market. This power can reduce the profitability of the companies due to the cost increase caused by suppliers (Porter, 2008).

Generic Competitive Strategies

Businesses who want to be active in e-commerce should be able to satisfy their customers or consumers much better than their competitors in order to be successful in a competitive environment (Coltman, Devinney, & Midgley, 2007). The degree of satisfaction is directly proportional to loyalty. In a competitive environment, competitive analysis has a strategic importance enabling survival in the market. The two most important elements of competitive analysis is the determination of strengths and weaknesses. If senior management has ego problems, if they cannot have a result-oriented mindset, and if they are not visionaries, they might ignore weaknesses within the firm. This means that the company's life in the market will be short-lived. Status/position title can change people. Real leadership is seen in those who do not show any change in character/personality after receiving a office/title/status. Naturally,

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during competitive analysis, companies should identify their weaknesses and turn their strengths into opportunities within the market (Tek, 1999).

The differentiation and cost-leadership strategy are parts of the Generic Competitive Strategy and also for companies operating under industry conditions. The focus strategy is for businesses with a narrow field of activity (Porter, 1985).

Industry 5.0: This means the existence of unmanned technologies in life. It is a fact that robots can do every job that people can, while also allowing artificial intelligence to communicate among themselves. The unlimited advancement of technology highlights the continuing problem of 'unemployment'. Furthermore, industries are now able to be managed by only one group of people while all other jobs can be carried out by artificial robots. The development of the capabilities of humanoid robots will push companies to generate new strategic moves. It is worthy paying attention to the question of how e-commerce companies will be affected by the attempts to bring the virtual world and the real world together. In this case, we need to ask if generic competitive strategies need a 4th strategy? Companies operating in the field of e-commerce should focus on technology-based activities in order to be ready for industry 5.0. It will be possible that new strategies will be generated as a result of this atmosphere in the competition environment.

However, Strategic Transformation should focus on;

- Reducing costs and ensuring operational efficiency; the supply chain must be functioning smoothly and technological integration, which is the pioneer of change, must be sustained successfully (Coltman et al., 2001).
- In order to have a good position in the e-commerce market, it is necessary to differentiate products and/or services and use the resources in the supply chain effectively (Chang et al., 2003).
- It is necessary to create a superior economic value that will provide a competitive advantage (Riggins, 1999).

Cost Leadership Strategy

Cost leadership strategy is about businesses gaining advantages over its competitors and obtaining above average income above in line with the reduction of costs in all activities and ensuring positive differences between costs and prices (Porter, 1985).

The cost leadership strategy has several risks (Porter, 1985);

- With the continuous development and change of technology, past investments or experiences may become invalid.
- The low cost of new entrants in the sector by imitating or investing in very good facilities,
- The fact that product or market changes may not be seen due to the company's concentration on cost.

Differentiation Strategy

By differentiating product or services, businesses can create something that is considered unique by consumers and customers. Carrying out business activities the same as other companies does not allow a company to progress beyond imitation. However, the basis of the differentiation strategy is to generate

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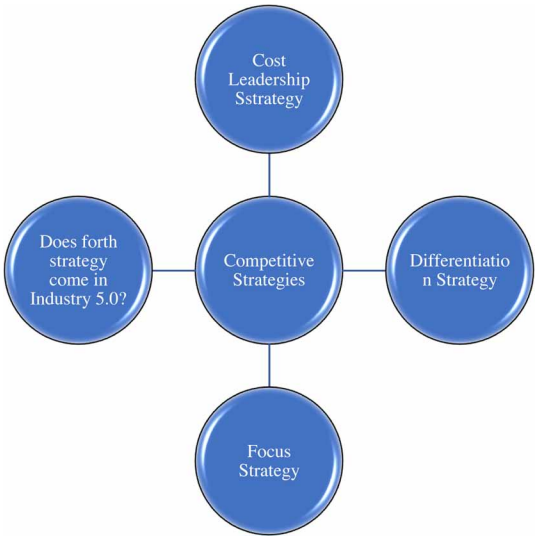
different applications, become distinct among competitors, and direct customer preferences to a company's products and services. Then, differentiation can be made based on the design, brand name, brand image, stores, technology, support services, customer services etc. In order for the differentiation strategy to provide a competitive advantage, the value created must exceed the cost. In addition, differentiation must be valuable for the consumer.

Figure 6. Generic Competitive Strategy (Porter 1985)



From the Technological Aspect

There are a range of outsourcing options from total outsourcing to partial outsourcing. It is possible for an organization to try to differentiate itself in the market by focusing only on one main factor. This can shift the strategic focus to an external supplier and generates additional strategic issues but does not generally lead to a comprehensive organizational culture change. However, if a comprehensive relationship in management is needed, there may be a significant gap between strategic expectations and fulfilment (Levina & Ross, 2003).

From the Products and Services Aspect

When e-branding becomes a critical issue, and when a difference occurs between brand identity and brand totality, a significant cultural change is seen (Venkatraman & Henderson, 1998). This requires all members of the organization to think 'out of the box' and distinguish between corporate customers and end consumers.

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Business models, e-Positioning

At this stage, the organization regains its position in the market through e-services to a wider community. Fujitsu and Dell have been exemplary for successful differentiation through e-business. These pioneers developed their public relations and established a special relationship between suppliers and buyers. This created an organizational culture that embraces 'community culture' throughout the organization.

Focus Strategy

Businesses choose a specific part of the market. For example; it may be certain consumer populations, a specific production and distribution line, or a geographic location. With the focus strategy, a company attempts to reach a specific target, market and provide better service.

Table 2.

Advantages of Differentiation Strategy	Risks of Differentiation Strategy
- Generates customer loyalty, as well, customers become insensitive to prices and this provides protection against competition. - Customer loyalty and the uniqueness of the company, due to differentiation, creates barriers for new competitors, - Creates high margins against the power of suppliers; this also destroys the need for a low-cost market situation. - The company that differentiates itself and achieves customer loyalty is better protected than its competitors in the case of substitution products (Porter 2008).	- If the cost difference between low-cost competitors and the differentiated enterprise increase too much, differentiation cannot maintain brand loyalty, and buyers stop buying the products for certain features, services, or the image of the enterprise. -Buyers' need for the differentiating factor may decrease. This occurs when buyers become more complex. -Imitation can reduce the perceived differentiation. This situation becomes more common in widespread sectors (Porter 1985).

Resource-Based Competition Strategy

Resources of Business

The competitive strategy based on resources emerged after 1980, and started to develop in order to achieve a sustainable competitive advantage in the sector. The aim of this strategy is to determine the strengths and weaknesses of the organisation and focus on strong resources (Van Hooft & Stegwee 2001). It is a perspective based on gaining competitive advantage by focusing on a company's strong resources (Karacaoğlu, 2006). Resources (tangible assets, intangible assets, and organizational skills) are the tools for organisations to develop and implement a strategy to achieve a competitive advantage (Seviçin, 2006).

There are two basic assumptions of the Resource Based Competition Strategy:

- Businesses may have different strategic resources in the sector. In other words, the resources of similar production processes may have different characteristics compared to other enterprises. This situation may cause different productivity and efficiency levels and can lead to distinctive performance gaps. At the same time, it can generate competitive advantages.

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- Resource differences between businesses may be long-term. This situation indicates that the resources are specific to the enterprises and are very valuable. At the same time, it ensures a sustainable competitive advantage.

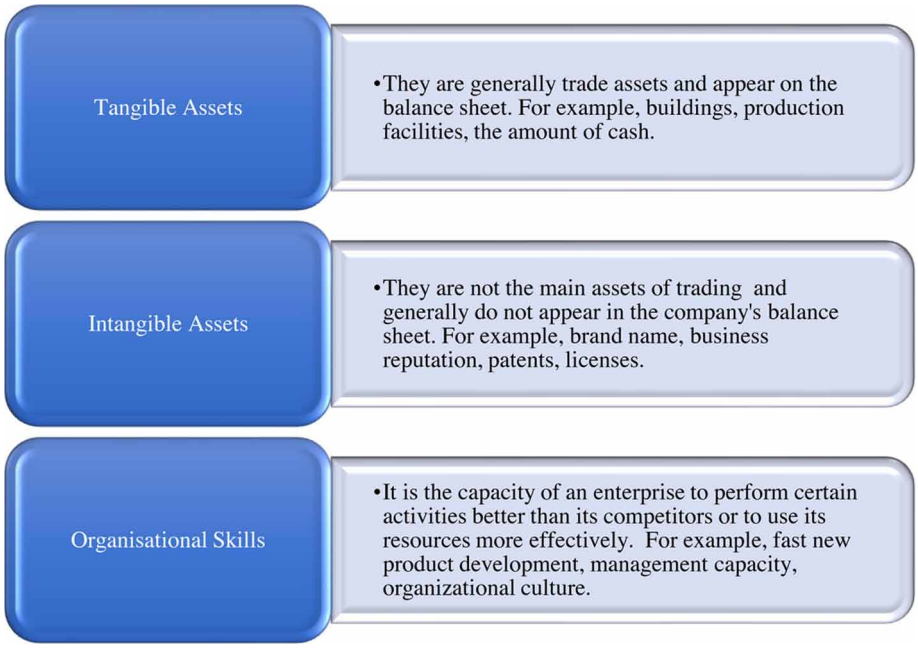
Table 3.

Advantages of Focus Strategy	Risks of Focus Strategy
- It can be considered a type of competitive strategy which reduces the threats that new entrants may create. - The threat of substitution products for businesses is very low. - The number of competitors in private and differing markets decreases and competition occurs at a different severity (lower level) (Porter, 2008).	-In the case of a wide range of products, the company with a focus strategy may lose the cost advantage of serving a narrow target. - Differences in products or services begin to decrease as a whole. -Competitors find sub-markets within the strategic target and exclude the orientation focus (Porter, 1985).

Characteristics of Resources

The characteristics of the strategic resources are:

Figure 7. The Tools for Organisations
Source: Seviçin, A. (2006). Kaynaklara Dayalı Rekabet Stratejisi Geliştirme. Dumlupınar Üniversitesi Sosyal Bilimler Dergisi, (15).



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Stages of Resource-Based Competition Approach

Prahalad and Hamel, Grant and Rumelt stated that the Resource-Based Competition Strategy, carried out from internal to external dimension, and companies should use resources and skills effectively.

Hamel and Prahalad explain certain stages of competition (Köseoğlu, 2007):

- Establishing basic skills by predicting customer demands and future opportunities.
- Creating an alternative product variety to reshape the customer approach
- Creating and managing necessary coalitions for the sector
- Forcing competitors to progress styles that will be expensive and time consuming
- Ensuring suppliers have worldwide networks
- Entering key markets before competitors by identifying a suitable market positioning strategy
- Differentiating product and production processes to increase efficiency and effectiveness.

The Porter's approach and Resource-based approach are alternatives to each other, however Barca (2002) explains that these two approaches are also complementary. Barca states that 'strategy development is about associating internal resources with external environments in order to achieve a competitive long-term advantage (Barca, 2002). Barca explains that the good 'market position' and 'basic skills position' is necessary for gaining a sustainable competitive advantage (Barca, 2002).

The Effect of E-Commerce on Competitive Strategies

E-Commerce will require radical changes in our understanding of competing enterprises. When we consider Porter's Generic Competition Strategies,

Through e-commerce, businesses;

- can focus on different markets
- reduce their total costs
- can develop a wide range of services or products compared to their competitors (Porter, 2008).

If we analyse e-commerce from the recourse-based perspective, we can say that e-commerce companies should have effective and efficient approaches in using their resources. If we analyse e-commerce's competitive strategy, in terms of game theory, e-companies will affect all companies in the sector, in terms of added-value rules.

The reciprocal moves of companies operating in the field of e-commerce will also affect their strategies and naturally have an impact on the conditions of competition (Ma, Jin and Huo 2019). If companies want to turn these effects of a competitive environment into an opportunity and gain an advantage, they should ensure that their strategic moves are complementary to each other.

Adding Value

Companies need to collect information and data to analyse their customers and competitors in the sector. At the same time, customers need information to compare the products and/or services of companies to make a purchase. The Internet provides a great convenience both in terms of accessing and gathering

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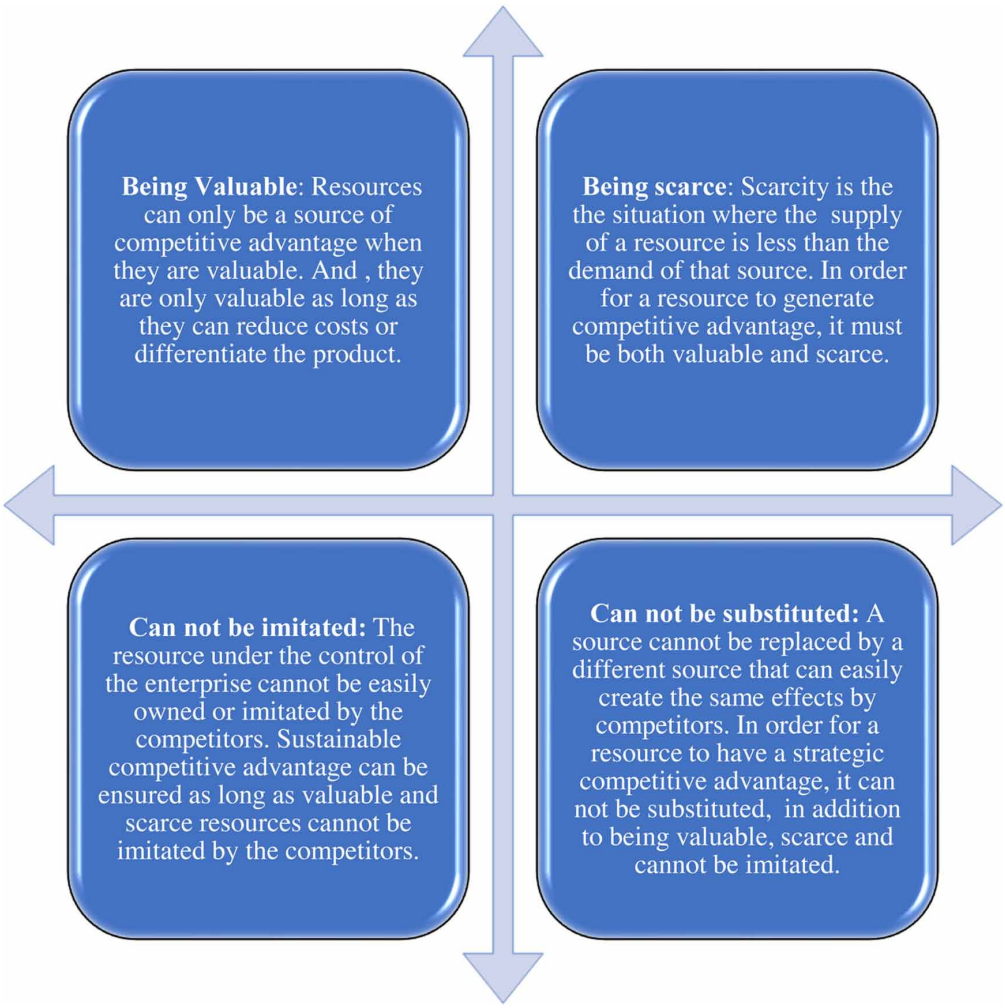
information. The Internet reduces search costs and brings multiple benefits. For example, we can use the Google search engine to gather information and compare products and services of several companies and then buy from the appropriate company according to our budget. Google scans 3 billion web pages in an average of 500 milliseconds and provides instant information. Imagine if you had to do the same search without the Internet; If you spend 1-minute per page, you will need to spend 5707 years to navigate 3 billion web pages. This example helps us to better understand what kind of technological invention the Internet is. Therefore, Google has become of interest for people of all ages and at all educational levels. Companies allocate significant portions of their budget to appear on the first page of Google. Because, if you want to gain a competitive advantage, you should use the technology very effectively (both in the manufacturing and in the service sector).

Figure 8. The Characteristics of The Strategic



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In order to achieve a sustainable competitive advantage, strong support is needed to create value in productivity and customer service because the quality of the products and/or services or customer satisfaction determines the value of the product/service offered. Customers value the product together with the service received. The value created by the service will be an advantage in a competitive environment, and a competitive advantage depends on increasing the efficiency and positive return on investments. Therefore, trainings should be provided for employees and organisational plans should be done with the utmost care. Continuous development and change will make it possible for companies to achieve their targets and reach their goals. Especially in today's business world, where there is intense competition, it is not possible for companies to be successful if they do not learn and not keep up with the changes or are slow to adopt to developments. Success in a competitive environment also depends on planning and implementing non-disruptive supply chain practices and providing innovative product and/or services compared to competitors.

SOLUTIONS AND RECOMMENDATIONS

It is accepted that 'policy' is an important factor for the new e-commerce concept. Indeed, technology and management strategy options are very much linked to the political, social, and regulatory environments of e-business. Policies can be quite complex or change regularly; therefore, their impact on e-commerce is not fully understood yet. Policies can change market conditions, increase or decrease regulations, create market entry barriers, influence prices, increase or decrease competition costs, and configure interactions between companies and customers. E-commerce companies have different options, and they can either act passively and obey the rules or become an actor in managing policy limits as a part of a company's overall strategy (Hackney, & Burn, 2001). E-commerce brings customers and traders together in a commercial, translational, cultural market beyond imagined technical boundaries.

E-businesses use computers and communication technologies for commercial purposes; therefore, they should pay attention to the automation of communication and interaction activities. E-business includes telephone, e-mail sales, or systems that support commercial activities over the Internet and exploded with the growth of the Internet (global gathering of thousands of individual networks in the world), particularly the World Wide Web. E-commerce has changed the market rules and the role of information technology (IT). Before, market strategies determined the use of IT systems; however, now, IT has power of its own (Venkatraman, & Henderson, 1998). Indeed, companies that want to be successful in e-commerce are planning their market strategies based on IT. Today's successful e-commerce models are market and technology-oriented, but at the same time, it requires the seamless integration of both marketing and technological skills (Ghosh, 1998). Tomorrow's e-business model will be technology oriented, and information technologies will be an integral part of the company strategy, in dealings with governments, interest groups, and the public. In other words, policies will be closely managed with strategy and technology options. Tomorrow's e-businesses will need to design, structure, and create relationships that allow technology and policy-driven dynamic and cost-effective options to be present.

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FUTURE RESEARCH DIRECTIONS

There is a deep concern in many circles that e-commerce may be increasing the power of traders, reducing the power of consumers, challenging the government's ability to protect local industries, and threatening the income sources of both the state and governments. E-commerce not only raises economic concerns related to competition and pricing but also reveals new social and environmental threats that can be quite widespread and viral (Kakalejčík, Bucko, & Vejačka, 2019). Moreover, the regulation of a country may need global cover rather than being limited to a sovereign state. Finally, as the Internet reduces the cost of the organization, there is an increasing number of interest groups, and their opinions about policies should be taken into consideration. These interest groups can be formed and solved in a short time and e-businesses should develop interactions with them regarding forming policy. Up until now, there has been little awareness or interest in public policies in the field of management within e-commerce. Therefore, companies that want to be successful in competition conditions should thoroughly analyze their external stakeholders before starting their activities in the field of e-commerce. Then, they need to create their own organizational culture with a better dynamic structure than their competitors. However, in doing so, the most important point is to make sure that their investment has a visionary perspective and is integrated with technology.

CONCLUSION

The most important feature of e-commerce is that it provides an opportunity for customers to evaluate and compare products and services. The customer/consumer can conduct cost and benefit analysis and purchase the most appropriate product and/or service according to his/her budget. However, it is also necessary to point out the disadvantages of e-commerce. There are some products that even if comparisons are made on the Internet, it will not be enough, and a customer will need to go and look or try. For example, textile products may not always be same as the one on the web page, and a customer may have to go to the store and try it on and purchase the goods there. Similarly, furniture may not be same as it appears on web pages. One of the indicators of success for e-business is whether the company is ready to meet the demands of customers/consumers. From a strategic point of view, the important factor is the organisation's adaptation process to technology (Spathis & Constantinides, 2003). The success of the e-business initiative also depends on having a compelling vision that radically changes the organization's performance. Another way of being successful is to have open communication between the leader and employees, and also have strong organisational participation and determination. In order to achieve this, it is necessary to establish an appropriate organizational culture (Yu, 2005). Another key point for the success of e-business is that its vision of change should be adopted by all stakeholders within the organization. In order to gain this, intra-organizational communication should be successfully implemented at all levels. A further factor of success of e-business initiative lies in the adoption of a transparent management approach, which is very important in providing trust for all internal stakeholders and external stakeholders. Managers need to use resources in line with organisational objectives and they should prepare the structure of the organization for competition in order to achieve organizational change (Huang et al., 2004; Zhao, 2004; McAdam & Galloway, 2005). A digital economy has changed the cost structures of certain sectors, as well, the applications of Internet-based technologies have already had a tremendous impact. It is clearly understood that the Internet reduces costs and speeds up processes. For

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example, transactions between a seller and customer can be mutually agreed and implemented on E-bay.com very easily and quickly. Similarly, payments can be made between the parties through services such as Paypal, without any need of seeing each other. Amazon offers One-Click technology that enables high-speed purchases and is very successful in fulfilling orders and conducting fast and reliable transactions. These examples show that companies should focus on every detail in e-commerce, such as the variety of payment methods they offer in their web pages, in order to be successful in a competitive environment.

REFERENCES

Afra, S. (2014). *Dijital Pazarın Odak Noktası eTicaret: Dünya'da Türkiye'nin Yeri, Mevcut Durum ve Geleceğe Yönelik Adımlar*. İstanbul, Turkey: TÜSİAD.

Akgöz, S. S. (2009). E-dış ticaret işlemleri. *BETA Bulletin of Experimental Treatments for AIDS*.

Baldwin, L. P., & Currie, W. L. (2000). Key issues in electronic commerce in today's global information infrastructure. *Cognition Technology and Work*, *2*(1), 27–34.

Barca, M. (2002). *Stratejik Yönetim Yaklaşımları: Rekabet Avantajı Yaratmada Sinerjik Etki, Stratejik Boyutlarıyla Modern Yönetim Yaklaşımları*. İstanbul, Turkey: Beta Yayınevi.

Boersma, M. F., & Ghauri, P. N. (1997). A qualitative meta analysis of performance measures and factors affecting international joint venture performance. *Proceedings of the 24th Annual Conference at the UK Academy of International Business* (pp. 119–142). Leeds, UK: CIBUL, April.

Brynjolfsson, E., & Hitt, L. M. (2003). Computing productivity: Firm-level evidence. *The Review of Economics and Statistics*, *85*(4), 793–808.

Budak, B. (2010). *E-Ticaret İnternet Ortamında Ticaret*. İstanbul, Turkey: Etap Yayınevi.

Canpolat, Ö. (2001). *E-Ticaret ve Türkiye'deki gelişmeler*. Ankara, Turkey: Sanayi ve Ticaret Bakanlığı Hukuk Müşavirliği.

Chaffey, D. (2007). E-business and e-commerce management: Strategy, implementation and practice. London, UK: Financial Times.

Chang, K. C., Jackson, J., & Grover, V. (2003). E-commerce and corporate strategy: An executive perspective. *Information & Management*, *40*(7), 663–675.

Chen, H. M., & Tseng, C. H. (2005). The performance of marketing alliances between the tourism industry and credit card issuing banks in Taiwan. *Tourism Management*, *26*(1), 15–24.

Chen, S. (2001). *Strategic management of e-business*. New York, NY: John Wiley and Sons.

Coltman, T., Devinney, T. M., Latukefu, A., & Midgley, D. F. (2001). E-business: Revolution, evolution, or hype? *California Management Review*, *44*(1), 57–86.

Coltman, T. R., Devinney, T. M., & Midgley, D. F. (2007). e-Business strategy and firm performance: A latent class assessment of the drivers and impediments to success. *Journal of Information Technology*, *22*(2), 87–101.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Corbitt, B. J., Thanasankit, T., & Yi, H. (2003). Trust and e-commerce: A study of consumer perceptions. *Electronic Commerce Research and Applications*, *2*(3), 203–215.

Coşkun, A. G. D. N. (2004). Elektronik ticaretin gelişiminde temel dinamikler ve gelişimi önünde engeller, Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, *13*(2), 243-258

Dal, V. & Özbek, A. (2006). Avrupa Birliği ve Türk hazır giyim sanayiindeki e-ticaret uygulamalarının karşılaştırılmalı olarak incelenmesi. Elektronik Sosyal Bilimler Dergisi, *5*(18).

Dale, C. (2003). The competitive networks of tourism e-mediaries: New strategies, new advantages. *Journal of Vacation Marketing*, *9*(2), 109–118.

Damanpour, F., & Damanpour, J. A. (2001). E-business e-commerce evolution: Perspective and strategy. *Managerial Finance*, *27*(7), 16–33.

Doğaner, M. (2007). *Elektronik ticaret Türkiye'de elektronik ticaretin gelişimi ve işletmeden tüketiciye elektronik ticaret üzerine bir araştırma. Yüksek Lisans Tezi*. Konya, Turkey: Selçuk Üniversitesi İİBF.

Dolanbay, C. (2000). *Elektronik ticaret stratejiler ve yöntemler*. Ankara, Turkey: Meteksan.

Elibol, H., & Kesici, B. (2004). Çağdaş İşletmecilik Açisindan Elektronik Ticaret. Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, (11), 303-329.

Elmuti, D., & Kathawala, Y. (2001). An overview of strategic alliances. *Management Decision*, *39*(3), 205–217.

Erbaşlar, G., & Dokur, Ş. (2012). *Elektronik ticaret: e-ticaret*. Nobel Yayın Dağıtım.

Ersoy, Z. (1999). *Elektronik ticaret ve ticaret noktaları*. Ankara, Turkey: İgeme.

Fahey, L., Srivastava, R., Sharon, J. S., & Smith, D. E. (2001). Linking e-business and operating processes: The role of knowledge management. *IBM Systems Journal*, *40*(4), 889–907.

Fırlar, B. G. (2010). Dijital geleceğe hazırlanmak: bilgi ve yenilik yaratma. Sinem Yeygel Çakır (Ed.). Teknolojinin pazarlama iletişimine etkileri içinde, Ankara, Turkey: Nobel.

Geringer, J. M. (1991). Strategic determinants of partner selection criteria in international joint ventures. *Journal of International Business Studies*, *22*(1), 41–62.

Ghosh, S. (1998). Making business sense of the Internet. *Harvard Business Review*, *76*(2), 126–135. PMID:10177862

Görkey, A., & Küçük, S. (2001). *Elektronik ticaret*. İstanbul, Turkey: Yüksek Lisans Tezi, Marmara Üniversitesi, Sosyal Bilimler Enstitüsü.

Gottschalk, P. (2006). *IS/IT Outsourcing E-Business Strategy*. Sourcing and Governance.

Gultai, R. (1999). Network location and learning: The influence of network resources and firm capabilities on alliance formation. *Strategic Management Journal*, *20*, 397–420.

Guthrie, R. A., & Austin, L. D. (1996). Competitive implications of the Internet. *Information Systems Management*, *13*(3), 90–92.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hackney, R. A., & Burn, J. (2001). SPECS-Strategic planning for e-commerce systems: Towards an e-customer focus. *International Journal of E-Business Strategic Management*, *2*(4), 281–291.

Hamad, H., Elbeltagi, I., & El-Gohary, H. (2018). An empirical investigation of business-to-business e-commerce adoption and its impact on SMEs competitive advantage: The case of Egyptian manufacturing SMEs. *Strategic Change*, *27*(3), 209–229.

Hamad, H., Elbeltagi, I., Jones, P., & El-Gohary, H. (2015). Antecedents of B2B e-commerce adoption and its effect on competitive advantage in manufacturing SMEs. *Strategic Change*, *24*(5), 405–428.

Harrigan, K. R. (1988). Joint ventures and competitive strategy. *Strategic Management Journal*, *9*, 141–158.

Hidayanto, A. N., Ovirza, M., Anggia, P., Budi, N. F. A., & Phusavat, K. (2017). The Roles of Electronic Word of Mouth and Information Searching in the Promotion of a New E-Commerce Strategy: A Case of Online Group Buying in Indonesia. *Journal of Theoretical and Applied Electronic Commerce Research*, *12*(3), 69–85.

Ho, C. F., Wu, W. H., & Tai, Y. M. (2004). Strategies for the adaptation of ERP systems. *Industrial Management & Data Systems*, *104*(3), 234–251.

Huang, S. M., Chang, I. C., Li, S. H., & Lin, M. T. (2004). Assessing risk in ERP projects: Identify and prioritize the factors. *Industrial Management & Data Systems*, *104*(8), 681–688.

Hyder, A. S., & Abraha, D. (2004). Product and skills development in small- and medium-sized high-tech firms through international strategic alliances. *Singapore Management Review*, *26*(2), 1–24.

Kakalejčík, L., Bucko, J., & Vejačka, M. (2019). Differences in buyer journey between high-and low-value customers of e-commerce business. *Journal of Theoretical and Applied Electronic Commerce Research*, *14*(2), 47–58.

Kalakota, R. (2000). Next generation B2B solutions: The revolution's winners. Supply chain. *Management Review*, 14–79.

Kaplan, S., & Sawhney, M. (2000). E-hubs: The new B2B marketplaces. *Harvard Business Review*, *78*(3), 97–106. PMID:11183982

Karacaoğlu, K. (2006). *Rekabet Üstünlüğü Sağlamada Endüstri Temelli ve Kaynak Temelli Bakış Açısı: Kayseri'de Faaliyet Gösteren İmalat Sanayi İşletmeleri İçin Bir Model Önerisi. Yayınlanmamış Doktora Tezi*. Ankara, Turkey: Ankara Üniversitesi Sosyal Bilimler Enstitüsü.

Kemp, S. (2017). Digital in 2017: Global overview. *We are social, 24*.

Kiennan, B. (2002). *İşletmeler için çözümler elektronik ticaret, (Çev. Kaan Öztürk, Okan Cem Çırakoğlu, Serdar Özkaya)*. Ankara, Turkey: Arkadaş.

Koellinger, P. (2008). The relationship between technology, innovation, and firm performance—Empirical evidence from e-business in Europe. *Research Policy*, *37*(8), 1317–1328.

Köseoğlu, M. A. (2007). *Etik Kodların Rekabet Stratejilerine Etkileri ve Bir Alan Araştırması.* Yayınlanmamış Doktora Tezi. Afyonkarahisar Kocatepe Üniversitesi Sosyal Bilimler Enstitüsü.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Lee, S., & Lim, G. G. (2005). The impact of partnership attributes on EDI implementation success. *Information & Management Amsterdam*, *42*(4), 503–516.

Levina, N., & Ross, J. W. (2003). From the vendor's perspective: Exploring the value proposition in information technology outsourcing. *Management Information Systems Quarterly*, 331–364.

Lu, B., & Wang, H. (2016). Research on the Competitive Strategy of Cross-Border E-Commerce Comprehensive Pilot Area Based on the Spatial Competition. *Scientific Programming*, 12.

Lumpkin, G., Droege, S., & Dess, G. (2002). E-commerce strategies: Achieving sustainable competitive advantage and avoiding pitfalls. *Organizational Dynamics*, *30*(4), 325–340.

Ma, L., Jin, C., & Huo, Y. (2019). Strategy Of E-Commerce Market Entry Based On Vertical Complementarity Of Service Supply Chain. *International Journal of Innovative Computing, Information, & Control*, *15*(2), 757–772.

Marangoz, M. (2014). *İnternette pazarlama*. İstanbul, Turkey: Beta.

McAdam, R., & Galloway, A. (2005). Enterprise resource planning and organisational innovation: A management perspective. *Industrial Management & Data Systems*, *105*(3), 280–290.

Mess. (1997). Dünya'da ve Türkiye'de Rekabet. İstanbul, Turkey: Mess Yayınları.

Morrison, A. J., & King, B. E. (2002). Small tourism businesses and e-commerce: Victorian tourism online. *Tourism and Hospitality Research*, *4*(2), 104–115.

Mucuk, İ. (2012). *Pazarlama ilkeleri. 19. Basım*. İstanbul, Turkey: Türkmen.

Nemat, R. (2011). Taking a look at different types of e-commerce. *World Applied Programming*, *1*(2), 100–104.

Okrent, M. D., & Vokurka, R. J. (2004). Process mapping in successful ERP implementations. *Industrial Management & Data Systems*, *104*(8), 637–643.

Oum, T. H., & Zhang, A. (2001). Key aspects of global strategic alliances and the impacts on the future of Canadian airline industry. *Journal of Air Transport Management*, *7*, 287–301.

Park, H. P., & Ungson, G. R. (1997). The effect of national culture, organizational complementarities, and economic motivation on joint venture dissolution. *Academy of Management Journal*, *40*(2), 279–307.

Pavic, S., Koh, S., Simpson, M., & Padmore, J. (2007). Could e-business create a competitive advantage in UK SMEs? Benchmarking. *International Journal (Toronto, Ont.)*, *14*(3), 320–351.

Poorani, A. A., & Smith, D. R. (1995). Financial characteristics of bed and breakfast inns. *The Cornell Hotel and Restaurant Administration Quarterly*, *36*(5), 57–63.

Porter, M. (2001). Strategy and the Internet. *Harvard Business Review*, *79*(3), 62–79. PMID:11246925

Porter, M. E. (1985). *Competitive Advantage: Creating and Sustaining Superior Performance*. New York, NY: The Free Press.

Porter, M. E. (2008). *Competative Strategy. Çev. Gülen Ulubilgen*. İstanbul, Turkey: Sistem Yayıncılık.

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Porter, Q. (2005). Internet and Competitive advantage: an empirical study of UK retail banking sector (Doctoral dissertation, University of Warwick).

Ramanathan, R. (2010). E-commerce success criteria: Determining which criteria count most. *Electronic Commerce Research*, *10*(2), 191–208.

Rekabetdernegi (n.d.). Retrieved from http://www.rekabetdernegi.org/rekabethakkinda.htm

Riggins, F. J. (1999). A framework for identifying web-based electronic commerce opportunities. *Journal of Organizational Computing and Electronic Commerce*, *9*(4), 297–310.

Rowley, J. (2002). *E-business: Principles and practice*. Basingstoke, UK: Palgrave.

Ruiz-Mercader, J., Merono-Cerdan, A., & Sabater-Sanchez, R. (2006). Information technology and learning: Their relationship and impact on organizational performance in small businesses. *International Journal of Information Management*, *26*(1), 16–29.

Rust, R. T., & Kannan, P. K. (2003). E-service: A new paradigm for business in the electronic environment. *Communications of the ACM*, *46*(6), 36–42.

Seviçin, A. (2006). Kaynaklara Dayalı Rekabet Stratejisi Geliştirme. Dumlupınar Üniversitesi Sosyal Bilimler Dergisi, (15).

Smith, K. T. (2011). Consumer perceptions regarding e-commerce and related risks, B>Quest, 1-20.

Spathis, C., & Constantinides, S. (2003). The usefulness of ERP systems for effective management. *Industrial Management & Data Systems*, *103*(9), 677–685.

Stafford, E. R. (1994). Using co-cooperative strategies to make alliances work. *Long Range Planning*, *27*(3), 69–70.

Stiles, J. (2001). Strategic alliances. In H. Volberda, & T. Elfi-ing (Eds.), *Rethinking strategy*. London, UK: Sage.

Su, Z., Guo, H., & Sun, W. (2017). Exploration and firm performance: The moderating impact of competitive strategy. *British Journal of Management*, *28*(3), 357–371.

Tek, Ö. B. (1999). *Pazarlama İlkeleri Global Yönetimsel Yaklaşım Türkiye Uygulamaları*. İzmir, Turkey: Beta.

Tinnila, M. (2002). Service processes in electronic travel services: A summary. *Information Technology & Tourism*, *4*, 203–214.

Tse, A. C. B. (2003). Disintermediation of travel agents in the hotel industry. *Journal of Hospitality Management*, *22*(4), 453–460.

Ussahawanitchakit, P., & Intakhan, P. (2011). Internet strategy of e-commerce business in Thailand. *International Journal of Business Strategy*, *11*(1), 1–15.

Van Hooft, F. P., & Stegwee, R. A. (2001). E-business strategy: How to benefit from a hype. *Logistics Information Management*, *14*(1/2), 44–54.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Venkatraman, N., & Henderson, J. C. (1998). Real strategies for virtual organizing. *Sloan Management Review*, *40*(1), 33–49.

Vural, Z., & Bat, M. (2010). Yeni bir iletişim ortamı olarak sosyal medya: Ege üniversitesi iletişim fakültesine yönelik bir araştırma. *Journal of Yaşar University*, *20*(5), 3348–3382.

Wise, R., & Morrison, D. (2000). Beyond the exchange--the future of B2B. *Harvard Business Review*, *78*(6), 86–96. PMID:11184979

Xie, F. T., & Johnston, W. J. (2004). Strategic alliances: Incorporating the impact of e-business technological innovations. *Journal of Business and Industrial Marketing*, *19*(3), 208–222.

Yeşil, A. (2008). E-Ticaret İnternet Ortamında Ticaret. İstanbul, Turkey: Kum Saati Yayın Dağıtım LTD. ŞTİ.

Yu, C. S. (2005). Causes influencing the effectiveness of the post-implementation ERP system. *Industrial Management & Data Systems*, *105*(1), 115–132.

Yunus, M., Moingeon, B., & Lehmann-Ortega, L. (2010). Building social business models: Lessons from the Grameen experience. *Long Range Planning*, *43*(2-3), 308–325.

Zahra, S. A., & George, G. (2002). The net-enabled business innovation cycle and the evolution of dynamic capabilities. *Information Systems Research*, *13*(2), 147–150.

Zhang, G., & Gai, J. (2005, August). Strategic choice for being e-business. In *Proceedings of the 7th international conference on Electronic commerce* (pp. 184-187). ACM.

Zhao, F. (2004). Management of information technology and business process re-engineering: A case study. *Industrial Management & Data Systems*, *104*(8), 674–680.

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Chapter 74
Impact of E-Commerce on Agricultural Business Success

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ABSTRACT

In an increasingly digital and competitive environment, it is important to understand the agricultural business' success in a digital economy. E-commerce appears as a potential strategic tool. The purpose of this chapter is to analyze the impact of e-commerce on agricultural business success in Portugal. Through a quantitative approach, data were collected by survey and a sample of 372 agricultural enterprises is obtained. The empirical results suggest a negative and significant impact of e-commerce on productivity. However, there is a simultaneous relationship between the e-commerce adoption and performance, both individually and globally. This study contributes to the addition of theory on e-commerce adoption, the impact of e-commerce on performance, and other determinants of the agricultural business' success.

INTRODUCTION

In an increasingly digital and competitive environment that agricultural enterprises cross due to the technological advances into the 21st century, it is important and becomes interesting to understand their success in a digital economy. From these technological advances arose a new form of trade - e-commerce as a potential strategic tool for agricultural enterprises to become more successful in a digital economy, as more and more information and markets are available to the consumer. Although many enterprises adopt e-commerce without knowing their impact (positive, negative or potential) (Leonard and Cronan, 2002).

To clarify the possible importance of e-commerce adoption and thereby increase the agricultural business success (ABS), in a digital economy, it is proposed this study. The study therefore addresses the following research question: what is the impact of e-commerce adoption on ABS? The following general hypothesis is formulated for this investigation: e-commerce adoption has a positive impact on ABS.

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This chapter aims to analyze the impact of e-commerce adoption on ABS in Portugal. For this purpose, the researcher has taken into account the potential endogeneity of e-commerce on ABS determination models. Previous studies have suggested models (e.g., Bertschek et al., 2004, 2006; Falk & Hagsten, 2015; Kubota & Milani, 2011; Liu et al., 2013). However, although e-commerce adoption may be a factor impacting the ABS, other factors may contribute to its success. In order to reach this objective, the author proposes an empirical study. In addition, this aim is achieved by performing the following specific objectives, in the context of agricultural enterprises:

- To verify possible relationships between e-commerce adoption and ABS, in multiple dimensions, in Portugal, in year 2014;
- To identify key factors that contribute to ABS in Portugal, in the period of 2014.

The present study may be relevant in a country - such as Portugal - for several reasons. Firstly, at the time of data collection, Portugal was experiencing serious economic crisis and e-commerce adoption by agricultural business could be a strategy for enterprises to grow, increasing productivity and improving performance, and, consequently, the extent of the potential economic growth. Secondly, another reason is due to the fact that Portugal is one of the European countries with the lowest intensity of e-commerce adoption by enterprises and weak business growth. This makes it interesting to analyze the impact of e-commerce in the Portuguese context. Thirdly, e-commerce in agriculture is an under-researched and scarce theme in Portugal. Finally, it may be important to discover and analyze strategies with impact on ABS, so that managers have more information available that can be useful to plan future strategies, in order to be more successful. In addition, agricultural sector is the focus of the author's interest.

This chapter can contribute to research on success, because it tests an ABS model, in various dimensions, based on a holistic approach. It can contribute to research on e-commerce, within the agricultural business in Portugal, because empirically it analyzes the impact of this technology adoption on ABS. The researcher believes that this chapter adding knowledge for development of agricultural sector for politicians, economists, managers, consultants and academic researchers, about key determinants of ABS, in particular, the e-commerce impact.

The next section contains the theoretical background and hypotheses of research. The section 3 describes the research methodology and the section 4 presents the results. The final section presents the conclusions, discusses some limitations of the research and suggests directions for future research.

THEORETICAL BACKGROUND AND HYPOTHESES

Agricultural enterprises, like the rest of the economy, have the challenge for changing their business model and practices (Henderson et al., 2000).

Success: An Overview

Success is a theme of interest in the scientific community that has allowed the development of studies over the years, and up to now, thus becoming a relevant and current theme. The research into business success covers different terms that have been used to refer to this phenomenon in different disciplines. "Success" is a broad term and therefore conceptualized in different forms. Success relates to the achieve-

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ment of goals and objectives for any sector of human life (Chittithaworn et al., 2011; Islam et al., 2011). In addition, in business, success is "a matter of opinion and may be related to the degree to which objectives are met or exceeded, some of which may be critical for success" (Simpson et al., 2012, p. 272). However, in the field of agricultural business, success is understood as the achievement of goals and objectives of agricultural business.

In literature on success, several ways have been used to measure this phenomenon, in multiple dimensions in different disciplines. This phenomenon is measured as: survival (Headd, 2003; Schutjens & Wever, 2000), success vs. failure (Lussier & Pfeifer, 2001) and successful status at closure (Headd, 2003). Or size (Schutjens & Wever, 2000; Unger et al., 2011), growth (Lee et al., 2010; Schutjens & Wever, 2000; Unger et al., 2011; Zhou & De Wit, 2009) and profitability/ productivity (Unger et al., 2011). And still perceived organizational performance/ success (Ahmad et al., 2011; Alom et al., 2016; Chan et al., 2006; Chittithaworn et al., 2011; Hult & Ketchen, 2001; Islam et al., 2011; Lee et al., 2010; Sabherwal & Chan, 2001).

However, for the purposes of this study, the researcher decides to conceptualize success in three dimensions: growth, productivity and performance of agricultural business. Turnover growth that represents the enterprise growth. Turnover per employee that represents productivity/ profitability. In addition, the organizational performance perceived by agricultural managers. The meta-analytic review of Unger et al. (2011) uses the dimensions - growth, profitability and size, but in the present study, the size is considered an independent variable. Instead, the researcher includes the perceived performance of agricultural enterprises. These measures are chosen for two reasons. The first, because turnover and number of employees are indicators widely used in the literature. The second, because they are objective measures and easier to obtain compared to other financial measures. In addition, Zhou and De Wit (2009) suggest that future studies use sales growth as a dependent variable for growth and Combs et al. (2005) point to sales growth as the most used indicator in terms of growth. Furthermore, the researcher has selected other subjective measures of manager's perception and a more direct response, because they are easier to obtain than objectives measures and also represent organizational success.

Different researchers studying these phenomena from different perspectives and different factors influence business success. Schutjens and Wever (2000) point to large firm size right from the beginning, good preparation, have a business partner, and a few years in salaried employment increase startup firm growth. Zhou and De Wit (2009) show individual and organizational determinants of growth but environmental determinants don´t influence growth.

Ahmad et al. (2011) validate un construct for business success which include satisfaction with financial performance, satisfaction with non-financial performance, performance relative to competitors and business growth. Alom et al. (2016) point to entrepreneurial and enterprise characteristics and economic factors impact on overall performance. In perspective of Sabherwal and Chan (2001) and Chan et al. (2006), the strategic alignment improves perceived organizational performance. Chittithaworn et al. (2011) point that SMEs characteristics, customer and market, the way of doing business, resources and finance, and external environment influence business success. Based on resource-based view, Hult and Ketchen (2001) point to market orientation, entrepreneurship, innovativeness, and organizational learning have a positive effect on performance. Islam et al. (2011) show that entrepreneur characteristics affect business success, but firm characteristics are not significant. Lee et al. (2010) show gender differences on perceived business success and profit growth models.

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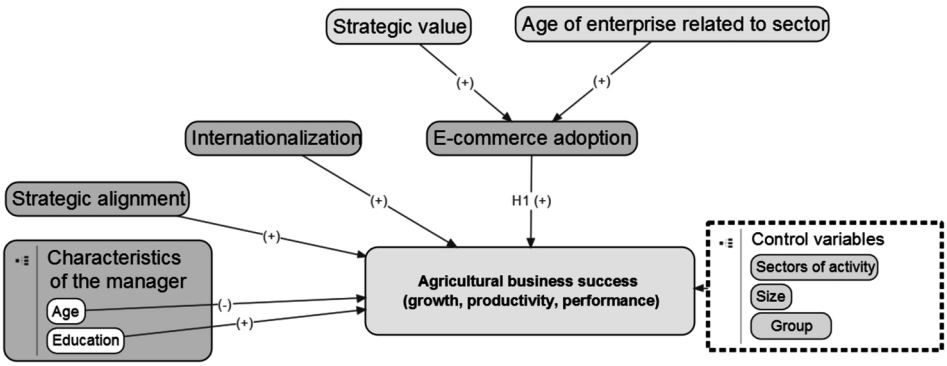
RESEARCH MODEL AND HYPOTHESES

Based on the above discussion, the researcher proposes the research model presented in Figure 1. The ABS model can be considered holistic, across knowledge of multiple disciplines, integrating several theories addressed in the literature and different theoretical models, namely in the context of entrepreneurship, strategic management, marketing and economics. ABS is measured in three dimensions: growth, productivity and agricultural enterprise performance. However, it is difficult to estimate a model with only one explanatory variable and all other factors are included in the error term. In this sense, the present investigation contains other explanatory factors/attributes and control variables on ABS model. These model aims to investigate the impact of e-commerce adoption on success of agricultural business, controlling the effect of other factors, such as internationalization, strategic alignment, and manager characteristics. On researcher's perspective, these strategies are key determinants for ABS. Because these variables are considered fundamental criteria for expansion of agricultural success business. These explanatory variables have already been used by other authors, but separately, in other areas and circumstances and it is thought that their aggregation provides a complete approach that explains ABS.

Figure 1. Research model: Agricultural business success model
Source: Own elaboration.



Over time, in addition to e-commerce, the internet does develop other technologies for enterprises and changing the traditional business to e-business. E-business also includes internal electronic exchanges, in addition to including e-commerce. Chaffey (2007, p. 13) defines e-business as "all electronically mediated information exchanges, both within an organization and with external stakeholders supporting the range of business processes". The choice of appropriate capabilities e-business for agricultural enterprises may be fundamental to success. E-business use can occur in different ways, namely by: e-sales, e-know-how, e-collaboration, e-service, e-commerce, supply chain management (SCM), customer relationship management (CRM), electric data interchange (EDI) and e-community, according to Wikipedia (2016). However, many agricultural companies continue to work without their presence in technological environments.

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Impact of E-Commerce Adoption on Agricultural Business Success

The technological advances walk to the ubiquity of commerce. The rapid growth of e-commerce leads agricultural enterprises to change their business. However, most agricultural enterprises still don´t have e-commerce. Therefore, it is necessary to know what their impact on ABS.

A quick look at the literature reveals that there are many definitions of e-commerce. To Chaffey (2007), e-commerce is much more than a mere commercial exchange, it can be considered as "all electronically mediated information exchanges between an organization and its external stakeholders". Laudon and Traver (2014, p. 10) define e-commerce as the "use of the Internet, the Web, and apps to transact business. More formally, digitally enabled commercial transactions between and among organizations and individuals". These authors explain that digitally performed transactions correspond to transactions carried out through digital technologies (internet, web, mobile applications) and commercial transactions mean that they include the exchange of value for products/services between organizations and individuals.

E-Commerce B2B can allow this sources of competitive advantage: lower intermediation costs, lower purchasing costs, enhanced information gathering and processing and improved market share or development of new markets (Barnes-Vieyra & Claycomb, 2001), than B2C, enterprises more visible to consumers (Bodini & Zanoli, 2011).

In addition, over the past years, the relationship between e-commerce adoption and business success is investigated. The previous literature considers the positive impact of e-commerce on enterprises. Raymond et al. (2005) demonstrate that e-commerce and e-collaboration positively influence sales growth. Vilaseca-Requena et al. (2007) show impact of e-commerce adoption for online sales. Liu et al. (2013) show evidence that e-commerce has a positive influence on productivity. Abebe (2014) confirms the positive impact of e-commerce on performance.

However, previous studies suggest that there may be an endogeneity problem (e.g., Bertschek et al., 2004, 2006; Falk & Hagsten, 2015; Kubota & Milani, 2011; Liu et al., 2013) and several instrumental variables are used for e-commerce adoption. Bertschek et al. (2004) use the following variables: export quota, enterprise age, number of software applications and subsidiaries abroad. Subsequently, Bertschek et al. (2006) include the variables: export quota, enterprise age, number of software applications of an enterprise and the existence of production facilities or subsidiaries abroad. Several years later, the study of Kubota and Milani (2011) use the variables: % of professionals in information technology (IT), enterprise age and the existence of site. Thereafter, Liu et al. (2013) use the network effect (or network externalities) to address the problem of endogeneity of e-commerce. More recently, Falk and Hagsten (2015) test endogeneity of e-commerce (% e-sales) on productivity growth and use employees number with broadband internet access as instrument. In this chapter, the researcher decides to choose the enterprise's age and perceived strategic value as instrumental variables for e-commerce adoption of agricultural business in Portugal, as discussed in the next section.

Impact of Internationalization on Agricultural Business Success

The internationalization strategy can positively influence to increase ABS. Coad (2009, p. 126) states "expansion into new geographic markets can be an attractive opportunity for firm growth." (…), "to boost sales" (…) and offers "advantages such as scale and scope economies, more market power, diversification of revenues, and the ability of spreading fixed costs such as R&D over a larger sales base". Therrien et al. (2011) examine the impact of exports on performance (commercial success) in services

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sector, measured by introduction of a new product and percentage of sales of this product, and through econometric models showed that to obtain more sales enterprises need to enter on the market early or introduce new products with high level of novelty. The authors suggest that exporters are more likely to have innovative products and to market them. This can happen because if an organization introduces a new product and has access to several markets it can spread its new product more efficiently.

From the same line of reasoning, agricultural enterprises that export their products are expected to have higher turnover growth and sales performance and therefore a better ABS. The impact of internationalization can be measured by intensity of exports from agricultural enterprises.

Coad et al. (2016) test the impact of exports on business growth, with growth measured through sales, productivity and employee growth, having a positive impact on all quantiles for sales growth, only for 25%, 50% and 90% quantiles, and in all quantiles except 90% and 95% for employees´ growth.

Impact of Strategic Alignment on Agricultural Business Success

According to Porter (1979, p. 143), the strategy can be understood as "building defenses against the competitive forces or as finding positions in the industry where forces are weakest." A key strategy is for enterprises to become competitive and survive in an ever-changing environment. The appropriate strategy allows a positioning of organization against the competition. The concept of alignment is a "complex, multi-dimensional construct" (Johnson & Lederer, 2010, p. 138). Strategic alignment is a process of continuous adaptation and change (Henderson & Venkatraman, 1993). In this sense, many organizations have difficulty achieve alignment (Johnson & Lederer, 2010). Due to the above, it is convenient to know that managers perceive a high level of alignment in their agricultural enterprises.

In this investigation, alignment is treated as the fit between business strategies including e-commerce/IT/IS and sales/commercial/marketing and agribusiness. In this sense, through the literature, the researcher selects antecedent factors of alignment, as shown in Table 1. Alignment is a process of continuous adjustment that agricultural enterprises use to obtain the interconnection between the strategies and objectives of e-commerce/IT/IS or sales/commercial/marketing with the strategies and objectives of the business.

Table 1. Variables for strategic alignment

Dimensions	Factors	Authors and Date	Scope
Agribusiness (factors beyond the control of the organization)	Environmental uncertainty	• Sabherwal and Kirs (1994) • Chan et al. (2006)	Environmental
	Environment scanning EB/ traditional business	Bergeron et al. (2004)	Strategy of e-commerce/IT/IS and sales/marketing
Organizational (business strategy, e-commerce / IT / IS and sales / marketing)	Strategic use the e-business/business traditional	Bergeron et al. (2004)	Strategy e-business/ traditional business
	Shared domain knowledge	• Reich and Benbasat (2000) • Chan et al. (2006)	Coordination of information between e-commerce / IT / IS / sales / marketing and organizational
	Prior e-business/ traditional business success	Chan et al. (2006)	Strategy e-business/ traditional business
	Planning sophistication	Chan et al. (2006)	Plan of e-commerce / IT / IS / sales/ marketing with plan of e-business/ traditional business

Source: Own elaboration.

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Impact of Manager on Agricultural Business Success

The ABS is conditioned to the manager through their strategic decisions, so it is necessary to identify their characteristics, which appear to be relevant in success literature. Because it is intended to study the impact of these characteristics associated with the manager on ABS.

The literature presents arguments for the impact of manager's individual factors on success. Davis and Harveston (2000) find the impact of age and education on sales growth, arguing that the aging of entrepreneur decreases sales growth, and a high level of education has a positive impact on internationalization and sales growth. The results of Lussier and Pfeifer (2001) indicate that managers of enterprises successfully have significantly higher levels of education than those with failed enterprises. In a similar way, it happened with their results for owner's age. In contrast to Davis and Harveston (2000), younger owners/managers who start a business are more likely to be unsuccessful than older. This may be due to the lack of experience of owner/ manager. Baum et al. (2001) show the relevance of traits, motivation and competencies of the CEO/entrepreneur for growth. The present study has no interest in the perceptions, but in the characteristics age and education, and in a wider scope, i.e. for CEO /entrepreneur / IT/e-commerce/e-business manager or sales/marketing.

An individual approach with emphasis on manager characteristics helps to explain the ABS, through age and education. In principle, it is expected that having a manager with higher education would have a positive impact on ABS in various dimensions, because higher levels of education correspond to people with more general and technological knowledge.

Research Hypotheses

Starting from the research question and with the support of literature review, the researcher has the expectation that if an agricultural enterprise adopts e-commerce can improve its success, in terms of growth, improve their productivity and performance. In order to examine this relationship, the researcher plans to test the following formulated hypotheses.

E-commerce affects the growth of agricultural business. Growing agricultural enterprises are, therefore, successful companies, whereas, in contrast, when they are stagnant, are considered unsuccessful enterprises. Previous studies (O'Regan et al., 2006; Raymond et al., 2005) indicate that e-commerce provides growth. Abebe (2014) confirms the positive impact of e-commerce on annual sales growth rate. Hence:

H_{1a}: E-commerce adoption has a positive impact on growth.

E-commerce influences positively the productivity of agricultural business. Labour productivity of agricultural business is understood as the result of the resources that are applied. Therefore, increasing productivity is about maximizing what is achieved sell/provide maintaining the same resources. One of the reasons for companies adopt e-commerce is to generate short-term productivity gains (Karakaya & Shea, 2008). Several studies (Bertschek et al., 2004, 2006; Kubota & Milani, 2011; Liu et al., 2013) indicate that e-commerce has a positive influence on productivity. Hence:

H_{1b}: E-commerce adoption has a positive impact on productivity.

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Success relates to the agricultural business sales performance. In the B2C perspective, the enterprise becomes more visible to customers with e-commerce (Bodini & Zanoli, 2011). According to Wu et al. (2003), sales performance refers to market share, sales volume increase, price change, increase of new customers and increase of existing customers. Hence:

H_{1c}: E-commerce adoption has a positive impact on sales performance.

E-commerce adoption can improve efficiency. Success can be measured by efficiency.

Customer response is faster through electronic communication Wu et al. (2003). Efficiency corresponds to the possibility of cost reduction in the transaction (Eikebrokk & Olsen, 2007, 2009). Efficiency is related to the improvement of efficiency in production and marketing, that is, the reduction of production and transaction costs, the general activities of management, coordination, marketing and acquisition of new customers Wu et al. (2003). "E-commerce provides companies with greater efficiency and reliability of business processes through the automation of transactions" (Shim et al., 2000, p. 40). B2B e-commerce is expected to reduce transaction costs, more transparent markets and the most efficient business (Bertschek & Fryges, 2002). In the case of exports and, above all, in digital products, it is expected that the reduction of transaction costs is still greater (Bertschek et al., 2004). Hence:

H_{1d}: E-commerce adoption has a positive impact on efficiency.

This measure of ABS concerns the orientation of agricultural enterprise to the domestic or international market, as well as market segmentation (Chamberlin et al., 2009), and also to improve customer service via e-commerce (Karakaya & Shea, 2008) and to the company's prestige in terms of products and markets (Karakaya & Shea, 2008). Hence:

H_{1e}: E-commerce adoption has a positive impact on products and markets.

According to Hausen et al. (2006), e-commerce improves coordination between buyers and sellers. Based on the study by Wu et al. (2003), this concept concerns the communication of agricultural enterprise with the partners and suppliers. Hence:

H_{1f}: E-commerce adoption has a positive impact on relationship development.

Customer satisfaction refers to the extent to which the company meets customer expectations.

"Customer satisfaction has always been assumed as a necessary condition for the success of organizations" (Molla and Licker, 2001: 135). A satisfied customer returns to buy again.

According to Wu et al. (2003), quantifying customer satisfaction as results of the organization covers: satisfaction with the type of commerce used, encourage others customers and increased customer loyalty. Hence:

H_{1g}: E-commerce adoption has a positive impact on customer satisfaction.

One of the two reasons for companies adopt e-commerce company's long-term competitiveness (Karakaya & Shea, 2008). Competitive advantage refers to the position of agricultural enterprise vis-à-

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vis its competitors. This concept encompasses better financial performance, respond quickly to market changes, higher marketing performance, achieve organizational objectives more effectively and rapidity in innovation (Swilley et al., 2012). The following hypothesis is based on the study of Swilley et al. (2012) for M-commerce. Hence:

H_{1h}: E-commerce adoption has a positive impact on competitive advantages.

E-commerce adoption affects the value creation. For an agricultural company to have success must know how to contribute to add value to the client, and, therefore, defining organizational goals that meet customer needs. Overall, Amit and Zott (2001, p. 503) define value as the "total value created"… "regardless of whether it is the firm, the customer, or any other participant in the transaction who appropriates that value".

In this investigation, it is about creating value for the customer and is measured through the perception of farm manager. The creation of superior value for the client, according to Martelo et al. (2013) corresponds to the increase in the level of customer loyalty compared to competitors and compared to last year, and the increase in customer satisfaction compared to the previous year. Hence:

H_{1i}: E-commerce adoption has a positive impact on customer value creation.

E-commerce affects agricultural business performance. In addition, performance refers to more than one concept. Consequently, the following hypothesis is proposed for agricultural business performance, in global terms. Hence:

H_{1j}: E-commerce adoption has a positive impact on agricultural business performance.

RESEARCH METHODOLOGY

Based on positivist research paradigm, the research approach can be classified into a quantitative and deductive approach. In addition, this research consists of a cross-sectional study with primary data.

Sampling and Instrument

Data collect using a questionnaire. A pre-test is carried out to validate the proposed model and, therefore, to improve the clarity and comprehension of the questions. Items come from prior literature reviews, but are modified to the specific context of e-commerce and e-business in agriculture, using seven-point Likert scale, where the minimum is 1 "totally disagree" and the maximum 7 that represents "totally agree", and an option category to "don't know/ don´t answer". This option is treated as missing data.

The questionnaire was sent to two respondents in the same enterprise: a) manager/owner of the agricultural enterprises and b) responsible for commerce (e-commerce/IT/IS manager if there is e-commerce, or sales/ commercial/ marketing manager). Part of the questionnaire is intended to characterize the strategic value and performance through two groups of questions: a) for e-commerce adopters and b) for non-adopters. Other part, questions about use and type of e-business, and for 2 groups of respondents: a) use e-business and b) do not use e-business (only traditional business), to characterize strategic alignment.

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A sample is selected from agricultural enterprises in Portugal. The period of data collection takes from September 14, 2015 and run until January 24, 2016.The researcher receives responses from 418 enterprises but only one respondent per enterprise. 46 responses were rejected because they are duplicate, errors or missing dates in variables, except those that are measured on a Likert scales. The overall response rate is 11.76%, but is 10.46% when counting only usable surveys. Then, this sample consists of 372 observations. Subsamples for commerce contains 58 (15.59%) enterprises that adopt e-commerce and 314 (84.41%) that don´t adopt. Another subsamples that use e-business (n = 66; 17.74%) and use traditionally business (n = 306; 82.26%).

Measures of the Variables

Table 2 provides the description of all variables included in the model, but several variables are derived from previous studies.

Table 2. Variables of agricultural business success model: ABS

Variable	Description/Measurement	Authors and Date
Dependent Variable		
logVN1314: Turnover Growth (log)	logVN2014-logVN2013	Nunes et al. (2011), Coad and Rao (2008) e Coad et al. (2016)
logPROD14: Productivity (logarithm)	log(VN2014/EMP2014)	Bertschek et al. (2004, 2006)
FSP: Sales performance	Factorial score FSP	Adapted from Wu et al. (2003)
FEF: Efficiency	Factorial score FEF	Adapted from Wu et al. (2003)
FPM: Products and markets	Factorial score FPM	Adapted from Karakaya and Shea (2008) and Chamberlin et al. (2009)
FRD: Relationship Development	Factorial score FRD	Adapted from Wu et al. (2003)
FCS: Customer satisfaction	Factorial score FCS	Adapted from Wu et al. (2003)
FCA: Competitive advantages	Factorial score FCA	Adapted from Swilley et al. (2012)
FCV: Creating value for customer	Factorial score FCV	Adapted from Martelo et al. (2013)
AEP: Agricultural enterprise performance	Average (FSP, FEF, FPM, FRD, FCA, FCS, FCV)	
Independent Variables		
ACE	1 - if enterprise adopt e-commerce 0 – otherwise	
EXPOP: Exports	% exports	
SA: strategic alignment	Average factorial scores (SAEU: Environmental uncertainty; SAES: Environment scanning of E-business; SASU: Strategic use of E-business/ traditional business; SASD: Shared domain knowledge; SAS: Prior success; SAPS: Planning sophistication)	Adapted from Bergeron et al. (2004) and Chan et al. (2006)
AGElog: manager age	Logarithm of number of years	

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Table 2. Continued

Variable	Description/Measurement	Authors and Date
EDU: Education	EDU1: 1 - Up to 9 years; 0 – No	
	EDU2: 1 – Up to 12th year; 0 – No	
	EDU3: 1 - higher education; 0 – No	
Control Variables		
SAE: Sectors of activity economic	SAE1: 1 - Primary sector; 0 – No	
	SAE2: 1 - Secondary sector; 0 – No	
	SAE3: 1 - Tertiary sector; 0 – No	
SIZE: Size	Average number of employees in 2014	Coad et al. (2016) and Abebe (2014)
GROUP: Belonging to a group	1 – Yes; 0 – No	
Other Variable		
EB: E-business	1 – Yes; 0 – No	
Instrumental Variables		
SV: Strategic Value	Average factorial scores (SVOS: Organizational support; SVMP: Managerial productivity; SVDA: Strategic decision aids)	Adapted from Grandon and Pearson (2004)
AGEAS: Age of enterprise related to sector where enterprises operate	Years up to 2014 relative to the industry average (Age of enterprise/ average age of sector)	Bertschek et al. (2006)

Source: Own elaboration.

Control Variables

The group was suggested as an explanatory variable by other authors, Bertschek and Fryges (2002) and Therrien et al. (2011). Generally, enterprise belongs to a group have greater financial resources and may have less risk aversion (Bertschek & Fryges, 2002). Regarding the industry effect, Zhou and De Wit (2009) suggest that firms with labor intensive may have a greater propensity for growth. Davis and Harveston (2000) show evidence significant positive effect of company size on sales growth.

Discussion of the Instruments

As one of the explanatory variables is endogenous, the researcher discusses economic arguments supporting the validity of two variables that it is used as instruments for e-commerce adoption, which are enterprise age and perceived strategic value. The expectation is that these are correlated to e-commerce adoption but not with the error of ABS model. The plausible simultaneity of e-commerce and ABS has the consequence that e-commerce is an endogenous explanatory variable on ABS determination model.

The first instrument is enterprise age[1], that is used as an instrument in several studies and through different forms. The researcher follows Bertschek et al. (2006). Enterprise age is measured in relation to average enterprises age in the same industry. For these authors, an enterprise more recent than the industry average has a relative age less than one, whereas, the enterprise's age in relation to an older enterprise exceeds the value of 1. Relative age is logarithmic due to asymmetry and the researcher add square logarithm of relative age, since the age effect on the probability of adopting e-commerce may be non-linear.

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The second instrument is perceived strategic value. The researcher also considers the manager's perception of strategic value that is understood as the level at which the manager perceives the value that e-commerce can provide him. Usually, enterprises choose to invest in e-commerce due to the perceived strategic value that can be achieved (Sutanonpaiboon and Pearson, 2006). In the researched literature, although no papers have been found in Portugal or specifically in the agricultural context, several studies have focused on the relevance between the strategic value of e-commerce and e-commerce adoption in different countries and in developed and underdeveloped economies. Strategic value is measured in different ways for enterprises: organizational resources (Martelo et al., 2013), strategic value of IS (Subramanian & Nosek, 2001), strategic value of e-commerce (Grandon & Pearson, 2003, 2004; Saffu et al., 2007, 2008; Saffu et al., 2012; Seyal & Rahim, 2010).

RESULTS

In order to prevent potential problems with Common Method Bias (CMB) variation, the survey takes into account several recommendations proposed by Podsakoff et al. (2003), such as: items are written clearly and concisely, ensuring respondent anonymity to encourage participation, unknown to the respondent of conceptual model and Harman's single-factor test is performed. The researcher conducts a statistical test for common method variance with the Harman one-factor method, through a principal component analysis of all measures. Results show 14 factors with eigenvalues greater than 1, which explain 69.20% of the variance. The first factor explains 26.01% of the variance, and therefore less than 50%. This suggests that CMB isn´t a problem in this investigation and doesn´t explain alone the observed relationships among the study constructs.

Preliminary Analyses

First, the researcher checks for missing data in turnover. Are removed all data with 0, the values without coherence in turnover in 2013 and 2014, and enterprises that are established in 2014. After, all observations with missing values are removed, except for the variables measured by Likert scales. The procedure of mean substitution of items in scales is used to reduce the problem of missing data. When the missing values are less than or equal to 20%, Downey and King (1998) suggest two methods for replacing missing data: item mean and person mean. The average substitution of valid answers is one of the most used methods for missing data and maintains the sample size (Hair et al., 2010).

Subsequently, running SPSS 20 because the variables composed of several items on a Likert scale are subjected to descriptive, consistency (reliability) and factorial analysis, as shown in Table 3, Table 4 and Table 5. Besides the descriptive analyze, in order to guarantee the adequacy of the scales to the proposed variables, the researcher test reliability and validity of the constructs, through Cronbach's alpha[2] and Kaiser-Meyer-Olkin (KMO)[3]. With the consistency analyze, most of the constructs provide a certain degree of trust on scales. Factorial analyze of principal components was run to test the unidimensionality of the measurement scales and to obtain the factorial scores. The scores are exact when the extraction is performed by principal components method, while by other methods the score is only approximate (Maroco, 2007). These factor scores are estimated values of the factors to be used in the subsequent analyses.

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Strategic Value Construct

As seen in Table 3, the perceived strategic value (SV) consists of the following components: SVOS, SVMP and SVDA, and all items are kept.

Table 3. Descriptive, consistency and factorial analyze of strategic value perceived

Construct	Items	Minimum	Maximum	Average	Cronbach's Alpha	KMO	Variance Explained
SVOS	SVOS1 SVOS2 SVOS3 SVOS4	1 1 1 1	7 7 7 7	4.44 4.67 4.74 4.78	0.831	0.781	66.58
SVMP	SVMP1 SVMP2 SVMP3 SVMP4	1 1 1 1	7 7 7 7	4.63 4.64 4.70 4.51	0.941	0.846	85.18
SVAD	SVDA1 SVDA2 SVDA3 SVDA4	1 1 1 1	7 7 7 7	4.62 4.69 4.60 4.66	0.942	0.837	85.45

Source: Own elaboration.

Alignment Construct

Table 4 shows analyze for strategic alignment (SA). The researcher chooses to remove item SAEU1, SAEU3, SAES1, SAES3 and SAPS.

Performance Construct

Analysis of performance is presented in Table 5 and FPM variable is removed. The dependent variables are the factorial score of each factor and one of them (AEP) is the average of all factorial scores.

In summary, the following criteria are used: all averages are higher than 4, which represents agreement; Cronbach's alpha > 0.7[4] except for SAEU (0.64) and corrected item-total correlation $> = 0.4$. Furthermore, principal components analyze method; extraction of factors with their own value superior to 1; factor weight$> = 0.5$ (if lower the variable isn´t considered relevant, then it is dropped) and orthogonal rotation method varimax. KMO> 0.6 for all factor analyses except FRD; commonalities is more than 0.5 except in FCV1; all Bartlett's sphericity tests are significant (up to 0.05) and variance explained above 60% except SAEU (but explained variance is very close to 60).

Estimation Method

Through the review of the literature on e-commerce adoption, the researcher believes that e-commerce has an impact on ABS and is endogenous. Then, it is used instrumental variables method to explain this impact. Following Wooldridge (2002, pp. 623-625), in the first stage, the researcher estimates a probit

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regression of the probability of e-commerce adoption. As independent variables, the researcher takes all independent variables of the success model and the instrumental variables. In the second stage, the researcher predicts the fitted variable for each observation in the sample. In the third stage, the ABS model was estimated using instrumental variables method, where the researcher includes the fitted value resulting from the previous stage as an instrumental variable for e-commerce adoption. This method is appropriate when endogenous variable is binary.

Regression Results

The results of the regression analyses, using STATA, are shown in Table 6.

Model 1: Growth

The results indicate inconsistent with expectations and statistically insignificant. Isn´t possible to reject the null hypothesis. Different from previous findings of Abebe (2014).

Table 4. Descriptive, consistency, and factorial analyze of alignment

Construct	Items	Minimum	Maximum	Average	Cronbach's Alpha	KMO	Variance Explained
SAEU	SAEU1	1	7	4.25	0.653	0.653	58.12
	SAEU2	1	7	4.95			
	SAEU3	1	7	5.36			
	SAEU4	1	7	4.94			
	SAEU5	1	7	4.66			
SAES	SAES1	1	7	4.27	0.764	0.637	68.22
	SAES2	1	7	4.82			
	SAES3	1	7	4.06			
	SAES4	1	7	4.84			
	SAES5	1	7	4.55			
SASU	SASU1	1	7	4.22	0.855	0.796	63.80
	SASU2	1	7	4.25			
	SASU3	1	7	4.49			
	SASU4	1	7	4.68			
	SASU5	1	7	4.72			
SASD	SASD1	1	7	4.85	0.899	0.828	76.74
	SASD2	1	7	4.97			
	SASD3	1	7	5.17			
	SASD4	2	7	5.00			
SAS	SAS1	1	7	4.85	0.895	0.879	71.09
	SAS2	1	7	4.70			
	SAS3	1	7	4.75			
	SAS4	1	7	4.63			
	SAS5	1	7	4.57			
SAPS	SAPS1	1	7	4.73	0.946	0.904	82.23
	SAPS2	1	7	4.49			
	SAPS3	1	7	4.69			
	SAPS4	1	7	4.61			
	SAPS5	1	7	4.66			
	SAPS6	1	7	4.76			

Source: Own elaboration.

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Table 5. Descriptive, consistency, and factorial analyze of performance

Construct	Items	Minimum	Maximum	Average	Cronbach's Alpha	KMO	Variance Explained
FSP	FSP1 FSP2 FSP3 FSP4	1 1 1 1	7 7 7 7	4.71 4.82 4.77 5.08	0.777	0.714	60.18
FEF	FEF1 FEF2 FEF3 FEF4 FEF5	1 1 1 1 1	7 7 7 7 7	4.02 4.21 4.39 4.20 4.33	0.894	0.856	70.48
FPM	FPM1 FPM2 FPM3 FPM4	1 1 1 1	7 7 7 7	3.62 4.04 4.40 5.57	0.162	0.526	33.84
FRD	FRD1 FRD2	1 1	7 7	4.99 5.01	0.858	0.500	87.57
FCS	FCS1 FCS2 FCS3	1 1 1	7 7 7	4.84 4.63 4.82	0.809	0.715	72.69
FCA	FCA1 FCA2 FCA3 FCA4 FCA5	1 1 1 1 1	7 7 7 7 7	4.40 4.65 3.93 4.48 4.48	0.836	0.808	60.80
FCV	FCV1 FCV2 FCV3	2 3 3	7 7 7	5.03 5.08 5.05	0.797	0.618	72.04

Source: Own elaboration.

ABS is statistically different depending on managers' education. "secondary education" (-0.179) and "higher education" (-0.139) are negative and statistically significant for growth rate model (logVN1314), at 5% and 10% level, respectively. It means that enterprises with managers who have secondary and university education have lower growth rate than enterprises with managers who only complete basic education. Moreover, the average growth of enterprises included in SAE2 is lower than SAE3, on average 0.301 units. Belonging to a group have 0.134% decrease in growth, at 5% level of significance.

Model 2: Productivity

The findings point to a negative and statistically significant impact of e-commerce adoption on productivity, i.e., e-commerce adoption provides a 31.8% decrease in productivity, at 10% level of significance. Then, contrary to expectations hypothesis H1b is rejected. This result clashes with findings prior studies (Bertschek et al., 2004, 2006). While, a 1% increase in manager age provides a 0.503% decrease in productivity, at 10% level of significance. Belongs to "primary sector" has 73.1% less productivity compared to enterprise that belongs to "tertiary sector", at 1% level of significance. The enterprise included in tertiary sector allows a 1363% increases in productivity, at 1% level of significance. Belong to a business group suggests that agricultural enterprise has 69.3% more productivity, at 1% level of significance.

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Table 6. Results of the regression analyses

Variables	(1)	(1)robust	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	logVN1314	logVN1314	logPROD14	FSP	FEF	FRD	FCS	FCA	FCV	AEP
Main										
ACE	0.0811	0.0811	**-0.318***	**1.685****	**2.699*****	0.466	**4.138*****	**1.442****	**1.176***	**1.934*****
	(0.0675)	(0.0669)	(0.182)	(0.719)	(0.744)	(0.531)	(1.217)	(0.683)	(0.691)	(0.562)
Other Independent										
EXPOP	0.00132	0.00132	-0.00107	**0.00671*****	0.00150	-0.000218	-0.000486	0.000442	0.000999	0.00149
	(0.000981)	(0.00133)	(0.00264)	(0.00239)	(0.00248)	(0.00177)	(0.00405)	(0.00228)	(0.00230)	(0.00187)
AE	0.0274	0.0274	-0.0544	**0.392*****	**0.221****	**0.849*****	**0.287****	**0.430*****	**0.454*****	**0.439*****
	(0.0336)	(0.0354)	(0.0909)	(0.0831)	(0.0859)	(0.0613)	(0.141)	(0.0790)	(0.0799)	(0.0649)
AGElog	-0.145	-0.145	**-0.503***	-0.368	0.133	-0.0282	0.223	-0.00834	-0.251	-0.0499
	(0.0969)	(0.105)	(0.262)	(0.234)	(0.242)	(0.173)	(0.395)	(0.222)	(0.225)	(0.183)
_IEDU_2	**-0.179****	**-0.179****	0.287	0.0353	0.0540	0.141	-0.0449	-0.148	-0.233	-0.0325
	(0.0846)	(0.0876)	(0.229)	(0.203)	(0.210)	(0.150)	(0.343)	(0.193)	(0.195)	(0.158)
_IEDU_3	**-0.139***	**-0.139***	-0.165	0.000847	**-0.424****	**0.309****	-0.265	**-0.357****	-0.209	-0.157
	(0.0723)	(0.0758)	(0.196)	(0.181)	(0.187)	(0.134)	(0.307)	(0.172)	(0.174)	(0.142)
_ISAE_1	0.0967	**0.0967****	**-0.731*****	0.119	0.0235	-0.0793	0.119	0.196	0.262	0.107
	(0.0778)	(0.0452)	(0.211)	(0.191)	(0.197)	(0.141)	(0.323)	(0.181)	(0.184)	(0.149)
_ISAE_2	**0.301****	**0.301****	-0.0394	0.448	0.270	-0.216	0.810	0.263	**0.571****	0.358
	(0.118)	(0.139)	(0.315)	(0.296)	(0.307)	(0.219)	(0.502)	(0.282)	(0.285)	(0.232)
SIZE	-0.0198	-0.0198	0.0364	0.00361	0.0340	-0.0435	-0.0146	**0.246*****	0.0472	0.0455
	(0.0235)	(0.0265)	(0.0635)	(0.0559)	(0.0578)	(0.0413)	(0.0946)	(0.0531)	(0.0538)	(0.0437)
GROUP	**-0.134***	**-0.134****	**0.693*****	-0.00951	-0.0718	**-0.206***	-0.343	-0.00407	0.0710	-0.0939
	(0.0704)	(0.0627)	(0.190)	(0.169)	(0.175)	(0.125)	(0.286)	(0.160)	(0.162)	(0.132)
_cons	**0.684***	**0.684***	**13.63*****	0.876	-0.762	-0.00550	-1.367	-0.552	0.577	-0.206
	(0.387)	(0.409)	(1.048)	(0.959)	(0.992)	(0.708)	(1.622)	(0.911)	(0.922)	(0.749)
N	369	369	372	372	372	372	372	372	372	372
R^2	0.048	0.048	0.107	.	.	0.352	.	.	.	.

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Table 6. Continued

Variables	(1)	(1)robust	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	logVN1314	logVN1314	logPROD14	FSP	FEF	FRD	FCS	FCA	FCV	AEP
adj. R^2	0.022	0.022	0.082	.	.	0.334	.	.	.	.
F	1.813 (0.0570)	2.040 (0.0287)	4.315 (0.0000)	5.065 (0.0000)	3.505 (0.0002)	23.61 (0.0000)	2.469 (0.0072)	7.283 (0.0000)	5.056 (0.0000)	8.098 (0.0000)
-imtest	67.76 (0.1349)	67.76 (0.1349)	74.18 (0.0523)	.	.	.	.	.	.	
-estat hettest/ ivhettest	23.27 (0.0000)	-	1.518 (0.2194)	7.857 (0.8528)	13.259 (0.4280)	18.943 (0.1249)	8.780 (0.7893)	10.960 (0.6142)	20.713 (0.0788)	6.382 (0.9311)
-ivendog				7.60563 (0.00612)	10.25481 (0.00148)	2.92084 (0.08830)	65.05044 (0.00000)	6.65547 (0.01028)	5.64586 (0.01802)	41.14511 (0.00000)
				7.69655 (0.00553)	10.30314(0.00133)	2.99391 (0.08358)	56.93151 (0.00000)	6.75248 (0.00936)	5.74397 (0.01655)	38.15572 (0.00000)
-overid- sargan				4.0117 (0.2603)	8.165 (0.0427)		1.185 (0.7567)	9.744 (0.0209)	11.356 (0.0099)	3.842 (0.2790)
ovtest	0.98 (0.4036)	0.98 (0.4036)	0.37 (0.7728)							
-vif/ ivvif	1.02-2.01	1.02-2.01	1.02-2.02	1.07-2.23	1.07-2.23	1.07-2.23	1.07-2.23	1.07-2.23	1.07-2.23	1.07-2.23

Source: Own elaboration.

Notes: Numbers in parentheses indicate the standard error. Standard errors in parentheses * p<0.1, ** p<0.05, *** p<0.01

Model 1 and 2: Run OLS regression: command reg; test for Heteroskedasticity: command imtest; test RESET: command ovtest; test for multicollinearity: command VIF

Model 3 to 9: Run instrumental variables regression: command ivreg ; test for Heteroskedasticity: command ivhettest; test for endogeneity: command ivendog; test Sargan: command overid; test for multicollinearity: command ivvif

Model 3 to 10: Performance

E-commerce adoption has significant positive impact on sales performance ($\beta = 1.685$; $p < 0.05$), efficiency ($\beta = 2.699$, $p < 0.01$), customer satisfaction ($\beta = 4.138$, $p < 0.01$), competitive advantages ($\beta = 1.442$, $p < 0.05$) and value creation ($\beta = 1.176$, $p < 0.10$), both individually and globally ($\beta = 1.934$, $p < 0.01$), and therefore on agricultural business performance. Then, hypotheses 1c to 1j are accepted, except 1_f.

In addition, strategic alignment positively influences on sales performance ($\beta = 0.392$; $p < 0.01$), efficiency ($\beta = 0.221$, $p < 0.01$), relationship development ($\beta = 0.849$, $p < 0.01$), customer satisfaction ($\beta = 0.287$, $p < 0.05$), competitive advantages ($\beta = 0.430$, $p < 0.01$), creating value ($\beta = 0.454$, $p < 0.01$), both individually and globally ($\beta = 0.439$, $p < 0.01$), the ABS. Previous study of Chan et al. (2006) confirmed that alignment affects business success.

Moreover, it has also obtain that internationalization ($\beta = 0.00671$; $p < 0.01$) and strategic alignment ($\beta = 0.392$; $p < 0.01$) have a positive impact on sales performance. Enterprises that have managers with university education have less efficiency ($\beta = -0.424$; $p < 0.05$) and less competitive advantages ($\beta = -0.357$; $p < 0.05$), than enterprises with managers have basic education. However, enterprises that have managers with university education have a greater relationship development than enterprises with managers who have a basic education ($\beta = 0.309$; $p < 0.05$). Enterprise belongs to "secondary activity sector" SAE2 has more creating value ($\beta = 0.571$; $p < 0.05$) compared to a company that is in "tertiary activity sector" SAE3. Increasing in size of companies has a positive effect on competitive advantages ($\beta = 0.246$; $p < 0.01$). Finally, belonging to a group suggests that agricultural enterprises has less relationship development ($\beta = -0.206$; $p < 0.10$).

DISCUSSION

Econometric analyses allows, on the one hand, confirming the exogeneity of e-commerce adoption when success is measured through growth and productivity. On the other hand, endogeneity of e-commerce adoption when measuring success as perceived agricultural business performance.

However, impact of e-commerce adoption on success of agricultural enterprises isn´t significant when success is measured through growth, and, contrary to expectations, is negative when measured through productivity. In general, these results may be due to the small number of observations of enterprises adopting e-commerce or small size of enterprises. Another possible reason for these results may be non-separation between B2B and B2C.

Contrary to Bertschek et al. (2004, 2006) that point to a relationship of simultaneity between the adoption of B2B e-commerce and productivity. The present study points to exogeneity of e-commerce adoption and significance of this negative relationship. These results may be due to non-separation of B2B and B2C. In addition, prior papers use service/retail enterprises, a different context of the Portuguese agricultural sector. Perhaps this is why it has had a negative impact from e-commerce adoption on productivity. Results of Kubota and Milani (2011) show that enterprises that do not adopt e-commerce have higher productivity than a randomly chosen one.

From subsequent analyses, result a positive and significant impact of e-commerce adoption on ABS, when this is measured through agricultural business performance, as shown in Table 6. All hypotheses are corroborated except impact of e-commerce adoption on relationship management ($\beta = 0.466$; n.s.), although positive, is not significant.

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In addition, the results suggest some degree of simultaneity between e-commerce adoption and performance, then enterprises that adopt e-commerce have superior performance, and enterprises with high performance are more likely to adopt e-commerce. E-Commerce adoption has a significant positive influence on performance, efficiency, customer satisfaction, competitive advantages and value creation, both individually and globally, and vice-versa.

FUTURE RESEARCH DIRECTIONS

It might be interesting: analyze the manager's perceptions before and after e-commerce adoption through a longitudinal study and use longitudinal data to analyze the dynamic effects of e-commerce adoption on ABS. It is also suggested to carry out this study with other indicators of success, conducting this study in several countries in order to compare these results with other countries or replicate in other sectors could lead to different results.

CONCLUSION

It is concluded that the decision to adopt e-commerce by agricultural enterprises is determined by perceived strategic value, but not by age enterprise in relation to activity sector.

This research provides also empirical evidence of the negative contribution of e-commerce adoption to success measured through productivity, in the context of agricultural enterprises in Portugal. There is also evidence of simultaneity relationship between e-commerce adoption and performance, both individually and globally, i.e., companies adopting e-commerce achieve higher performance and vice versa.

The study contributes to clarify the relationship between e-commerce adoption and success. A holistic view of success is obtained, with other explanatory variables that facilitate and influence ABS that can be used to predict future opportunities. Additionally, in methodological terms, endogeneity of e-commerce adoption is tested differently from previous studies. It also contributes with a new instrumental variable for e-commerce adoption - strategic value perceived.

This research presents several limitations that must be considered when interpreting the results. Sample size is a limitation of this research work, the value of responses (372) is a little lower than the recommended minimum (384) according to The Research Advisors (2006). Potential bias of non-responses is another possible limitation of this study. To estimate the magnitude of the bias, a non-response analyses could be performed to compare the responses that were obtained early and late, as suggested by Armstrong and Overton (1977). However, the researcher cannot distinguish between responses received earlier and later. In this way, the researcher cannot perform this comparison and know the potential bias due to non-responses. The variable of IT workers could be used as an instrumental variable of endogenous e-commerce adoption as Kubota and Milani (2011) study, but this question was only asked of e-commerce adopters. This limitation can be considered as a suggestion for future research. Finally, in this sample are included only agricultural enterprises because it is the focus of the author's interest, however, this limits the scope of the sample, because there are other enterprises with interest on success.

Lastly, recommendations for possible solutions are suggested, at different levels: Al level governmental, it is proposed governmental support to agricultural enterprises and individuals for continuous formation, in particular the importance of e-commerce and other business technologies and managerial

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training initiatives. Creation and support of networks of agricultural business for enterprises to expose their products/services and to boost the agricultural market and enable internationalization of products/services. Hence, provide economic growth of this activity and economic growth of the country in general. In the organizational context, it is suggested focus on technology, for example, managerial training initiatives, for enterprises adapts in an environment increasingly digital. It is paramount that the leadership and the workers do not resist the change to these new technological environments. In an ever-changing environment, leadership will adopt methods to manage workers' resistance. As the results suggest focusing on strategic alignment for performance, plan the strategic alignment. As well the focus on internationalization. In the technological context, as this paper presents determinant factors for e-commerce adoption and impact in the ABS, the technology manufacturers have information on factors important for e-commerce adoption and the managers' needs, for the development of appropriate programs for this activity sector.

REFERENCES

Abebe, M. (2014). Electronic commerce adoption, entrepreneurial orientation and small- and medium-sized enterprise (SME) performance. *Journal of Small Business and Enterprise Development*, *21*(1), 100–116. doi:10.1108/JSBED-10-2013-0145

Ahmad, N. H., Wilson, C., & Kummerow, L. (2011). Assessing the Dimensionality of Business Success: The Perspectives of Malaysian SME Owner-Managers. *Journal of Asia-Pacific Business*, *12*(3), 207–224. doi:10.1080/10599231.2011.586855

Alom, F., Abdullah, M. A., Moten, A. R., & Azam, S. F. (2016). Success factors of overall improvement of microenterprises in Malaysia: An empirical study. *Journal of Global Entrepreneurship Research*, *6*(1), 1–13. doi:10.118640497-016-0050-2

Amit, R., & Zott, C. (2001). Value creation in e-business. *Strategic Management Journal*, *22*(6-7), 493–520. doi:10.1002mj.187

Armstrong, J. S., & Overton, T. S. (1977). Estimating Nonresponse Bias in Mail Surveys. *JMR, Journal of Marketing Research*, *14*(3), 396–402. doi:10.2307/3150783

Barnes-Vieyra, P., & Claycomb, C. (2001). Business-to-business E-commerce: Models and managerial decisions. *Business Horizons*, *44*(3), 13–20. doi:10.1016/S0007-6813(01)80030-6

Baum, J. R., Locke, E. A., & Smith, K. G. (2001). A multi-dimensional model of venture growth. *Academy of Management Journal*, *44*(2), 292–303. doi:10.2307/3069456

Bergeron, F., Raymond, L., & Rivard, S. (2004). Ideal patterns of strategic alignment and business performance. *Information & Management*, *41*(8), 1003–1020. doi:10.1016/j.im.2003.10.004

Bertschek, I., & Fryges, H. (2002). *The adoption of business-to-business e-commerce: empirical evidence for German companies* (Discussion Paper No 02-05). ZEW Centre for European Economic Research.

Bertschek, I., Fryges, H., & Kaiser, U. (2004). B2B or Not to Be: Does B2B E-Commerce Increase Labour Productivity? *ZEW Discussion Papers*, 04-45.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Bertschek, I., Fryges, H., & Kaiser, U. (2006). B2B or Not to Be: Does B2B E-Commerce Increase Labour Productivity? *International Journal of the Economics of Business*, *13*(3), 387–405. doi:10.1080/13571510600961395

Bodini, A., & Zanoli, R. (2011). Competitive Factors of the Agro-Food E-Commerce. *Journal of Food Products Marketing*, *17*(2-3), 241–260. doi:10.1080/10454446.2011.548696

Bryman, A., & Cramer, D. (2011). *Quantitative Data Analysis with IBM SPSS 17, 18 & 19: A Guide for Social Scientists*. London: Routledge.

Chaffey, D. (2007). *E-business and e-commerce management: strategy, implementation and practice* (3rd ed.). London: Financial Times/Prentice Hall.

Chamberlin, T., Doutriaux, J., & Hector, J. (2009). Business success factors and innovation in Canadian service sectors: An initial investigation of inter-sectoral differences. *Service Industries Journal*, *30*(2), 225–246. doi:10.1080/02642060802120174

Chan, Y. E., Sabherwal, R., & Thatcher, J. B. (2006). Antecedents and outcomes of strategic IS alignment: An empirical investigation. *IEEE Transactions on Engineering Management*, *53*(1), 27–47. doi:10.1109/TEM.2005.861804

Chittithaworn, C., Islam, M. A., Keawchana, T., & Yusuf, D. H. M. (2011). Factors affecting business success of small & medium enterprises (SMEs) in Thailand. *Asian Social Science*, *7*(5), 180–190. doi:10.5539/ass.v7n5p180

Christensen, C. M., & Rosenbloom, R. S. (1995). Explaining the attacker's advantage: Technological paradigms, organizational dynamics, and the value network. *Research Policy*, *24*(2), 233–257. doi:10.1016/0048-7333(93)00764-K

Coad, A. (2009). *The growth of firms: A survey of theories and empirical evidence*. Cheltenham, UK: Edward Elgar. doi:10.4337/9781848449107

Coad, A., & Rao, R. (2008). Innovation and firm growth in high-tech sectors: A quantile regression approach. *Research Policy*, *37*(4), 633–648. doi:10.1016/j.respol.2008.01.003

Coad, A., Segarra, A., & Teruel, M. (2016). Innovation and firm growth: Does firm age play a role? *Research Policy*, *45*(2), 387–400. doi:10.1016/j.respol.2015.10.015

Combs, J. G., Crook, T. R., & Shook, C. L. (2005). The dimensionality of organizational performance and its implications for strategic management research. In D. J. Ketchen & D. D. Bergh (Eds.), Research methodology in strategy and management (Vol. 2, pp. 259-286). Emerald Group Publishing Limited. doi:10.1016/S1479-8387(05)02011-4

Davis, P. S., & Harveston, P. D. (2000). Internationalization and organizational growth: The impact of Internet usage and technology involvement among entrepreneur-led family businesses. *Family Business Review*, *13*(2), 107–120. doi:10.1111/j.1741-6248.2000.00107.x

Downey, R. G., & King, C. V. (1998). Missing Data in Likert Ratings: A Comparison of Replacement Methods. *The Journal of General Psychology*, *125*(2), 175–191. doi:10.1080/00221309809595542 PMID:9935342

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Eikebrokk, T. R., & Olsen, D. H. (2007). An empirical investigation of competency factors affecting e-business success in European SMEs. *Information & Management*, *44*(4), 364–383. doi:10.1016/j.im.2007.02.004

Eikebrokk, T. R., & Olsen, D. H. (2009). Training, Competence, and Business Performance: Evidence from E-business in European Small and Medium-Sized Enterprises. *International Journal of E-Business Research*, *5*(1), 92–116. doi:10.4018/jebr.2009010105

Falk, M., & Hagsten, E. (2015). E-commerce trends and impacts across Europe. *International Journal of Production Economics, 170*(A), 357-369.

Grandon, E. E., & Pearson, J. M. (2003). Strategic value and adoption of electronic commerce: An empirical study of Chilean small and medium businesses. *Journal of Global Information Technology Management*, *6*(3), 22–43. doi:10.1080/1097198X.2003.10856354

Grandon, E. E., & Pearson, J. M. (2004). Electronic commerce adoption: An empirical study of small and medium US businesses. *Information & Management*, *42*(1), 197–216. doi:10.1016/j.im.2003.12.010

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). Multivariate Data Analysis (7th ed.). Harlow: Pearson Education Limited.

Hair, J. F. J., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis: A Global Perspective* (7th ed.). Pearson Prentice Hall.

Hausen, T., Fritz, M., & Schiefer, G. (2006). Potential of electronic trading in complex supply chains: An experimental study. *International Journal of Production Economics*, *104*(2), 580–597. doi:10.1016/j.ijpe.2005.04.010

Headd, B. (2003). Redefining Business Success: Distinguishing Between Closure and Failure. *Small Business Economics*, *21*(1), 51–61. doi:10.1023/A:1024433630958

Henderson, J., Dooley, F., & Akridge, J. (2000). *Adoption of e-commerce strategies for agribusiness firms.* Paper presented at the American Agricultural Economics Association Annual Meeting.

Henderson, J. C., & Venkatraman, N. (1993). Strategic alignment: Leveraging information technology for transforming organizations. *IBM Systems Journal*, *32*(1), 4–16. doi:10.1147j.382.0472

Hult, G. T. M., & Ketchen, D. J. (2001). Does market orientation matter?: A test of the relationship between positional advantage and performance. *Strategic Management Journal*, *22*(9), 899–906. doi:10.1002mj.197

Islam, M. A., Khan, M. A., Obaidullah, A. Z. M., & Alam, M. S. (2011). Effect of entrepreneur and firm characteristics on the business success of small and medium enterprises (SMEs) in Bangladesh. *International Journal of Business and Management*, *6*(3), 289–299.

Johnson, A. M., & Lederer, A. L. (2010). CEO/CIO mutual understanding, strategic alignment, and the contribution of IS to the organization. *Information & Management*, *47*(3), 138–149. doi:10.1016/j.im.2010.01.002

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Karakaya, F., & Shea, T. (2008). Underlying Motivations for Establishing E-Commerce Business and Their Relationship to E-Commerce Success. *Journal of Internet Commerce*, *7*(2), 153–179. doi:10.1080/15332860802067649

Kubota, L. C., & Milani, D. N. (2011). Os efeitos do e-commerce na produtividade das firmas comerciais no Brasil. Texto para Discussão, Instituto de Pesquisa Econômica Aplicada (IPEA) 1585.

Laudon, K. C., & Traver, C. G. (2014). E-Commerce 2014: Business, Technology and Society (10th ed.): Pearson Education.

Lee, Y. G., Jasper, C. R., & Fitzgerald, M. A. (2010). Gender Differences in Perceived Business Success and Profit Growth Among Family Business Managers. *Journal of Family and Economic Issues*, *31*(4), 458–474. doi:10.100710834-010-9226-z

Liu, T.-K., Chen, J.-R., Huang, C. C. J., & Yang, C.-H. (2013). E-commerce, R&D, and productivity: Firm-level evidence from Taiwan. *Information Economics and Policy*, *25*(4), 272–283. doi:10.1016/j.infoecopol.2013.07.001

Lussier, R. N., & Pfeifer, S. (2001). A Crossnational Prediction Model for Business Success. *Journal of Small Business Management*, *39*(3), 228–239. doi:10.1111/0447-2778.00021

Maroco, J. (2007). Análise estatística: com utilização do SPSS (3rd ed.). Lisboa: Edições Sílabo.

Martelo, S., Barroso, C., & Cepeda, G. (2013). The use of organizational capabilities to increase customer value. *Journal of Business Research*, *66*(10), 2042–2050. doi:10.1016/j.jbusres.2013.02.030

Nunes, P. M., Gonçalves, M., & Serrasqueiro, Z. (2011). The influence of age on SMEs' growth determinants: Empirical evidence. *Small Business Economics*, *40*(2), 249–272. doi:10.100711187-011-9363-2

O'Regan, N., Ghobadian, A., & Gallear, D. (2006). In search of the drivers of high growth in manufacturing SMEs. *Technovation*, *26*(1), 30–41. doi:10.1016/j.technovation.2005.05.004

Pestana, M. H., & Gageiro, J. N. (2014). Análise de dados para ciências sociais: a complementaridade do SPSS (6th ed.). Lisboa: Edições Sílabo.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, *88*(5), 879–903. doi:10.1037/0021-9010.88.5.879 PMID:14516251

Porter, M. E. (1979). How competitive forces shape strategy. *Harvard Business Review*, *57*(2), 137–145. PMID:18271320

Raymond, L., Bergeron, F., & Blili, S. (2005). The assimilation of E-business in manufacturing SMEs: Determinants and effects on growth and internationalization. *Electronic Markets*, *15*(2), 106–118. doi:10.1080/10196780500083761

Reich, B. H., & Benbasat, I. (2000). Factores that influence the social dimension of aligment between business and information technology objectives. *Management Information Systems Quarterly*, *24*(1), 81–113. doi:10.2307/3250980

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Research Advisors. (2006). *Sample Size Table*. Retrieved from http://www.research-advisors.com/tools/SampleSize.htm

Sabherwal, R., & Chan, Y. E. (2001). Alignment between business and IS strategies: A study of prospectors, analyzers, and defenders. *Information Systems Research*, *12*(1), 11–33. doi:10.1287/isre.12.1.11.9714

Sabherwal, R., & Kirs, P. (1994). The Alignment between Organizational Critical Success Factors and Information Technology Capability in Academic Institutions. *Decision Sciences*, *25*(2), 301–330. doi:10.1111/j.1540-5915.1994.tb01844.x

Saffu, K., Walker, J. H., & Hinson, R. (2007). An empirical study of perceived strategic value and adoption constructs: The Ghanaian case. *Management Decision*, *45*(7), 1083–1101. doi:10.1108/00251740710773925

Saffu, K., Walker, J. H., & Hinson, R. (2008). Strategic value and electronic commerce adoption among small and medium-sized enterprises in a transitional economy. *Journal of Business and Industrial Marketing*, *23*(6), 395–404. doi:10.1108/08858620810894445

Saffu, K., Walker, J. H., & Mazurek, M. (2012). Perceived Strategic Value and e-Commerce Adoption among SMEs in Slovakia. *Journal of Internet Commerce*, *11*(1), 1–23. doi:10.1080/15332861.2012.650986

Schutjens, V. A. J. M., & Wever, E. (2000). Determinants of new firm success. *Papers in Regional Science*, *79*(2), 135–159. doi:10.1007101100050040

Seyal, A. H., & Rahim, M. M. (2010). Understanding Electronic Commerce Adoption in Bruneian SMEs: A Replication of the Application of TAM and Perceived Strategic Value Models. *Journal of Electronic Commerce in Organizations*, *8*(4), 32–50. doi:10.4018/jeco.2010100103

Shim, S. S. Y., Pendyala, V. S., Sundaram, M., & Gao, J. Z. (2000). Business-to-business e-commerce frameworks. *Computer*, *33*(10), 40–47. doi:10.1109/2.876291

Simpson, M., Padmore, J., & Newman, N. (2012). Towards a new model of success and performance in SMEs. *International Journal of Entrepreneurial Behaviour & Research*, *18*(3), 264–285. doi:10.1108/13552551211227675

Subramanian, G. H., & Nosek, J. T. (2001). An empirical study of the measurement and instrument validation of perceived strategy value of information systems. *Journal of Computer Information Systems*, *41*(3), 64–69.

Swilley, E., Hofacker, C. F., & Lamont, B. T. (2012). The Evolution from E-Commerce to M-Commerce: Pressures, Firm Capabilities and Competitive Advantage in Strategic Decision Making. *International Journal of E-Business Research*, *8*(1), 1–16. doi:10.4018/jebr.2012010101

Tenenhaus, M., Vinzi, V. E., Chatelin, Y.-M., & Lauro, C. (2005). PLS path modeling. *Computational Statistics & Data Analysis*, *48*(1), 159–205. doi:10.1016/j.csda.2004.03.005

Therrien, P., Doloreux, D., & Chamberlin, T. (2011). Innovation novelty and (commercial) performance in the service sector: A Canadian firm-level analysis. *Technovation*, *31*(12), 655–665. doi:10.1016/j.technovation.2011.07.007

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Unger, J. M., Rauch, A., Frese, M., & Rosenbusch, N. (2011). Human capital and entrepreneurial success: A meta-analytical review. *Journal of Business Venturing*, *26*(3), 341–358. doi:10.1016/j.jbusvent.2009.09.004

Vilaseca-Requena, J., Torrent-Sellens, J., Meseguer-Artola, A., & Rodríguez-Ardura, I. (2007). An Integrated Model of the Adoption and Extent of E-Commerce in Firms. *International Advances in Economic Research*, *13*(2), 222–241. doi:10.100711294-006-9061-z

Wikipédia. (2016). *E-business*. Retrieved from https://pt.wikipedia.org/w/index.php?title=E-business&oldid=47860975

Wooldridge, J. M. (2002). *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press.

Wu, F., Mahajan, V., & Balasubramanian, S. (2003). An analysis of e-business adoption and its impact on business performance. *Journal of the Academy of Marketing Science*, *31*(4), 425–447. doi:10.1177/0092070303255379

Zhou, H., & De Wit, G. (2009). Determinants and dimensions of firm growth. SCALES EIM Research Reports (H200903). Zoetermeer.

ENDNOTES

1. There is no consensus among authors about which enterprises are most likely to adopt technologies, whether the recent or the old. According to Christensen and Rosenbloom (1995) cited by Bertschek and Fryges (2002) and Bertschek et al. (2006), newer enterprises are more flexible and more likely to adopt technologies. Also, Kubota and Milani (2011) argue that more recent enterprises are more flexible to adopt innovations. However, Bertschek et al. (2006) argue that more recent firms may have more risk aversion on technology adoption because of lack of experience and financial resources.
2. Cronbach's alpha coefficient is the most used, it varies between 0 and 1 and the internal consistency is considered very good if alpha> 9; good between 0.8 and 0.9; reasonable between 0.7 and 0.8; weak between 0.6 and 0.7 and unacceptable if <0.6 (Pestana & Gageiro, 2014).
3. KMO varies between 0 and 1, between 1-0.9 points to a very good factorial analyze; 0.8-0.9 good; 0.7-0.8 mean; 0.6-0.7 reasonable; 0.5-0.6 bad and if less than 0.5 unacceptable (Pestana & Gageiro, 2014). For Bryman and Cramer (2011), the ideal value is greater than or equal to 0.8. Hair et al. (2014) consider acceptable 0.7; however this limit may be lowered to 0,6 if the research is exploratory.
4. Value recommended by Tenenhaus et al. (2005).

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Chapter 75
Impact of Product Presentation on Purchase Intention:
Moderating Role of Mood in Online Shopping of Lifestyle Products

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ABSTRACT

Effective visual product presentation gives consumers a sense of appropriateness and supplementary perceptible experience to lessen the degree of apparent risk, compensate the absence of sensory attributes, and offer delightful online shopping experiences. The purchase of lifestyle products has become a matter of happiness to consumers that is convincingly regulated by the mood. Mood—a direct indicator of the subjective wellbeing—plays a prominent role in consumers' purchase behavior. This chapter attempts to examine the impact of product presentation on purchase intention of lifestyle products and moderating role of mood by obtaining data from 356 Indian online shoppers. Results revealed that mood moderates the impact of product presentation on purchase intention in online shopping context. The study recommends that marketers must offer pleasant and lively virtual product experiences for creating favorable shopping atmospherics and encouraging consumers' purchase intention.

INTRODUCTION

Globalization, demanding customers, advances in information & communication technologies (ICT) and increased usage of internet have led to increased competition and brought significant promises to electronic commerce. In such dynamic business landscape, the most important asset that an organiza-

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tion possesses is its customers because the ultimate measure of its success in the market is determined by what the customers think about organization's image and offerings. Therefore, every organization aims to create market offerings appropriate to fulfil the customer needs and expectations better than its competitors with an ultimate goal of creating an encouraging customer experience, delivering of services which create value for the customer, building customer loyalty and ultimately contributing to the long-term profitability of the organization. Using the extent of sensory interactions, direct and indirect experiences have been identified by researchers. In the context of product, experience of direct nature shows the intercede interaction of consumer with product, in which consumer applies all its individual sensory stimuli. The depiction of object in physically form in various media generates the form of indirect experience. ICT and internet-related technological advancements have shaped a different form of experiences. In this form of experience, usually termed as virtual experience, prospective buyers can examine a product visually with the advance facilities of object enlargement, zooming, or inspecting the product with various angles.

Product presentation is one of the important determinants of consumer buying behaviour in both online and offline format. Turley & Milliman (2000) advocated that elegantly presented product creates a favourable mood which further consequently directs to desired shopping outcome in the physical store environment. This product presentation is even more important in case of online platform. Besides attracting the customers, the well-presented product also assists consumer decision making in the lack of direct experiences with the product. Since consumers can't physically inspect the product before purchase in online environment, well-presented product plays a decisive function in encouraging purchase stimulus, shopping experiences and desired outcomes. In the age of technological revolution, e-commerce companies have begun to provide the sensory experiences to satisfy shoppers' needs by employing the technological advanced tools such as product enlargement, product rotation, three-dimensional presentation, controlled playback, functional video of the product. Use of such technology enhances understanding product features & functions, website performance and success of e-commerce organizations in this competitive marketplace.

Although the online product presentation has attracted the attention of several researchers and practitioners, it is evident the missing aesthetics product experience is still the most important hindrance in e-tailing environment (Internet Retailer, 2005). This present study also proposes that mood may be a significant attribute that facilitates sensory or aesthetics experience in product purchase. As stated by Gardner (1985), mood is a decisive and momentary construct of person's instinctively apparent emotional condition. Mood of a person can affect his behaviour with no interference with other cognitive courses of action (Clark & Isen, 1982). Addressing this concern, an attempt has been made to examine the impact of product presentation of e-commerce companies on shoppers' purchase intention and moderating role of mood in this relationship in the context on lifestyle products in India.

A study of this nature is justifiable in Indian perspective as it is the second fastest growing economy in the world, after China. Together with a population of 1.32 billion people, India is designated as the second largest emerging consumer market in the world and rapid economic transformations have led to an increase in the consumption. It is expected that e-commerce revenue of India will increase from $26 billion to $103 billion by 2020. Although lower than China, Japan and others in terms of the base, Indian E-commerce annual growth rate is quite higher. India is growing in this front at the rate of 51% and other markets are also growing (China 18%, Japan 11% and South Korea 10%) but slowly (ASSOCHAM-Forrester, 2016). Moreover, this research is interesting to be done because India occupied the significant

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position in the usage of internet, social media and Smartphone. With more than 462 million users, India has become the second largest country by the number of internet users after China.

The outcomes of this study will be of immense value to marketers for designing appropriate product presentation strategies to arouse customers' moods and influence their purchase decision in this emerging market.

The major objectives of the research were:

- To examine the impact of online product presentation on purchase intention of lifestyle products.
- To examine the moderating role of mood in the relationship between online product presentation and purchase intention of lifestyle products.

LITERATURE REVIEW

Online Shopping

Expansion of the Internet as a user friendly technological advancement has changed the way buyers and sellers interact through online transaction channels and has transformed the social and spatial aspects of shopping for many consumers. The favourable demographics of developing economies promises a number of opportunities for e-enabled retail models and therefore, companies are exploiting the Internet as an alternative channel for reaching out to customers. Internet is fast catching up as an important media especially among Indian youth. The improvements in ICT infrastructure coupled with psychographic changes among youths are bound to influence their purchase behavior and inclination to use the electronic channels for shopping (Khare & Rakesh, 2011). Online shopping allows customers to select, inspect and purchase products over an interactive electronic medium. It also offers some unique benefits to customers in terms of increased customization, time saving shopping experience, purchase convenience, efficient and timely product delivery, easy comparison of alternatives and cost savings through lower prices. As electronic channels proliferate, it becomes important for an organization to differentiate itself from the rest. Unlike physical outlets, where marketer has a varieties of ways to differentiate, online platforms are typically constrained to the same communication channel, the same access mechanism, universally adopted technology and even the same product items. Without any reservation, a key determinant of uniqueness for an online platform is its content and the presentation of offerings.

Online Product Presentation

In the growing online shopping environment, the importance of online platform design has been highlighted. Websites that make use of responsive presentations, orderly interface & navigation, and trouble-free search options offer enjoyable and memorable shopping experience by shopping convenience (Park & Stoel, 2002). In the e-tailing environment, products are being evaluated by shoppers only through virtual product experiences rather than physical examination due to lack of aesthetics or sensory attributes. This diminishes the direct physical, social and psychological experiences of traditional shopping. Moreover, internet is unique in nature on which customer is free to move from one product to another and from one online store to another easily, it seems pertinent to persuade customers to retain and/or return at another time by offering enjoyable services and exceptional features. online product presentation is

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emerging as a prominent strategy to gain the attention of online shoppers. The absence of sensory attributes makes it complicated to showcase the lively features of the product in e-commerce market (Jiang 2007). E-commerce companies may be able to stimulate consumer feelings, shrink consumer perceived risks and eventually encouraging their intention to buy the products, with the help of innovative multimedia visualization techniques (LaRose, 2001). Thus, effective presentation of the product has become progressively more significant in appealing consumers in e-commerce context.

Then & DeLong (1999) suggested that the consumer will be involved in the commercial exchange online, when the relevant description of the product is presented in the effective manner through the visual display by the retailer. Many e-commerce companies have displayed their product through effective manners in order to attract customers. Online retailers are avoiding the traditional forms of presentation dominated by texts and images and are now employing lively visualization techniques to augment the demonstration of products (Coyle & Thorson, 2001; Suh & Lee, 2005). Displaying product effectively minimizes uncertainties of online shopping and offers a competitive edge over traditional retailers (Elliot & Fowell, 2000). Stationary images and video devoid of commentary are less effective than moving images, virtual product experiences and commentary enabled videos in influencing consumer willingness to purchase products presented in e-commerce platform (Jiang & Benbasat, 2007). However, Kim & Lennon (2008) come across that instead of product image size; the quantity of information about the product in the form of rich text has more powerful impact on consumer willingness to purchase the product.

Product Presentation and Mood

Mood is viewed as feeling state that is subjectively perceived by individuals and as such, is a sub-category of feeling state. It is momentary and subjected to vary with time and situation (Jeon, 1990). In our day to day life, mood plays an active role in determining our beliefs and attitudes and it is instrumental in influencing our thinking, helping in decision making, and initiating actions (Gratch & Marsella, 2004). A consumer experiences a variety of subjective and/or affective status of mind during exploring, selecting or utilizing products and even interacting with marketers (Cohen & Areni, 1991; Ruth, Brunel, & Otnes, 2002). Marketers have realized that in managing human impressions and behaviours, moods (both positive and negative) play a determinant role. Social scientist explains that positive moods improve the performance of behaviours that generate to favourable consequences. Experiencing positive mood enhances the receptivity of consumers in collecting good amount of information about the product and their willingness to purchase the same even without having the direct experience. A consumer's mood is affected by visual product presentation and product presentation can be made attractive by increasing the size of product images and presenting the product from various angles and in different size may create a pleasurable shopping experience (Liao, et al., 2016). A moving object or distinct colour may also generate positive feeling and favourable attitude towards the product in online platform (Then & Delong, 1999). Further Jeandrain (2001) in his research revealed that a three-dimensional demonstration of the product encourages favourable mood of the consumer towards products and thus creates a pleasure experience of shopping.

Product Presentation and Purchase Intention

Purchase intention is considered as the major element of consumer cognitive behaviour that shows conscious plan of consumer in product purchase (Spears and Singh, 2004). Effective product presen-

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tation may construct an emotional response, creating arousal and pleasure while making decision for purchasing a product. The attractive and interesting demonstration of the product leads to favourable customer experience which may consequently increase purchase intention. Researchers including Then & Delong (1999) and Kim & Lennon (2000) were of the opinion that consumers' willingness to buy the product can be accelerated through such product presentations which are visually appealing. Strategies such as large-sized pictures, moving product, distinct colour, three-dimensional view, human models and displayed in conjunction with similar items may be more helpful in developing favourable consumer purchase intention (Fiore, Kim & Lee, 2005; Algharabat & Abu-ElSamen, 2013).

Mood and Purchase Intention

Purchasing lifestyle products using online stores may be considered as complicated task for a number of reasons. First, lifestyle products are not purchased for functional benefits but also for psychological requirements. Thus, physical examination of products is utmost important in order to check the appropriateness, suitability and quality. Second, computer knowledge and expertise also need for online shopping purpose. Third, there are several concerns associated with online shopping such as timely delivery, product returns policy, security and privacy issues and legitimacy of merchant. These all aspects make online purchase decisions more difficult (Elliot & Fowell, 2000; Park, Lennon & Stoel, 2005). Several researches on the topic have projected that under the complex task situation, mood acts as a mean of heuristic knowledge for assisting consumer decision making (Schwartz & Clore, 1983). As a result, positive moods can be helpful in increasing purchase intentions in the case of online shopping environment. In marketing psychology, several empirical studies support the correlation between consumers' mood and purchase intention consumer. Mood states are inherent and likely to affect the purchase decision in terms of what, when and how much is purchased and even intention to repurchase the product (Babin, Dardin, & Griffin, 1994; Liao et al., 2016). Several researchers conform that when the consumers are in a favourable mood in the course of shopping, they are more keen to spend additional time in the store (online and offline both), evaluate the store more positively and consequently shop more profoundly & frequently (Park, Lennon & Stoel, 2005; Li, Sarathy & Xu, 2011; Zhang et al, 2012). Menon & Kahn (2002), Eroglu et al. (2003), Mummalaneni (2005), Rose et al. (2012) and Pappas et al. (2014) have studied the significant role of emotions or moods by means of virtual store atmospherics and advocated that online shopping cultivates different moods which trigger consumers' intention to purchase. Consumers' positive feeling generate a kind of rose-colored glasses effect, instigating products to seem more appropriate and vice-versa. Consumers' positive moods increase the likelihood that individuals will reflect behavior with positive consequences and decrease the likelihood that individuals will engross in behaviors with anticipated negative consequences (Gardner & Hill, 1988). The purchase of lifestyle product has become matter of happiness to the consumer that is convincingly regulated by the mood. Mood - a direct indicator of general subjective well-being - plays a prominent role in purchase and subsequently in post purchase behaviour of consumer.

Hypotheses of the Study

The present research work has been undertaken to investigate the importance of product presentation in online shopping environment and its impact on consumers' purchase intention of lifestyles products. Three lifestyle products namely, fashion accessories, apparels and electronic gadgets have been selected

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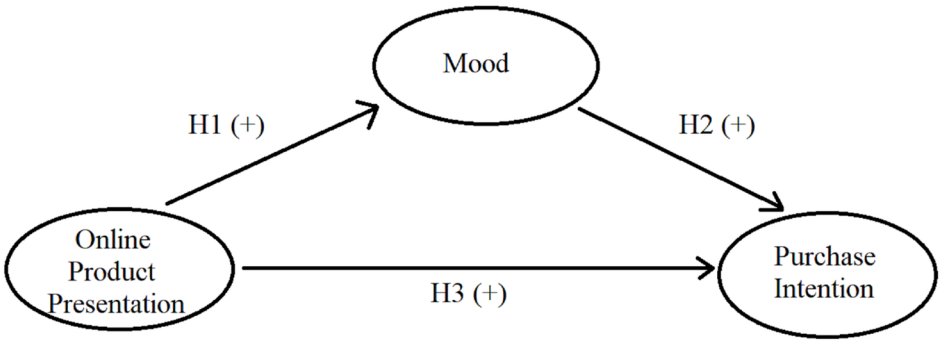
to examine the association between online product presentation and purchase intention and moderating role of mood in this relationship.

By reviewing the relevant literature, the following research hypotheses were framed:

- **H1:** Online product presentation has a positive impact on purchase Intention.
- **H2:** Online product presentation positively affects mood.
- **H3:** Mood moderates the relationship between product presentation and purchase intention in online shopping context.

Figure 1. The proposed Conceptual Model



RESEARCH METHODOLOGY

Data for this study was collected from Indian consumers using an online survey developed on Google Forms in September, 2017. A well-structured questionnaire was developed and sent to consumer through emails after taking their consent for the same. The online survey is widely used research instruments as it facilitates prompt response as well as considerable advantages in terms of wide coverage and associated cost. Overall, 373 responses were received. After editing, final valid 356 questionnaires were found suitable and employed in this study, eliminating 17 incomplete and casually responded questionnaires. The existing literature helped in the preparation of the questionnaire and questions were selected based on related studies. Some questions were then modified by the researchers in order to focus on specific information.

The entire questionnaire was developed in two parts. First part consisted of questions related to respondents' demographical profile, their frequency of online shopping and product presentation modes used by online stores. The second part of the questionnaire was designed using the variables related to measurement of online product presentation, mood, and purchase intention. Respondents were instructed to indicate their opinion according to their degree of agreement with given 15 attributes related to online product presentation, mood and purchase intention in a five-point Likert-scale (where 5 designated strongly agree and 1 designated strongly disagree).

Out of 15 attributes, eight were associated with online product presentation (Webster & Ho, 1997; Menon & Soman, 2002; Park, Lennon & Stoel, 2005; Jeong, 2007), four were related to Mood (Eroglu, Machleit & Davis, 2003; Park, Lennon & Stoel, 2005) and three variables were concerned with purchase

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intention (Jiang & Benbasat, 2007; Shukla, 2010). The validity of the construct & content, the precision of its attributes' meaning and to ensure its association with the research objectives was ensured with the panel of experts and faculty members. To check the reliability, a pilot test of 40 respondents was carried out and Cronbach's alpha test was conducted using SPSS software. The calculated value was 0.834, which indicated the reliability of the questionnaire within the acceptable threshold. After assuring reliability, a full scale survey was carried out and data thus received was analysed using SPSS 22. Descriptive statistics was calculated using SPSS 22 and structural equation modelling was carried out using AMOS 20.

RESULTS

Sample Profile

Data presented in the Table 1 show the demographical distribution of the surveyed participants. Age-wise distribution indicates that 12.92% of participants were of the age range of upto 20 years, 53.93% were of 21-30 years, 24.44% were from 31-40 years and 8.71% were above 41 years. The sample was dominated by male with almost 62 percent. The majority of participants fell into the category of students and followed by employees of private organizations. As regards to education level, 28.65% respondents were graduate, 24.44% were post-graduate, and 46.91% were professional degree holders such as MBA, B.Tech etc.

Table 1.

		F	%			F	%
Age	Upto 20 Years	46	12.92	**Occupation**	Students	197	55.34
	21-30 Years	192	53.93		Private Employees	101	28.37
	31-40 Years	87	24.44		Government Employees	15	4.21
	Above 41 Years	31	8.71		Others	43	12.08
Gender	Male	221	62.08	**Education**	Graduate	102	28.65
	Female	135	37.92		Post Graduate	87	24.44
					Professionals	167	46.91

Demographical Profile (N= 356)

Structural Equation Modelling (SEM)

SEM is applied in this study because it simultaneously examines the inter-relationships among several variables, both independent and dependent, and explores the causal associations among various measurement items and latent constructs (Hair et al., 2010). It is two-step approach including measurement model and structural model (Gerbing & Anderson, 1992). For the reliability and validity of the latent variables and observed variables, measurement model is intended and for showing the strength of path

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and testing the proposed relationships among constructs, the structural model is used. Structural equation modelling was performed using AMOS 20.

Measurement Model

At the outset, using three latent constructs namely, online product presentation, mood and purchase intention, the measurement model was designed. These three constructs were measured through 12 items (3 items of online product presentation were removed because of poor fit). The maximum likelihood method was applied for parameter estimations and overall fit-indices. Using the fit indices, the fitness of measurement model was considered. Fitness indices and their threshold levels indicate the good fit of the measurement model as values of all indices was above the acceptable threshold (Table 2). Results show the model sufficiently fitted the data.

Table 2.

	χ2/df	GFI	CFI	TLI	NFI	RMESA
Calculated Values	2.856	0.959	0.920	0.916	0.920	0.056
Threshold Values	1.0 – 3.0	> 0.90	> 0.90	> 0.90	> 0.90	< 0.08

Measurement Model: Goodness-of-Fit Indices

Cronbach's α was applied to verify the reliability of items. The value of alpha ranged from 0.724 to 0.781 which was well above the minimum suggested value of 0.60 for each construct. To measure the degree to which items of a construct have a high percentage of variation, the term convergent validity suggested by Hair et al. (2010). It is measured by examining the factor loadings and their significance through critical ratio. Results show that items are significantly different from zero ($p < 0.05$ level), since all the value of the critical ratio is greater than 1.96 (Byrne, 2009). The standardized loading estimates for each item at the alpha level of 0.05 was higher than acceptable level of 0.70, signifying the convergent validity of the measurement model. Composite reliability (CR) – another reliability indicator in the measurement model – was also showed good reliability for each construct (online product presentation = 0.826, mood = 0.799, purchase intention = 0.756). Average variance extracted (AVE), which measures the overall extent of variance, was greater than the acceptable level of 0.50 for all three constructs (online product presentation = 0.534, mood = 0.515, purchase intention = 0.563). Thus, all these measures confirm convergent validity for analyzing of data.

As stated by Hair et al. (2010), discriminant validity in the model evaluates the degree to which the variance is shared between a construct and any other constructs. Discriminant validity is confirmed when AVE of a particular construct is more than the average shared variances (ASV) between the constructs. Table 3 shows that AVE of the particular constructs is more than the ASV. In particular, the results of measurement model are appropriate and possess satisfactory reliability and validity. Therefore, it is recommended to further advance to structural model.

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Table 3.

Construct and Item		Standardized Loading	Critical Ratio	Mean	SD	α
Online Product Presentation (CR = 0.826, AVE = 0.534, ASV = 0.462)						
OPP 1	OPP demonstrate all benefits of product to me in a convenient and attractive form.	0.70	9.901	4.01	0.768	**0.725**
OPP 2	It saves my time by providing images, pricing information, technical characteristics and many more relevant information.	0.76	10.779	3.94	0.718	
OPP 3	OPP enhances the personalization of the product and thus provide aesthetics value to product.	0.77	9.081	3.85	0.757	
OPP 4	Appealing visual presentation such as quality, size product image, motion & use of model accelerates me to purchase products online.	0.81	8.278	3.72	0.851	
OPP 5	Product presentation gives me a feeling of complete satisfaction, happiness and fulfillment.	0.82	9.946	3.92	0.760	
Mood (CR = 0.799, AVE = 0.515, ASV = 0.391)						
M 1	I feel pleased while shopping.	0.70	10.789	3.49	0.817	**0.781**
M 2	I feel my mood facing good influence when I shop online.	0.71	10.339	3.58	0.785	
M 3	I like the music being played in the website along with product display.	0.72	10.355	3.79	0.875	
M 4	Combinations of colour schemes in the product presentation & of website in overall make me feel refresh.	0.74	9.878	3.43	0.914	
Purchase Intention (CR = 0.756, AVE=0.563, ASV = 0.388)						
PI 1	I would think about by buying product online when it is presented effectively.	0.73	11.086	3.47	0.884	**0.724**
PI 2	I would recommend nicely presented products online to friends and family.	0.78	10.128	3.69	0.798	
PI 3	I would say favourable things about the product which is effectively presented.	0.74	9.948	3.77	0.806	

Standardized Loading, Reliability & Validity of Constructs

Structural Model

Similar to measurement model, the structural model also used various goodness of fitness statistic like CFI, GFI, NFI, TLI and RMSEA. As presented in Table 4, all the measures have calculated values more than the acceptable threshold. Review of these fitness indices proposes that proposed structural model seems to appropriately fit with the data.

Table 4.

	χ2/df	GFI	CFI	TLI	NFI	RMESA
Structural Values	2.720	0.974	0.945	0.986	0.937	0.034
Threshold Values	1.0 – 3.0	> 0.90	> 0.90	> 0.90	> 0.90	< 0.08

Structural Model: Goodness-of-Fit Indices

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The overall structural model was developed by twelve measurement items that recognized the three latent constructs (Figure 2). Among three hypothesized relationships calculated, all three were found significant at 0.05 (Table 5). The impact of online product presentation on mood (β= 0.693, p = 0.000) found significant, indicating that online product presentation helps in creating the favourable mood towards products shown in the online platform. The direct association between online product presentation and intention to purchase (β= 0.194, p = 0.026) found, indicating that online product presentation helps in encouraging purchase intention for lifestyle products. The effect of product presentation on purchase intention (β= 0.830, p = 0.000) found even more significant when mood was also involved in this relationship. This indicates that mood moderated the impact of product presentation on favourable intention of purchase in the online shopping context.

Figure 2. Hypotheses testing results

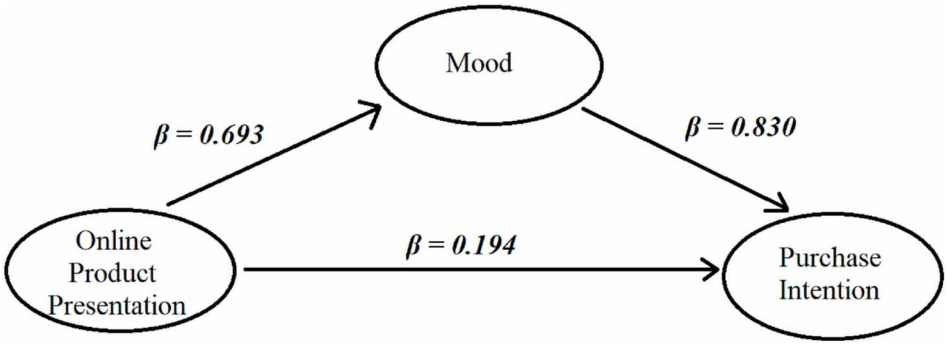

Table 5.

Independent Variable	Dependent Variable	Estimates	Standardized Error	Critical Ratio	*p*	*β*	*Hypothesis Testing Result*
Online Product Presentation	Mood	.439	.050	8.777	***	0.693	Accepted
Online Product Presentation	Purchase Intention	.101	.046	2.224	.026	0.194	Accepted
Mood	Purchase Intention	.684	.098	6.957	***	0.830	Accepted

DISCUSSION

The escalating prevalence of online shopping has changed the manner by which modern consumers explore information, assess alternatives, and make choices. With the substantial growth in e-commerce in the Indian context, there is a need for researchers and marketers to better comprehend the influence of shopping environment on consumer's willingness to purchase. Researchers attempted to explore the roles of product presentation on purchase intention of lifestyle products in online shopping landscape. This study also investigated how mood influences or moderates the relationship between the study variables - online product presentation and intention to purchase. Results of the study indicated the significant,

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positive and statistically supported relationship between these three constructs. Product presentation significantly affects the purchase intention of lifestyle products in the online platform. Further, the impact of product presentation on mood also found significant, indicating that product presentation helps in creating the favourable mood towards products and subsequent purchase intention of lifestyle products in the online platform. The results showed that mood positively persuade the intention to purchase and also moderates the direct relationship between online product demonstration and intention to purchase. This result is consistent with previous researches of Park, Lennon & Stoel (2005), and Zhang et al. (2012) who supported the positive association among product presentation, mood and purchase intention with reference to apparels.

In online shopping environment, consumers' mood acts as an influential factor in their decision making behaviour. This has direct and instantaneous effect on consumers' willingness to search for products, amount of information needed for final purchase, product evaluations, degree of perceived risk, associated and complementary services and their intention to make the final purchase. Similar to relevant past studies, this study also indicates that innovative product presentation techniques create pleasant and inspiring shopping atmosphere which has direct and immediate influence on consumers' engagement with products and subsequent increase consumers' intention to purchase products. E-tailers should accordingly attempt focus on those aspects of product presentation which help in designing an affective and alive shopping environment. Vivacious, lively and cheerful online interfaces and demonstration of product attributes can reinforce the favourable moods of consumers and their willingness to make the product purchase. From perspective of marketers of lifestyle products in online platform, this study highlights the aspects of pleasant shopping environment which includes usage of innovative and advance presentation tools and creating favourable shopping mood of consumers. In the online platform, where shoppers inspect the product virtually rather than in its physical form, marketers must provide cheerful and lively environment for shopping in order to compensate the shortcomings of online shopping and also stimulate consumer intention to purchase. Particularly in online retailing of lifestyle products, marketers' strategies to evoke such emotions and moods using innovative presentation are obligatory owing to the absence of essential sensory experience facet.

The study also observed that product personalization, availability of rich product information, website design & interactivity, usage of music, moving objects, appealing colors enhance the positive moods of shoppers. From theoretical and practical background, the understanding of product presentation effectiveness and mood viewpoint will help scholars and practitioners in framing visually appealing strategies. In the course of development of strategies for product visualization, marketers need to consider the relevance of consumer mood and involvement. Consistent with prior research (Then & Delong, 1999; Park et al. 2005; Jeong, 2007; Li et al. 2011; Zhang et al, 2012), the present research provides empirical evidence for the significance of mood and have beneficial implications for augmenting the presentation of product online.

CONCLUSION

E-commerce is a rapidly emergent channel for purchasing lifestyle products in India. In this growing and competitive e-commerce landscape, marketers regularly add a variety of features and services to differentiate their offerings and further increase sales. Since shoppers have to imagine the product in online marketplace, marketers need to develop rich virtual product experiences attempting to imitate

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reality. Therefore, effective product presentation has become increasingly more significant in creating arousal, pleasure and encouraging them to make purchase. As revealed in the present study, innovative multimedia product visualization techniques offer experiential value in the effective manner, which enhances the purchase intention. Findings also signify that mood moderates the direct association between product presentation and intention to purchase lifestyle products. Results highlight that indirect or virtual product experiences and favorable shopping atmospherics are important commercial stimuli in online business that can make products more touchable. In the Indian context, where numbers of internet users and online shoppers are growing rapidly, it is recommended that marketers should pay attention to effectiveness of product presentation as a significant marketing tool that influences brand image, competitiveness, and long-term success.

REFERENCES

Algharabat, R. S., & Abu-ElSamen, A. A. (2013). Modelling the impact of 3D product presentation on online behaviour. *International Journal of Electronic Marketing and Retailing*, *5*(3), 242–264. doi:10.1504/IJEMR.2013.052891

ASSOCHAM-Forrester. (2016). *Betaout identifies e-commerce trends for 2017*. Retrieved from http://www.thehindubusinessline.com/business-wire/betaout-identifies-ecommerce-trends-for-2017/article9449142.ece

Babin, B. J., Darden, W. R., & Griffin, M. (1994). Work and/or fun: Measuring hedonic and utilitarian shopping value. *The Journal of Consumer Research*, *20*(4), 644–656. doi:10.1086/209376

Byrne, B. M. (2009). *Structural equation modeling with AMOS* (2nd ed.). New York: Routledge.

Clark, M. S., & Isen, A. M. (1982). Toward understanding the relationship between feeling states and social behavior. In A. H. Hastrof & A. M. Isen (Eds.), *Cognitive Social Psychology* (pp. 73–108). New York: Elsevier.

Cohen, J. B., & Areni, C. S. (1991). Affect and consumer behavior. In T. S. Robertson & H. H. Kassarjian (Eds.), *Handbook of consumer behavior* (pp. 188–240). Englewood Cliffs, NJ: Prentice Hall.

Coyle, J. R., & Thorson, E. (2001). The effects of progressive levels of interactivity and vividness in web marketing sites. *Journal of Advertising*, *30*(3), 65–77. doi:10.1080/00913367.2001.10673646

Elliot, S., & Fowell, S. (2000). Expectations versus reality: A snapshot of consumer experiences with Internet retailing. *International Journal of Information Management*, *20*(5), 323–336. doi:10.1016/S0268-4012(00)00026-8

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2003). Empirical testing of a model of online store atmospherics and shopper responses. *Psychology and Marketing*, *20*(2), 139–150. doi:10.1002/mar.10064

Fiore, A., Kim, J., & Lee, H. H. (2005). Effects of image interactivity technology on consumer responses toward the online retailing. *Journal of Interactivity Marketing*, *19*(3), 39–53.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Gardner, M. P. (1985). Mood states and consumer behavior: A critical review. *The Journal of Consumer Research*, *12*(3), 281–300. doi:10.1086/208516

Gardner, M. P., & Hill, R. P. (1988). Consumers' mood states: Antecedents and consequences of experiential vs. informational strategies for brand choice. *Psychology and Marketing*, *5*(2), 169–182. doi:10.1002/mar.4220050206

Gerbing, D. W., & Anderson, J. C. (1992). Monte Carlo evaluations of Goodness of Fit Indices for structural equation models. *Sociological Methods & Research*, *21*(2), 132–160. doi:10.1177/0049124192021002002

Gratch, J., & Marsella, S. (2004). A domain-independent framework for modeling emotion. *Cognitive Systems Research*, *5*(4), 269–306. doi:10.1016/j.cogsys.2004.02.002

Hair, J. F., Black, B., Babin, B., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate Data Analysis: A Global Perspective*. New Jersey, NJ: Pearson Education Inc.

Jeandrain, A. (2001). Consumer reactions in a realistic virtual shop: Influence on buying style. *Journal of Interactive Advertising*, *2*(1), 2–9. doi:10.1080/15252019.2001.10722053

Jeong, So Won (2007). *The effects of product presentation on consumer experiences, emotion, and website patronage intention towards an apparel website*. Retrospective Theses and Dissertations. Paper 14888.

Jiang, Z., & Benbasat, I. (2015). Enticing and engaging consumers via online product presentations: The effects of restricted interaction design. *Journal of Management Information Systems*, *31*(4), 213–242. doi:10.1080/07421222.2014.1001270

Khare, A., & Rakesh, S. (2011). Antecedents of online shopping behavior in India: An examination. *Journal of Internet Commerce*, *10*(4), 227–244. doi:10.1080/15332861.2011.622691

Kim, H., & Lennon, S. J. (2010). E-atmosphere, emotional, cognitive, and behavioral responses. *Journal of Fashion Marketing and Management*, *14*(3), 412–428. doi:10.1108/13612021011061861

LaRose, R. (2001). On the negative effects of e-commerce: A socio cognitive exploration of unregulated on-line buying. *Journal of Computer Mediated Communication*, *6*(3). Retrieved from http://onlinelibrary.wiley.com/doi/ 10.1111/j.1083-6101.2001.tb00120.x/full

Li, H., Sarathy, R., & Xu, H. (2011). The role of affect and cognition on online consumers' decision to disclose personal information to unfamiliar online vendors. *Decision Support Systems*, *51*(3), 434–445. doi:10.1016/j.dss.2011.01.017

Liao, C., To, P. L., Wong, Y. C., Palvia, P., & Kakhki, M. D. (2016). The impact of presentation mode and product type on online impulse buying decisions. *Journal of Electronic Commerce Research*, *17*(2), 153–168.

Menon, S., & Kahn, B. (2002). Cross-category effects of induced arousal and pleasure on the internet shopping experience. *Journal of Retailing*, *78*(1), 31–40. doi:10.1016/S0022-4359(01)00064-1

Menon, S., & Soman, D. (2002). Managing the power of curiosity for effective web advertising strategies. *Journal of Advertising, Vl.*, *31*(3), 1–14. doi:10.1080/00913367.2002.10673672

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Mummalaneni, V. (2005). An empirical investigation of Web site characteristics, consumer emotional states and on-line shopping behaviors. *Journal of Business Research*, *58*(4), 526–532. doi:10.1016/S0148-2963(03)00143-7

Pappas, I. O., Kourouthanassis, P. E., Giannakos, M. N., & Chrissikopoulos, V. (2014). Shiny happy people buying: The role of emotions on personalized e-shopping. *Electronic Markets*, *24*(3), 193–206. doi:10.100712525-014-0153-y

Park, J., Lennon, S. J., & Stoel, L. (2005). Online product presentation: Effects on mood, perceived risk, and purchase intention. *Psychology and Marketing*, *22*(9), 695–719. doi:10.1002/mar.20080

Park, J., & Stoel, L. (2005). Effect of brand familiarity, experience and information on online apparel purchase. *International Journal of Retail & Distribution Management*, *33*(2), 148–160. doi:10.1108/09590550510581476

Retailer, I. (2005). *More than a quarter of consumers who go online still won't buy there*. Retrieved from http://www.internetretailer.com/2005/04/14/more-than-a-quarter-of-consumers-who-go-online-still-won-t-buy

Rose, S., Clark, M., Samouel, P., & Hair, N. (2012). Online customer experience in e-retailing: An empirical model of antecedents and outcomes. *Journal of Retailing*, *88*(2), 308–322. doi:10.1016/j.jretai.2012.03.001

Ruth, J. A., Brunel, F. F., & Otnes, C. C. (2002). Linking thoughts to feelings: Investigating cognitive appraisals and consumption emotions in a mixed-emotions context. *Journal of the Academy of Marketing Science*, *30*(1), 44–58. doi:10.1177/03079459994317

Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgments of wellbeing: Informative and directive functions of affective states. *Journal of Personality and Social Psychology*, *45*(3), 513–523. doi:10.1037/0022-3514.45.3.513

Shukla, P. (2010). Impact of interpersonal influences, brand origin and brand image on luxury purchase intentions: Measuring inter-functional interactions and a cross-national comparison. *Journal of World Business*, *46*(2), 242–252. doi:10.1016/j.jwb.2010.11.002

Spears, N., & Singh, S. N. (2004). Measuring attitude toward the brand and purchase intentions. *Journal of Current Issues and Research in Advertising*, *26*(2), 53–66. doi:10.1080/10641734.2004.10505164

Suh, K. S., & Lee, Y. E. (2005). Effects of virtual reality on consumer learning: An empirical investigation in web-based electronic commerce. *Management Information Systems Quarterly*, *29*(4), 673–697. doi:10.2307/25148705

Then, N. K., & DeLong, M. R. (1999). Apparel shopping on the web. *Journal of Family and Consumer Sciences*, *91*, 55–68.

Turley, L. W., & Milliman, R. E. (2000). Atmospheric effects on shopping behavior: A review of the experimental evidence. *Journal of Business Research*, *49*(2), 193–211. doi:10.1016/S0148-2963(99)00010-7

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Webster, J., & Ho, H. (1997). Audience engagement in multi-media presentations. *The Data Base for Advances in Information Systems*, *28*(2), 63–77. doi:10.1145/264701.264706

Yoo, J., & Kim, M. (2014). The effects of online product presentation on consumer responses: A mental imagery perspective. *Journal of Business Research*, *67*(11), 2464–2472. doi:10.1016/j.jbusres.2014.03.006

Zhang, H., Lu, Y., Shi, X., Tang, Z., & Zhao, Z. (2012). Mood and social presence on consumer purchase behaviour in C2C E-commerce in Chinese culture. *Electronic Markets*, *22*(3), 143–154. doi:10.100712525-012-0097-z

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Chapter 76
Millennials Consumers' Behaviors between Trends and Experiments

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ABSTRACT

Millennial consumer behaviors approach purchasing or shopping things differently when compared to what earlier generations encountered. Each generational cohort shares a common technological, social, political, historical, and economic environment that shapes and distinguishes them from one another and the millennial generation is using social media as a shopping platform. Technology advancement has become far more user-friendly during millennials' lifetimes, as they are attached to the social media given that it has become a platform that is utilized to communicate and shop. The aim of the study is to look at the characteristics of consumers' behaviors as it has a huge impact on the development of new business strategies. This article provides an analytical framework of millennial consumers' behaviors based on previous studies along with data collected from a focus group discussion. The study finds that millennials are more confident compared to earlier generations, more willing to be experimented on and willing to experiment, and are fashionable trend-wise. In terms of technology adoption, millennials have adopted technology as a way of life which makes full use of its functions ranging from communication to entertainment and optimized social media presence is essential for brands that are targeting millennials.

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INTRODUCTION

The world business ecosystem has undergone remarkable changes, starting from the industry 1.0 (mechanization; the age of steam), to industry 2.0 (mass production; the age of electricity), then to industry 3.0 (the age of computer and automation; the information age) and now the world is moving towards the Fourth Industrial Revolution, which is commonly known as industry 4.0, the revolution which includes cyber-physical systems (CPS), the Internet of things (IoT) and the Internet of services (IoS) (Lasi et al., 2014; Ning & Liu, 2015; Weyer et al., 2015). These technological revolutions will activate many innovative functionalities which include networking and access to the cyber world hence significantly changing human everyday lives. Moreover, the revolution will result in the creation of a new business model, work process, development methods and big data environment as the process may involve various data exchange and data storage (Jazdi, 2014).

The millennial generation is people who were born in the early time of Industry 4.0 and they are digital native groups in the society. The term 'millennials' was first coined by social historians Strauss and Howe. A generation can be defined as an "identifiable group that shares birth years, age, place, and significant life events at critical developmental stages" (Kupperschmidt, 2000). According to Zogby Analytics (Landrum, 2017), the millennial generation will take their smartphones everywhere since it has the ability to use online or to take selfies, which mean that smartphones are really important to them and hence, they must purchase it (Anshari, Alas, Sulaiman, 2019). Millennials spend more products or services online, but they have less loyalty to the brands than earlier generations (Ahad, Anshari, & Razzaq, 2017). The reasons for this low loyalty maybe because of the greater exposure to price promotions. They also look for products and brands that match their personality, lifestyle, social and community values. They use brands to create images, to represent their personality and communicate their values (Ayaydın & Baltaci, 2013). Lyons, et al. (2005) argue that some discrepancy exists in defining each generation, but Each generation shares a unique set of significant historical and social life events that shape their attitudes and beliefs, thereby creating generation gaps. Managing those generation gaps provides unique challenges and opportunities for organizations (Lancaster & Stillman, 2002).

The purpose of the study is to examine and explore the behaviors, characteristics, and values driven to consumers' millennials. The data analytics were collected from literature review and focus group discussion of the first-year undergraduate students as primary source. The research found that the consumers among the millennial generation have an unfixed preference when it comes to buying products. Millennials tend to buy anything that is currently trending in the social media, and they will move to buy something else those are newly trending.

Definitions

Millennials are the demographic cohort that have grown up with the Internet and born in the range 1980s to 2000s. It is also directly followed by Generation X (Rouse, 2018). According to Rosebud (2017), both Generation Y (people born between 1980s to 1990s) and Generation Z (born between 1990s to 2000s) can be called Millennials and the primary difference between the two being technology (See Figure 1). Millennials are 13% more likely to share their purchases on social media than Gen X. This provides them with the forum for sharing and making conversations as well as a place to hear from others they trust (Woo, 2018). Generation Y grew up on personal computers, cell phones, and video game systems,

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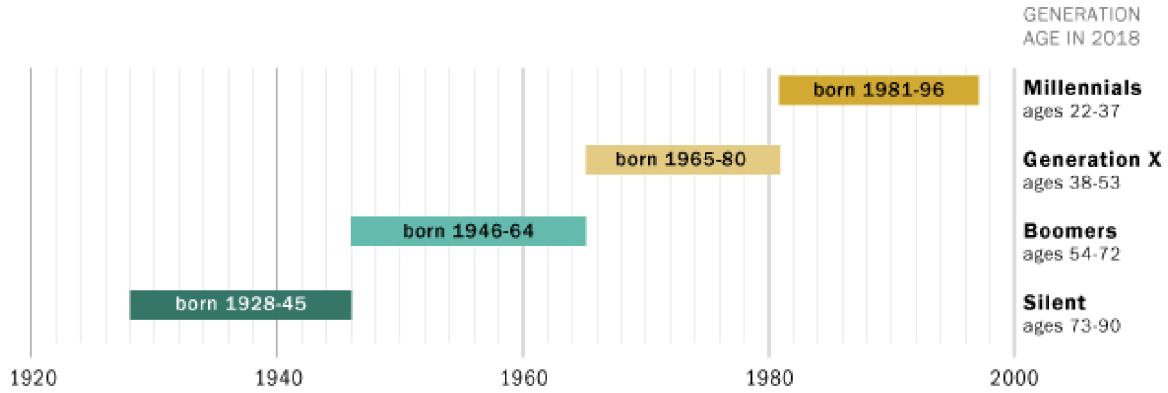
while Generation Z has grown up on tablets, smartphones, and apps. Yet, the common characteristics between both generations are that they have transformed and altering communication and identity globally.

Figure 1. Generation cohort (Source: Pew Research Center, 2018)



Each generational cohort shares a common social, political, historical, and economic environment that distinguishes them from one another (Williams & Page, 2011). General consensus on the boundaries are Baby Boomers (1946 – 1964), Generation X (1965-1980), Generation Y (1980-1995) and Millennials (Dimock 2018; McCrindle, 2006). The huge generation cohort of Baby Boomers will be the age of 60, transition out of the workforce, and retiring staffs. At a strategic level, there is an ongoing process of knowledge and leadership transferred to the emerging Generation X managers, the commencing Generation Y employees, and Millennials as users. Obviously, with the mixture of generations in the business landscape at all levels create differences that need to be understood. According to Ordun (2015), Gen Y buyers select and consume products that help them to define who they are, what is important to them, what they value in life and serve to express some aspect of their own personality or image. In addition, they have the desire to make the best decision on not only price and quality but give consideration to making good investments for the future. Millennial customers found great confidence and trust in the brand names of their choice. Gen Y consumers are more aware of their purchasing power and are likely to spend their cash as quickly as they acquire it, usually on consumer goods and personal services (Der Hovanesian, 1999). Gen Y demand an authentic relationship based on a deep knowledge of who they are and what makes them buy (Yarrow & O'Donnell, 2009).

Millennials Consumers' behaviors

Millennial consumers' behaviors grew up in an era of Industry 4.0. They seem to have a different decisions pattern (psychological – mental state) towards brand loyalty when compared with Baby Boomers. Ordun (2015) added that millennial use their considerable knowledge about the latest trends, images, and reputations of retailers, products, and brand names to be considered experts or leaders among peers. The millennials grew up with better offer of products and services, thus they are considered as demanding consumers who expect more selectivity, personalization and customization in their products and services (Sweeney, 2006; Anshari, Alas, & Guan, 2016).

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Millennial consumers do not get easily affected by all advertising. Only 1% of millennials in the survey said that a compelling advertisement would make them trust a brand more. Millennials believe that advertising is all spin and not authentic (Schawbel, 2015). In addition, they are mostly using multi technologies devices to purchase something. 87% of millennials use between two and three tech devices at least once on a daily basis. 39% are either very or completely likely to purchase a tablet computer in the next five years, while 30% are for wearable devices.

Other characteristics include highly educated, career-driven, and politically progressive and develop strong brand loyalty when presented with quality products and actively engaged by brands (Arabov, 2016). In terms of consumers' behaviors, millennials are solidly coming into their own. Their purchase behaviors have been shaped by their journey, wrought by social and economic trials, and clear preferences are emerging that can advise brands on the communications and connections that will have the most impact (Roesler, 2018; Anshari et.al., 2019). In addition, millennials are committed to a brand as long as it provides for their needs (DeBard, 2004).

Methodology

The study deployed an qualitative approach that were confined to data analysis from a focus group discussion and Meta analytics from literature studies of a thorough search for studies pertaining to millennials consumers' behaviors. The studies that were selected for inclusion should provide empirical data on the relationship between millennials and their consuming behaviors. This is also known as a scoping review (Torgerson, 2003). By conducting a scoping review, a preliminary assessment of the size and nature of the literature that is relevant to the research questions can be used to determine the feasibility and relevance of a full-scale systematic review (Arksey & O'Malley, 2005). Furthermore, focus group discussion was used to explore primary data from millennials group mostly first-year university students. A total of 176 respondents were contributed in defining the characteristics of millennials. The data collected either from literature reviews and focus group discussion were then extracted using text mining analytics and expressed them into data analytics visualization. Then, the results were integrated as it guided the exploration of the truth or reality behind the conversations and opinions of respondents. While there is the richness of depth in interpretive research, no generalizations are made; however, this approach is flexible in its application. As a result, the interpretive constructionist paradigm is deemed as the most suitable paradigm to meet the needs of this study.

Analysis & Discussion

Business organizations specializing in mobile commerce will get a competitive advantage by understanding millennials' behaviors. The results of data analytics confirm that millennial generation consumers show wide range of characteristics. The study discussed that most would have the same characteristics based on the respondents' opinions. Millennial generation consumers are more or less materialistic where they see that items such as clothes, phones and more are important to their lives. They have the need to purchase items that are branded and expensive. They may have a mindset where being able to purchase these items would make them "relevant" gaining attention from their followers on social media. They are however more creative than previous generation. They may in fact have a good amount of confidence in them.

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In addition, Industry 4.0 shapes the millennials consumers' attitudes toward a product, there is no holistic way of categorizing it. Influences from musical genres from K-POP to Indie Rock, athletics, movie stars, social media, and memes play a major role in what is trendy and hip. Political activism also plays a huge role in millennial preferences with the unstable political climate transition we face today, millennial use their angst to voice their opinions. This also made them more socially aware of how their product is made (Anshari & Alas, 2015).

The extent, to which the many factors involved in consumers' behaviors among millennials. It will thus be interesting to examine the characteristics of millennials from primary and secondary data sources. The following sections present findings obtained from the focus group discussions compared to the data analytics from a literature review. The findings present the most important features of millennials consumers' behaviors. It is the cirrus view from text mining analytics for the respondents' opinion on millennials consumers' behavior characterizes. The bigger the words express the level of the more important characteristics of the keywords such as social media, shopping online, trending, brands, buying a product, Instagram, technology, etc.

Figure 2. Cirrus view from respondents' opinion on millennial characteristics

The Power of Social Media

The reason of social media has repeatedly mentioned by respondents that make social media and online have become the most highlighted keywords at Cirrus visualization (see Figure 2). According to respondents, it firmly indicates that millennials consuming behaviors is that they usually use social media as the main medium for shopping information and preferences. Social media especially Instagram is the most popular social media platform for millennials in buying or selling items. Social media play a vital role

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in their life as these mediums offer opportunities to the millennial to process new information, involve in social discussion and stay updated with any trends happening such as they would use the social media to compare the price, brands, quality and read brand's review before purchasing certain items. Since, millennial are entitled, smartphone obsessed and would have any effects on mobile commerce, they are considered as the most critical and important customer in business. As there are many social media personalities promoting products nowadays, it is easier for them to review and purchase the products. Social media has become a number one for shopping information.

They are tech-savvy shoppers and actively making a comparison of several shops online to get the best value and shopping experience. Social media has become their primary tool to search and hear about several products, special deals and shopping news. As stated by the respondent, "in my opinion, millennial generation on consumer's behavior is when young people try to develop their life experienced with similar attitudes and beliefs which they have been influenced from the al group that are currently developing especially when there is new trending." Credibility and relevance are the basis of many purchasing decisions. They rely on the content of their friends' social networks much more than on the content of the brands. They consider that trademarks must be authentic and relevant.

Millennial are certainly techno-savvy online customers. According to a study conducted by Moore (2012), millennial consumers are more active and superior adept at integrating technologies into their daily lives for marketing purposes. In fact, interviews conducted at one of America's largest shopping malls confirmed our survey findings that many members of the digital generation actually prefer visiting stores to shopping online. Online and mobile channels are important to Millennial, providing the information and insights they need to find the best products and services. Many hone their shopping skills on the Internet, checking product ratings and reviews or feedback on retailers, for example, to confirm that both product and vendor provide the best value and service, respectively, thus millennials preferred brands that use social media compared to those that do not and they want to engage with brands on social networks (Vantage, 2017).

Purchasing Behavior

Figure 3 shows sstreamgraph analytics derived from respondents' conversation on millennials' commerce behavior. They make purchases products more frequently online. It is in line with Lissitsa & Kol, (2016) that millennials more impulsively prefer to purchase goods online rather than buying goods in physical, this is because through online they could research for more details of the products or have the time to choose wisely before purchasing it. According to Woo (2018), half of millennials like to spend their cash on having experiences over material things and they certainly will pay additional for it. They make purchases based on what a friend has said about a product. Respondent made his statement that "from my perspective, in recent years, the millennial generation is more up-to-date and also more aware of what they are trying to buy. They always do thorough research first before immediately buying a product. Some even watch reviews that other experts have done to help them make their decisions. However, some are also just curious about trying out new stuff that they completely ignore the protocol and just buy whatever they think is or going to be the big trend."

Millennials do need influences when making decisions on what items to purchase or what brands to purchase, and the most influencers come from social media (see Figure 3). Millennials are also constantly exposed to social media, whereby they post or purchase products online (Murdough, n.d).

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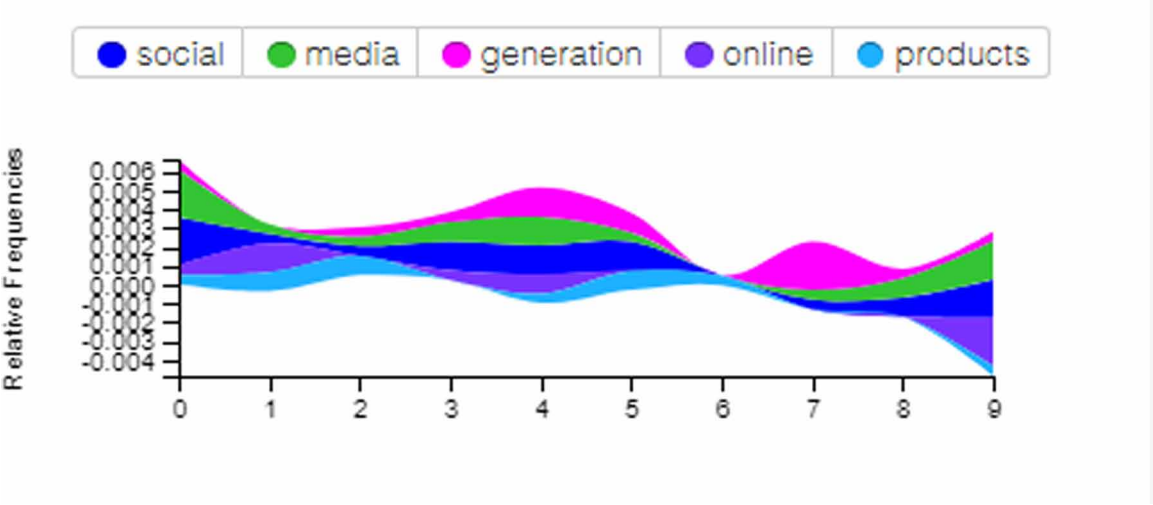
Figure 3. Streamgraph view of respondents' opinion on millennials characteristics



Furthermore, millennials make purchases based on both a logistical and an emotional need, using it as an outlet to express their personalities. Purchasing products that make them feel good about themselves. As stated by respondent, "From my opinion, their behaviors toward the things they have bought are sometimes odd in certain cases. The reason for such accusation is because from what I have experience and seen, millennials have purchased the things that are mostly trending and Instagram worthy. It does not matter whether it makes them feel happy (just saying), it only matter if they are up-to-date." In addition, millennials tend to share their purchases with peers on social media, even making purchases based on endorsements from their peers. Basing it on word of mouth rather than company-generated advertisements, this is due to millennials seeking relevance from the brands they purchase from (Woo, 2018).

Figure 4 shows millennials' consuming behaviours extracted from literature analysis of. It shows certain similarities about similar with the data analytics at Figure 3 from respondents' opinion that they are heavily use social media as a medium for shopping information and preferences. They want to purchase things that they themselves feel good about it and they like to share their purchases to others by showing/exposing them to the social media (Murdough, n.d). Since the majority of millennial consumers rely on social media (Instagram, Twitter, Facebook & etc.) or online shopping Web/Apps where they can just simply pay and preferably by their cards rather than paying face-to-face in cash. Therefore, social media plays an important role in their life because they get information about the trends around the world so that they can keep up to date alongside other people. There are a lot of influencers in the social media where they promote things for people to buy and these influencers are also mostly millennials. The millennial generation consumer's behaviours based on their characteristic, they get professional on using the social networks (Facebook, Instagram, etc.) to find information about one product they want to buy. Most millennial generations usually go through social media first to compare the price, brands and quality before purchase the items. Credibility and relevance are the basis of many purchasing decisions. They rely on the content of their social networks much more than on the content of the brands. They consider that trademarks must be authentic and relevant.

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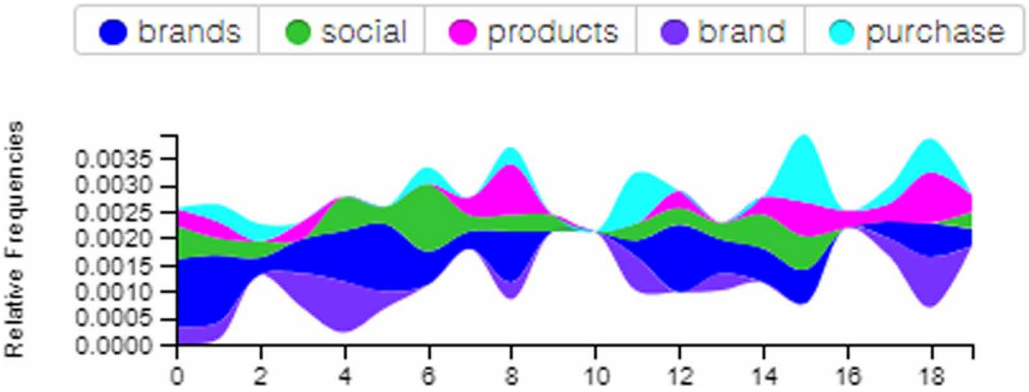
Figure 4. Streamgraph view of reference analytics on millennials characteristics



Shopping Online

Figure 5 shows Mandala visualization derived from data analytics of respondents' opinions on millennials. Some important keywords are trending, shopping, buying, product, and online. These characteristics are influenced by trends circulating in social media. It piqued their interest whenever viral items has been purchased by various people particularly close friends, family and relatives. Millennials also tend to shop online especially with the availability of shopping Web or Apps such as Amazons, Zalora, Fashion Valet, Lazada. According to Faraldo (2017) millennials like to shop online. With the aid of social media, millennials are able to get an update for their desired items. Shopping online allows millennial customers to browse items and comparing prices with ease.

They are easily influenced by the market trends not only in terms of buying power alone but also the real estate and the development of a lifestyle. According to a recent report about millennial, about 77 million people aged between 18-36 will dominate the increasing share of economy. The value of the lifestyles and purchasing power will have a direct impact to the millennials (Woo, 2018). According to Forer (2017), stating that 39% of products and brands will be reviewed by millennial. They are more likely to be connected and listen to the people like them than celebrities. While 60% of people aged between 18 to 24 are most likely to try the product as proposed by Youtube.

Respondent stated that "the millennial generation consumers' behaviors change over time. Especially in this era where new trends are rapidly growing. Take the fashion world for an example, the millennial generation would spend invest a lot to buy designer goods that are in trend." Things that are in trending, millennial would buy in no matter the cost. The reason is that sometimes having those items will make them feel blend in with the society (Chevreau, 2016). Obtaining good memories, that is what people value more, and to accomplish it, they have to experience it for themselves (Landrum, 2017).

Millennial have influence a lot especially from trending social media (Instagram, Facebook, etc.) and it varies from food to fashion with the idea to simply be keep on track with the trend. Crawble (2015) comes to conclude on how most millennial are not mostly brand loyal and are plain inaccurate. In addition to that based on surveyed conducted by Arabov (2013) on how millennial never truly influence on advertising saying it is simply a spin not authentic. They will simply review from blogs (Instagram, twitters, YouTube) before making the purchase.

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Figure 5. Mandala visualization from respondents' opinion on millennials

Brand Awareness

Figure 6 shows Cirrus visualization generated from literature reviews. Brands, products and social media are the highlighted keywords. Millennials are consumer brand loyal (Lodes & Megan, 2009). They are more likely to download applications to connect to retailers or brands (Moore, 2012). Brands will become bigger than ever, as millennials identify the idea of a big brand as being a return to the community. Millennials are loyal to brands whose products not only provide for the individual but also for the community as a whole (Beirne and Howe, 2008). Millennials are committed to a brand as long as it provides for their needs (DeBard, 2004). Furthermore, they spend a lot of time on social networking sites and connect themselves to retailers in social media and they are also likely to follow brands on Twitter, Facebook and Instagram. In addition, they engage in social networking to connect to retailers and brands and the engagement with the brands (either through Instagram or Facebook, etc.) will make them be a loyal customer and based on the surveyed itself they also mention how they are willing to co-create on the product as that is mainly how most the brands spreading and emerging around the world.

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Figure 6. Cirrus view from literature analytics on millennials' characteristics

Price is important but brands also matters as they are brand loyal (Schawbel, 2015). When they build a relationship and connection with the brands that they currently purchase, it is most likely that they will purchase from the same brand as they grow older or when they become an adult. According to an article posted by Vantage (2017), it stated that although 57% of millennial shopper compare prices in store with online, 60% of the population reported often being loyal towards the brands they like, price is critical, but brands matter more (Figure 1). Therefore, earning loyalty and trust of millennial is essential and important. Furthermore, millennial shopper prefers to get a direct recommendation from friends and trust the products their friend like. Thus, it is important to advertise brand products or review through influencer marketing or through creative social ads that could be part of the feed. This generation group is more active in integrating technologies into their daily lives for marketing purposes, using their mobile devices and the traditional Internet means to connect to retailers or brands (Moore, 2012). Its purchasing power and technological capacity have been crucial for minor online retailers who have benefited from this important segment of consumers. Their technological ability allows them to advertise the desired and undesired brands that they consider reliable and that also manages to generate an effective communication link with them as they continually seek to communicate. Finally, according to Oh (2018), millennials are driven by instant gratification. The rise of technology and digital has made it possible to deliver everything in real-time, which further empowers them to expect instant value from brands.

Value Driven

Millennials are highly values-driven generation especially their civic value. Their beliefs would cause them to buy products from companies that support their beliefs or the causes that they care about. For example, millennials are more likely to care if a food is organic or not when compared to non-millennials.

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A study conducted by Roesler (2018), stated that millennials use search engines to connect with brands and find information. They also expect retailers to keep prices low and to offer certain perks that were once premium extras. They would regularly skip commercials and advertisements on various websites. In addition, they review blogs before they make a purchase. This means that millennials look to social media and rely on the contents written by their peers before they make their decision to buy. Millennial consumer's behavior is unpredictable. Millennial have totally different personalities from their parents and their behavior are sometimes unpredictable. These generations tend to spend more money on technology as everyday application of technology is considered to be a commonplace and part of millennials environment and lifestyles.

In addition, millennial consumers are also demanding values as they are the key consumer to most organizations. Millennials do research and only accept relevant offers. According to a research conducted by Donnelly and Scaff (n.d.), there are approximately 80 million millennials in USA alone and they spend $600 billion each year buying goods from organisations around the world. Millennial wants instant rewards after buying products (Paddon, 2018).

Furthermore, Simoes and Gouveia (n.d.) stated that millennials are more likely to be influenced toward their family, religion and community ties. This is because they cherish their family and their status than any of other factors. Millennial does not care about others race, gender and ethnicity factors. This causes their relationship with each other to be closer. Millennials tend to search for things that are trending. They will try to be in trend to somehow look cool and in the same trend as others. In fact, they are more open to a more advanced stuff such as online shopping and making easy payment.

Techno Savvy

As they grow up in the Industry 4.0 era, millennial love automation, they crave Personalization, obsessed with easy to use technology, and they are mobile shoppers. In addition, millennials generation are able to adapt to new technologies easily more than any other generations. For instant social media (Instagram, Twitter, Facebook, etc.) play a vital role in their life as these mediums provide opportunities to the millennial to process new information, involve in social discussion and stay updated with any trends happening, such as they would use the social media to compare the price, brands, quality and read brand's review before purchasing certain items. For example, Zalora is an online shopping platform where consumer can buy shirt through online, in this case majority of millennial adapted to the uses of online shopping because of the reliability and trustworthy platform.

Even though millennials are entitled, phone-obsessed and thought would not have any effects towards the world of e-commerce, millennials today is considered as the most critical and important customer in business. When there is new technology available, millennials will be all over it. To keep brand relevant and appealing to millennials, it needs to be able to engage them on new platforms as they are released. For instance, having an application on the IWatch could be a matching long-term investment (Schawbel, 2015).

I think that the behavioral consumption of Millennials and adolescents can be simply put as techno-savvy following the mainstream trends very attentively, no matter how alien these trends are and whatsoever.

One of the traits of millennial generation as consumers is that they expect technology to work. Millennials grew up with modern and advanced technology that bundle communication, entertainment,

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shopping, and education all in one. So business should be careful when operating their websites or their online business because the millennials expect technology to work. Millennials are different from the previous generations because they grow up in an era of modern technology and are access to unlimited amount of information (Woo, 2018). Millennial consumer has a characteristic of collaboration, they are hyper-social, they expect technology is working easy as always, and they value experiences, discoveries, and excitements (Solomon, 2018). Their technological ability allows them to advertise favorable, or unfavorable brands that they consider reliable (Moreno et al., 2017).

The millennial generation, in my opinion, has more purchases power, and technological knowledge which makes them more actives in incorporating technologies into their daily lives e.g. socializing and shopping online". As technological advances are becoming more evident, millennials tend to look for reviews of certain products or software before deciding to spend on anything.

Millennial generation consumer's behaviors are very unpredictable, millennials prefer things that are trending globally which thanks to technology, help them to see what is trending. Trending things can be music (K-pop), new games, new clothing brands and many more. Millennials would prefer branded goods than none branded goods. Millennials are the most comfortable generation in using technology. Naturally, online shopping would be a part of what brings the development of the online industry. Millennials' comfort with mobile shopping extends to stores, where they are avid Omnichannel shoppers. Nearly all have researched products online before buying in-store.

Trends & Identity

Figure 7 shows the consistency of characteristics derived from literature reviews. Millennials are trendsetters, and they are shaped by social media which is mostly which plays a major role in that revolution. However, some have started their small business at a very young age due to their relatives and for personal income. Some even turn their capabilities or passion as a side job. For instance, people who are good at taking pictures to become a photographer at wedding ceremonies or events. The millennial generations prefer things that are currently trending, and also items that are at an affordable price. Since they don't want to be left out in this world, they constantly check for any new updates that many people especially from the Western side, Korean, and Japanese side have. Moreover, advertisements and promotions can easily trigger them to buy the items. They also act on how Youtuber's review or their friends' reviews on the things that they have bought, which will further strengthen their reason for buying the things which have much more positive feedback on it. Their characteristics and preferences are solely more towards trying to constantly keep up with the 'trend' that is continuously changing. However, even though Millennial tries to keep up, they still select and purchase products that could help define who they really are, why it is important to them and how much value can this product help in their life. In order for them to know this is by knowing about the latest trends, images, and the reputations of the sellers, products and even the brand names. Hence, why, they put a lot of effort into thinking whether they should purchase such items.

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Figure 7. Mandala view of reference analytics on millennial characteristics

Impatience & Multitasking

Other characteristics that help to distinguish millennial to a degree or kind from previous generations that are impatience and multitasker (Sweeney, 2006). They have zero patience and dislike any sort of delay. They want their services to be instantly ready when they are ready as well. They need to have instant and constant feedback to know how they are progressing in terms of studies or themselves. They absolutely dislike it if there is any sort of delay, the requirement to wait in line or even having to deal with another unproductive process that could cause any delay. Millennial is known to be great multitaskers as they are able to handle different tasks at once as this is considered as more efficient and practical use of their time and also with the fact that is impatient people. Millennial does not really have a good interaction with reality. Woo (2018) stated that millennials are often characterized as unable to handle business and struggling in the real world. This is because the millennial tends to focus on the virtual world than reality. In addition, they have a problem with their work-life and do not want to try to improve their way of living because as long as they are in trend and good with their social life.

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Exploratory Learners

Finally, millennial shop promiscuously, they would rather have the risk of purchasing a new product than the old well-known reliable product. Millennials behavior is depended on the environment they live in, either filled with technology, unlimited access to information or in developing low access to the internet. Woo (2016) makes a powerful statement on how reality has a definite impact on millennials psychologically and socially. Respondents mentioned that "the characteristics of the millennial generation are that they are more open-minded, confident, self-expressive with themselves, they are more upbeats and are more interested in finding new ways to live."

Millennials are savvy shoppers, and they are actively making a comparison of several shops online to get the best value and shopping experience. They make use of social media as their primary tool to search and hear about several products, special deals, and shopping news. Millennials strongly prefer learning by doing (Sweeny, 2006). They almost never read the directions; love to learn by doing, by interacting. They prefer to learn through interaction more rather than doing. Gaming, computer simulations and social medias are considerably some environments that they love and it provides them a small penalty for trial and error learning. It was known that millennials prefer being interactivity in their studies, rather than attending lectures. They are adventurous and value experiences since they travel abroad more often than non-Millennial (Solomon, 2018). Finally, the millennial generation is a group of young adults that were usually in trend with products, application or even activities and actions. This group tends to have the feelings of wanting to do something different and up to date than a regular young adult. The place where these millennial generation spend most of their times are on social media. They are usually the group of people that start the trend in the social media.

CONCLUSION

Millennials adapt quickly to technology, unlike the previous generations. It is obvious that they are tech-savvy and with that being in their identity, they have characteristics different from older generations in the sense of consuming behaviors. The millennial generation consumers' behavior is that they usually use their social media to check for any positive reviews/feedback regarding the items or brands that they seem to be interested in before they purchase. In addition, millennial consumers' behavior is more likely to be ambitious, where new trending stuff becomes a curiosity for them and build interest to know more. Since millennials tend to share most of their lives on social media, more people will know about a product once they share their stories about their purchases.

REFERENCES

Ahad, A. D., Anshari, M., & Razzaq, A. (2017). Domestication of Smartphones among Adolescents in Brunei Darussalam, *Journal of Cyber Behavior. Psychology and Learning*, *7*(4), 26–39. doi:10.4018/IJCBPL.2017100103

Anshari, M., & Alas, Y. (2015). Smartphones Habits, Necessities, and Big Data Challenges. *Journal of High Technology Management Research*, *26*(2), 177-185. doi:. doi:10.1016/j.hitech.2015.09.005

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Anshari, M., Alas, Y., & Guan, L.S. (2016). Developing online learning resources: Big data, social networks, and cloud computing to support pervasive knowledge. In *Education and Information Technologies*. Springer. doi:. doi:10.100710639-015-9407-3

Anshari, M., Alas, Y., & Sulaiman, E. (2019). *Smartphone Addictions and Nomophobia among Youth. In Vulnerable Children & Youth Studies*. Taylor & Francis. doi:10.1080/17450128.2019.1614709

Anshari, M., Almunawar, M. N., Ariff Lim, S., & Al-mudimigh, A. (2019). Customer Relationship Management and Big Data Enabled: Personalization & Customization of Services. *Applied Computing and Informatics*, *15*(2), 94–101. doi:10.1016/j.aci.2018.05.004

Arabov, D. (2016). The CEO and COO of Elite Daily, the millennial news site acquired by The Daily Mail last year, are leaving the company. Business Insider. Retrieved from https://www.businessinsider.sg/elite-daily-ceo-and-coo-step-down-2016-3/?r=US&IR=T

Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, *8*(1), 19–32. doi:10.1080/1364557032000119616

Ayaydın, H., & Baltacı, N. (2013). Corruption, banking sector, and stock market development: A panel data analysis. *Management*, *94*, 99.

Buckley, P., Viechnicki, P., & Barua, A. (2015). A new understanding of Millennials: Generational differences reexamined. Deloitte. Retrieved from https://www2.deloitte.com/insights/us/en/economy/issues-by-the-numbers/understanding-millennials-generational-differences.html

Der Hovanesian, M. (1999). Spending It, Investing It--Coming on Strong: The Children of the Baby Boomers are Affecting Spending and Investing as Their Parents Did; The Similarity Ends There. *Wall Street Journal*.

Dimock, M. (2018). Where Millennials end and post-Millennials begin. Pew Research Center. Retrieved from http://www.pewresearch.org/fact-tank/2018/03/01/defining-generations-where-millennials-en d-and-post-millennials-begin/

Donnelly, C., & Scaff, R. (n.d.). Who are the millennial shoppers? and what do they really want? Accenture. Retrieved from https://www.accenture.com/us-en/insight-outlook-who-are-millennial-shoppers-what-do-they-really-want-retail

Faraldo, D. (2017). Why do millennials love shopping online? Retrieved from https://cdnpos.com/why-do-millennials-love-shopping-online/

Forer, L. (2017). An inside look at the habits of millennial shoppers. MarketingProfs. Retrieved from https://www.marketingprofs.com/chirp/2017/32824/an-inside-look-at-the-habits-of-millennial-shoppers-infographic

Jazdi, N. (2014, May). Cyber physical systems in the context of Industry 4.0. *Proceedings of the 2014 IEEE International Conference on Automation, Quality and Testing, Robotics* (pp. 1-4). IEEE.

Kupperschmidt, B. R. (2000). Multigeneration employees: Strategies for effective management. *The Health Care Manager*, *19*(1), 65–76. doi:10.1097/00126450-200019010-00011 PMID:11183655

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Lancaster, L. C., & Stillman, D. (2002). *When Generations Collide*. New York: HarperCollins.

Landrum, S. (2017, May 07). 10 things millennials love to buy. Chelsea Krost. Retrieved from https://chelseakrost.com/10-things-millennials-love-to-buy/

Lasi, H., Fettke, P., Kemper, H. G., Feld, T., & Hoffmann, M. (2014). Industry 4.0. *Business & Information Systems Engineering*, *6*(4), 239–242. doi:10.100712599-014-0334-4

Lissitsa, S., & Kol, O. (2016). Generation X vs. Generation Y–A decade of online shopping. *Journal of Retailing and Consumer Services*, *31*, 304–312. doi:10.1016/j.jretconser.2016.04.015

Lodes, M., & Buff, C. L. (2009). Are generation Y (Millennial) consumers brand loyal and is their buying behavior affected in an economic recession? A preliminary study. *Journal of Academy of Business and Economics*, *9*(3), 127-134. Retrieved from https://law-journals-books.vlex.com/vid/are-millennial-loyal-behavior-affected-300282114

Lyons, S. T., Duxburry, L., & Higgins, C. (2007). An Empirical Assessment of Generational Differences in Basic Human Values. *Psychological Reports*, *101*(6), 339–352. doi:10.2466/PR0.101.6.339-352 PMID:18175471

McCrindle, M. (2006). *New generations at work: Attracting, recruiting, retaining and training generation Y*. the ABC of XYZ.

Moore, M. (2012). Interactive media usage among millennial consumers. *Journal of Consumer Marketing*, *29*(6), 436–444. doi:10.1108/07363761211259241

Murdough, C. (2018). How millennials make purchase decisions today. Affirm. Retrieved from https://www.affirm.com/content/how-millennial-shoppers-make-purchasing-decisions/

Ning, H., & Liu, H. (2015). Cyber-physical-social-thinking space based science and technology framework for the Internet of Things. *Science China. Information Sciences*, *58*(3), 1–19. doi:10.100711432-014-5209-2

Oh, A. (2018). Marketing to Millennials in 2018 and Beyond. CustomerThink. Retrieved from http://customerthink.com/marketing-to-millennials-in-2018-and-beyond/

Ordun, G. (2015). Millennial (Gen Y) Consumer Behavior, Their Shopping Preferences and Perceptual Maps Associated With Brand Loyalty. *Canadian Social Science*, *11*(4), 40–55. doi:10.3968/6697

Paddon, R. (2018). Why millennial consumers are demanding. Adotas. Retrieved from http://www.adotas.com/2018/11/millennial-customers-demanding/

Roesler, P. (2018). New study highlights trends that shape millennial consumer decisions: Global study shows how mobile devices, social media, search engines and ad blockers affect young consumers. Inc. Retrieved from https://www.inc.com/peter-roesler/new-study-highlights trends-that-shape-millennial-consumer-decisions.html

Rouse, M. (2018). Millennials (Generation Y). Tech Target. Retrieved from https://whatis.techtarget.com/definition/millennials-millennial-generation

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Scawble, D. (2015, January 20). 10 New findings on millennial consumer. Forbes. Retrieved from https://www.forbes.com/sites/danschawbel/2015/01/20/10-new-findings-about-the-millennial-consumer/

Schawbel, D. (2018). 10 New Findings About The Millennial Consumer. Forbes. Retrieved from https://www.forbes.com/sites/danschawbel/2015/01/20/10-new-findings-about-the-millennial-consumer/#30db07f86c8f

Simoes, L., & Gouveia, L. B. (n.d.). Consumer behaviour of the millennial generation. Retrieved from http://homepage.ufp.pt/lmbg/com/aplsimoes2_sopcom08.pdf

Solomon, M. (2018). For small business week: All abut millennial consumers and millennial-friendly consumer experiences. Forbes. Retrieved from https://www.forbes.com/sites/micahsolomon/2018/05/03/for-small-business-week-all-about-millennial-consumers-and-millennial-friendly-customer-experiences/#23e848f52f91

Sweeney, R. (2006). Millennial Behaviors & Demographics. Retrieved from http://unbtls.ca/teachingtips/pdfs/sew/Millennial-Behaviors.pdf

Torgerson, C. (2003). *Systematic reviews*. Bloomsbury Publishing.

Urban Dictionary. (n.d.). Millennial. Retrieved from https://www.urbandictionary.com/define.php?term=Millennial

Vantage. (2017). The 10 Characteristics of Millennial Shoppers You Need to Know. Retrieved from https://gotvantage.com/10-characteristics-millennial-shoppers/

Weyer, S., Schmitt, M., Ohmer, M., & Gorecky, D. (2015). Towards Industry 4.0-Standardization as the crucial challenge for highly modular, multi-vendor production systems. *Ifac-Papersonline*, *48*(3), 579–584. doi:10.1016/j.ifacol.2015.06.143

Williams, K. C., & Page, R. A. (2011). Marketing to the generations. *Journal of Behavioral Studies in Business*, *3*(1), 37–53.

Woo, A. (2018, June 4). Understanding the research on millennial shopping behaviors. Forbes. Retrieved from http://www.forbes.com/sites/forbesagencycouncil/2018/06/04/understanding-the-research-on-millennial-shopping-behaviors/

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Chapter 77
Impact of Mood of the Millennial Customers on Purchase of Apparels Online

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ABSTRACT

In today's scenario, the millennials are keen towards the mobile technology wherein they expect to use the best of it in all aspects of their lives. Online channels help the millennials to enhance their shopping experiences by taking a glance at the reviews, ratings, value, and pricing of the products. This can be attributed to the streamlined services coupled with the free trials and delivery, and additional discounts offered by the apps. But, at the same time, how their mood affects their decision is still a question. For instance, if the consumers are in a good mood, they are likely to shop more. However, if they are in a low mood, they might not shop for anything. This study includes the mind and mood analysis of the young millennial consumers while shopping for apparels online. The study will involve in-depth interviews of 21 customers. The analysis will be done through the Leximancer tool. Additionally, this chapter would help the retailers understand the range of mood, which the customers display while purchasing apparels online and accordingly devise their strategies.

INTRODUCTION

Online channels help the millennial to enhance their shopping experiences by taking a glance on the review and ratings, along with the value and pricing of the products. Furthermore, the individual apps for shopping stores and retailer brands are also expected to favorably impact the changing shopping trends over the forecast period. This can be attributed to the streamlined services coupled with the free trials, delivery, and additional discounts offered by the apps. The social media platforms also play an important role in this segment. Every millennial nowadays, are engaged in using any one of the social media sites for uploading and sharing their experiences with the brands that they use (Engagement, 2017).

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Millennial includes the people born in between the years 1980 and 2000, i.e. the generation which truly is a digital one. This generation focuses on getting all the insights and information of the various products through different online channels in order to get the best value as well as services. They emphasize more on the shopping experience, product quality, and prices of the products (Baird, 2017). The millennial belong to the era of globalization, and numerous technological developments, which are further anticipated to enhance their behavioral pattern and mindsets. These customers are grown up with internet and smartphones, which helps suffice their needs. The convenience as well as accessibility of the mobile apps acts as a favorable factor to maintain the loyalty of these customers. Additionally, the social networking platforms which help in knowing the whereabouts and experiences of the customers, enhances their shopping trends. Furthermore, factors such as extracting all information related to the products including reviews, feedback and ratings are expected to change the perceptions and mindset of the customers.

In today's scenario, spending powers of the millennial are the maximum as compared to other generations. However, maintaining the brand loyalty of these customers is expected to be one of the challenges. The retailers need to design their strategies accordingly, to keep the millennial customers motivated and attracted towards them. Increasing innovations and developments in technologies are expected to boost the millennial shopping trends and demand. The millennial are very brand specific. This generation is more interested in the services which are much convenient, faster and easier. These people emphasize more on purchasing the products which are derived through the ethical practices and social conscious. The retailers need to lay more stress on the consumer mindset and changing preferences with time.

According to a study, the frequency of the millennial online shopping purchase in Asia, Western Europe, and North America vary from that of the purchase trends of the millennial in the regions of Middle East, Africa, and Latin America. Western Europe and North America region is expected to witness larger online sale on account of the larger disposable income as compared to the other developing economies of the world (KPMG, The truth about online consumers, 2017). E-commerce segment, specifically for the apparel is anticipated to witness significant growth. The millennial follow several brands on the online retail shopping platform. This can be attributed to the factor that they are very sensitive towards pricing and majorly, opt for the products which are on discount. For instance, online retail apps such as Zara, helps to keep the tab on the fresh arrivals, as well as filter large assortments easily. Additionally, this app also consists of a built-in barcode scanner which is engaged in offering information related to the customer in-store findings. This includes whether the store has that particular product in size or whether the product is out of stock or the users are looking for different colors. Similarly, Asos.com is a British online beauty and fashion hub which is engaged in selling nearly 850 brands along with its own range of accessories and fashionable clothing. Furthermore, this app also offers free shipping up to the orders of certain price level and can also get synchronized with the apple watch for various sale alerts.

These consumers emphasize more on the ease of payments as well as faster as well as safe delivery of the apparels. Several online apps offer at-the door delivery option, which favorably impacts the choices and preferences of the customers. Millennial are very specific about the product authenticity as well as its quality. Apart from the aforementioned factors, these consumers emphasize on the feedbacks and ratings of the products. While shopping online, one cannot feel the product quality and make their purchase decisions on the basis of the given product description. In such situations, reviews by the other customers play an important role. Hence, before making any purchase decision, the customers go through the online reviews, and recommendations of that particular product. Henceforth, product reviews act as

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great influencer for the product purchase. If the reviews are positive or negative, the consumers make their purchase decisions accordingly (Hankin. Lisa, May 2007).

- **Identification of the Topic:** Before making a purchase decision, for in-store or online shopping, the millennial consumers focus on factors such as authenticity, shopping experience, quality, pricing and services. It has been observed that the consumers are likely to change their perceptions or preferences when they read about any product reviews, ratings and prices through different online channels. But, at the same time, how does their mood affect their decision is still a question. For instance, if the consumers are in a good mood, they are likely to change their decisions instantly after going through the feedback and purchase that particular product. However, if they are in a low mood, then it becomes difficult for them to make a decision even if the product review is good.
- **Rationale for the Topic:** This study focuses on the analysis of mindset and mood of the consumers. Data has been collected from various respondents at different locations through open-ended in-depth interviews. This study helps us to understand the changing preferences of customers for shopping online. It also focuses on the reasons why the customers tend to select any specific shopping portal online and also why they prefer shopping online rather than offline from any physical store. Additionally, this chapter focuses on the impact of mood on the purchase decisions made by the millennial customers. Further, how feelings and emotions affect the customers and their shopping patterns? This chapter discusses about the various situational mindsets and mood affecting the behavioral online shopping patterns and trends of the consumers.

The analysis of the gathered/collected information is done with the help of Leximancer tool. After the analysis, the data is presented in a detailed description format for every different mapping diagram. The study then includes different limitations, which the author came across while writing the proposed chapter, followed by the suggestions and conclusion.

Significance of the Study

The study targets the millennial customers and their impact of mood while shopping online for apparels. The shopping trend of the customer solely depends upon their mood and mindset when they shop. Mostly, the millennial customers shop in good mood or some of them shop to elevate their mood. In today's scenario, the customers prefer to shop online owing to the different factors such as:

Ease of content sharing coupled with advancements in the mobile technology is expected to propel the demand for millennial online shopping. Reposting or re-tweeting or sharing the content from one's profile to another on various social platforms, also adds value to the customer's reviews for the product.

The fact, that the millennial focus on flexibility, convenience and positive experiences while purchasing apparels online also favorably impacts the market trend. There are variety of shopping apps which provide different kinds of deals and discounts along with several other features of returning and exchange policies, as well as flexible payment systems. The aforementioned factors contribute positively to the millennial shopping trend.

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Objective of the Study

The objective of this study is to understand online shopping trends of the millennial customers and the impact of their mood on their purchase decisions.

LITERATURE REVIEW

According to a study, the younger customers are more prone for shopping online than the other generation consumers (Joines J. S. C., 2003). With the ever changing cultural scenario, the tech savvy companies are just not trying to keep pace with the changing trends; a few retailers are, in fact trying to move ahead. With growing awareness of the factors which influence the consumers, the retailers connect with the shifting trends to stay relevant and gain success in the market (Global, 10 Trends Millennial Retail, 2016). For the retailers with the wherewithal to invest, there are lots of opportunities to become a leading innovator (PWC, Total Retail 2016: They say they want a revolution, February 2016)

The retail segment is expected to witness substantial growth over the forecast period which can pose to be favorable as well as unfavorable to a few retailers. This can be attributed to the changing shopping trends of the millennial and increasing digitalization. Also, factors such as inability to make adequate changes in business models and strategies with the changing preferences and behavioral patterns of the consumers might pose unfavorable to a few retailers (Nashiya, 2017).

Competition is no longer related to the presence of the physical stores. In today's scenario, the customers can shop from anywhere and anytime around the world and also from any manufacturer as well as retailer. The retailers are shifting their business strategies from shop-centric to customer-centric. With increasing lifestyle priorities, the millennial prefer shopping online rather than visiting any store (Sohi, 2016). The millennial are able to make purchase decisions by sitting at one place and do comparative analysis of the designing, authenticity, and price of that particular product. Seamless shopping experience such as customization of the product offerings by the retailers to provide enhanced services affects the online shopping trends. Additionally, factors such as transaction privacy and security, socialization, interactive control, information, economic motivation, social escapism, and non-transactional privacy are expected to boost the consumers to shop online (L. Joines, 2003).

Having a smartphone acts as an important strategy for the retailers as well as manufacturers to keep pace with this generation. Increasing technological developments in the quality of screens of the smartphones as well as easy availability of internet with hi-speed bandwidth boosts the e-commerce market demand (Deloitte, Digital Media: Rise of On-demand content, 2015). Additionally, factors such as growing access to internet coupled with the advancements in mode of payments, trust, and logistics are expected to increase the online shopping demand among the millennial. Growing rise in the digital era, coupled with the increasing online shopping trends favorably impacts the retailers as well as the product manufacturers. For the online shoppers, assurance and faster delivery play a pivotal role in their purchase decisions.

In the online shopping journey, two main factors which affect the shopping trends of the consumers majorly includes, decision of when and where to buy the product. There are various attributes which the consumers focus upon while shopping: Delivery options, pricing, availability of the products, return and exchange policy, and websites/apps through which they make purchase, and discounts being offered.

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We are in the age of value; however pricing is still the important factor for every generation, particularly for millennial. Years of fluctuating economic growth are expected to result in affordability, and value dynamics which is very important for every income bracket, across every region, and also across every particular age group (PWC, Total retail 2016: They say they want a revolution, February 2016). Price is expected to act as a vital factor over other factors such as brand, and availability of the products. This can be attributed to the cost saving behavioral pattern of the customers. Additionally, disposable income of this group can also be one of the reasons. According, to a study conducted by KPMG International (KPMG, Global Online Consumer Report: The truth about online cosnumers, 2017), pricing acts as a most significant attribute while making the purchase decisions. Pricing also creates loyalty among the customers specifically, the millennial. For instance, these customers prefer opting for apparels which are easily available online at a cheaper price than the normal physical stores. Most of the millennial are expected to shift their brand preferences if they are given certain level of discounts in the pricing of the products (Bhanot, A study of the Indian apparel market and the consumer purchase behaviour of apparel among management students in Mumbai and Navi Mumbai). Reliable delivery and affinity for any brand are the important factors which affect the shopping trends of the millennial (PWC, Total retail 2016: They say they want a revolution, February 2016).

Shopping from the websites on which the consumers trust is one of the factors affecting their purchase decision. In few regions of Asia Pacific, the consumers opt for preferred websites/mobile apps on smartphones for making their purchase decisions (Go-Globe, 2016). However, according to the global online consumer report by KPMG, the trusted websites also hold significant share of nearly 30% among the customer attributes. Secure payment gateways along with brand reputation are the factors which favorably impact the customer's online shopping criteria. As per a study, nearly 76% of the respondents return to any particular website if they have already made any purchases from it before (Editors, 2015). Furthermore, apart from brand or website reputation free shipping, delivery charges and payment convenience also contribute to the consumer satisfaction.

With the growing trends in the online shopping, the millennial customers also shop for apparels through different mobile apps. This can be due to the ease of instant connectivity and internet availability at all places. According to an article published by *RetailTech Innovation Editors*, shopping through mobiles has witnessed an increase from 31% in 2013 to 37% in 2014.

The key decision making characteristics among the millennial includes quality consciousness, information availability, and impulsiveness (Ali Alavi, 2015). Before the purchase of any product, the customers try to get all the information related to that product in order to get an idea about their choice. In today's scenario, the online shoppers also emphasize more on the faster and efficient delivery of their products. Further, flexibility in choosing the delivery date and time also motivates the millennial to shop online. For better delivery options, the e-commerce or the online retail chains need to focus more on their supply chain processes. Also, improved technology with proper landmarks and address section mentioned at the time of purchase would provide efficient delivery process. This would further enhance delivery of the product at right time by the right delivery person at right place. Better delivery options also contribute significantly, to the online consumer attributes share.

Apart from the varieties, the consumers also focus on the availability of the products. For instance, if a millennial is looking for a product on an online platform, and if the relevant size and color is not available on that app, then there is a probability, that he/she might switch to different app. Hence, the consumer preference also depends on the availability of the products. Hence, if the products are not available in the respective searched brands, it is expected that the customers might shift their preferences.

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The millennial consumers make their purchase decisions on the basis of comments, reviews, feedbacks and recommendations on the various social media platforms (Rohampton, 2017). The online shoppers are always engaged in taking recommendations from the internet as well as their peers before they purchase any particular product. These shoppers particularly, emphasize on checking the online reviews and product information's. Social media platform acts as an important source to get the relevant information and deals related to the product. Also, sometimes, these millennial make their decisions on the basis of shopping experiences and stories which other people share on the social sites.

Discounts and offers play a vital role for the consumers to make purchase decisions (Shamout, January 2016). The millennial customers prefer shopping online because of the varied options and discounts that they get online in comparison to the retail outlets. This generation people are much updated and are aware of different coupons which can be used while shopping and they make the best use of it. There are several shopping apps which offer huge festive season discounts, weekend sales, end of the season sales, and seasonal discounts. The aforementioned factor acts as one of the strategy to attract and retain the customer. Also, the millennial are very brand specific. They prefer good quality, and labeled brands as their preferences for whatever products they purchase specially in the case of apparels. If they get discounts over their choice of brands online, it becomes an added advantage to them. However, there are also a few customers, for whom discounts do not play that much important role. They prefer for quality of the product, over the discounts being offered on it.

Millennial also emphasize on the latest trends and styles of clothing, which acts as a significant shopping factor. Women, particularly focus on the availability of various options, variety, and trends than men (Aswegen, 2015). For instance, Forever 21 is a well-known brand among the millennial. This brand offers more options in their collection online than in the physical stores. Similarly, there are several other online platforms, which also help in promoting the newly launched brands online at a much cheaper cost. For instance, brands like Roadster and Dress berry are launched by Myntra and its products are only available online and not in any retail stores. Advertising also plays an important role in the promotion of such apparel brands available online. This strategy focuses on the quality of the product and the offers that the different brand provides online.

According to a study, majority of the millennial look for various coupons or promotional codes before making any purchase decision. This can be seen more in the case of online shopping (which is approximately 72%) rather than in-store visits (which are nearly 52%) (Kestenbaum, This Is How Millennials Shop, 2017). This can be attributed to the factors such as ease of availability, faster and timely delivery of the products, which further contribute to the growth in the online shopping trends. The level of brand loyalty is expected to be different for the different markets. If the market is more mature, the millennial customers become less loyal (Deloiite, 2017). Majority of the millennial prefer apps or particular brands websites which are engaged in offering brand loyalty programs through personal contact numbers and email. Also, they prefer brands which reward them with free welcome vouchers or other relevant promotional offers. In comparison to the male respondents, females are more engaged in shopping online in order to get some access to these kinds of codes or various offers on different apps, to give them a better experience (PWC, Total Retail 2015: Retailers and the age of disruption, 2015). The apparel companies are engaged in providing tailored collections, various discounts and offers. Innovations in the clothing segment such as introducing the plus size clothing for the obese people is also expected to affect the apparel market demand. Also, the rising trend for the athletic and sportswear clothing on account of growing awareness for fitness among the consumers also favorably impacts the apparel sale.

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In addition to the aforementioned point, easy and varied brand availability at a discounted price is also a vital factor propelling the online sale.

However, there are certain factors which are expected to inhibit the online shopping trends. These might include the lack of touch and feel of the quality of apparel. Proper fitting might also pose barriers, however, there are brands which have very easy return and refund policies for their customers.

The retailers have to emphasize on the mood as well as mindset of their potential consumers when they shop online. Online reviews are the most influential factors responsible to favorably impact the purchase decision of the millennial. In today's scenario, the customers demand for much greater experiences from the retailers, with the ease of getting the product delivered at their desired location, and time. But at the same time, what strategies will the retailers make to retain their customers even with their changing preferences and behavioral patterns is a question. Also, how can the retailers get clarity on the mindset of the consumers?

In India, the millennial account for nearly 28% of the population, wherein they are expected to drive the online transaction usage over the forecast period. As per the statistics, online shopping among the consumers in India is expected to increase to nearly 320 Million people in 2020, as compared to over 50 Million in today's scenario (ETRetail.com, 2016). The Indian apparel industry is one of the largest contributors to the country's economy. Changing lifestyle and preferences of the young millennial consumers coupled with the entry of several global brands on a single online platform, is expected to boost the online shopping trend among the consumers. The Indian customers emphasize more towards higher degree of value orientation. They focus towards the quality of the products that they purchase (Trends of 2016: Millennial rush, 2015).

Shopping for apparels is often subjected to the emotions and sentiments of the consumers (Gopaldas A., 2014). If the consumers are uncertain about the clothing quality or authenticity, they are likely not to buy that particular product. But, at the same time, how does their mood affect their decision making process while shopping online is still a question. For instance, if a customer is in a good mood, he/she is likely to change his/her decision instantly after going through the positive feedback and purchase the apparel. However, in spite of negative feedback also, the customer might rethink over other reviews and take the decision. Furthermore, if the consumer is in a low mood, then it becomes difficult for them to make a decision even if the product review is good. The shopping trends of the millennial are very much dependent on their mood along with their mind. They have a tendency to make decisions on the basis of how they feel, and what are their preferences. Mood, cognitive functioning or time is some of the internal influences which affect the buying power of the consumers. If the millennial are in a good mood, they tend to shop a lot. Sometimes they even shop for things which are not required due to the spur of time. If the millennial are in a bad mood and mind set, it clearly affects their purchase decision. This can be further illustrated as; if the consumers are in an angry or sad or low mood, they prefer not to shop, in order to avoid taking haste decisions. However, many customers do consider shopping, as a stress buster for themselves, particularly in case of women. As per our study, there are millennial women, who shop online even in a bad mood, to elevate their mood. However, if in a good mood, the women customers might also buy some extra apparel, even if not required. Also, there a few customers for whom a specific brand can elevate their mood and make them happy. Henceforth, shopping particularly for apparels and specifically for females is expected to act as a mood buster. So, mood as well as mindset of the consumers plays a pivotal role in purchasing the product.

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Knowledge Gap

There have been a lot of studies conducted on the mindset analysis of the consumers when they shop online (Lysonski S. &., 2013). However, it is very essential for the retailers to also know, how mood does impact the purchase decisions of the consumers. This would help in designing their strategies accordingly in an efficient manner and attract customers and further gain profits. There have been very few instances, wherein, the impacts of mood on the shopping trends of the customers have been discussed. And, this leads to a gap in the designing of strategies by the retailers because they are not able to understand the needs and wants of the millennial. They are not able to perceive their behavior towards various factors such as offers, discounts, reviews and other features that their websites offer. As a result, they are unable to attract them and make them loyal towards their brand.

RESEARCH QUESTIONS

1. What are specific mood of the millennial customers when they shop online for apparels?
2. What kind of strategies will help the retailers to overcome the gaps in their executions to gain benefits?

Research Design

- **Qualitative Research:** The qualitative research technique helps to understand the detailed description which is available through the various data collection approach. Conducting intensive in-depth interviews with nearly 21 millennial respondents, helped in exploring their perceptions and ideas regarding shopping online for apparels. Additionally, the process also helped in gaining information on an individual's behavioral pattern and thoughts regarding shopping.

Research Objectives

In the proposed study, target is to find the impact of mood on the customers while purchasing the apparels online. Further, the key objectives include:

- What are the main factors responsible for the changing preferences of the millennial to shop online?
- How does mood and mind of the millennial affect their purchase decisions?
- How do review, recommendations and feedback affect the shopping trends and decisions of the millennial consumers?

Target Group

- **Age Group:** 16 years to 34 years

The study focuses on gathering information from the millennial customers, specifically in the metro cities of Delhi, Bangalore, Kolkata and Pune, wherein the number of fashion conscious millennial cus-

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tomers residing at such cities is relatively more in comparison to the other cities. Additionally, a few random in-depth interviews were also conducted across different areas of Rajasthan, specifically, in Jaipur.

METHODOLOGY

Secondary data is gathered from the different research publications and journals published till date.

Additionally, the study will also involve in-depth interviews of 21 customers of different regions and age-groups. The tool for qualitative research is discussion guide which has been attached in the annexure. Every in-depth interview is then converted into the transcript form.

The analysis of the gathered/collected data through the interview will be done through the *Leximancer tool*. *Leximancer* is a software tool for the analysts and researchers for exploring the larger text-based data, wherein coding or manual analysis might be time consuming. This includes lengthy reports, focus group transcripts/multiple interviews, and qualitative survey data. This software employs a process referred to the unsupervised semantic mapping of the qualitative data set. After the analysis, the data is then presented in a detailed description form with every respective mapping diagram. Further, the relevance percentage of different concepts in the study would also be defined. Additionally, the query results of different specific themes at the time of interviews and their respective transcripts are also described.

The results would be of practical significance to the online portals selling the apparels as it would help them understand the range of mood which the customers display while shopping and accordingly device their online communication strategies

ANALYSIS

The data was collected from 21 respondents through the in-depth interviews. Further, analysis was done through Leximancer tool. This research can help the retailers get an idea about the mindset of the millennial and design their strategies accordingly.

Objective of This Research Includes

- To identify the key preferences of customers while shopping online. In today's scenario, the customers are expected to shift their preferences towards online shopping rather than visiting the physical stores. This study helps in identifying the factors which are responsible for the change in customer preferences. Additionally, it also focuses on the various factors which impact the millennial customer decision making processes such as specific brands, discounts, offers, and promotional codes.
- Understand how much is mood responsible for the customers when they shop online specifically for apparels. There are various factors which affect the purchase decision of the customers. There are a few consumers who only prefer some specific brands or there are a few customers who have a mindset of opting for the apparels which only offers discounts, thereby prioritizing discounts over brands. Further, mood also plays an important role while purchasing apparels. Many customers prefer shopping when in good mood, while a few do not prefer so. At the same time, many cus-

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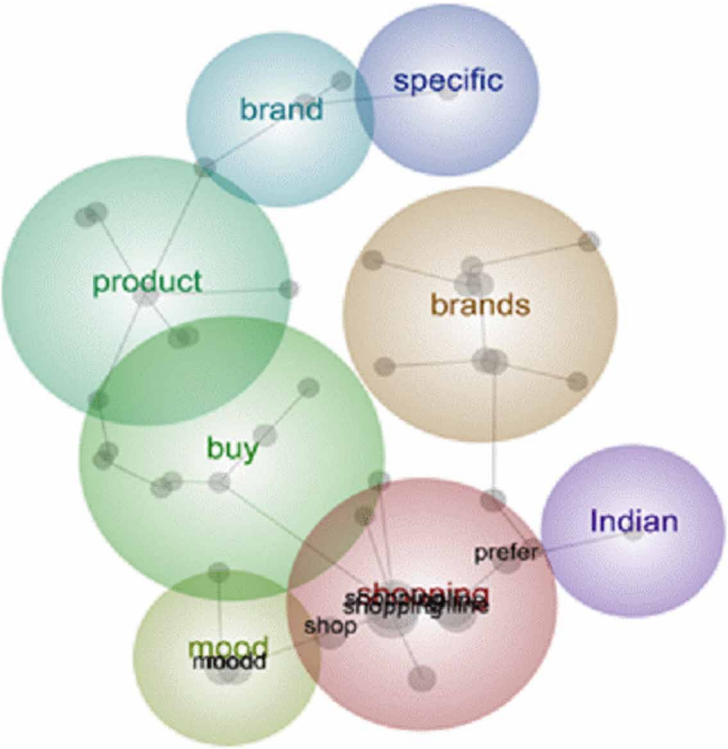
tomers do not shop in a sad or tensed mood, but for a few, shopping acts as a mood elevator. This study emphasizes on analyzing the mood and mindset of the customers when they shop online.

The analysis can be explained in Figure 1.

Figure 1. Millennial shopping trends - segments analysis



The above mentioned diagram illustrates about the different aspects in a broader perspective. For instance, what does Indian millennial prefer when they shop? Is it related to mood or is it brand specific? What kind of products do they prefer when they shop? According to our study, most of the millennial prefer shopping and buying the products on the basis of their moods. So, their mood is directly linked to their shopping trends. If they are happy, they will shop a lot. If they are sad, still they will shop. In such cases, shopping acts as a mood or stress busters. Also, there were some customers who were very specific for the apparel brands which they purchased.

Figure 2, illustrates the reasons why people prefer to shop online? How much do discounts and offers affect the shopping trends of the millennial? Is time a major constraint for today's generation? According to the information collected through the in-depth interviews, time acts as a major constraint while shopping. Nowadays, due to changing lifestyles, the consumers do not have enough time to go and look for varieties at in-store outlets. Moreover, in big cities, like Pune, or Bangalore or New Delhi, on account of traffic problems, people avoid going for offline shopping. Majority of the people prefer online shopping. This can be attributed to the factors such as availability of large number of brands on a

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single platform. This gives the customers the ease of shopping and also, saves time. Further, in today's scenario, there are many discounts and promotional offers being offered by the different websites, which is further expected to boost the demand for shopping online among the customers. However, in some cases, in spite of discounts and offers, if he/she is in a low mood, they will not prefer to shop. And rather shop only, if they are in a happy mood.

Figure 2. Millennial shopping trend – sub-segments analysis

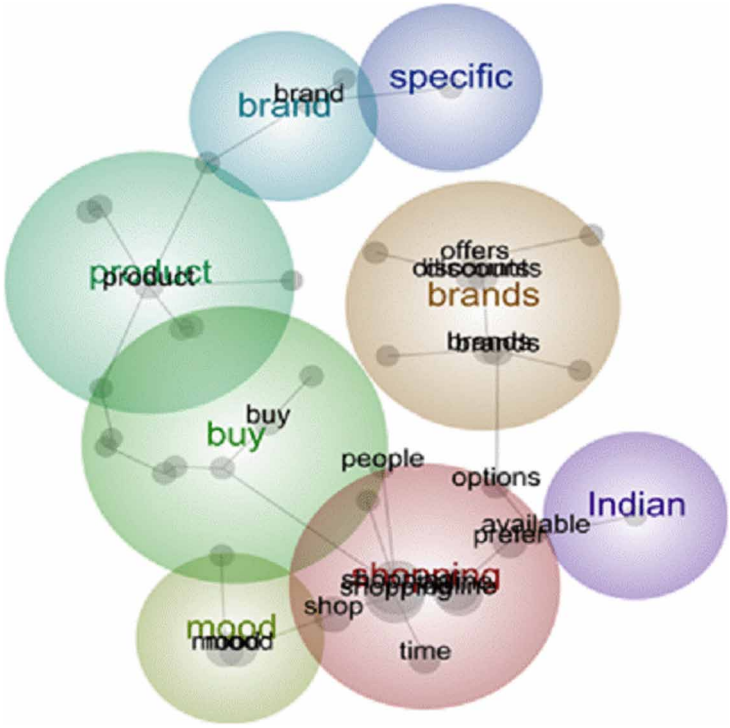

Figure 3 illustrates the further segmentation and analysis of factors such as mood, brands, product and shopping. In India, the millennial are shifting their preferences from in-store shopping to online shopping, owing to the availability of varied number of brands. In today's scenario, millennial prefer going through the reviews and feedback before making their purchase decisions. Feedbacks and reviews from one customer help the other customer to make their purchase decisions. For instance, apps such as Myntra have launched their own brands such as Dress berry and Roadster, which do not have retail outlets and are only available online. So, in such cases the consumers do go through the reviews of these brands, to get a knowhow about its product quality and its brand image. But, in case of well established brands, the people do not prefer going through the reviews. They directly purchase the products.

Also, mood plays a vital role in making the purchase decisions, especially in case of females, and apparels. In several instances, the females do shop online for different attires to elevate their mood. If they are in a happy mood, they tend to shop and look for more apparel products.

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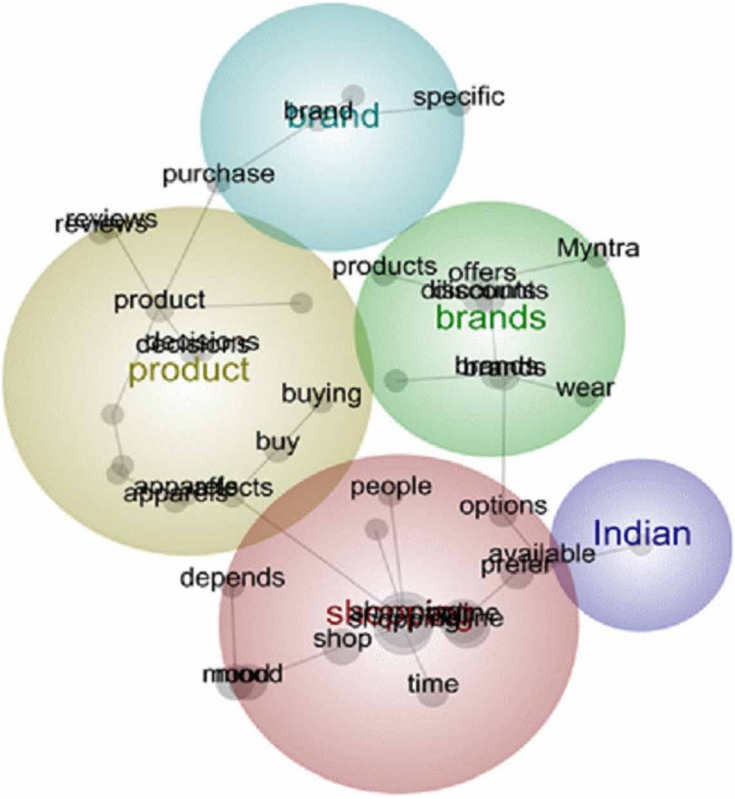
Figure 3. Millennial shopping trend analysis – detailed sub-segment analysis



In Figure 4, product and shopping are explained in a broader perspective. The shopping pattern of the millennial as compared to the previous generations has changed a lot. Firstly, this generation is a tech savvy generation, who suffice most of their shopping needs through the mobile and internet. Secondly, factors such as ease of shopping, time-constraint, and availability of more brands affect the shopping decisions of the millennial. In today's scenario, shopping online is quite easy and convenient and for professional people it is the best. Majority of the professionals prefer shopping online because it saves a lot of time. Also, shopping online is pocket friendly for the millennial customers.

Purchase of any product depends upon several factors such as reviews. Also, for apparels if some new brands are launched, then reviews help and matter a lot while purchasing the attires.

One very important thing while purchasing the clothes is quality. Quality can be checked when bought at in-stores, but it cannot be checked online. So, reviews form an important part particularly for online shopping. Furthermore, the online retailers emphasize more on designing and implementation of the exchange policies. These policies include an exchange or return period of any product, for around thirty days, wherein, the customers are given an option to exchange or return the products if they are not as per their needs.

As per our study, there are many people who are not that brand specific and prefer for those brands which offer good discounts and features. In fact, most of the people who shop online opt for options with more discounts and attractive offers for festive seasons, weekend sale or end of season sale.

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Figure 4. Millennial shopping trend analysis on a broader perspective

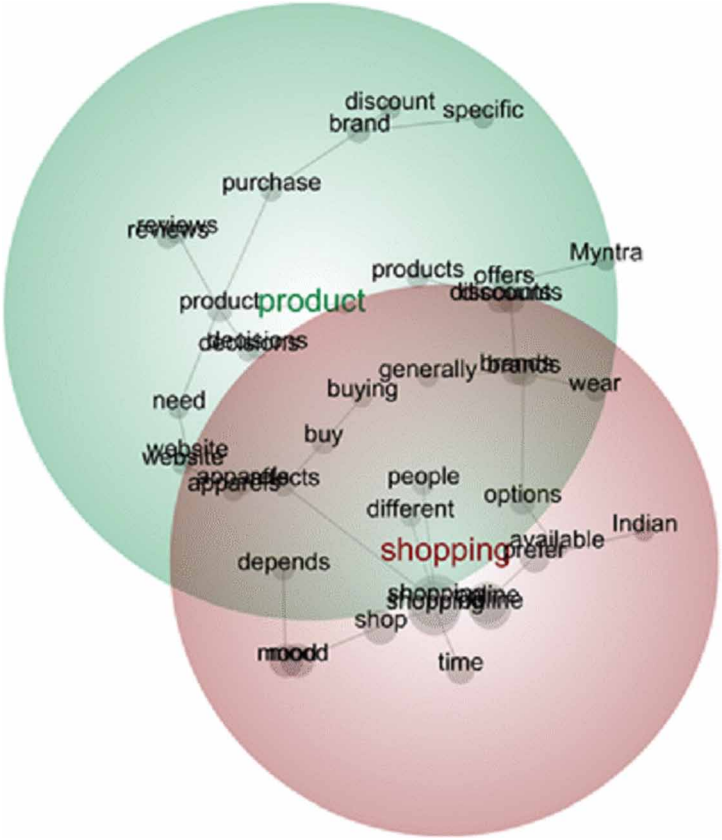

Figure 5 illustrates the linkage between shopping, products, brands and options available. Shopping depends upon the mood of the consumers and availability of time. As per the in-depth interviews conducted, millennial go for online shopping from Myntra due to the factors such as:

- Availability of varied options on one global platform
- Today's generation is tech savvy and always engages in doing comparative analysis for their shopping, which gives them valued shopping experience. What matters to them is how conveniently they get their products delivered at their door step, without any hassles of going out and looking for apparels. Myntra, is thereby one of the best options for the millennial customers.
- Return and exchange policies of Myntra also play an important factor in favorably impacting the customer choices and preferences. The company offers a window period wherein they give their customers a window period to exchange or return their products in case if the product delivered is not appropriate to their choice or is not of the relevant size.

Also, Myntra offers a lot of heavy discounts and offers on the branded as well as lesser known brands during the festive season, weekend sale, or end of season sale. This acts as a motivational factor for the customers to shop online. However, there are a few customers who are brand specific and for whom discounts do not matter much. So, in such cases, the customers prefer their choices over discounts and

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offers. Also, few customers make their purchase decisions on reviews and recommendations of the products if they are lesser known in case of apparels. This can be attributed to the touch and feel factor, wherein, these customers cannot feel the quality of the apparels online unlike in-store outlets. So, reviews and feedbacks work the best for such kind of situations. Hence, from the aforementioned factors, it is very evident that the purchase decisions of the millennial customers depend solely on their mindset, mood, brands, discounts, reviews, and recommendations. All the factors are inter-related to each other.

Figure 5. Link between the different factors

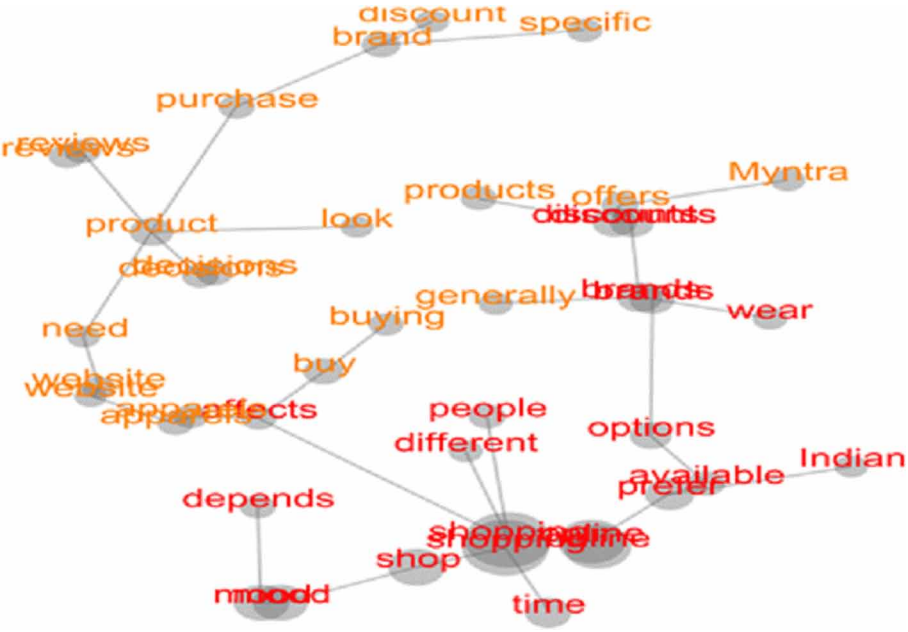

Figure 6 gives an in-depth analysis of the various attributes which affects shopping. In India, the millennial are shifting more towards shopping online and most of their preferences include shopping from the Myntra app. As discussed, shopping for apparels online majorly depends on the time constraints and mood of the customers. If the customers are in a good mood, they shop a lot. However, if the consumers are in a bad mood, a few still do shop, and a few prefer not to shop. Similarly, if time acts as a major constraint, then consumers opt for shopping online, wherein they get more options on one single platform at the same time, rather than going for shopping in-stores for different brands at different timings and different places.

Most of the customers prefer shopping for specific brands. This can be attributed to the brand loyalty, quality, and brand image for that apparel. Also, according to our study, few of the customers prefer quality over discounts unlike others who prefer discounts whatever be the brand. The purchase decisions of the customers depend upon the needs and requirements of the customers. Additionally, the shopping trends also depend upon the various websites image, brand image, reviews, and recommendations from the present millennial who have already purchased that product.

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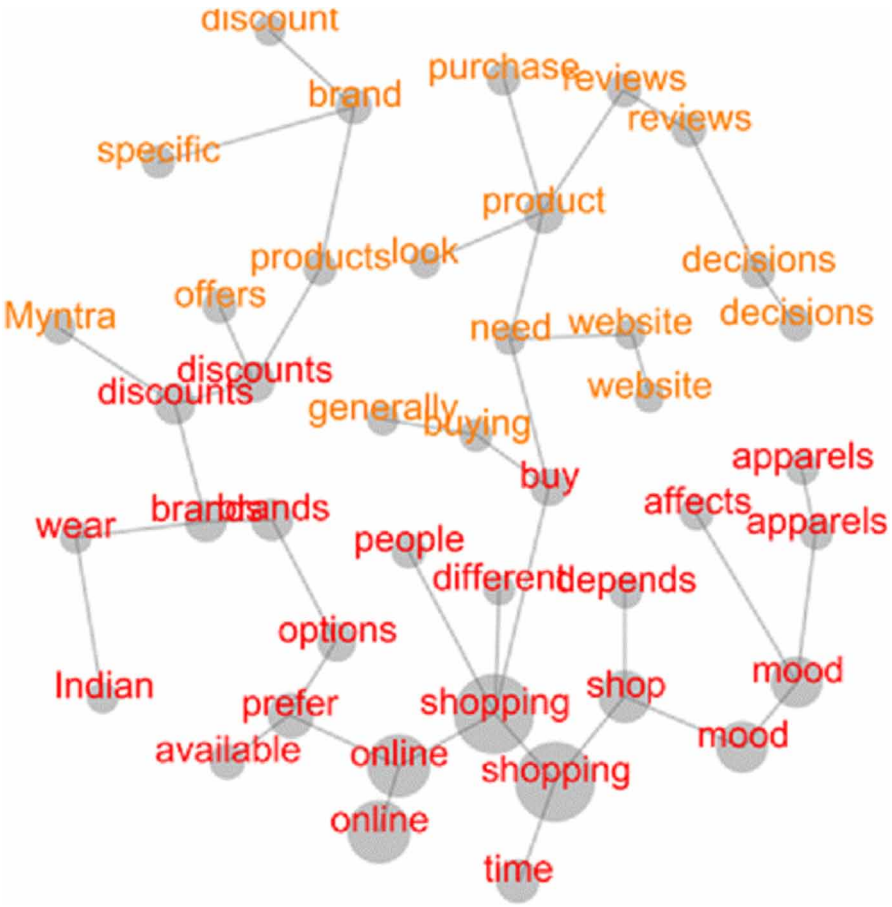
Figure 6. Link between the different factors – In-depth analysis



Observations

1. In today's scenario, consumers prefer shopping online owing to the factors such as availability of large number of brands and varieties on one global platform. Also, due to changing lifestyles majority of the consumers have a very hectic and busy schedule. All they want is hassle free and value for money shopping experience. However, if the consumers have enough time or need anything on urgent basis, they prefer for shopping from in-stores. So, at times, shopping depends and varies as per the needs and requirements of the consumers. Another vital factor which motivates the millennial to shop online includes the various discounts, promotional codes, offers, and deals that the websites offer to them. For a few customers, if the brands offer discounts it becomes an added advantage to shop, because at times, they don't feel the prices worth the brand. Also, a few customers prefer choosing Myntra as their preferred online shopping destination on account of the presence of features such as filters, which is thereby expected to give more options to the customers. Furthermore, online shopping apps provide the customers door to door delivery of the products, hence, saving the transportation costs and time from going for in-store shopping outlets. Online shopping can be done any time, and from anywhere. Further, factors such as easy exchange

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and return policies are also expected to favorably impact the shopping trends of the customers. Gradually, in the last few years probability has certainly increased to get the exact product what we have ordered for. This wasn't the case a few years back because the concept was new and people were also hesitant to check whether it was correct or not. Hence, the concept of shopping online has significantly increased.

2. If the consumers are in a good mood, then they shop more. Instead of buying one product, they buy several products even if that is not required. Also, reviews and recommendations seem very positive at that time. If the consumers are in a low mood, even discounts don't matter, they tend not to shop because they think they might take decisions in haste and regret later. However, there are a few customers, for whom shopping acts as a mood buster and elevates their mood. In such situations, shopping acts as a stress buster for them and they shop a lot. During the research study, there were a few customers who change their color preferences according to their mood. For instance, if they are in happy mood, they would prefer bright colors. However, when in bad mood, they prefer dull colors.
3. Product reviews are definitely expected to affect the customer shopping trends because in case of online shopping we cannot touch and feel the quality of the apparels. Also, while purchasing for apparels online, we don't have the option to verify the product. So, in such cases, reviews and recommendations of the products play a vital role. If the reviews are not positive, the customers would not prefer buying that product.

This includes the relevancy percentage of any particular term which has been used during the interview. For instance, Myntra has the relevancy percentage of 19% to our topic. Similarly, Indian has the relevancy percentage of 14% to our topic. Shopping and apparels have 100% and 14% relevancy percentage respectively to our topic. This implies that the people in various cities of India prefer Myntra as their online shopping destination for apparels. This can be due to the factors such as the services and features that Myntra provides to its customers. Also, in India, the percentage of the consumers going for shopping has 100% relevancy percentage. Online shopping has the relevancy percentage as 60% to the topic. Several consumers are shifting their preferences from offline to online shopping with the changing time and their lifestyles coupled with ease that online shopping provides. According to our study, time plays an important role in making the purchase decisions. In today's generation, the consumers do not have time to go out and look for shopping in-stores or malls. They avoid hassle free shopping. Additionally, brands account for relevancy percentage of 29% to the topic and discounts hold relevancy percentage of 27% to the topic. Discounts are one of the important factors which boost the shopping decisions of the millennial consumer. In today's scenario, the consumers prefer discounts and offers (offers hold 16% of the relevancy percentage to our topic) for every product they purchase. This is because at times, they do not feel the worth for those brands as per their pricing. And, further, their shopping trends depend on the need and requirements of the consumer as well. Need accounts for relevancy percentage of 11%.

CONCLUSION

According to the in-depth interviews and analysis, mood along with the mindset of the consumers play a very vital role while shopping online. In today's generation millennial are shifting their preferences from offline to online shopping. This can be attributed to the ease of shopping and availability of different

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brands with varied options in colors and sizes. Also, online shopping saves a lot of time and prevents the customers from undergoing various hassles. In India, the consumers shop for apparels from online sites depending on the range of services they offer such as door to door delivery option, payment options, ease of selecting the apparels by using various filters, availability of varied kinds of brands and options of apparels, along with the flexible rules and policies of the company.

Figure 7. Map result analysis

```
Concept,Kind,Count,Relevance_percentage
Myntra,NAME GENERAL,22,19
Indian,NAME GENERAL,16,14
shopping,WORD ,117,100
shopping,WORD ,117,100
shop,WORD ,83,71
mood,WORD ,71,61
mood,WORD ,71,61
online,WORD ,70,60
online,WORD ,70,60
prefer,WORD ,43,37
product,WORD ,40,34
time,WORD ,34,29
brands,WORD ,34,29
brands,WORD ,34,29
buy,WORD ,34,29
discounts,WORD ,32,27
discounts,WORD ,32,27
brand,WORD ,31,26
options,WORD ,25,21
specific,WORD ,21,18
discount,WORD ,21,18
people,WORD ,20,17
reviews,WORD ,20,17
reviews,WORD ,20,17
offers,WORD ,19,16
products,WORD ,18,15
purchase,WORD ,18,15
depends,WORD ,18,15
available,WORD ,16,14
decisions,WORD ,16,14
decisions,WORD ,16,14
apparels,WORD ,16,14
apparels,WORD ,16,14
affects,WORD ,15,13
wear,WORD ,14,12
```

If the customers have certain preferences for any brand, then they purchase from that particular brand. However, if they are flexible with the brands or prefer discounts over brands then they might change their decisions. Hence, mindset impacts the purchase decisions of the customers to a huge extent. Additionally, mood also plays an important factor while shopping online. It was observed that when the consumers

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are in good mood, they shop a lot. They might even shop for double the things that they actually wanted to buy. However, if the consumers are in a bad mood, then they might not at all go for shopping. In the same case, few customers prefer to go for shopping when in angry or low or sad mood to elevate their mood and bring a smile on their faces. Additionally, the emotions and feelings also affect the shopping trends. For instance, during the festive season, consumers shop for a lot of apparels for themselves as well their family members. This is because of the festive mood and also moreover, various shopping websites offers huge discounts during the festivals to attract consumers.

SUGGESTIONS

In today's scenario, online shopping pattern has really gained importance and impacted the Indian society. The millennial from the age group of 16 years to 34 years are mainly opting for online shopping, particularly for apparels, because of the convenience, flexibility, ease, pricing and authenticity that these platforms offer. For keeping pace with today's generation customers, it is very essential for the retailers to focus on the changing needs and preferences of these millennial. The below mentioned aspects can add value to the effectiveness of the chapter. Additionally, these can also help the retailers focus on understanding their customers, thereby formulating their marketing strategies accordingly.

- Key product types or benefits which attract the customers, should be the focus strategy of the retailers. The retailers should emphasize more on the mindset of the consumers, as to what kind of products they are actually looking for?
- How far is discount or offer affecting them?
- And what more features they can add to their websites or apps to attract more millennial customers?
- What best innovations the retailers can introduce, to make their shopping experience work with their mood and make them happy.
- How to create that brick and mortar feel for the customers, when they shop online for apparels

The aforementioned factors help the online retailers to understand the mindset and mood of young millennial customers, while making their purchase decisions, in order to attract and retain them. Hence, the retailers should accordingly change their strategies and implement them to increase their profit and success rate in the market.

LIMITATIONS

Time constraint was a major factor. This interview was taken from the working millennial customers. So, for them to take out time from their busy schedule for the interview was a bit difficult.

FUTURE SCOPE OF RESEARCH

In this study, the millennial customers of only a few regions were targeted. However, the rest of the regions in India size can also be considered which would thereby help in gathering and analyzing the

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information on a larger front. This would help to analyze the purchase decisions of the customers on a holistic front in India.

Additionally, analysis can also be done by segregating the male and female millennial consumers shopping trends, while purchasing the apparels online.

Key takeaways from the chapter include

- With the advent in technology and ease of shopping, the consumers are shifting their preferences towards online shopping.
- Along with the mindset, even mood impacts the shopping decisions of the customers across different regions.
- Reviews and feedbacks play a major role in customer shopping decisions.

REFERENCES

Ali Alavi, S. (2015). Examining shopping mall consumer decision-making styles, satisfaction and purchase intention. *International Review of Retail, Distribution and Consumer Research*, *26*(3), 272–303. doi:10.1080/09593969.2015.1096808

Aswegen, A. V. (2015). *Women vs. Men – Gender Differences in Purchase Decision Making*. Academic Press.

Baird, N. (2017). *Luxury's Millennial Problem And How One Retailer Is Solving It*. Academic Press.

Bhanot, S. (n.d.). *A study of the Indian apparel market and the consumer purchase behaviour of apparel among management students in Mumbai and Navi Mumbai*. Academic Press.

Deloiite. (2017). *Bling it on: What makes a millennial spend more?* Author.

Deloitte. (2015). *Digital Media: Rise of On-demand content.* Author.

Editors, R. I. (2015). *Brand reputation, safe payment matter most in online shopping.* Academic Press.

Engagement, M. t.–S. (2017). *Marketing to Millennials – Social Media And User Engagement*. Academic Press.

ETRetail.com. (2016). *Look who are the biggest online shoppers in India*. Author.

Global, K. (2016). *10 Trends Millennial Retail*. Author.

Go-Globe. (2016). *M-Commerce in Asia Pacific-Statistics and trends*. Author.

Gopaldas, A. (2014). Marketplace Sentiments. *The Journal of Consumer Research*, *41*(4), 995–1014. doi:10.1086/678034

Hankin, L. (2007). *The Effects of User Reviews on Online Purchasing Behavior.* Berkeley, CA: University of California.

Jimmy, R. (2017). *How Does Social Media Influence Millennials' Shopping Decisions?* Academic Press.

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Joines, J. S. C., Scherer, C. W., & Scheufele, D. A. (2003). Exploring motivations for consumer we use and their implications for e-commerce. *Journal of Consumer Marketing*, *20*(2), 90–108. doi:10.1108/07363760310464578

Kestenbaum, R. (2017, June 14). *This Is How Millennials Shop*. Author.

KPMG. (2017). *Global Online Consumer Report*. The Truth About Online Consumers.

Lysonski, S., & Durvasula, S. (2013). Consumer decision making styles in retailing: Evolution of mindsets and psychological impacts. *Journal of Consumer Marketing*, *30*(1), 75–87. doi:10.1108/07363761311290858

M-Commerce in Asia-Pacific-Statistics and Trends. (2016, February 5). Academic Press.

Nashiya, S. (2017). *How Big Data and Analytics are Evolving Customer Experience in Retail*. Academic Press.

PWC. (2015). *Total Retail 2015: Retailers and the age of disruption.* Author.

PWC. (2016). *Total retail 2016: They say they want a revolution.* Autho.

ET Retail.com. (2016, November 21). *Look who are the biggest online shoppers in India*. Author.

Rohampton, J. (2017). *How Does Social Media Influence Millennials' Shopping Decisions?* Academic Press.

Shamout, M. D. (2016, January). The Impact of Promotional Tools on Consumer Buying Behavior in Retail Market. *International Journal of Business and Social Science*, *7*(1), 75–85.

Sohi, A. I. (2016). *What works for today's consumer: Online shopping or visiting physical store?* Academic Press.

Trends of 2016: Millennial rush, Omni-Channel & Social Retailing, and 'Pace' of Retailing. (2015, December 15). Academic Press.

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APPENDIX

Discussion Guide

I am conducting an in-depth interview for the mind and mood analysis of the young millennial consumers while shopping for apparels online. First of all, I would like to thank you for giving your valuable time and views for our topic.

- May I know your name and age?
- Can you say a few lines about yourself?
- What is your profession of work?

1. In today's scenario, consumers are changing their preferences from in-store to online shopping, for example, millennial who are probably more into shopping online. What is your opinion about this? Also, what would be your preference as a millennial?
2. Which one would you prefer and why?
    a. Shopping online or
    b. Offline

Please give your views.

3. Which is the most common website from which you shop for apparels?
   Specific reasons, if any.
4. What do you usually shop for online?
    a. Indian attire
    b. Western wear
    c. Sports wear
5. Are you brand specific for clothing or your choice varies as per the pricing or discount offered by the different apparel brands or apps?
6. How any product review or feedback does affects your shopping trends?
7. How much do you think is mood responsible while we shop?
8. How your emotions and feelings are related to the purchase decisions which you make.
9. Is mood product or brand specific? I mean is there any specific brand which elevates your mood?
10. How do discounts, special offers or promotional codes affect your mood?
11. How much do you think shopping can be affected, when in angry or sad mood in comparison to when in a happy mood?

Is there anything more which you would like to add?

I'll be gathering and analyzing the information from you as well as from other respondents and further submitting it for publication.

Thank you for your valuable time and views.

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Chapter 78
Components of Consumer Factor and Its Influence on Attitude of the Student Online Shopping Community:
Consumer Factor and Its Influence on Attitude

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ABSTRACT

This research article analyzed the impact of Consumer factors like privacy, security, time saving and convenience and its impact on the attitude of consumers of online shopping. Further, the difference between the variables such as frequency of online shopping, time spent for shopping online, products often purchased during online shopping, value of money spent during shopping, mode of payment preferred and the consumer factors were also identified to ascertain the actual relationship. The research has focused on the student's community as the data set and their views on online shopping were collected through Questionnaire.

1. INTRODUCTION

Consumer behaviour is a branch of management which gives an idea about how an individual and groups of consumers are involved in the purchasing decisions of goods or services. According to Engel et al. (1995), it is a process that include actions and decision processes executed at the time of buying goods and services for personal consumption. According to Lauden et al. (2009), it is a process in which an individual is engaging in various activities which leads to decision making related to purchasing of goods and services.

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The study of behavioural aspects of consumers is centered on the process which the consumers adopt in the aspects of components of consumer factor when they make purchases. The consumers plays many roles while involving in the purchase process thus making the prediction of behavioural aspects of consumers' as difficult one. The consumer factors such as Privacy, Security, Time Saving and Convenience can be studied through consumer needs, ways to satisfy their needs, the decision related to repeated buying, information analysis, understanding of information, and formulation of plans and implementation of these plans.

The successful entry into market is based on analysis of behavioural aspects of consumer evolution and framing the marketing strategies according to it. Indian consumers are more complex than their counterparts in the other parts of world. They offer so much of hope and generates so much deception. The complication involved in the analysis of behavioural aspects of Indian consumers lies firstly in their nature which is different from the consumers of other countries. The consumers of different countries have unique characteristics in terms of history, manners, customs, culture, and mentality of its consumers.

The market codes have transformed, especially among the youth, the traditional values such as simplicity and temperance have been changed into the habit of winning, glory and heroism. These habits, which have entered the Indian way of life, shape their way of thinking, behaving and define the new criteria of the market. The understanding of behaviour of consumers in this market is very essential for the online shopping companies

2. OBJECTIVES

- To study the impact of Consumer factors on the Attitude of online shopping consumers (Table 1).
- To examine the variance between the consumer factors and various dependent variables related to online shopping.

Table 1. Factors of consumer behavior

FACTORS	VARIABLES
Consumer Factors	Privacy, Security, Time Saving and Convenience.

3. LITERATURE REVIEW

3.1. Consumer Factor

The consumer factor was suggested as important to online shopping and factors included were privacy, security, time saving, ease of use, convenience, enjoyment, previous experience, company reputation and tactility (Godwin et al., 2001). Becker (1965) indicated that the right and efficient utilization of time is an important factor for the young consumers for they do not wish to spend more time on purchasing. Further, (Alreck et al., 2002; Bellman et al., 1999; Then et al., 1999) have found from their survey, that modern day consumers consider time as a crucial factor. Apart from that, modern day consumer does not like to spend more time in brick and mortar stores (Bhatnagar et al., 2000; Alreck et al., 2002). The

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attitude of time consciousness prevailed among modern and young consumers motivate them to use non-traditional method of buying products (Stell et al., 1999).

Kunz (1997) and Taylor et al. (1999) found in their analysis, ease of using means experiencing a positive impact of online shopping. The online shopping companies provide a technological platform for consumers to have close interaction with their product and services (Kim 2006). The product visualization technology is predominantly used to provide better shopping experience among consumers as it enables consumers to have seamless interaction with the website (Kim et al., 2004).

The convenience is the important factor that effectively determine attitude of consumer (Berkowitz et al., 1979; Shim et al., 2001). The non-traditional consumers always prefer the factor of convenience (Bellman L& Johnson, 1999). The website of online shopping companies provides more information about the product, comparative price of various products and its convenience (Butler & Peppard, 1998). The speed of the website and convenience experienced by the customer provide more satisfaction to younger consumers (Yoo et al., 2007). The excellent structure of the website and design are the important factors considered by the consumers at the time of buying the products through online shopping (Yi et al., 2003).

The online shopping companies should design the website as secured and attractive one. Also, the website should contain comprehensive details about the product, price and other related information required by the consumer (Woodside et al., 1975). Apart from that the consumers can compare different products and its prices by a simple click thus helping them not only to save money and time but also to ensure privacy of their home (Blattberg et al., 1989). The virtual marketing environment with the support from internet technology provides paperless operation for 24x7 that enables the consumers to have access with the products and services available at the technological platform (Haque et al., 2011). Easy to navigate and visual appealing are two predominant factors which are considered by shoppers when they want to involve in online shopping. Thus, Shoppers' purchasing decision depends upon the website design (Sorce et al., 2005).

The enjoyment of purchase of product through internet and this buying process is considered as the factor of enjoyment. The enjoyment can create both negative and positive impact on shopping attitude among consumers (Kunz 1997; Taylor et al., 1999; Forsythe et al., 2003). The online shopping companies are creating superior designed websites by understanding the attitude and intention of consumers to attract them (Goldsmith et.al. 2000).

The consumers who have more browsing experience adopt technology buying with a lot of ease (Bear et al., 1987; Kay, 1993; Klein, 1998; Balabanis et al., 2001; Salisbury et al., 2001). This indicates the technology adoption among consumers who have more experience on internet. Similarly, O'Keefe et al. (1998) have also stated in their analysis that, consumers who are regularly using internet have technical capability with excellent technical skills.

Srinivasan et al. (2002) disclosed in their study that, the company reputation avoids the consumer to opt for different channel buying product. In order to maintain company reputation, the company has to maintain long term relationship with consumers. Further, it stated that the company reputation can be enhanced by motivating consumers to have face to face communication with the management (Stephen et al., 1996; Schiffman et al., 2003). For the consumers who have no experience with online shopping, the reputation can be imbibed through the word of mouth thus leading to positive experience towards the company that would reduce the risk and uncertainty towards shopping online. The veracity and reliability demand in the part of consumers becomes less significant, if the online shopping companies have excellent brand awareness and good reputation (Constantinides et al., 2004). The base of reputation

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falls on trust worthiness; it depends on how the company ensures the long-term relationship with the consumers by providing excellent technological platform for them.

The reputation can be measured through online feedback system. The feedback system of technological platform like internet is widely used by the online shopping companies to collect the views and responses from the consumers, thus leading to measure the level of reputation of companies (Marios et.al. 2004). Companies can seamlessly perform all kind of activities like collecting feedback about products, brand enhancement exercises, loyalty programme, promotion measures and after sales activities through an effectively designed in formation communication system (Emerick et al., 1996; Palmer et al., 1998; Palumbo et al., 1998).

3.2. Privacy

The privacy factor is difficult to comprehend; however, it can be defined with four components namely collection of personal information, misuse of the collected information, errors and mistakes in the information collected, wrong online transaction etc. (Segars et al., 2002). In the early stage of online shopping, the consumers are more concerned about the privacy issues. Once they gain experience, the intensity of factor of privacy is minimized to the significant level.

Further, the experience and frequent use of website are the important factors that reduce the privacy issues (Udo, 2001). Further, researchers also identified that consumers may get worried about their personal information that is being used by unauthorized person, thus creating the embracing situation for both the shopping companies and the consumers at large. Similarly, the unauthorized secondary usage of information may lead to loss of trust among consumers (Brown et al., 1996).

The consumers of online shopping companies expect the excellent social contact mechanisms thus increasing the confidence level among them. If the confidence is breached, the trust level may come down in a significant way (Teo et al., 2007) also they found that because of security issues, consumers always desired to pay through Cash on Delivery.

3.3. Security

E-Commerce provides superior opportunities to the online shopping companies. But the level of success of these companies depends upon the security mechanisms being adapted in its websites. This mechanism also ensures the flawless payment transaction through different sources (Saeed et al., 2003). Security seems to be a big concern that prevents customers from shopping online (Laudon & Traver, 2009). This is witnessed because of the involvement of the third-party services that increase the security issues thus making an entire website a complex and difficult one to operate.

The challenges towards the integration of third party with the website should be mitigated by taking effective controlling mechanisms (Premkumara et al., 2008). The online shopping companies, also take various measures to enhance the satisfaction level among the customers by reducing the security related issues. In order to provide comfort to the consumers, the online shopping companies design the well-equipped and protected websites. Furthermore, these websites have been designed with the security protocol that helps to prevent the misuse of consumer information.

The affection and loyalty towards the online shopping companies are affected by lack of trust in the consumers mind on providing their personal data and using their credit card (Whysall, 2000). Also, the consumers are worried that the online shopping companies will cheat them or misuse their credit card

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details (Comegys et al., 2009). Consumers are always concerned about the security and safety of data when they transact online (Constantinides, 2004). The nature of trust and its implications in online shopping are not only widely recognized by the stakeholders and researchers, but are also providing extensive knowledge about its trust and its characteristics. The trust deficit to the particular online shopping website will deter consumers while making purchase decision through online shopping (Chen, 2007). The problems associated with online payment process reduce the willingness of paying money through it (Broekhuizen et al., 2009).

The payment processing system should have effective protection system which results in the prevention of misuse of credit card and other customer related information. The e- Trust certificate obtained from the authorities is a vital tool that enhances the satisfaction among the consumers (Korgaonkar et al., 1997). By obtaining this certificate, the companies can provide a safe and secured environment for the consumers.

4. RESEARCH METHODOLOGY

As per the information obtained from the Websites of Bharatiyar and Anna University, it is found that the approximately 13,500 students are undergoing their Post Graduate Programme in Arts, Science and Engineering colleges situated in and around Coimbatore. Among the entire population 7182 students are selected through the purposive sampling method. The purposive sampling method was adopted to select the students who are doing online shopping at least two times in a month.

Simple random sampling is the basic sampling technique where a sample is selected for study from a population. Each individual is chosen entirely by chance and each member of the population has an equal chance of being included in the sample. From the selected samples of 7182 students, 10.47% of the students are selected through Simple Random Sampling.

4.1. Direct-Data Survey

The behavioral aspects of online shopping consumers constitute the basic data for the study. The primary as well as the secondary data is used at large in order to derive at an accurate result (Saunders et al., 2012). The major source of the data used to carry out the analysis is primary data. In order to fulfill the objectives set out, field survey method was employed to collect the primary data from 752 selected respondents through the structured questionnaire. The Post Graduate students from different colleges in Coimbatore who shopped online at least twice in a month are taken for the study. The questionnaire is personally administered and the survey was conducted during the period 2014-2015.

The Secondary Data was collected from various indexed articles as it provides more validity to the data. (Saunders et al.2012). Databases of Sage, Emerald, Springer and Journals related to this area of research and Google scholar were accessed not only to gather comprehensive idea but also to use it as secondary data for this study.

The articles related to attitude were taken into consideration in order to collect data for the review of literature. The forgathered literature was used to formulate the appropriate questionnaire to test the relationship between the chosen factors taken for the study.

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4.2. Structure of the Questionnaire

The collection of required data was carried with the use of questionnaire. The questionnaire consists of three parts namely Demographic Data & Socio Economic data, Internet Usage & Shopping Experience, and Psychological Factor such as attitude. The third part of this research consists of questions to measure all variables selected for this research.

The research was carried out in Coimbatore city due to its nature of industrialization and use of internet for shopping and all the questions were tested through pilot study.

4.3. Instrument Validity

Before examining the hypotheses it is essential to examine the validity of the questionnaire that was used for measuring the selected factors. Validity is the degree in which variables measure accurately what they are supposed to measure (Hair et al., 2010) and consists of content validity, construct validity. The purpose of the instrument content validity is to eliminate or to correct those questions that have not accomplished their research goal (Bock & Kim., 2002). Although, the content validity is confirmed from a previous study (Lian et.al., 2002), before the beginning of the present research a discussion with stake holders of online shopping and a pilot test was made to avoid any miscomprehensions. Construct validity was accomplished by using exploratory factor analysis and reliability analysis based on the Cronbach Alpha.

4.4. Result of Reliability Tests

The result of the reliability test for the consumer factor is found to be 0.862.

5. ANALYSIS AND INTERPRETATION

The shopping behaviour of the respondents are classified based on their frequency of online shopping, time spent for shopping online, products often purchased during online shopping, value of money spent during shopping, mode of payment preferred when shopping online. These are compared with the dimensions of Consumer factors such as Privacy, Security, Time Saving and Convenience to find out the shopping attitude of the PG students. Further their shopping behaviour are analyzed through Analysis Of Variance (ANOVA).

5.1. Frequency and Attitude towards Shopping Online

H_{01}: There is no significant difference in the frequency of online shopping between the respondents based on the factors influencing the attitude (Table 2).

H_1: There is a significant difference in the frequency of online shopping between the respondents based on the factors influencing the attitude.

The level of significant difference between the frequency of online shopping and the influence of factors on attitude towards online shopping ie. Consumer Factor F(2,749)=6.708, Sig.0.001, have sig-

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nificantly varied based on the attitude of online shopping and the shopping behaviour of the PG students, therefore the null hypothesis is rejected (Table 3).

It is inferred that the frequency of shopping online deciding the shopping behaviour of the PG students and their attitude based on the consumer factor was found to be significantly varied and the null hypothesis is rejected.

Further, to understand the most appropriate result based on the specific difference, Tukey's HSD (Honesty Significant Difference) is used to present the difference in the frequency of online shopping between the respondents based on the factors influencing attitude are presented as follows in Table 4:

Table 2. Descriptive of Frequency and Attitude towards shopping online

Factors	Frequency	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Consumer Factor	Very Often	193	80.18	9.497	.684	78.83	81.52
	Mostly	414	78.64	10.184	.501	77.65	79.62
	Rarely	145	76.12	10.589	.879	74.39	77.86
	Total	752	78.55	10.169	.371	77.82	79.27

Table 3. Analysis of difference on Frequency and Attitude towards shopping online

Factors	Groups	Sum of Squares	df	Mean Square	F	Sig.
Consumer Factor	Between Groups	1366.670	2	683.335	6.708	.001
	Within Groups	76299.701	749	101.869		
	Total	77666.371	751			

Table 4. Frequency of shopping and Attitude based on Consumer Factor

Frequency of Online shopping	N	Subset for alpha = .05	
		1	2
Rarely	145	76.12	
Mostly	414		78.64
Very Often	193		80.18
Sig.		1.000	.267

Tukey's post-hoc comparison with respect to frequency of shopping online among PG students in Coimbatore differed significantly across the three categories when compared with the attitude based on consumer factor and the result is significant F(2,749)=6.708, Sig.0.001 at 5% level. Tukey's post hoc compares all the three factors and the result based on the frequency of online shopping was found to be high with respect to respondents shopping very often (M=80.18, 95% CI[78.83, 81.52]) which shows

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the significant level difference in the frequency of online shopping between the respondents based on the consumer factor influencing the attitude of respondents.

Therefore, it is concluded that the respondents who shop very frequently were found to have higher attitude based on the consumer factor leading to online shopping.

5.2. Time Spent and Attitude towards Shopping Online

H_{02}: There is no significant difference in the time spent for online shopping between the respondents based on the factors influencing the attitude (Table 5).

H_2: There is significant difference in the time spent for online shopping between the respondents based on the factors influencing the attitude.

Table 5. Descriptive of Time spent and Attitude towards shopping online

Factors	Frequency	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Consumer Factor	Less than 2 hours	193	76.96	10.420	.750	75.48	78.44
	2 to 4 hours	280	79.27	9.992	.597	78.10	80.45
	More than 4 hours	279	78.91	10.089	.604	77.72	80.10
	Total	752	78.55	10.169	.371	77.82	79.27

To test the variance with regard to factors influenced the attitude towards online shopping among the PG students and their shopping behaviour based on the time spent for shopping online revealed the level of significant difference between the two categories and the attitude is determined based on the three categories and their level of significance is computed ie. Consumer Factor F(2,749)=3.251, Sig.0.039, has proven to have significant variance (Table 6).

Tukey's post-hoc comparison with respect to time spent for shopping online among PG students in Coimbatore differed significantly across the three categories when compared with the attitude based on consumer factor and the result is significant F(2,749)=3.251, Sig.0.039 at 5% level (Table 7). Tukey's post hoc compares all the three factors and the result based on the time spend for online shopping was found to be high with respect to respondents spending between 2 and 4 hours for shopping (M=79.27, 95% CI[78.10, 80.45]) which shows the significant level of difference in the time spent between the respondents based on the consumer factor influencing the attitude of respondents.

Table 6. Analysis of Variance of Time spent and Attitude towards shopping online

Factors	Criteria	Sum of Squares	df	Mean Square	F	Sig.
Consumer Factor	Between Groups	668.318	2	334.159	3.251	.039
	Within Groups	76998.053	749	102.801		
	Total	77666.371	751			

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Table 7. Time spent and Attitude based on Consumer Factor

Time spent for shopping online	N	Subset for alpha = .05	
		1	2
Less than 2 hours	193	76.96	
More than 4 hours	279	78.91	78.91
2 to 4 hours	280		79.27
Sig.		.086	.920

Therefore, it is concluded that the respondents who spend between 2 and 4 hours were found to have higher attitude based on the consumer factor leading to online shopping.

5.3. Product often purchased and Attitude towards shopping online

H_{03}: There is no significant difference in the product often purchased during online shopping based on the factors influencing the attitude (Table 8).

H_3: There is significant difference in the product often purchased during online shopping based on the factors influencing the attitude.

Table 8. Descriptive of Product often purchased and Attitude towards shopping online

Factor	Frequency	N	Mean	Std. Deviation	Std. Err	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Consumer Factor	Clothing / Accessories / Shoes	330	77.86	10.362	.570	76.74	78.98
	Books / DVD / CD	64	76.02	8.512	1.064	73.89	78.14
	Computer / Electronics / Software	278	78.99	10.405	.624	77.76	80.22
	Kitchen items / Gardening / Hobby items	54	82.85	8.229	1.120	80.61	85.10
	Others	26	79.81	10.068	1.974	75.74	83.87
	Total	752	78.55	10.169	.371	77.82	79.27

To test the variance with regard to factors influenced the attitude towards online shopping among the PG students and their shopping behaviour based on the products often purchased during online shopping revealed the level of significant difference between the two categories and the attitude is determined based on the three categories and their level of significance is computed ie. Consumer Factor F(4,747) = 4.089, Sig.0.003 (Table 9).

Tukey's post-hoc comparison with respect to products often purchased during shopping online among PG students in Coimbatore differed significantly across the three categories when compared with the attitude based on consumer factor (Table 10) and the result is significant F(4,747)=4.089, Sig.0.003, at 5% level. Tukey's post hoc compares all the three factors and the result based on the time spend for

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online shopping was found to be high with respect to respondents buying Books / DVDs / CDs during shopping (M=82.85, 95% CI[80.61, 85.10]) which shows the significant level of difference in the product often purchased based on the Consumer factor influencing the attitude. Therefore, it is concluded that the respondents buying Books / DVDs / CDs during shopping were found to have higher attitude based on the consumer factor leading to online shopping.

Table 9. Analysis of difference of Product often purchased and Attitude towards shopping online

Factors	Criteria	Sum of Squares	df	Mean Square	F	Sig.
Consumer Factor	Between Groups	1664.242	4	416.060	4.089	.003
	Within Groups	76002.129	747	101.743		
	Total	77666.371	751			

Table 10. Products often purchased and Attitude based on Consumer Factor

Product often purchased online	N	Subset for alpha = .05	
		1	2
Kitchen items / Gardening / Hobby items	54	76.02	
Clothing / Accessories / Shoes	330	77.86	
Computer / Electronics / Software	278	78.99	78.99
Others	26	79.81	79.81
Books / DVD / CD	64		82.85
Sig.		.216	.201

5.4. Money Spent and Attitude towards Shopping Online

H_{04}: There is no significant difference in the money spent during online shopping between the respondents based on the factors influencing the attitude (Table 11).

H_4: There is significant difference in the money spent during online shopping between the respondents based on the factors influencing the attitude.

To test the variance with regard to factors influenced the attitude towards online shopping among the PG students and their shopping behaviour in Coimbatore based on the money spent during online shopping revealed the level of significant difference between the two categories and the attitude is determined based on the three factors and their level of significance is computed viz. Consumer Factor F(2,749)=3.426, Sig.0.033 (Table 12).

Tukey's post-hoc comparison with respect to money spent during shopping online among PG students in Coimbatore differed significantly across the three categories when compared with the attitude based on consumer factor (Table 13). The result is significant F(2,749)=3.426, Sig.0.033, at 5% level. Tukey's post hoc compares all the three factors and the result based on the money spent during online shopping was

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found to be high with respect to respondents spending more than Rs.1000 during shopping (M=79.80, 95% CI[78.52, 81.08]) which shows the significant level of difference in the money spent between the respondents based on the consumer factor influencing the attitude of respondents .

Table 11. Descriptive of Money Spent and Attitude towards shopping online

Factor	Frequency	N	Mean	Std. Deviation	Std Error	Interval for Mean	
						Lower Bound	Upper Bound
Consumer Factor	Less than Rs.500	402	77.66	10.599	.529	76.62	78.70
	Rs.500 to 1000	134	79.18	9.631	.832	77.53	80.82
	More than Rs.1000	216	79.80	9.542	.649	78.52	81.08
	Total	752	78.55	10.169	.371	77.82	79.27

Table 12. Analysis of Variance between Money Spent and Attitude towards shopping online

Factors	Criteria	Sum of Squares	df	Mean Square	F	Sig.
Consumer Factor	Between Groups	703.968	2	351.984	3.426	.033
	Within Groups	76962.403	749	102.754		
	Total	77666.371	751			

Table 13. Money spent and Attitude based on Consumer Factor

Average amount spent for shopping online	N	Subset for alpha = .05	
		1	2
Less than Rs.500	402	77.66	
Rs.500 to 1000	134	79.18	79.18
More than Rs.1000	216		79.80
Sig.		.130	.537

5.5. Mode of Payment Preferred and Attitude towards Shopping Online

H_{05}: There is no significant variance in the mode of payment preferred during online shopping between the respondents based on the factors influencing the attitude (Table 14).

H_5: There is significant variance in the mode of payment preferred during online shopping between the respondents based on the factors influencing the attitude.

To test the variance with regard to factors influenced the attitude towards online shopping among the PG students and their shopping behaviour based on the mode of payment preferred during online shopping revealed the level of significant difference between the two categories and the attitude is determined

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based on the three factors and their level of significance is computed i.e. Consumer Factor F(2,749) = 3.231, Sig.0.040, followed by Marketing Factor F(2,749) = 0.364, Sig.0.695 (Table 15).

Tukey's post-hoc comparison with respect to mode of payment preferred during shopping online among PG students in Coimbatore differed significantly across the three categories when compared with the attitude based on consumer factor and the result is significant F(2,749)=3.231, Sig.0.040, at 5% level. Tukey's post hoc compares all the three factors and the result based on the time spend for online shopping was found to be high with respect to respondents preferred Cash on Delivery payment method during online shopping (M=78.99, 95% CI[77.90, 80.07]) which shows the significant level of difference in the mode of payment based on the consumer factor influencing the attitude (Table 16).

Therefore, it is concluded that the respondents preferred Cash on Delivery method of payment during shopping online is found to have higher attitude based on the consumer factor leading to online shopping.

Table 14. Descriptive of mode of payment preferred and Attitude towards shopping online

Factor	Frequency	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Consumer Factor	Cash on Delivery	341	78.99	10.217	.553	77.90	80.07
	Internet Banking	133	76.52	9.947	.863	74.81	78.22
	Debit / Credit Card	278	78.98	10.134	.608	77.78	80.17
	Total	752	78.55	10.169	.371	77.82	79.27

Table 15. Analysis of variance between mode of payment preferred and Attitude towards shopping online

Factors	Criteria	Sum of Squares	df	Mean Square	F	Sig.
Consumer Factor	Between Groups	664.371	2	332.185	3.231	.040
	Within Groups	77002.000	749	102.806		
	Total	77666.371	751			

Table 16. Mode of payment preferred and Attitude based on consumer Factor

Mode of Payment preferred when shopping online	N	Subset for alpha = .05	
		1	2
Internet Banking	133	76.52	
Cash on Delivery	341		78.99
Debit / Credit Card	278		78.98
Sig.		1.000	1.000

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6. FINDINGS

The frequency of shopping online deciding the shopping behaviour of the PG students and their attitude based on the consumer factor were found to be significantly varied. The respondents who shop very frequently were found to have higher attitude based on the consumer factor leading to online shopping and the respondents who spend between 2 and 4 hours were found to have higher attitude based on the consumer factor leading to online shopping. In addition, with that, the respondents buying books / DVDs / CDs during shopping were found to have higher attitude based on the consumer factor leading to online shopping and the money spent during shopping online deciding the shopping behaviour of the PG students and their attitude based on the consumer factor was found to be significantly varied. Further, the respondents spending more than Rs.1,000 during shopping were found to have higher attitude based on the consumer factor and also the significant level of difference was found between the mode of payment based on the consumer factor influencing the attitude of the online shopping consumer. The Cash on Delivery payments during shopping online were found to have higher attitude based on the consumer factor leading to online shopping. These findings are represented in Table 17.

6.1 Hypothesis Results

Results can be found in Table 17.

Table 17. Consolidated Hypothesis Results

Hypothesis	Content	Results
There is no significant difference in the frequency of online shopping between the respondents based on the consumer factors influencing the attitude	The influence of factors on attitude towards online shopping i.e. Consumer Factor F(2,749) = 6.708, Sig.0.001, have significantly varied based on the attitude of online shopping and the shopping behaviour of the PG students	The null hypothesis is rejected.
There is no significant difference in the time spent for online shopping between the respondents based on the factors influencing the attitude	The time spend for online shopping was found to be high with respect to respondents spending between 2 and 4 hours for shopping (M = 79.27, 95% CI[78.10, 80.45]) which shows the significant level of difference in the time spent between the respondents based on the consumer factor influencing the attitude of respondents	The null hypothesis is rejected
There is no significant difference in the product often purchased during online shopping based on the factors influencing the attitude	on the time spend for online shopping was found to be high with respect to respondents buying Books / DVDs / CDs during shopping (M = 82.85, 95% CI[80.61, 85.10]) which shows the significant level of difference in the product often purchased based on the Consumer factor influencing the attitude than the other two categories.	The null hypothesis is rejected.
There is no significant difference in the money spent during online shopping between the respondents based on the factors influencing the attitude	The result is significant F(2,749)=3.426, Sig.0.033, at5% level. Tukey's post hoc compares all the three factors and the result based on the money spent during online shopping was found to be high with respect to respondents spending more than Rs.1000 during shopping (M = 79.80, 95% CI[78.52, 81.08]) which shows the significant level of difference in the money spent between the respondents based on the consumer factor	The null hypothesis is rejected.
There is no significant variance in the mode of payment preferred during online shopping between the respondents based on the factors influencing the attitude	The result based on the time spend for online shopping was found to be high with respect to respondents preferred Cash on Delivery payment method during online shopping (M = 78.99, 95% CI[77.90,80.07]) which shows the significant level of difference in the mode of payment based on the consumer factor	The null hypothesis is rejected.

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7. DISCUSSIONS

In the present study, it is found that there is a significant influence of privacy in the prediction of attitude as consumers always urge to ensure the protection of their data and this result is validated through the research conducted by (Guo Jun & Noor Ismawati Jaafar 2011) in which they firmly concluded that there is a significant relationship between the privacy and attitude of consumers. The current research also found relationship between time spent for online shopping and attitude as it is concluded that the respondents who spend between 2 to 3 hours were found to have higher attitude towards online shopping.

This finding got support from the research conducted by Dillon and Harry (2004) in which they stated that the students who spend more time on shopping have positive attitude towards online shopping. In the aspect of frequency of purchase, it is found in this study that the frequency of shopping influence the attitude of consumers of online shopping as it got validated through the research done by Dillon & Harry (2004).

8. CONCLUSION

The consumer factors such as Privacy, Security, Time Saving and Convenience have significantly influenced the attitude of consumers. The subcomponents of above said factors like the time spent, money spent on purchasing of products and their area of living have significantly contributed on shaping their attitude which prompted that the stake holders of industry should adopt innovative strategies to keep the youngsters in online for the longer period thus enable them to purchase products through online shopping. Further this survey also shows that the respondents living in urban area have more inclination towards online shopping Compared to the respondents of rural area which indicates that the online shopping companies have to concentrate more on urban market to enhance their market share. The overall outcome of this analysis shows a paradigm shift in the behavior of consumers in the aspects of attitude and satisfaction.

REFERENCES

Alreck, P., & Settle, R. B. (2002). Gender Effects on Internet Catalogue and Store Shopping. *Journal of Database Marketing*, *9*(2), 150–162.

Bear, G. G., Richards, H. C., & Lancaster, P. (1987). Attitude toward computer Validation of computer attitude scale. *Journal of Educational Computing Research*, *13*(2), 207–218. doi:10.2190/1DYT-1JEJ-T8J5-1YC7

Becker, H. J. (1998). Internet use by teachers. Retrieved from http://www.crito.usi.edu./TLC/findings/Internetuse/startpage.html

Bellman, S., Lohse, G., & Johnson, E. (1999). Predictors of online buying behaviour. *Communications of the ACM*, *42*(12), 32–38. doi:10.1145/322796.322805

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Blattberg, R., & Wisniewsk, K. (1989). Price-induced patterns of competition. *Marketing Science*, *8*(4), 291–309. doi:10.1287/mksc.8.4.291

Broekhuizen, T., & Huizingh, E. (2009). Online purchase determinants: Is their effect moderated by direct experience? *Management Research News*, *32*(5), 440–457. doi:10.1108/01409170910952949

Broekhuizen, T., & Huizingh, E. (2009). Online purchase determinants: Is their effect moderated by direct experience? *Management Research News*, *32*(5), 440–457. doi:10.1108/01409170910952949

Chen, Y. H., & Stuart, B. (2007). Initial trust and online buyer behaviour. *Industrial Management & Data Systems*, *107*(1), 21–36. doi:10.1108/02635570710719034

Comegys, C., & Brennan, L. M. (2003). Students online shopping behavior: A dual- country perspective. *Journal of Internet Commerce*, *2*(2), 69–87. doi:10.1300/J179v02n02_05

Constantinides, E. (2004). Influencing the online consumer's behaviour: The web experiences. *Internet Research*, *14*(2), 111–126. doi:10.1108/10662240410530835

Emerick, T. (1999). Media and Marketing Strategies for the Internet. In I. Marketing (Ed.), *Edward Forrest and Richard Mizerski NTC Business Books* (pp. 197–214). AMA.

Engel, J. F., Blackwell, R. D., & Miniard, P. W. (1995). *Consumer behavior* (5th ed.). Chicago: Dryden Press.

Forsythe, S. M., & Bailey, A. W. (1996). Shopping enjoyment, perceived time poverty, and time spent shopping. *Clothing & Textiles Research Journal*, *14*(3), 185–191. doi:10.1177/0887302X9601400303

Godwin, J. (2001). Privacy and security concerns as major barriers for e-commerce: A survey study. *Information Management & Computer Security*, *9*(4), 165–174. doi:10.1108/EUM0000000005808

Goldsmith, R.E. & Bridges, E. (2000). E-Tailing VS Retailing: Using Attitudes to Predict Online Buying Behavior. *Quarterly Journal of Electronic Commerce*, *1*(3), 245–253.

Haque, A., Sadeghzadeh, J., & Khatibi, A. (2011). Identifying potentiality online sales in Malaysia: A study on customer relationships online shopping. *Journal of Applied Business Research*, *22*(4), 119–130. doi:10.19030/jabr.v22i4.1420

Hoffman, D. L., Kalsbeek, L., & Novak, T. P. (1996). Internet and Web use in the USA. *Communications of the ACM*, *39*(12), 36–46. doi:10.1145/240483.240490

Kay, R. H. (2010). An exploration of the theoretical and practical foundations for assessing attitudes toward computers: The computer attitude measure (CAM). *Computers in Human Behavior*, *9*(4), 371–386. doi:10.1016/0747-5632(93)90029-R

Kim, J. A. (2006). Toward an understanding of web-based subscription database acceptance. *Journal of the American Society for Information Science and Technology*, *57*(13), 1715–172. doi:10.1002/asi.20355

Klein, L. R. (1998). Evaluating the potential of interactive media through a new lens: Search versus experience goods. *Journal of Business Research*, *41*(3), 195–203. doi:10.1016/S0148-2963(97)00062-3

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Korgaonkar, P. K., Karson, E. J., & Akaah, I. (1997). Direct marketing advertising: The assents, the dissents, and the ambivalent. *Journal of Advertising Research*, *37*(5), 41–55.

Kotler, P., & Armstrong, G. (2012). *'Principles of Marketing*. New Jersey: Pearson Education.

Kulviwat, S., Zhang, Y., Fan, J., & Zheng, L. (2016). Understanding consumer shopping behaviour: A comparison of three theories of emotions in predicting online flow. *International Journal of Electronic Marketing and Retailing*, *7*(1), 3–21. doi:10.1504/IJEMR.2016.075322

Kumar, R. R., & Asokkumar, S. (n.d.). Online shopping: purchase intention and satisfaction among the student community. *TTEM*, 541.

Kunz, M. B. (1997). On-line customers: identifying store, product and consumer attributes which influences shopping on the Internet [Ph.D. Thesis]. University of Tennessee, Knoxville.

Kwak, H., Fox, R. J., & Zinkhan, G. M. (2002). What Products Can be Successfully Promoted and Sold Via the Internet? *Journal of Advertising Research*, *42*(1), 23–38. doi:10.2501/JAR-42-1-23-38

Laudon, K. C., & Traver, C. G. (2009). *E-Commerce Business. Technology* (5th ed.). New Jersey: Prentice Hall.

Laudon, K. C., & Traver, C. G. (2009). *'E-Commerce Business. Technology'. Society* (5th ed.). New Jersey: Prentice Hall.

Marios, K., & William, H. S. (2004). The development of initial trust in an online company by new customers. *Information & Management*, *41*(3), 377–397. doi:10.1016/j.im.2003.08.004

Monsuwe, T., Dellaert, B., & Ruyter, K. (2004). What drives consumers to shop online? A literature review. *International Journal of Service Industry Management*, *15*(1), 102–121. doi:10.1108/09564230410523358

O'Keefe, R. M., O'Connor, G., & Kung, H. J. (1998). Early adopters of the Web as a retail medium: Small company winners and losers. *European Journal of Marketing*, *25*(1), 38–43.

Bhatnagar, A., Misra, S., & Rao, H. R. (2000). On risk, convenience, and Internet shopping behavior. *Communications of the ACM*, *43*(11), 98–105. doi:10.1145/353360.353371

Palmer, J. W., Griffith, D. A., & Krampf, R. F. (2003). The role of interface in electronic commerce: Consumer involvement with printing versus online catalogues. *International Journal of Electronic Commerce*, *5*(4), 135–153.

Pavlou, P.A. (2003). Consumer acceptance of electronic commerce: integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, *7*(3), 69–103.

Premkumara, G., & Bhattacherjee, A. (2008). Explaining information technology usage: A test of competing models. *Omega*, *36*(1), 64–75. doi:10.1016/j.omega.2005.12.002

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Rajendra Kumar, R., & Asok Kumar, S. (2016). Students opinion on policy work, economic implications of online shopping in Indian retail industry and the factors of promoting small scale organizations, products through electronic mode (online mode). *Asian Journal of Research in Social Sciences and Humanities*, *6*(4), 484–491. doi:10.5958/2249-7315.2016.00074.5

Rajendra Kumar, R., & Asok Kumar, S. (2016). An analysis of direct and moderation effect on online shopping attitude with special reference to student community of Coimbatore (India) based colleges. *Asian Journal of Research in Social Sciences and Humanities*, *6*(4), 592–601. doi:10.5958/2249-7315.2016.00081.2

Rezaei, S., & Amin, M. (2013). Exploring online repurchase behavioural intention of university students in Malaysia. *Journal for Global Business Advancement*, *6*(2), 92–119. doi:10.1504/JGBA.2013.053561

Saad, A. P., & James, T. J. (2003). Consumers attitude towards online shopping', Factors influencing employees of crazy domains to shop online. *Journal of Management and Marketing Research*, *2*(3).

Segars, A.H. & Grover, V. (1997). Re-examining perceived ease of use and usefulness: A confirmatory factor analysis. *MIS Quarterly*, *14*(4), 517-525.

Shim, S., Eastlick, M. E., Lotz, S. L., & Warrington, P. (2001). An online prepurchase intentions model: The role of intention to search. *Journal of Retailing*, *77*(3), 397–216. doi:10.1016/S0022-4359(01)00051-3

Sorce, P., Perotti, V., & Widrick, S. (2005). Attitude and age differences in online buying. *International Journal of Retail & Distribution Management*, *33*(2/3), 122–133. doi:10.1108/09590550510581458

Srinivasan, S. S., Anderson, R., & Ponnavolu, K. (2002). Customer loyalty in e-commerce: An exploration of its antecedents and consequences. *Journal of Retailing*, *78*(1), 41–50. doi:10.1016/S0022-4359(01)00065-3

Stell, R., & Paden, N. (1999). Vicarious exploration and catalog shopping: A preliminary investigation. *Journal of Consumer Marketing*, *16*(4), 332–346. doi:10.1108/07363769910277120

Stephen, D. L., Hill, R. P., & Bergman, K. (1996). Enhancing the consumer-product relationship: Lessons from the QVC home shopping channel. *Journal of Business Research*, *37*(3), 193–201. doi:10.1016/S0148-2963(96)00069-0

Taylor, S. L., & Cosenza, R. M. (1999). A conceptual choice model for hospital services. *Journal of Marketing Theory and Practice*, *7*(4), 20–33. doi:10.1080/10696679.1999.11501848

Teo, T. S., & Liu, J. (2007). Consumer trust in e-commerce in the United States, Singapore and China. *Omega*, *35*(1), 22–38.

Then, N & De, Long, M. (1999). Apparel shopping on the Web. *Journal of Family and Consumer Sciences*, *91*(3), 65–68.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Udo, G. (2001). Privacy and Security Concerns as major barriers for E- Commerce: A survey study. *Information Management & Computer Security*, *9*(4), 165–174. doi:10.1108/EUM0000000005808

Whysall, P. (2000). Retailing and the internet: A review of ethical issues. *International Journal of Retail & Distribution Management*, *28*(11), 481–489. doi:10.1108/09590550010356840

Woodside, A. G., & Waddle, G. L. (1975). Sales effects of in-store advertising and price specials. *Journal of Advertising Research*, *15*, 29–34.

Yi, M. Y., & Hwang, Y. (2003). Predicting the use of Web-based information systems: Self-efficacy, enjoyment, learning goal orientation, and the technology acceptance model. *International Journal of Human-Computer Studies*, *59*(4), 431–449. doi:10.1016/S1071-5819(03)00114-9

Yoo, K. S., & Marjorie, N. (2007). Attitude toward internet web sites, online information search, and channel choices for purchasing. *Journal of Fashion Marketing and Management: An International Journal*, *11*(4), 571–586.

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Chapter 79
Study of Emotional Factors Influencing Professionals' Adoption to E-Payment in Sri Lanka

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ABSTRACT

Electronic payment is widely regarded as a fund transfer between parties electronically for commercial purposes, and it is increasingly being recognized as a key competitive tool in the present situation. While businesses are focusing more on rational factors behind consumer acceptance and adoption of e-payment, academic research is lagging in investigating the emotional factors. This chapter is providing a clear background about how businesses can emotionally influence and motivate consumers to utilize e-payment methods for their day to day transactions. A sample of 460 professionals in Sri Lanka was empirically investigated with the aim of identifying the emotional factors influencing professionals to adopt and use e-payment methods. A structured questionnaire was used to collect data and the exploratory factor analysis identified that the professionals' e-payment adoption was influenced by six different emotional factors. Based on the literature these factors are innovativeness, professional satisfaction, optimism, insecurity, skepticism, and discomfort.

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INTRODUCTION

The worldwide proliferation of the Internet has given birth of Electronic payment system which is "the use of credit and debit cards on the Internet or other electronic devices to perform day to day transactions which include paying for goods and services, bill payment and transfer of money at any time of the day", mentioned Gholami et al. (2010) with Andam (2003). Simply Electronic payment systems refer to various innovative applications and approaches, including the use of credit card, debit card, Automated Teller Machine(ATM), Electronic Fund Transfer(EFT), online payment that are used to facilitate the customer's decision to pay for a product or services (Vassilious, 2004).

E-commerce can be simply described as all electronically mediated information exchanges between an organization and its external stakeholders. (Chaffy, 2009) That means e-commerce includes other activities, "such as businesses trading with other businesses and internal processes that companies use to support their buying, selling, hiring, planning, and other activities" (Schneider, 2011; Zwass, 2003). Eastin (2002) in an article entitled "The popularity of e-commerce: analysis of acceptance four e-commerce activities," mention 4 activities reviewed include online sales, online banking, online investing and electronic payment. So e-payment can be identified as a most important sub element of E-commerce.

The growth of information and communication technology (ICT) has revolutionized traditional systems of payment. Individuals can now carry out many kinds of modern methods of payment for goods and services instead of traditional methods of cash and cheques. This phenomenon of cashless payment is known as e-Payment. Electronic payment is a financial exchange that takes place online between buyers and sellers, the content of this exchange is usually some form of digital financial instruments (such as encrypted credit card numbers, electronic checks or digital cash) that is backed by a bank or an intermediary. (Ingenico, 2012) The cashless society has been predicted for decades or else we can denote as barter system and then paper-based payment instruments such as cash and checks continue to remain a dominant form of payment in Sri Lanka. But present, innovations such as e-cash, micro-payments, and smart cards which have introduced potentially powerful new technology in the banking industry have gained significant commercial adoption.

In this study researcher attempts to identify the emotional factors which affect professionals' adoption of electronic payment methods in Sri Lanka, in order to validate and to test the reliability of instruments used, the researcher went through a pilot test by taking a sample of 50 undergraduates. According to the results of the pilot test the researcher was able to identify 7 factors which affect individuals' emotions to adopt e-payment methods. This result may differ from the actual result of the research because of some inherent limitations of a pilot test.

Problem Statement

According to the World Bank report of 2015, in South Asian region only 14% ($0.3 trillion) from total of person to business payments $2.2 trillion has been done electronically. It is the lowest percentage when compared with other regions in the world. The same situation can be seen in Sri Lanka also as a country. But Payment Bulletin report issued by the Central bank of Sri Lanka (2015) emphasizes that there is an increased trend in usage of electronic cards or payment methods. It shows there is a 16.3% of increased percentage change in total financial transactions done through the internet when compared with 2014. Many researchers have provided the factors that influence individuals' adoption to electronic payment methods. Xiao et el (2015) concludes that people are more likely to use cash and less likely to

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use card when the payment environment is unfamiliar to them and perceived as lack of trustworthiness. Hataisaree (2008) found that cash and cheques remain as popular payment modes because consumers are not convinced of the benefits of using e-payment.

According to Eastin (2002) factors influencing the adoption of e-payment were profit, previous experience, internet use, confidence and perceived convenience. Lee et al., (2003) did research, "the adoption of smart cards in the University of Singapore and Australia" and their acceptance factors based on the model of Rogers, Moore and Ben Basat and Davis, the factors were: compatibility, testability, and perceived usefulness, ease of use, relative advantage, visibility, and visible results. There it has emphasized that consumers believe that relative advantage and compatibility of the technology are two main factors of adoption of e-payment methods. However, none of the researchers have focused on factors affecting individuals' emotions towards the adoption of e-payment methods and Xiao et al., (2015) suggests future studies could further investigate this perspective by testing emotional dimensions that effect to technology readiness, the payment usage pattern/preference in specific contexts.

Positive emotions generated through system design and functionality has been shown to influence the acceptance and use of technology (Karahanna and Agarwal, 2000). As well negative emotions generated through system design adversely influences ease-of-use and thereby intentions to use a system (Davis and Venkatesh, 2000), disclosure of information (Anderson and Agarwal, 2011), technology use (Beaudry and Pinsonneault 2010, customer loyalty (Lin and Wang, 2006) and online purchasing decisions (Huang, 2003). For example, online shoppers who experience negative emotion are more likely to leave (Tax and Brown, 1998) and not return (Mulpuru et al., 2010) to e-commerce websites. With these findings the researcher concluded that individuals' emotions are playing a significant role in individuals' adoption or use of particular technology.

These witnesses guided the researcher to design the general research question as, "What are the emotional factors affecting professionals' adoption to e-payment methods in Sri Lanka?" and specific research questions as follows:

- What is the current emotional level of professionals regarding E-payment methods in Sri Lanka?
- What are the emotional factors that determine the professionals' e-payment adoption?

Research Objectives

General objective: To examine the emotional factors influencing professional's adoption to e-payment methods in Sri Lanka.

Specific research objectives

- To determine the current emotional level of professionals regarding E-payment methods in Sri Lanka.
- To identify the emotional factors that determines the professionals' e-payment adoption.
- To suggest how individuals can be emotionally influenced to adopt E-payment methods.

Significance of the Study

Safe and efficient payment systems are a major precondition for financial stability and economic prosperity in a country. A well-functioning payment system facilitates the exchange of goods, services and

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assets, and is the foundation of today's real economy. The average bank cost of an electronic payment is one-third to one-half that of its paper-based equivalent or cash. (Humphrey, 2006) A merchant's average cost of accepting a bill payment electronically over an electronic network or at the point of sale is also lower (credit cards excepted). As well the source cost of a country's payment system may account for 1-2 percent of its Gross domestic product, it is clear that shifting from paper to electronic payments can confer social benefits. (Bolt, 2008)

Both scientific and market research shows that electronic payment methods are becoming increasingly adopted, mainly due to their advantageous characteristics such as convenience and cost saving. (Cotteleer et al.,2007; Kousaridas et al.,2008). So identification of emotional factors influencing individuals' adoption of e-payment methods is essential for business organizations in order to motivate their consumers to use e-payment methods and reduce their costs as well as to enhance their operational efficiency. Understanding those emotional factors and implementing appropriate strategies would help businesses to enhance consumer loyalty also. And the suggestions will beneficial for the government of Sri Lanka to motivate Sri Lankan citizens to adapt to e-payment system and it will help Central bank of Sri Lanka to reduce their cost of issuing cash and cheques.

LITRATURE SURVEY

Electronic Payment

Shon and Swatman (1998) define e-payment as any exchange of funds initiated via an electronic communication channel, while Gans and Scheelings (1999) define e payment as payments made through electronic signals linked directly to deposit or credit accounts. E-payment represents any kind of non-cash payment that does not involve a paper cheque (Hord, 2005). This study adopts these definitions and refers e-payment for the transfer of an electronic value of payment from a payer to the payee through an e-payment mechanism which allows customers to remotely access and manage their bank accounts and transactions, executed through an electronic network (Lim et al., 2006; Sumanjeet, 2009). E-payment requires an internet connection to work, similar to the use of other e-environments such as electronic banking (e-banking), electronic shopping (e-shopping), or electronic learning (e-learning). Since e-payment refers to financial exchange (Kalakota and Whinston, 1997; Zhang and Jasimuddin, 2012), it is one of the major functions of e-banking. It could also possibly serve as the main payment mechanism for e-shopping, but not necessarily for e-learning or some e-services where payment can also be made through other payment channels.

Adoption of E-Payment

Individual's adoption of electronic payment methods is determined by many factors. Different researchers have different characteristics to assess the e-payment systems. Schmidt and Muller (1999), discuss 3 dimensions, technical (security, reliability, scalability, and latency), economic (cost of the transaction, the exchange integral, customer base) and social (anonymity, the point-to-point). Parhonyi et al. (2005), discuss about 2 dimensions, technical (ease of use and convenience, anonymity, scalability, reliability, security, interoperability) non-technical dimension (privacy, and security coverage) and Kinberg (2002), discuss about ease of use, reliability, coverage network, transaction costs, speed up the evaluation process as a feature called micro-payment systems.

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Table 1. Literature review of factors

Researcher	Research Title	Factors
Eriksson Kerem Nilsson, 2004	Customer acceptance of electronic payment in Ukrain	I. Trust II. Perceived usefulness III. Ease of use IV. Use
Results: The findings suggest that e-payment usage increases as far as customers perceive it as useful. The perceived usefulness is crucial because it determines whether the perceived ease of electronic payment use will lead to increased use of the internet bank. In other hand, a well-designed and easy to use electronic payment may not be used if it is not perceived as useful. They further suggest that model of technology acceptance should be redesigned to focus more on the role of perceived usefulness of online payment embedded in the technology.		
Researcher	**Research title**	**Factors**
Shiha Fang, 2002	The use of decomposed theory to study electronic payment in Thailand	I. Attitude II. Compatibility III. Complexity IV. Facilitating V. Behavior intention VI. Self-efficacy VII. Subjective norms VIII. Perceived advantage
Results: In the decomposed theory of planned behavior model, only complexity and relative advantage are related to attitude, not related to compatibility. In order to subjective norm, it was failed to achieve significance in the model from the path of subjective norm. It says only self-efficacy was a significant determinant of PBC.		
Researcher	**Research title**	**Factors**
KarjoMatilaPanto, 2003	Factors based on attitude formation towards electronic payment in Malaysia.	I. Prior technological experience II. Reference group influences III. Prior computer experience
Results: Among prior computer experience, prior technology experience, reference group and computer attitude the researcher says the relationship between prior technology experience and attitude were most critical.		
Researcher	**Research title**	**Factors**
Black locket WinklohoferEnnew, 2001	The adoption of internet financial service: a qualitative study	I. Relative advantage II. Compatibility III. Trainability IV. Observability V. Complexity
Results: This paper was about the innovation of delivering financial services through the Internet and evaluated the Rogers' (1983) model. Based on the usage of the Internet, the focus group members used for data gathering were selected. The strongest influencing factors which emerged for adoption of the Internet to conduct financial transactions werecompatible with a person'svalue and previous experience with the product category. As well trialability was also identified as important for future adoption.		
Researcher	**Research title**	**Factors**
Tan teo, 2000	Factors influencing the adoption of electronic payment	I. Self-efficacy II. Risk III. Complexity IV. Compatibility with values V. Relative advantages VI. Government support VII. Social norms
Results: According to the results it emphasized that perceived behavioral control and attitudinal factors play a significant role rather than social influence in influencing the adoption to electronic payment methods. Perceptions of relative advantage, trialability, risk toward using Internet and compatibility were identified to influence intention to adopt electronic payment services. Perception of government support for electronic commerce and confidence in using such services was also found to influence adoption.		

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Table 1. Continued

Researcher	Research title	Factors
WungwanithChakorn, 2002	Adoption intention of consumers in electronic payment methods	I. Cost II. Social value III. Income IV. Age V. Option leader VI. Product category usage VII. Perceived risk VIII. Compatibility
Results: This research also yielded a useful conclusion related to adoption of electronic payment while specially identifying age, cost saving, income and product category as significant factors.		
Researcher	**Research title**	**Factors**
Shah Hans, 2005	Effect of trust on customer acceptance of online payment	I. Trust II. Perceived usefulness III. Ease of use IV. Attitude V. Intention to use
Results: This study, the researcher found that trust is the most significant factor in explaining a customer's attitude towards using electronic methods for payment. Customer perception of the usefulness as well as ease of use also affect attitude as suggested by the technology acceptance model. At the same time, behavioral intention toward e-payment is highly related to attitude, trust and perceived usefulness. These results highlight that consumers rely on trust in the online environment which produce sensitive information.		
Researcher	**Research title**	**Factors**
NdudisiZinti, 2007	Consumer attitudes, system's characteristics an electronic payment usage in Singapore	I. Importance to e-commerce needs II. Compatibility III. Risk IV. Utilitarian orientation V. Hedonic orientation VI. Trainability
Results: From the results of this study, they emphasize that the attitudinal factors play a significant role in electronic payment adoption. As well utilitarian orientation of website has significant influence on adoption rather than hedonic orientation.		
Researcher	**Research title**	**Factors**
PikkarainenKarjaluotoPahnila, 2004	Consumer acceptance of online payment: an extension of technology acceptance model	I. Perceived usefulness II. Perceived ease of use III. Perceived enjoyment IV. Information available V. Security and privacy VI. Quality of internet connection
According to this research finding, it highlights perceived usefulness and information on online payment on the Web site was the main factors influencing electronic payment acceptance.		
Researcher	**Research title**	**Factors**
Frank, 2004	Electronic payment adoption strategies for a developing country: The case of Thailand	I. Risk and privacy II. Personal preferences III. External environment IV. Culture V. Features of the web VI. Perceived usefulness
Results: The most significant attitudinal factors that appear to encourage the adoption of electronic payment in Thailand are "Features of the website" and "Perceived usefulness", while the most significant barrier to adoption is a perceived behavioral control, namely "External environment". Other significant moderating factors are gender, educational level, income, internet experience and electronic payment experience.		

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Individuals' Emotions on Technology Usage

Emotion is a complex, subjective experience accompanied by biological and behavioral changes. Emotion involves feeling, thinking, and activation of the nervous system, physiological changes, and behavioral changes such as facial expressions. (Wikipedia) There are main two dimensions of emotions. As explained by "Better health channel", negative emotions can be described as any feeling which causes someone to be miserable and sad. These emotions make individuals dislike themselves and others, and take away their confidence. Emotions which can become negative are hate, anger, jealousy and sadness. As well positive emotion may be considered as any feeling where there is a lack of negativity, such that no pain or discomfort is felt. Frederickson (2009) identifies the ten most common positive emotions as joy, gratitude, serenity, interest, hope, pride, amusement, inspiration, awe and love.

Positive emotion induced through system design has been shown to influence the acceptance and use of technology (e.g., Agarwal and Karahanna 2000). In contrast, negative emotion induced through system design adversely influences ease-of-use and thereby intentions to use a system (Venkateshand Davis 2000), technology use (Beaudry and Pinsonneault2010), disclosure of information (Anderson and Agarwal, 2011), online purchasing decisions (Huang 2003), and customer loyalty (Lin and Wang 2006). For example, online shoppers who experience negative emotion are more likely to leave (Tax and Brown 1998) and not return (Mulpuru et al. 2010) to e-commerce websites.

Technology Readiness

Technology readiness(TR) construct can be viewed as an overall state of mind resulting from a gestalt of mental enablers and inhibitors that collectively determine a person's predisposition toward using new technologies (Lin, Shih, Sher, 2007). Parasuraman in 2000 found there are some characteristics that comply with the acceptance of new technologies or services resulting in interaction through technology. The term technology-readiness refers to people's propensity to embrace and use new technologies for accomplishing goals in home life and at work (Parasuraman, 2000).

Khatri, and Montoya-Weiss (2007) stress that TR encompasses more than the degree to which an individual is relatively earlier in adopting an innovation. Parasuraman (2000) further explains it is possible for the customer to have both positive and negative feelings about technology, especially high technology products and services. The traits differ among people and therefore their beliefs about various aspects of technology differ. The relative strength of each trait indicates a person's openness to technology. TR thus reflects a set of beliefs about technology, but is not an indicator of a person's competence in using it.

Concept Indicator Model

This study thus will concentrate on establishing the factors which are affecting emotions that drive emergence and adoption of electronic payment system. These drivers are captured in the conceptual framework indicated in the diagram below.

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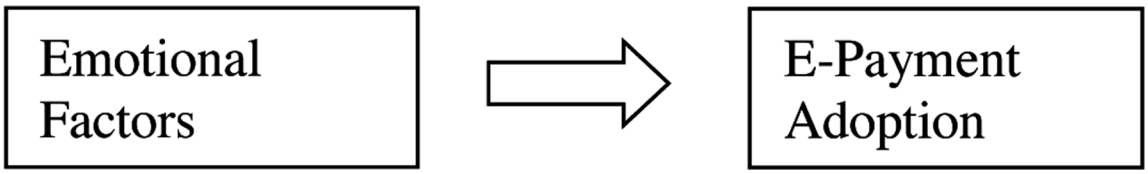
Figure 1.



MAIN FOCUS OF THE CHAPTER

Issues, Controversies, Problems

Sample

This study mainly focuses on professionals' adoption of e-payment. Professionals can be mainly divided into 7 categories. Those are academics, cultural, medical, industry, transport, public services and science. Data will be collected from 300professionals, including all those categories by convenience sampling.

Sample Size

Gorsuch (1983) recommended that sample size should be at least 100 for a factor analysis, and Kline (1979) supported this recommendation. Guilford (1954) argued that sample size should be at least 200, and Cattell (1978) claimed the minimum desirable sample size to be 250. Comrey and Lee (1992) offered a rough rating scale for adequate sample sizes in factor analysis: 100=poor, 200=fair, 300=good, 500=very good, 1000 or more=excellent. Considering all those recommendations and study limitations, the sample size is limited to 460 professionals representing all the categories.

Sampling Method

Convenience sampling technique was used for sample selection. Convenience sampling is a non-probability sampling technique where subjects are selected because of their convenient accessibility and proximity to the researcher. Since professionals are kind of a busy people it's impossible to reach them and reserve time for them to obtain data. And it is the least expensive, least time to consume of all sampling techniques. Data will be collected by using questionnaires and there is a limitation to define the study population. Considering all conditions the researcher selected convenience sampling method for this study.

Method of Data Collection

Past research papers, literature, reports, magazines and internet are used for the study purpose as well this research heavily depends on primary data for the empirical investigation. Both primary and secondary data are considered for the study. Primary data are collected through a closed structured questionnaire.

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Development of Measurements

In order to study the factors influencing professionals' adoption of electronic payment methods, researcher developed the measurement scale which consists of 50 research questions.

VALIDITY AND RELIABILITY OF INSTRUMENTS

Face Validity

To access face validity researcher developed 70 questions and the questionnaire was distributed among one academic and three undergraduates in Uva Wellassa University. According to their feedback the researcher eliminated some questions and re-modified the questionnaire to 50 questions assessed from face validity.

Pilot Survey

The pilot survey was carried out among 50 respondents in Uva WellassaUniversity who currently use electronic payment methods and those respondents are selected by convenience sampling. The unit of analysis was at the individual level. To gather primary data for pilot study, total numbers of 50 questionnaires were distributed by hand and email.

Content Validity

The questionnaire developed with an adequate coverage by comprising an adequate number of items or questions that represent the variables of interest ensuring the content validity of the instrument. Pilot survey was carried out in order to measure the content validity.

Factor Analysis

At the end of the explanatory factor analysis the researcher was able to identify 17 factors from 50 responses to the questionnaire. Out of those 17 factors only 7 factors loaded more than 0.5 of factor loading.

Convergent Validity

Convergent validity is shown when each measurement item correlates strongly with its assumed theoretical construct. In order to measure the convergent validity researcher used AVE analysis.

$$\text{AVE}= \frac{\sum\left[\lambda i \hat{} 2\right]}{\sum\left[\lambda i \hat{} 2\right]+\sum\left[Var\left(\varepsilon i\right)\right]}$$ (Fornell and Larcker, 1981)

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λi is the loading of each measurement item on its corresponding construct and εi is the error measurement. The value of AVE for each construct should be at least 0.50 (Fornell and Larcker, 1981). Through AVE analysis researcher found 6 out of the 7 factors have AVE values less than 0.5 therefore researcher re-modified questions in order to establish convergent validity.

Discriminant Validity

Fornell and Larcker (1981) present a method for assessing the discriminant validity of two or more factors. Here, a researcher compares the AVE of each construct with the shared variance between constructs. If the AVE for each construct is greater than its shared variance with any other construct, discriminant validity is supported. Based on the inter correlation matrix it shows questionnaire consist with the discriminant validity.

Table 2. Inter correlation matrix

Column1	Column2	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7
Factor1	Pearson Correlation	0.46770	-.254	.268	-.119	0.73	-.083	.413
Factor2	Pearson Correlation	-.127	0.52179	.199	.198	-.460	.193	.315
Factor3	Pearson Correlation	.134	.099	0.4332	0.588	.256	.194	.440
Factor4	Pearson Correlation	-.059	.099	.294*	0.44772	.292	.167	0.594
Factor5	Pearson Correlation	.365**	-.230	.256	.146	0.45454	.084	.137
Factor6	Pearson	-.041	.096	.097	.083	.042	0.39480	-.115
Factor7	Pearson Correlation	.206	.158	.220	.297*	.069	-.057	0.39356

Source: SPSS output from field information

Reliability

Cronbach's Alpha was used to measure the reliability and the questionnaires' validity. The test will be significant when the alpha value results more than 0.7. It assures the reliability of questions. The formula for the standardized Cronbach's alpha:

$$\alpha = \frac{N.\overline{c}}{\overline{v} + \left(N-1\right).\overline{c}}$$ (Fornell and Larcker, 1981)

According to the below table of Cronbach's Alpha Reliability Analysis, has been proven the reliability as the alpha values are greater than the acceptable level of 0.7 alpha value.

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Table 3. Reliability Statistics

Case Processing Summary			
		N	%
Cases	Valid	50	100.0
	Excluded[a]	0	0.0
	Total	50	100.0
a. Listwise deletion based on all variables in the procedure.			

Table 4.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.785	.792	50

Source: SPSS output from field information

Composite Reliability

Composite reliability also used to measure the reliability of instruments. The test will be significant when composite reliability value results more than 0.7. It assures the reliability of questions.

Table 5. Composite reliability

Factor	1	2	3	4	5	6	7
Composite Reliability	0.7745	0.7592	0.7508	0.7054	0.7129	0.6606	0.6536

The above table shows the calculated composite reliability values for each factor. 5 out of the 7 factors are having greater than 0.7 of composite reliability value. This ensures the reliability of the questionnaire.

SOLUTIONS AND RECOMMENDATIONS

Introduction

Personal information was analyzed and presented with frequency distribution. In order to find out the underlying pattern of professionals' characteristics, cross tabulation analysis was conducted for the personal information. Then the next part is research information, which was analyzed through the exploratory factor analysis and the researcher received 300 responses from 460 questionnaires distributed. The response rate was 65.2% of the sample.

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Data Analysis

There are some measures which exist in order to study on factors influence on professionals' adoption to electronic payment, but they are not well established. Therefore, in order to identify factors influencing on professionals' adoption of e-payment in Sri Lankan, Exploratory Factor analysis (EFA) method was used in the data analysis. It allows the researcher to explore the main dimensions to generate a theory.

Exploratory factor analysis (EFA) is generally used to discover the factor structure of a measure and to examine its internal reliability. EFA allows all items to load on all factors. EFA is often recommended when researchers have no hypotheses about the nature of the underlying factor structure of their measure. (Preacher &MacCallum, 2003).

Orthogonal type was used to rotation in this research study. Orthogonal means the factors are assumed to be uncorrelated with one another. This is the default setting in all statistical packages, but is rarely a logical assumption about factors in the social sciences. (Preacher &MacCallum, 2003). Under the orthogonal type this research was used Varimax rotation type.

Data Presentation

The data collected from the respondents in the sample can be presented in tables, in this connection with objectives of this study. Univariate analysis (descriptive Statistics) has been adopted by using the SPSS 21 package and Microsoft Excel 2013 software versions were used to generate the analyzed outcome.

Analysis of Reliability

The reliability of the instrument was measured using alpha analysis. It measures the internal consistency of the instrument, based on the average inter-item correlation. Cronbach's Alpha coefficient varies between 0 and 1 and the cutoff point is 0.6 (Ehlinger&Grenier, 2001). Acceptable alpha value ranges as follows,

- $\alpha \geq 0.9$ –Excellent
- $0.7 \leq \alpha \leq 0.9$ –Good
- $0.6 \leq \alpha \leq 0.7$ –Acceptable
- $0.5 \leq \alpha \leq 0.6$ –Poor
- $\alpha < 0.5$ -Unacceptable

Cronbach's alpha can be written as a function of the number of tested items and the average inter correlation among the items. Below formula shows the standardized Cronbach's alpha:

$$\alpha = \frac{N.\overline{c}}{\overline{v} + \left(N-1\right).\overline{c}}$$ (Ehlinger&Grenier, 2001)

The above table shows that the cronbach's alpha is 0.798 with respect to 50 statements, since it is greater than 0.6. Therefore, all items considered in this study are to be reliable.

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Table 6. Cronbach's Alpha test

Reliability Statistics	
Cronbach's Alpha	N of Items
.798	50

Source: SPSS output from field information

Personal Information

In this section, the analysis of personal information, conducts on the information collected from 300 respondents. Data on personal profiles of each respondent were recorded during the survey. The personal profiles of the key respondents were summarized as their gender, age, occupation, bank account usage and card usage in table 7 and figures 2-4.

Table 7. Personal profile

Personal Factor	Classification	No. of Respondents	Percentage %	Total%
Gender	Male	136	45.33	100
	Female	164	54.67	
Age	18-24	116	38.67	100
	25-34	125	41.67	
	35-50	53	17.67	
	>50	6	2.00	
Occupation	Teacher	29	9.67	100
	Nurse	26	8.67	
	Doctor	22	7.33	
	Engineer	21	7.00	
	Accountant	21	7.00	
	Police officer	19	6.33	
	Lawyer	18	6.00	
	Pharmacist	15	5.00	
	Auditor	13	4.33	
	Dentist	10	3.33	
	Customs officer	10	3.33	
	Architect	8	2.67	
	Other	88	29.33	
Bank Account	Yes	300	100.00	100
	No	0	0.00	
Electronic card	Yes	300	100.00	100
	No	0	0.00	

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As this research is based on electronic payment adoption, the researcher selected the respondents only those who use electronic payment in their day to day life to participate in the research. With this requirement the summarized data emphasize that 100% of the sample respondents are having bank account as well as electronic cards.

Figure 2.

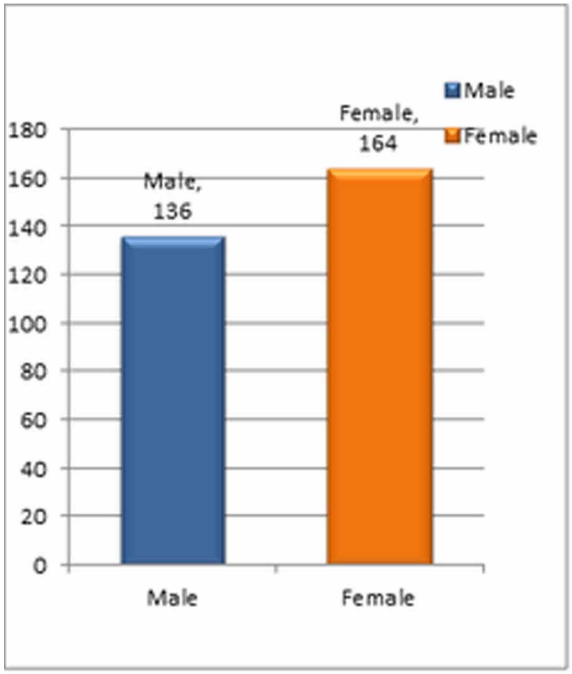


Figure 3.

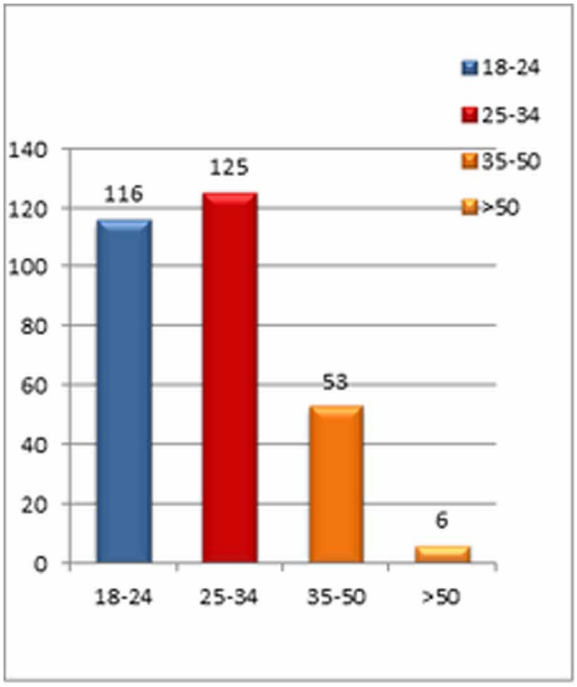
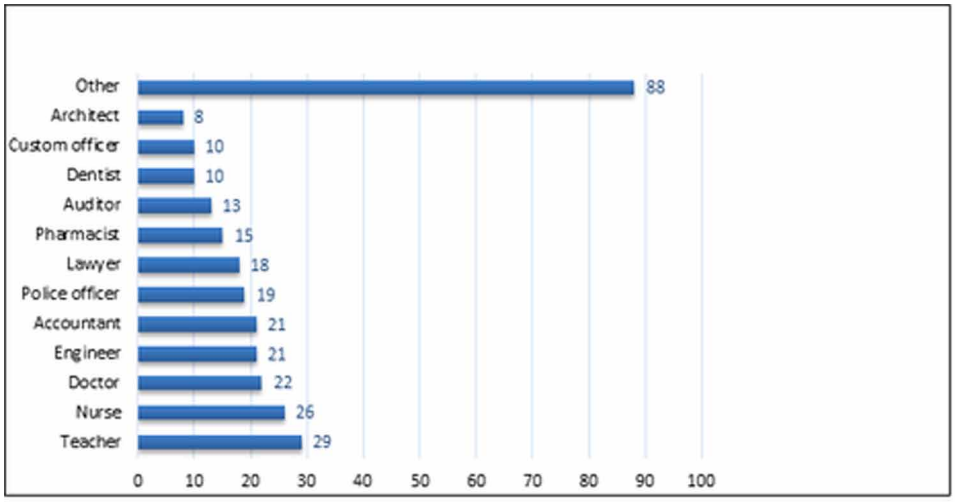


Figure 4.



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Factor Analysis

An initial factor analysis was done for all 50 items and 16 factors emerged. From the 50 items tested, the items with factor loadings below 0.5 were removed, since their contributions to the overall variable were low. The factor analysis was done by the Principal component methods (PCA). The rotation method was Varimax rotation type.

KMO and Bartlett's Test

Table 8 gives the results of KMO and Bartlett's test on 50 items. The high correlation value (0.720), which is higher than 0.60, shows that the results of factor analysis are reliable (Ehlinger&Grenier, 2001). And it indicates that the data are appropriate for factor analysis. In the analysis only the factors having latent roots or eigenvalue greater than 1 were considered significant.

Table 8. KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.720
Bartlett's Test of Sphericity	Approx. Chi-Square	3306.689
	df	1225
	Sig.	.000

Source: SPSS output from field information

Through Exploratory factor analysis researcher found out 16 factors from 300 responses to questionnaires.

Principal Component Analysis of Emotional Factors

The below table presents the results of exploratory component factor analysis is taken into consideration for grouping of variables. The first factor comprises of four items i.e. "I enjoy having control over others", "Others always expect me to be successful regarding online activities", "I expect to control others rather than permit them to control me when using E-payment", "My unique knowledge and abilities regarding e-payment activities are recognized by others", with factor loading values of .677, .692, .750, .560. This factor can be named as innovativeness.

Second factor shows the highest loading of three items i.e. "I feel I can do something special that makes use of my abilities regarding online shopping and e payment", "This helps me to spend my leisure time happier", "24*7 day shopping experience and payment facility makes me more satisfied", with factor loadings of .703, .697, .629. And this factor can be named as professional satisfaction.

Third factor shows the highest loading of three items i.e. "I like the idea of online shopping and e payment via computers because I'm not limited to regular business hours", "I prefer to use modern e payment methods available", "I like online shopping and e payment that allow me to tailor things to fit my own needs" with factor loadings of .658, .702, .535. This factor can be named as optimism.

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Table 9. Factor groups

Question	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Factor 1						
I enjoy having control over others	0.677					
Others always expect me to be successful regarding online activities	0.692					
I expect to control others rather than permit them to control me when using E-payment	0.750					
My unique knowledge and abilities regarding e-payment activities are recognized by others	0.560					
Factor 2						
I feel I can do something special that makes use of my abilities regarding online shopping and e payment		0.703				
This helps me to spend my leisure time happier		0.697				
24*7 day shopping experience and payment facility makes me more satisfied		0.629				
Factor 3						
I like the idea of online shopping and e payment via computers because I'm not limited to regular business hours			0.658			
I prefer to use modern e payment methods available			0.702			
I like online shopping and e payment that allow me to tailor things to fit my own needs			0.535			
Factor 4						
It is embarrassing when I have trouble with online transaction while people are watching				0.690		
If I provide information to a machine or over the Internet, I can never be sure it really gets to right place				0.589		
It seems my friends are learning more about online activities than me				0.566		
Factor 5						
I worry that information I send over the Internet will be seen by other people					0.555	
I do not feel confident doing business transactions with a place that can only be reached online					0.651	
When I call a business, I prefer to talk to a person rather than a machine					0.672	
Factor 6						
Descriptions about use of e payment are not helpful because they do not explain things in terms I can understand						0.511
Sometimes, I think that e payment systems are not designed for use by ordinary people						0.566
There is no such thing as a manual, guidelines about how to use modern e payment methods that is written in plain language						0.711

Source: SPSS output from field information

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Fourth factor shows the highest loading of three items i.e. "It is embarrassing when I have trouble with online transaction while people are watching", "If I provide information to a machine or over the Internet, I can never be sure it really gets to right place", "It seems my friends are learning more about online activities than me", with factor loadings of .690, .589, .566 and this factor can be named as skepticism.

Fifth factor shows the highest loading of three items i.e. "I worry that information I send over the Internet will be seen by other people", "I do not feel confident doing business transactions with a place that can only be reached online", "When I call a business, I prefer to talk to a person rather than a machine", with factor loadings of .555, .651, .672. This factor can be named as insecurity.

Sixth factor also shows the highest loadings of three items i.e. "Descriptions about use of e payment are not helpful because they do not explain things in terms I can understand", "Sometimes, I think that e payment systems are not designed for use by ordinary people", "There is no such thing as a manual, guidelines about how to use modern e payment methods that is written in plain language", with the factor loadings of .511, .566, .711. Accordingly, this factor can be named as discomfort.

From all other factors, seventh, ninth, eleventh and twelfth factors are having only two highest loadings which are greater than 0.5, so that those factors are not considered.

Rest of eighth, tenth, thirteenth, fourteenth, fifteenth and sixteenth factors are having only one highest factor loading which is greater than 0.5. With that, those factors also are not considered.

The results of principle component place 50 variables into 7 factors. Loading of meaningful grouping are given in the table 9.

Further to find out the emotional factors influencing professionals' adoption electronic payment in Sri Lanka respondents were asked to rate the questions based on five point Likert scale. Mean value of factor 1 is (M- 2.8892). In this factor 25.7 percent of respondents agreed that "I enjoy having control over others" (M-2.56)., 30.3 percent of respondents agreed that "Others always expect me to be successful regarding online activities" (M-2.77)., 38.6 percent of respondents agreed that "I expect to control others rather than permit them to control me when using E-payment" (M-3.08) and finally 41 percent of respondents agreed that "My unique knowledge and abilities regarding e-payment activities are recognized by others" (M-3.14). With that this factor was named as innovativeness.

Mean value of factor 2 is (M-3.88) Here 67 percent of respondents agreed that "I feel I can do something special that makes use of my abilities regarding online shopping and e payment" (M-3.78)., 71.3 percent of respondents agreed that "This helps me to spend my leisure time happier" (M-3.84) and 78 percent of respondents agreed that "24*7 day shopping experience and payment facility makes me more satisfied" (M-4.04). Accordingly this factor was named as professional satisfaction.

For third factor mean value is (M-3.945). In this factor 73.7 percent of respondents agreed that "I like the idea of online shopping and e payment via computers because I'm not limited to regular business hours" (M-3.91), 78 percent of respondents agreed that "I prefer to use modern e payment methods available" (M-4.00) and 75 percent of respondents agreed that "I like online shopping and e payment that allow me to tailor things to fit my own needs" (M-3.93). It emphasize that all three variables related to factor 3 have scored more than average. And this factor was named as optimism.

Fourth factor also shows the highest loadings of three items and mean value of this factor is (M-2.992). All these three factors score lower than average i.e. 42.6 percent of respondents agreed that "It is embarrassing when I have trouble with online transaction while people are watching" (M-3.08), 31.4 percent of respondents agreed that "If I provide information to a machine or over the Internet, I can never be sure it really gets to right place" (M-2.85), and 37.7 percent of respondents agreed that "It seems my friends are learning more about online activities than me" (M-3.04). This factor was named as skepticism.

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Fifth factor is having a mean value of (M-3.241) and all three variables in this factor also score lower than average i.e. 49 percent of respondents agreed that "I worry that information I send over the Internet will be seen by other people" (M-3.25), 48.7 percent of respondents agreed that "I do not feel confident doing business transactions with a place that can only be reached online" (M-3.26) and 45.7 percent of respondents agreed that "When I call a business, I prefer to talk to a person rather than a machine" (M-3.21). This factor was named as insecurity.

Sixth factor also shows the highest loadings of three items. Mean value of this factor is (M-3.467) Here 2 out of 3 variables score more than average i.e. 55 percent of respondents agreed that "Descriptions about use of e payment are not helpful because they do not explain things in terms I can understand" (M-3.50), 44.4 percent of respondents agreed that "Sometimes, I think that e payment systems are not designed for use by ordinary people" (M-3.14) and 68.3 percent of respondents agreed that "There is no such thing as a manual, guidelines about how to use modern e payment methods that is written in plain language" (M-3.77). With that this factor was named as discomfort.

Hence results of this study indicate that emotional factors influencing professionals' adoption to electronic payment in Sri Lanka.

DISCUSSION

Discussion is presented in accordance to comply the objectives of the research. There were three objectives of the study and the researcher has conducted the research according to achieve those objectives.

- To determine the current emotional level of professionals regarding E-payment methods in Sri Lanka.
- To identify the emotional factors that determines the professionals' e-payment adoption.
- To suggest how individuals can be emotionally influenced to adopt E-payment methods.

Nature of the Current Emotional Level of Professionals E-Payment Adoption in Sri Lanka

One of the primary objectives of this study was to determine the current level of emotional influence on professionals' electronic payment adoption in Sri Lanka. According to Robyn Lawson (2008), male professionals as a percentage used to utilize electronic payment methods for their day to day activities rather than female professionals in the Asian region. For the present study, the researcher chose the sample respondents who currently use electronic payment since the main objective was to identify emotional factors. According to selected sample, 45% of respondents are male, while the rest of the sample is females out of 300. It emphasizes that female professionals are highly influenced to use electronic payment because of emotional factors rather than male professionals. As to the findings of Elija Sokobe (2015), electronic payment methods are highly famous among young and middle-aged people between 20 to 40 years of age. Analysis of present study emphasized that 39% of respondents were aged between 18-24 and 42% of respondents consists of age between 25-34. Since the researcher used online method for data collection that also can be a reason for this variance.

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Table 10. Mean and standard deviations

Question	Mean	SD	Factor Mean
Innovativeness			2.889
I enjoy having control over others	2.56	1.162	
Others always expect me to be successful regarding online activities	2.77	1.09	
I expect to control others rather than permit them to control me when using E-payment	3.08	1.048	
My unique knowledge and abilities regarding e-payment activities are recognized by others	3.14	1.074	
Professional satisfaction			3.88
I feel I can do something special that makes use of my abilities regarding online shopping and e payment	3.78	0.898	
This helps me to spend my leisure time happier	3.84	1.009	
24*7 day shopping experience and payment facility makes me more satisfied	4.04	0.897	
Optimism			3.945
I like the idea of online shopping and e payment via computers because I'm not limited to regular business hours	3.91	0.821	
I prefer to use modern e payment methods available	4	0.854	
I like online shopping and e payment that allow me to tailor things to fit my own needs	3.93	0.857	
Skepticism			2.992
It is embarrassing when I have trouble with online transaction while people are watching	3.08	1.082	
If I provide information to a machine or over the Internet, I can never be sure it really gets to right place	2.85	1.103	
It seems my friends are learning more about online activities than me	3.04	0.996	
Insecurity			3.241
I worry that information I send over the Internet will be seen by other people	3.25	1.272	
I do not feel confident doing business transactions with a place that can only be reached online	3.26	1.082	
When I call a business, I prefer to talk to a person rather than a machine	3.21	1.073	
Discomfort			3.467
Descriptions about use of e payment are not helpful because they do not explain things in terms I can understand	3.5	1.062	
Sometimes, I think that e payment systems are not designed for use by ordinary people	3.14	1.113	
There is no such thing as a manual, guidelines about how to use modern e payment methods that is written in plain language	3.77	0.993	

The nature of the current emotional level of professionals can be identified from descriptive statistics of emotional factors. According to the table 10, it includes the meaning value of six factors which were identified as emotional factors. Innovativeness and skepticism which are having 2.889 and 2.992 of mean values dictate that there is a moderate level of emotional influence on professionals' electronic payment adoption. Meanwhile, other emotional factors identified by the researcher consist mean values of 3.88,

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3.945, 3.241 and 3.467. With those finding the researcher can conclude that there is a higher level of emotional influence of electronic payment adoption of professional satisfaction, optimism, insecurity, and discomfort. Some of these factors cause positive emotions regarding electronic payments while some of them affect to generate negative emotions.

Emotional Factor Influencing Professionals' Adoption to Electronic Payment

Another objective of this study was to identify the emotional factors influencing professionals' adoption to electronic payment in Sri Lanka. The findings from this study suggested that six emotional factors for e-payment adoption as innovativeness, professional satisfaction, optimism, skepticism, insecurity, and discomfort. These factors were named as above mainly based on the literature. As discussed in problem statement technology readiness (TR) of an individual is an essential element is an acceptance and adoption of a new technology such as e-payment. This TR can be viewed as an overall mental state resulting from a gestalt of mental enablers and inhibitors that together determine a person's tendency to use new technologies and services. According to Parasuraman (2000), TR constructs consists of four emotional factors or sub-dimensions such as optimism, innovativeness, discomfort, and insecurity. Meanwhile, he has identified that optimism and innovativeness are drivers of TR and discomfort and insecurity are inhibitors. Optimism is related to the positive view of technology. And it refers to "a belief that technology offers people increased control, flexibility and efficiency in their lives". As it says optimists are more willing to use to use new technologies such as e-payment because they tend to accept their situation and are less likely to be escapist.

Innovativeness means the extent to which an individual believes he or she is at the leading edge of new technology or to be the pioneer of using new technologies or technology-based services like e-payment. Innovative consumers tend to learn about new modern technology on their own and may need less support. Meanwhile, consumers who are low on innovativeness, they beliefs may want and need more guidance, advice, and support. This factor is closely related to ease of use, but might be less concerned with ease of use, because users quite prefer and willing to figure it out themselves. The next factor, discomfort is a perception of lack of control over technology and a feeling of being overwhelmed by new technology. It consists the extent to which people have a general anxiety about technology-based service or products such as electronic payments. The previous literature has concluded that discomfort is one of two inhibitors of technology use, or simply making users reluctant to use technology. This factor can be used to measure the degree to which people have a general prejudice against technology-based services or products emotionally such as e-payment. Insecurity is another emotional factor, according to technology readiness model. The user of a new technology like e-payment needs to feel like they are in control while still having their privacy protected. This will be another inhibitor of technology use. The findings of this research or these four factors (Innovativeness, Optimism, Discomfort and Insecurity) were similar to the Nadine Guhr, Tai Loi's (2013) findings regarding mobile payment adoption in Finland, USA and Germany as well as the findings of Pinar Basgoze's (2015) study regarding integration of technology readiness for mobile shopping.

Professional satisfaction and skepticism are other two emotional factors identified by the researcher. Professional satisfaction denotes how a particular product or service meet or surpass a professional's expectations. Professional's satisfaction as a consumer is a significant drive to adopt new technology related to banking technology services. (Karthikeyan P., 2014) A higher level of consumer satisfaction leads to use a new technology again and again through creating positive emotions in consumer's mind as to

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the conclusion of Karthik (2008), the study of the relationship between customer satisfaction and mobile banking. Alfred E. Newman (2010) has mentioned, "to gain benefits from adoption of new technology, the innovator must realize and understand the nature of skepticism that will likely to occur". When it considers the culture and perception of Asian and South Asian people, they more concern about trust and safety and seething in a skeptical attitude. (Aravind, 2001) With the research findings, the researcher can conclude skepticism regarding electronic payment and e-payment process is a significant emotional factor in professionals' e-payment adoption.

Suggestions for How Individuals Can Be Emotionally Influenced to Adopt E-Payment Methods

As to the emotional factors identified through the analysis, those six factors can be mainly divided into two parts. Innovativeness, Optimism and Professional satisfaction can be identified as motives and other factors such as Insecurity, Skepticism, and discomfort can be categorized as emotional inhibitors. As general, it can conclude that innovativeness, optimism and professional satisfaction affect to cause positive emotions regarding e-payment and other three factors affect to create negative emotions.

E-commerce businessmen and banks need to consider these factors to motivate their customers to use and adopt electronic payment methods rather than using physical cash. Through many strategies, they can improve their customer's optimism and satisfaction while reducing the level of skepticism, discomfort, and insecurity. As businessmen, they have to ensure the safety of the payments and need to build trust and belief of their customers. Simply through banks and their brand loyalty and reputation can be utilized effectively for this purpose. And they need to identify innovative consumers who adapt to their new payment systems because according to their opinions and recommendations the early and late majority consumers will gain decisions whether to adopt or not to adopt new payment methods. Simply E-businesses have to provide flexible and reliable service, enhanced control on consumers' payment, efficiency in the system functions while minimizing errors, assuring safety and guarantee in order to maximize the consumer's satisfaction. Promotional strategies can be utilized effectively to emotionally stimulate consumers and create a positive image regarding electronic payment.

Composite Reliability

In this study, all the composite reliability coefficients are greater than 0.7 indicating reliability of the factors. However, many researchers have argued that a minimum value of 0.6 is required in order to achieve composite reliability for a construct.

Table 11. Composite reliability

Factor	1	2	3	4	5	6
CR	0.763	0.717	0.667	0.647	0.659	0.625

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Convergent Validity

The value of AVE should be 0.5 or higher for this validity to achieve. Thus, retaining the low factor loading items in a model could cause the construct to fail Convergent validity. Formula for calculating AVE as follows:

$$\text{AVE}= \frac{\sum\left[\lambda i \hat{} 2\right]}{\sum\left[\lambda i \hat{} 2\right]+\sum\left[Var\left(\varepsilon i\right)\right]}$$ (Fornell and Larcker, 1981)

Through AVE analysis researcher found that 2 out of 6 factors are having AVE values greater than 0.5. They are 1st and 2nd factors and their values are 0.532 and 0.507. For other factors AVE values are 0.474, 0.461, 0.469, and 0.447 respectively for 3rd, 4th, 5th and 6th factors.

Discriminant Validity

Fornell and Larcker (1981) present a method for assessing the discriminant validity of two or more factors. Here, the researcher compares the AVE of each construct with the shared variance between constructs. If the AVE for each construct is greater than its shared variance with any other construct, discriminant validity is supported.

Table 12. Inter correlation matrix

Inter Correlation Matrix							
		Factor1	**Factor2**	**Factor3**	**Factor4**	**Factor5**	**Factor6**
factor1	Pearson Correlation	0.532	0.286	.159	0.472	0.244	.180
factor2	Pearson Correlation	.143*	0.507	0.374	.149	-.051	.218
factor3	Pearson Correlation	.080	.187**	0.474	.087	-.169	.037
factor4	Pearson Correlation	.236**	.075	.044	0.461	0.322	.182
factor5	Pearson Correlation	.122*	-.025	-.084	.161**	0.469	.040
factor6	Pearson Correlation	.090	.109	.019	.091	.020	0.447
*. Correlation is significant at the 0.05 level (2-tailed).							
**. Correlation is significant at the 0.01 level (2-tailed).							

Source: SPSS output from field information

FUTURE RESEARCH DIRECTIONS

Further research may address the following important areas:

1. Identification of the relationship between emotional factors and consumer electronic payment adoption.

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2. Impact of these emotional factors on other e-commerce services such as e-banking and mobile payment.
3. Identification of impact of cultural factors on emotions of consumers to adopt and use electronic payment in Sri Lanka.
4. Study of emotional factors influencing shopping mall consumers as general (not limiting to professionals) to adopt and use electronic payment methods in Sri Lanka.
5. Conduct the same research in mixed method or qualitative method using interviews rather than considering only quantitative information.

CONCLUSION

Throughout the study, the researcher's attempt was to identify emotional factors influencing professionals' adoption to electronic payment in Sri Lanka. The results of this study replicate and extend earlier findings from many researchers regarding technology readiness dimensions on new technology usage and acceptance such as e-banking, online shopping, and mobile payments. Additionally, the researcher was able to add knowledge to existing literature by identifying two unique emotional factors called professional satisfaction and skepticism. Identification of these emotional factors is necessary for e-businesses to improve their sales by enhancing their target consumer base. The suggestions as explained in the third objective will help businessmen and bankers to reduce their cost of the payment system and to minimize financial frauds and errors through utilizing electronic payment methods.

As per the study results, professionals' emotions regarding e-payment are mainly driven by security, trust and comfort as well as they more concern on enhanced flexibility and control (optimism), the satisfaction they receive as well as their innovative experience to adopt electronic payment methods. Identification of these factors and designing payment structure of e-business is important to enhance and retain the consumers in order to maximize their sales.

Overall, the intention of this study is to focus on assessing the nature of emotions regarding e-payment and to determine the emotional factors influencing professionals to adopt electronic payment methods in Sri Lanka.

Assumptions and Limitations of the Research

This research also conducted under many limitations as other researchers. These limitations should be taken into account when the results of this research are interpreted. This study has been mainly focused on professionals in Sri Lanka. The results of the same, if conducted by considering another specific group of respondents may vary. The general predisposition, perceptions, and behavior of professionals may differ from other people regarding electronic payment usage. Mainly occupation, income level, geographical considerations and family background may differently affect an individual's emotions regarding new technologies. These motivations or emotional factors will need to be measured empirically considering other demographics in future research.

The same study can be expanded face to face card usage for financial transactions since the present study only focuses on the use of electronic payments for online transactions, according to the working definition of e-payment in the present study. In real-world scenario, many consumers utilize electronic

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cards when they are physically going for shopping. Therefore the findings of this study are limited to online shopping.

Like many other empirical studies, this research might also have some limitations in reference to sampling, data collection, and generalizing of the findings. The sample drawn from the study may not be enough to generalize the study results.

Although the present study suffers certain limitations it also possesses some strong implications that give it good weight age. Firstly, this study consists of almost good sample size. Tabachnick's rule of thumb suggests there should be at least 300 cases for factor analysis. Hair et al., (2006) suggested that sample sizes should be 100or greater. A number of textbooks cite that work of Comrey and Lee in their guide to sample sizes: 100 as poor, 200 as fair, 300 as good, 500 as very good and 1000 or more as excellent therefore this study consist with 460 sample and response rate is 65.2%.

Assumptions

1. The data collected through the research were accurate and unbiased.
2. There is no change in e-commerce business policies and government ideas and regulations.
3. During the data collection, there are no any changes in electronic payment system in Sri Lanka.
4. All selected respondents in the sample will provide full - corporations for this study.
5. All the respondents will provide answers in a true and fair manner.

REFERENCES

Abrazhevich. (2001). Factors affecting consumers' perception of electronic payment: an empirical analysis. *Internet Research, 23*(4), 465-485.

Agarwal & Karahanna. (2000). Research note—how does personality matter? Relating the five-factor model to technology acceptance and use. *Information Systems Research*, *19*(1), 93–105.

Al-Somali, S. A., Gholami, R., & Clegg, B. (2009). An investigation into the acceptance of online banking in Saudi Arabia. *Technovation*, *29*(2), 130–141. doi:10.1016/j.technovation.2008.07.004

Beaudry, A., & Pinsonneault, A. (2010). The other side of acceptance: Studying the direct and indirect effects of emotions on information technology use. *Management Information Systems Quarterly*, *34*(4), 689–710. doi:10.2307/25750701

Bolt, W., Humphrey, D.B., & Uittenbogaard, R. (2005). *The Effect of Transaction Pricing on the Adoption of Electronic Payments: A Cross-Country Comparison*. Academic Press.

Cheema, U., Rizwan, M., Jalal, R., Durrani, F., & Sohail, N. (2013). The trend of online shopping in 21st century: Impact of enjoyment in TAM Model. *Asian Journal of Empirical Research*, *3*(2), 131–141.

Dahlberg, T., Mallat, N., & Öörni, A. (2003). *Trust enhanced technology acceptance model-consumer acceptance of mobile payment solutions: Tentative evidence.* Stockholm Mobility Roundtable.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Dehbini, N., Birjandi, M., & Birjandi, H. (2015). Factors Influencing the Adoption of Electronic Payment Cards in Urban Micro-Payments. *Research Journal of Finance and Accounting*, *6*(1), 39–47.

Eastin, M. S. (2002). Diffusion of E-commerce: An analysis of the adoption of four E-commerce activities. *Telematics and Informatics*, *19*(3), 251–267. doi:10.1016/S0736-5853(01)00005-3

Eriksson, K., Kerem, K., & Nilsson, D. (2005). Customer acceptance of electronic payment in Ukrain. *International Journal of Bank Marketing*, *23*(2), 200–216. doi:10.1108/02652320510584412

Godoe, P., & Johansen, T. (2012). Understanding adoption of new technologies: Technology readiness and technology acceptance as an integrated concept. *Journal of European Psychology Students*, *3*(1).

Guhr, N., Loi, T., Wiegard, R., & Breitner, M. H. (2013). Technology Readiness in Customers' Perception and Acceptance of M (obile)-Payment: An Empirical Study in Finland, Germany, the USA and Japan. *Technology*, *1*, 1–2013. PMID:24999487

Ho, K. K., & See-To, E. W. K. (2010). *An Exploratory Study on the Impact of Trust on Different E-Payment Gateways*. Octopus Card Vs. Credit Card.

Hove & Farhod (2011). *Understanding online payment method choice: An eye-tracking study.* Academic Press.

Humphrey, D. B. (2006). *Transforming payment systems: meeting the needs of emerging market economies* (Vol. 291). World Bank Publications.

Humprey, D., Kaloudis, A., & Owre, G. (2004). The Future of Cash: Falling Legal Use and Implications for government policy. *Journal of International Financial Markets, Institutions and Money*, *14*(3), 221–233. doi:10.1016/j.intfin.2003.07.003

Humprey, D., Willesson, M., Bergendhal, G., & Lindblom, T. (2006). Benefits from a Changing Payment Technology In European Banking. *Journal of Banking & Finance*, *30*(6), 1631–1652. doi:10.1016/j.jbankfin.2005.09.009

Humprey, D. B., Kim, M., & Vale, B. (2001). Realizing the gains from Electronic payments: Costs, Pricing and Payment Choices. *Journal of Money, Credit and Banking*, *33*(2), 216–234. doi:10.2307/2673882

Inan, F. A., & Lowther, D. L. (2010). Factors affecting technology integration in K-12 classrooms: A path model. *Educational Technology Research and Development*, *58*(2), 137–154. doi:10.100711423-009-9132-y

Jonker, N. (2007). Payment instruments as perceived by consumers–results from a household survey. *De Economist*, *155*(3), 271–303. doi:10.100710645-007-9062-1

Julien, P. A., & Raymond, L. (1994). Factors of New Technology Adoption in the Retail Sector. *Entrepreneurship Theory and Practice*, *18*(5), 79–90. doi:10.1177/104225879401800405

Kalakota, R., & Whinston, A. B. (1997). *Electronic commerce: a manager's guide*. Addison-Wesley Professional.

Katawetawaraks, C., & Cheng, L.W. (2013). *Online shopper behavior: Influences of online shopping decision.* Academic Press.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Kaynak, E., Kucukemiroglu, O., & Ozmen, A. (1995). Correlates of credit card acceptance and usage in an advanced developing Middle Eastern country. *Journal of Services Marketing*, *9*(4), 52–63. doi:10.1108/08876049510094496

Khalil, O. E. M., & Nasrallah, A. (2014). The Adoption of the Traffic Violation E-payment System (TVEPS) of Kuwait. *Electronic Journal of Knowledge Management*, *12*, 3–22.

Lau, K. Y., Vassilious, I., & Venkatraman, M., & the Berkeley Concept Research Corporation and Kawasaki Microelectronics, Inc. (2004). *Multichannel distributed wireless repeater network.* U.S. Patent 6,690,657.

Lee, C. H. M., Cheng, Y. W., & Depickere, A. (2003). Comparing smart card adoption in Singapore and Australian universities. *International Journal of Human-Computer Studies*, *58*(3), 307–325. doi:10.1016/S1071-5819(03)00014-4

Lim, B., Lee, H., & Kurnia, S. (2007). Exploring the reasons for a failure of electronic payment systems: A case study of an Australian company. *Journal of Research and Practice in Information Technology*, *39*(4), 231–244.

Lin, C. H., Shih, H. Y., & Sher, P. J. (2007). *Integrating technology readiness into technology acceptance:* The TRAM model. *Psychology and Marketing*, *24*(7), 641–657. doi:10.1002/mar.20177

Mantel, B., & McHugh, T. (2001). *Competition and innovation in the consumer e-payments market?* Considering the demand, supply, and public policy issues.

Mashreghi, B. (2011). *An analysis of the factors influencing success of Bank-issued micropayment systems in Iran.* Academic Press.

Massey, A. P., Khatri, V., & Montoya-Weiss, M. M. (2007). Usability of online services: The role of technology readiness and context. *Decision Sciences*, *38*(2), 277–308. doi:10.1111/j.1540-5915.2007.00159.x

Nakhumwa, J. N. (2013). *Adoption of e-commerce payment systems by Commercial Banks in Kenya* (Doctoral dissertation). University of Nairobi.

Özkan, S., Bindusara, G., & Hackney, R. (2010). Facilitating the adoption of e-payment systems: Theoretical constructs and empirical analysis. *Journal of Enterprise Information Management*, *23*(3), 305–325. doi:10.1108/17410391011036085

Parasuraman, A. (2000). Technology Readiness Index (TRI) a multiple-item scale to measure readiness to embrace new technologies. *Journal of Service Research*, *2*(4), 307–320. doi:10.1177/109467050024001

Roy, S., & Sinha, I. (2014). Determinants of Customers' Acceptance of Electronic Payment System in Indian Banking Sector–A Study. *International Journal of Scientific and Engineering Research*, *5*(1), 177–187.

Schierz, P. G., Schilke, O., & Wirtz, B. W. (2010). Understanding consumer acceptance of mobile payment services: An empirical analysis. *Electronic Commerce Research and Applications*, *9*(3), 209–216. doi:10.1016/j.elerap.2009.07.005

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Schmid, Stanoevska-Slabeva, & Tschammer. (2001). *Toward the E-society: E-commerce, E-business, E-government.* Zurich, Switzerland: Academic Press.

Schuh, S.D., & Stavins, J. (2011). How *consumers pay: adoption and use of payments.* Academic Press.

Shah Alam, S., Ali, M. Y., & Mohd.Jani, M. F. (2011). An empirical study of factors affecting electronic commerce adoption among SMEs in Malaysia. *Journal of Business Economics and Management*, *12*(2), 375–399. doi:10.3846/16111699.2011.576749

Sumanjeet, S. (2009). *Emergence of payment systems in the age of electronic commerce: The state of art*. Academic Press.

Tan, M., & Teo, T. S. (2000). Factors influencing the adoption of Internet banking. *Journal of the AIS*, *1*(1es), 5.

Tan &Teo. (2000). Factors influencing the adoption of internet banking in Tunisia. *International Journal of Business and Management*, *6*(8), 143–160.

Tax, S. S., & Brown, S. W. (1998). Recovering and learning from service failure. *MIT Sloan Management Review*, *40*(1), 75.

Tsai, J. Y., Egelman, S., Cranor, L., & Acquisti, A. (2011). The effect of online privacy information on purchasing behavior: An experimental study. *Information Systems Research*, *22*(2), 254–268. doi:10.1287/isre.1090.0260

Van der Cruijsen, C., & van der Horst, F. (2016). *Payment behaviour: the role of socio-psychological factors.* Academic Press.

Wickramasinghe, V., & Gurugamage, A. (2009). Consumer credit card ownership and usage practices: Empirical evidence from Sri Lanka. *International Journal of Consumer Studies*, *33*(4), 436–447. doi:10.1111/j.1470-6431.2009.00779.x

Xiao. (2015). *Antecedents of Building Trust in E-Commerce Websites: Evidence from Ghana* (Doctoral dissertation). University of Ghana.

Xin, H., Techatassanasoontorn, A. A., & Tan, F. B. (2015). Antecedents of consumer trust in mobile payment adoption. *Journal of Computer Information Systems*, *55*(4), 1–10. doi:10.1080/08874417.2015.11645781

Xu, Q., & Riedl, R. (2011). *Understanding online payment method choice: An eye-tracking study*. Academic Press.

Yang, K. C. (2005). Exploring factors affecting the adoption of mobile commerce in Singapore. *Telematics and Informatics*, *22*(3), 257–277. doi:10.1016/j.tele.2004.11.003

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

ADDITIONAL READING

Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce*, *7*(3), 101–134. doi:10.1080/10864415.2003.11044275

Pavlou, P. A., Liang, H., & Xue, Y. (2007). Understanding and mitigating uncertainty in online exchange relationships: A principal-agent perspective. *Management Information Systems Quarterly*, *31*(1), 105–136. doi:10.2307/25148783

Salo, J., & Karjaluoto, H. (2007). A conceptual model of trust in the online environment. *Online Information Review*, *31*(5), 604–621. doi:10.1108/14684520710832324

Srite, M., & Karahanna, E. (2006). The role of espoused national cultural values in technology acceptance. *Management Information Systems Quarterly*, *30*(3), 679–704. doi:10.2307/25148745

Vance, A., Elie-Dit-Cosaque, C., & Straub, D. W. (2008). Examining trust in information technology artifacts: The effects of system quality and culture. *Journal of Management Information Systems*, *24*(4), 73–100. doi:10.2753/MIS0742-1222240403

KEY TERMS AND DEFINITIONS

Discomfort: A perception of lack of control over technology and a feeling of being overwhelmed by new technology.

Exploratory Factor Analysis: A statistical method used to identify or discover the underlying structure of a large set of variables.

Innovativeness: The extent to which an individual believes he or she is at the leading edge of new technology or to be the pioneer of using a new technology or technology-based services like e-payment.

Insecurity: Feeling of unsafely.

Optimism: A belief that technology offers people increased control, flexibility, and efficiency in their lives.

Parasuaraman: Person who has firstly defined the term technology readiness.

Professional Satisfaction: The extent of a product or service meets or surpasses a professional's expectations.

Skepticism: Feel something in doubtful manner.

Technology Readiness: Peoples propensity to embrace or use new technology to accomplish his or her goals in home or work life.

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APPENDIX

Questionnaire

Study of emotional factors influencing professionals' adoption to e-payment methods general Questions

1. Gender
   a. Male
   b. Female
2. Age
   a. 18-25
   b. 26-35
   c. 36-50
   d. 50<
3. Occupation: _____
4. Do you have a bank account?
   a. Yes
   b. No
5. Do you use electronic cards?
   a. Yes
   b. No
6. If No why? If yes continue
   _____

Please agree or disagree on the following, enter a tick or underline the relevant number.

Table 13.

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1. Use of electronic cards gives me more control over my daily life.	1	2	3	4	5
2. E payment for online shopping much more convenient to use.	1	2	3	4	5
3. I like the idea of online shopping and e payment via computers because I'm not limited to regular business hours.	1	2	3	4	5
4. I prefer to use modern e payment methods available.	1	2	3	4	5
5. I like online shopping and e payment that allow me to tailor things to fit my own needs.	1	2	3	4	5
6. E payment makes me more efficient in my occupation.	1	2	3	4	5
7. I find electronic payment to be mentally stimulating.	1	2	3	4	5
8. Adoption to e payment gives me more freedom of mobility.	1	2	3	4	5
9. I feel confident that online technology will follow through with what I instructed them to do.	1	2	3	4	5
10. Members of my peer group/friends respect and admire me because of using E-payments.	1	2	3	4	5
11. I enjoy having control over others.	1	2	3	4	5
12. Others always expect me to be successful regarding online activities.	1	2	3	4	5
13. I expect to control others rather than permit them to control me when using E-payment.	1	2	3	4	5
14. My unique knowledge and abilities regarding e-payment activities are recognized by others.	1	2	3	4	5

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Statement	Strongly Disagree	Disagree	Neither agree or Disagree	Agree	Strongly Agree
15. Descriptions about use of e-payment are not helpful because they do not explain things in terms I can understand.	1	2	3	4	5
16. Sometimes, I think that e-payment systems are not designed for use by ordinary people.	1	2	3	4	5
17. There is no such thing as a manual, guidelines about how to use modern e payment methods that is written in plain language.	1	2	3	4	5
18. When I get technical support from a provider (from merchant) about electronic payment, I sometimes feel as if I'm being taken advantage of by someone who knows more than I do.	1	2	3	4	5
19. It is embarrassing when I have trouble with online transaction while people are watching.	1	2	3	4	5
20. E-payment makes it too easy for governments and companies to spy on people.	1	2	3	4	5
21. E payment system always seems to fail at the worst possible time.	1	2	3	4	5
22. I do not consider it safe giving out a credit card number over a computer.	1	2	3	4	5
23. I do not consider it safe to do any kind of financial business online.	1	2	3	4	5
24. I worry that information I send over the Internet will be seen by other people.	1	2	3	4	5
25. I do not feel confident doing business transactions with a place that can only be reached online.	1	2	3	4	5
26. Any business transaction I do electronically should be confirmed later with something in writing.	1	2	3	4	5
27. Whenever something gets automated, I need to check carefully that the machine or computer is not making mistakes.	1	2	3	4	5
28. The human touch is very important when doing online transactions with a business.	1	2	3	4	5
29. When I call a business, I prefer to talk to a person rather than a machine.	1	2	3	4	5
30. If I provide information to a machine or over the Internet, I can never be sure it really gets to right place.	1	2	3	4	5
31. Other people come to me for advice on online shopping and e payment.	1	2	3	4	5
Statement	**Strongly Disagree**	**Disagree**	**Neither agree or Disagree**	**Agree**	**Strongly Agree**
32. In general, I'm among the first in my circle of friends to adopt e-payment when it appears.	1	2	3	4	5
33. I enjoy the challenge of adopting modern e shopping experience.	1	2	3	4	5
34. I find I have fewer problems than other people in online shopping and e-payment activities for me.	1	2	3	4	5
35. I feel like special when I pay using electronic card.	1	2	3	4	5
36. E-payment is used by only richer people.	1	2	3	4	5
37. Online shopping gives me chance to do different things from time to time.	1	2	3	4	5
38. I feel I can do something special that makes use of my abilities regarding online shopping and e payment.	1	2	3	4	5
39. This helps me to spend my leisure time happier.	1	2	3	4	5
40. 24*7 day shopping experience and payment facility makes me more satisfied.	1	2	3	4	5
41. My previous experiences make me use e-payment, online transactions again and again.	1	2	3	4	5
42. My friends' successes on e-payment affect me also to use e-payments.	1	2	3	4	5
43. I believe I do possess all capabilities regarding e payment transactions.	1	2	3	4	5
44. I rarely receive quality goods through e-payment transactions.	1	2	3	4	5
45. Provided information doesn't match with real product or service.	1	2	3	4	5
46. I don't believe all the information provided by merchants.	1	2	3	4	5
47. It's impossible to predict real quality of products before payment.	1	2	3	4	5
48. I often use e-payment to purchase expensive products.	1	2	3	4	5
49. I use e-payment because I can pay electronically for all my needs.	1	2	3	4	5

Thank you.

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Chapter 80
A Review of Antecedents of Online Repurchase Behavior in Indian E-Commerce Paradigm Shift

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ABSTRACT

The purpose of this chapter is to highlight research areas of customer satisfaction and repurchase intentions and their antecedents in the Indian e-commerce industry. To retain, attract, and satisfy customers, e-retailers need to understand how and why online customers evaluate a web store. The relevant areas of consumer behavior and marketing research were derived to explain the possible gaps to study with respect to e-commerce in India. To do so, a systematic review of online consumer behavior literature is conducted. Following inclusion and exclusion criteria, a total of 109 journal articles are analyzed. The major finding of the chapter was that there is very less amount of research considering the areas of customer satisfaction, trust, loyalty along with repurchase behavior of the online customer in specific to the Indian context. Therefore, it is a need of the hour to extend the study to know the repurchase behavior of the online consumer in present time.

INTRODUCTION

India is one among the fast-moving and drastically growing countries with respect to e-commerce when compared with developed and developing countries. Now a day's internet is playing a vital role in person's life as well as for corporate houses. Because of expanding noticeable quality of e-retailing, enthusiasm among researchers and professionals have expanded towards customer perception and reception.

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Researchers have attempted to speculate e-shopping regarding social brain science and data framework perspective of view to investigate its different determinants (Celik, 2016).

Nowadays, people are so involved in their way of life and they claim that it is difficult to go outside and shop. For such factors, the online stores give them countless options to peruse, including refunds that a standard store can never stand while they sit in their home. It should also be noted that if individualists unsatisfied with psychological needs in a face-to-face relationship then they would seek to satisfaction in other contexts such as the online buying (Li, Zhang et al, 2016; Li and Zhou, 2016; Ibrahim Arpaci et al, 2018). Electronic business has become immeasurably worldwide and its aggressiveness is expanding over the previous decades. The most important aspect of the business is to not only attract customers but also retain them to survive and withstand the competition. Hence repurchase from a customer is ending up increasingly noticeable for web-based shopping sites and sellers than at any other time (Jansen et al, 2008).

The number of users when compared around the world, Asia ranks the first with 50.2% internet users, Europe 17.1%, Latin America 10.3%, Africa 9.3%, the remaining percentage is shared by North America, Middle East and Australia (Internet World stats, Mar 31, 2017). Headway in the computer supported innovation and the quick development of web based apps has helped internet business drastic growth (Oh *et al*., 2012). Web based business has turned into a vital piece of the virtual space and has brought about quick development of e shopping space and online shopping websites (Alden *et al*., 2006; Kamarulzaman, 2007).

E-commerce business makes open doors for business endeavors to acquire purchasers globally (Al-Maghrabi *et al.*, 2011). It engages buyers with a broad determination, colossal item data and minimal fleeting and spatial restrictions, which urge them to buy items and services through online rather than physical stores (Wen *et al*., 2011).

The KPMG Report (2017) on E-commerce Retail Logistics India stated that the infiltration of online retail in India's aggregate retail advertise is relied upon to go up from 2.5% in 2016 to 5% by 2020. Aranca Research (March 2018), the report quantified that the online business advertising is expected to reach US$ 64 billion in 2020 from US$ 38.5 of 2017 and US$ 200 billion by the ending of 2026. With developing web infiltration, web clients in India are expected to reach 829 million by 2021 against 481 million as of December 2017 (Ibef, March 2018).

Morgan Stanley (2017) stated that India's e-commerce market will rise to 30 percent to $200 billion by 2026. This milestone will also raise market penetration to increase from 2% to 12% in coming decade and there will be an increment in new internet users from 14% in 2016 to 50% by 2026 and it will help e-commerce industry to grow (India's Digital Leap report 2018). Thus there is a vast market for new entry and as well as the existing e-retailers to grow in future. This marks that research should be done to know the mindset or new consumer's behavior.

In order to predict consumer behavior of online shopping, many models highlighting socio psychological items and informational system items have been developed which includes technology acceptance model, motivation theory, theory of planned behavior and unified theory of acceptance. These studies contributed in support to online consumer behavior, they failed to accomplish keeping online buyers retaining and repurchasing. In the Indian scenario, online shopping portals are increasing drastically. Many retailers that were only into brick and mortar business are forcing themselves to be in electronic commerce due to change in the market environment. Several multinational online shopping players also have made their existence in the Indian market as the usage of online shopping is growing among the Indian consumer

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As the e-commerce market becomes increasingly dynamic and competitive, the marketers have to acknowledge that the best core marketing strategy is to retain existing customers by satisfying them through service in terms of delivery and service quality (Bai et al, 2008; Udo et al, 2010; Kim, 2010; Ankit keshawani et al, 2017). Indian market conditions have become more competitive than before, there is a need for a business to deliver consumer value by enchanting customers in long term relationships in order to increase greater chances of re-purchase.

Number of e-commerce players though are trying to reach out to the customers, are not successful since they could not grab the customer base. Only very few online sellers have converted themselves into giant sellers. Even though these giants provide high discounts but still fail to create loyalty to its customers and could not create repurchase intention.

Hence, in order to grab customers and take advantage of the smart Indian market, firstly the online sellers need to understand different determinants and dimensions that drive for repurchase intention from the last purchased website. Sullivan et al. (2018) repurchase intentions are influenced by website reputation and online trust. This work makes an attempt to finding out the different determinants that can cause repurchase intention.

Why Study E-Commerce in India?

The e-commerce players have come up with mobile apps or user-friendly browsers and these forces drive the consumers to taste the online experience at their convenience. Research seems to be interesting may be because of various comparisons made by the consumers like mobile versus desktop and online shop versus in-store. The state of mind or perception of consumers comparing the prices of online and in-store gives the interest to make a study of their behavior.

Indian customers are heterogeneous in nature; they like to pay online since they are found shopping online since a decade and want to have greater shopping experience in terms of fast delivery, steep discounts, replacement facility etc. The other kinds of customers are those who bargain and never mind about fast delivery, but the price of the product does matter. No loyalty is found in them when big discounts are given by the sellers.

Nowadays there are multiple competitors in online shopping such as Amazon, Flipkart, Myntra, Snapdeal, Jabong etc. So, it is a challenging job for the online shopping inc. to differentiate their products/ service than others to attract as much as online shopping customers. The differentiation can be based on multiple factors (Athira A Nair, Feb 2017).

Table 1. Reasons for online shopping popularity

Researchers	Reasons
Poulter et al, 2013; Duarte, P et al, 2018	convenience
Palmer, 2013; Bodur, H. O et al, 2015; Gorodnichenko, Y et al, 2017	price comparisons online, product comparision
Poulter, 2013; Delacroix, E 2016	avoiding long queues
Eckler, 2013; Anil Bilgihan 2016; Lee, C. R et al, 2017	consumers can shop online anywhere, anytime
Poulter, 2013	one third of consumers shop in bed, 24/7
Lauden & Traver, 2013; Shehu, E et al, 2016; Ma, S 2017	Free offers, No crowds or no queues, Easier to find items, Direct shipping to home

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Table 2. Reasons why online shopping seems to be dissatisfying and annoying

Researchers	Reasons
Rackspace (2013)	complicated check out procedures
Adeshara, 2013, Palmer, 2013; Chen, H. M et al, 2016; Wang, Y et al, 2016	High shipping costs, product information lack, security issues and few online payment options

BACKGROUND

Measuring consumer behavior and perception is an ongoing process for every industry since no business can survive without consumers/Customers. Measuring consumer behavior is also important because it helps the organization in understanding the target audience. Considering past decade it is found that there is internet usage growing and also found that businesses expanding by adopting e-commerce to mark their presence globally. Considering Asia Pacific region internet penetration for the year 2017, the top position is taken by China with 731 million internet users and India takes second place with 462 million internet users (Statista, 2017).

The Internet and Mobile Association of India and market research firm IMRB International mentioned that Indian internet penetration present is around 31% and digital transformation will take India's internet users to 829 million (59 percent of the Indian population) in 2021 from 373 million (28 percent of the population) in 2016. This indicates there is much positive to happen in e-business and online shopping in India.

Internet users increasing day by day and prefer shopping online because of social networking sites are seen increasing. But a question arises irrespective of time, how to attract the customer and make him/her as a loyal customer to the online shopping seller. To answer this question, many academicians, researcher and consulting firms have tried to answer this question but failed to give a proper solution. This may be due to the changes in the consumer behavior and market advancements. For effective marketing strategy development studying consumer behavior is used as a key phenomenon.

Online shopping is the topic that has been researched and provided proven outcomes from past to nowadays, but still, as the time passes there is a need to study to know consumer behavior. The post-purchase behavior of consumer should be studied regularly since making consumers stick to the same e-commerce is difficult these days because of steep discounts and cheap products. To measure post-purchase behavior, the consumers need to test whether they are satisfied or dissatisfied.

The satisfaction and dissatisfaction of consumers falls between product performance and consumer's expectations. The larger the gap between product performance and consumer's expectations, there will be greater consumer's dissatisfaction. Also retaining customers these days is not that easy, so a gap is open to study why these customers do shopping with different e-stores and need to find out which factors lead them to shop with other online sellers. Thus there is still a need to study post purchase behavior of the online customer in present days.

Several factors are found that govern the growth of e-commerce in India. Online players need to understand the need that holds the customer stick to their earlier purchased company or seller. This can only happen with a thorough understanding of the Indian online consumer behavior. Online shopping behavior is governed by quality, price offered and seller's reputation (Genrt et al, 2012). In the quality at any price offered, reputation will be the most dominant segment in the online shopping behavior. May be

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this is the reason why customers tent to buy from prominent online seller's. Once the customers found to be satisfied with online shopping, they will tend to repeat purchase (Jiang and Rosenbloom, 2005).

The needs and wants of the consumers keep on changing as time goes and this needs to be remembered by the company. It's seen too often that brands focus on product catalog and forget about its customers. Always consider who your business is being built for. Remembering the wants and needs of the consumer's should be important for a company. As time goes on the tastes of the consumer's change and studies should regularly be done in knowing how to retain the consumer make him repurchase again and again. Thus, this study is focused on the factors that develop trust and repurchase intention of Indian consumers in the present competitive market.

Overview of Reviewed Articles

A systematic approach was followed to literature search. The academic publications from 2005 to 2018 were focused. In the journal papers considered more focus was made with respect to repurchase behavior and its antecedents were high lightened. Major journal papers in the areas of consumer behavior, services marketing and e-commerce were also included.

India is competing with global retailers because India is having a very good potential market. Since the internet users number is growing day by day and thus it is very necessary to identify the various factors that affect Indian consumers online shopping behavior in order to research hoe these factors stimulate the online shopping behavior (Jayendra Sinha, 2012).

Hong-Youl Ha et al. (2008) carried out a study that employs a cross-cultural perspective which explores alternative explanations in the development of the online repurchase intentions model. Structural equation modeling was applied to test the model which deals with key consumer behavior factors such as customized information, web use applications, online service and perceived interactivity which lead to formation of purchase intentions. The results explain the power of customized information that lies in its ability to influence consumer satisfaction and perceived interactivity that are proximate to repurchase intentions.

Fang, Y et al. (2009) have focused on the relationship between customer satisfaction and repurchase intention and showed that the customer satisfaction is not predominantly result in the frequent repurchase. There are many possible factors connecting to the relationship in repurchase behavior. Vinerean, S et al, (2013), worked with the psychological and social factors and cheeked their influence on online shopping behavior. The results conclude that social media or social networks influence online perception and trust with respect to a specific website through word of mouth. Hsu, C. L (2009) studied external & internal factors that influence customer satisfaction and loyalty relationship using structural equation modeling as an analytical tool. Their findings show customer satisfaction and website service quality has a positive effect on loyalty and also states that technology acceptance model factors positively influence customer satisfaction and loyalty.

Grewal *et al.* (2009) establish that online satisfactory shopping knowledge can increase in repeat purchase plan. According to self-perception theory (Johnson *et al.*, 2001), people may frequently modify their perceptions as they procure new information about the pivotal behavior. Hand et al. (2009) explored situational factors that influence adoption of online grocery shopping and posited that due to service issues some customers discontinued grocery shopping. Doherthy & Ellis (2010) in their comprehensive literature review stated that consumer has become more powerful and also stated that competitive pricing wins competition in e-retailing environment.

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Mummalaneni V et al (2009) reported that service quality induce online customers to repurchase from the previous seller. Zhang et al (2011) mentioned in their research that repurchase intentions exert influences with service quality. Bhupinder ps chandar et al (2016) mentioned that with the increasing players in online market, the marketers need to have an edge in terms of service quality to gain a large market share in competitive market. This study explained the service quality concept along with most significant factor in e-service quality which attracts consumer online buying. The results say that the most important factor in measuring service quality is the privacy of website and delivery of goods on time. The growth of internet and online shopping will increase in larger number in coming years; so online sellers should think about how to make customers repeat purchase.

Richard M. O. et al. (2010) the influences of web atmosphere and internet experience on consumer e-shopping behavior is examined in this paper, which developed to the model of web navigation behavior. They assessed the role of men and women for online shopping behavior. Results revealed that, women engaged more exploratory behavior and website involvement than men. The key attitudes of website are effectiveness of information content, entertainment and challenge.

Boudhayan Ganguly et al. (2010) to provide empirical evidence that trust in online stores is positively influencing the purchase intention and reduces the perceived risk; the mediating role of trust is tested in this paper. Confirmatory Factor Analysis is performed to analyze the questionnaire. The factors such as website design, information design, visual effects and navigation influence trust through which purchase intensions increase

Su & Huang (2011) analyzed online shopping intention of China's undergraduate consumer based on theory of planned behavior. Their results posited that price of products and student' computer knowledge influences the online shopping intentions.

Mustafa I. Eid (2011) a conceptual framework which hypothesizes the relationship between the constructs of e-commerce and their antecedents to identify the factors that influence consumers trusts, satisfaction and loyalty towards B2C e-commerce. Results proved that customer's loyalty is more influenced by customer satisfaction and less influenced by customer trust. Kim Hee-Woong et al. (2011) the relative influence of price and trust on online purchase decisions of potential and repeat customers are examined in this paper. For developing customized sales strategies to target different groups of customers the relative impacts and the relative roles over customer transaction experience is useful. From the results it is observed that perceived trust has more effect than the price on purchase intensions. The repeat customers purchase intensions are much influenced by perceived price.

Ha & Stoel (2012) tested the influence of e-shopping quality on e-shopping satisfaction and e-shopping intention and also testing consumer experiential e-shopping motives as a moderator on USA apparel retail store. The results posit that website content have a significant influence on e-shopping satisfaction which indeed contributes to e-shopping intention, also found that security and consumer service have a significant impact on e-shopping intention but not on e-shopping satisfaction. Dwivedi et al. (2012) studied review of existing literature with respect to online retailing in India and identified some factors that motivate consumers to shop online. These factors include convenience, payment mode, delivery and cost saving. The challenges found out were security and transaction fraud issues, competitors are click away and consumers waiting for best offers.

Gong W et al. (2013) studied the factors those influence Chinese consumers to shop online considering the effect of demographic characteristics on e-shopping intentions. The results depict that age, income, education and marital status show significant impact on online shopping intention. Nachiappan Subramanian et al (2013) studied the impact of customer satisfaction and Chinese electronic retailer's

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competitiveness considering quality factors. This Study proposed two conceptual models based on asset-process-performance (APP) competitive theoretical framework. By using SEM, the researchers could identify reliability in service quality along with purchasing experience in e-service quality as dominant customer satisfaction elements. They made a conclusion that to be competitive e-retailers, they have to focus more on delivery of products (logistics) compared to other intangible service quality factors.

Ariff M S M et al. (2013) the study showed the relationship and the impacts of e- SQ and e- satisfaction on e- loyalty in internet banking are examined in this research. The modified version of E-SERVQUAL instrument was used to determine e- SQ. Survey was conducted and data is collected from 265 internet banking users. The factors that affected e-satisfaction are assurance, efficient system availability, privacy, contact-responsiveness and guide constitute e- service quality for the internet banking service, and these are shown in results. The results highlighted the important features of internet banking that attractiveness and appearance of bank's website and the information and guidance provided by the websites.

Waseso Segoro (2013) this study was done seeing in the decline of customer satisfaction and loyalty in service firms. The factors such as customer perception on service quality, mooring factors and relationship quality are identified as influences of customer satisfaction and loyalty. To measure these factors questionnaire was distributed to students who subscribed to cellular operated services. The Structural Equation Model (SEM) was used for data analysis. Results showed that customer perception and relationship quality had positive correlation with mooring factors, these also have positive direct influence on customer loyalty.

Hana Uzun (2014) in a study about factors affecting online shopping behavior which measures consumer's previous experience and mentioned that if consumers are satisfied with the online seller with minimal risk level then they will buy more in future. Thus the consumers become loyal to the online seller. Brady & Cronin Jr. (2014) the effects of being customer oriented and outcome behaviors on service performance perceptions are studied in this paper. Using the two step approach the model was tested. The results showed the link between physical goods quality, services cape quality and performance service quality.

Chinho Lin, Watcharee Lekhawipat (2014) examined the effects of online shopping experience and pattern in relation to adjusted expectations for increasing online repurchase intention. Study used partial least square (PLS) as a method to analyze the measurement and structural models. The results showed that online shopping pattern acts as a moderator of both customer satisfaction and adjusted expectations, whereas online shopping experience can be perceived as a key driver of customer satisfaction. If the product or service meets the customer satisfaction will develop an intention to repurchase. Since customer satisfaction is known as bunch of many factors such as good feeling when comparing product with others, expectations match with the product and service etc.

Giovanis & Athanasopoulou (2014) in their study they tested the customer loyalty in e-tailing. They investigation was done to determine e-SQ and their dimensions to e-satisfaction and e-trust, the relevant impact of e- satisfaction and e-trust on e-loyalty. Data was collected from 451 customers of consumer electronics e-tailers. The results showed that the e-loyalty is positively affected by e-satisfaction and e- trust, the antecedents of e-satisfaction and e-trust are the e-SQ dimensions such as reliability, privacy and usability. The relationship between the information quality/benefits, responsiveness and web design & e-trust are mediated by e- satisfaction.

Srivastava M & Alok Kumar Rai (2014) this paper discussed the service quality -customer loyalty relationship in life insurance sector. By assessing the moderating influences of trust it offers further insights. Results proved that relationships are statistically significant. Customer loyalty has a strong and

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positive relationship with service quality and trust. Zeki Atıl Bulut (2015) investigated Turkish consumers intentions considering e-satisfaction, e-trust and e-loyalty and revealed that there exists a positive relationship between repurchase intentions and these construct. Also found that e-trust is a very important determinant for online repurchase intentions. Michelle Carter et al. (2014) in this research paper the authors did an empirical study of the relative influence of trust versus switching costs on e-loyalty for online service providers. They also examined whether the relationship between switching costs and e-loyalty are moderated by trust. Results showed that trust is the important factor of e-loyalty than the switching costs. It also revealed that switching costs depends on the trust that customers have.

Mubbsher Munawar Khan, Mariam Fasih (2014) made a study to determine the satisfaction level of banking customers regarding quality of different services provided by their bank and their loyalty with the respective bank. This study was made to find out which service quality dimensions may enhance customer satisfaction and customer loyalty in a better way. Descriptive statistics, one sample t-test, correlation and regression are used to analyze the data. The results indicate that service quality and all its dimensions have significant and positive association with customer satisfaction and customer loyalty. Today's online businesses lack loyal customers. Making customers stick to the company and purchase again and again is a question raising issue. Thus it is very important for a business to manage satisfaction, belief, and customer loyalty in the adoption of E-commerce services for business development.

Gerson Tontini et al. (2015) considered the nonlinear impact of online retail stores quality dimensions on general customer satisfaction and loyalty. Using factorial analysis with verimax rotation, five service-quality dimensions are studied: service accessibility/speed, fault recovery, buying reliability, service and site flexibility and site interaction/ feedback. Penalty and reward difference analysis identifies the Kano model classification of the service-quality dimensions, and the nonlinear impact of these dimensions, and customer satisfaction, on customer loyalty. The findings show that there is a nonlinear impact of these dimensions, and customer satisfaction, on customer loyalty.

Muita Sobihah et al. (2015) has made a study which deals with E-commerce service quality on customer satisfaction, belief and loyalty. The collected data was tested by confirmatory factor analysis. This paper has sought to examine the perception of foreign tourists towards e-commerce service quality in Malaysian hotel websites that influence their satisfaction, belief and loyalty. On basis of discussions throughout this paper, it was found that customer satisfaction and consumer belief will be influenced by E-commerce service quality and also the mediator that will influence customer loyalty in using the website as a substitute for traditional purchases. The researchers conclude as, In order to have a loyal customer, the hotel industry should fulfill the service quality expected by the customer that will satisfied and have belief with the service provider.

Siqi Ma (2016) investigated delivery time interacting with shipping charges on customer satisfaction and purchase intentions and found that increase in delivery time increases customer ambiguity and perceived riskiness which negatively impact purchase intentions. Further Edlira Shehu et al (2016) worked on free shipping promotions and their impact on online retailers, his findings state that free shipping promotions will increase return shares to the sellers. Jorge Matute (2016) explored the characteristics of consumer reviews taking e-word of mouth in to consideration and its impact on repurchase intentions. The results indicate that e-word of mouth quality has a positive effect on repurchase intentions.

Lin and Jing Luo et al (2016) explored the quality factors influencing customer satisfaction in the e-commerce context using a triadic view of customer, e-retailer, third-party logistics provider, and to investigate the impacts of service quality on customer satisfaction and loyalty provider in the e-retailing supply chain. Structural equation modeling is used to analyze collected data and test the hypothesis.

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The findings indicate that e-service quality and logistics service quality are strongly linked to customer satisfaction. Also found that e-Service quality positively impacts customer satisfaction with logistics services, but logistics service quality negatively impacts customer satisfaction with e-services. The results show that e-retailers should not only focus on e-service quality, but also logistics service quality, which is critical to the success of e-commerce.

Ibrahim Elbeltagi Gomaa Agag (2016) studied online shoppers in Egypt to develop a new framework that explains impact of e-retailing ethics customer satisfaction and repurchasing intention and mentioned that the factors like Security, Privacy, non-deception, fulfilment/reliability, and service recovery are strongly predict the customer satisfaction and repurchase intention.

Hong-Youl Ha et al. (2016) in their paper using trust as a mediator in online shopping they examined the effects of perceptions of information obtained from social networks. For this, they have conducted an email survey. They adopted a two dimensional view of trust i.e.., cognitive and affective trust. Using longitudinal approach direct and indirect effects of information perceptions on behavioral intentions are empirically explored. Results show that there is a significant carryover effects from time T to time $T+1$ in perceptions of information obtained. The study revealed that over time, the influence of affective trust is greater than that of cognitive trust, both in its effect on behavioral intentions as well as in its mediating role between information perceptions and behavioral intentions.

Thi Song Hanh Pham et al. (2017) studied the determinants of online customer satisfaction taking online shopping experience based on UK consumers. The items include order fulfillment, ease of return and customer service and found these items showed significant influence to online customer satisfaction. The most important interpretation was that website appearance on customer satisfaction found insignificant. Their findings also state that customer satisfaction leads to repurchase behavior and also spreading positive recommendations. Xiabing Zheng et al. (2017) this paper highlighted about that e-loyalty is the driver of online shopping. The theoretical analysis of coupon proneness and value consciousness in e-loyalty are examined. Results said that value consciousness and coupon proneness plays a important role in e-loyalty.

Yeolib Kim & Robert A. Peterson (2017) this study examined the role of online trust in B2B e-commerce. A meta-analysis on antecedents and consequences of online trust was conducted where related relationships were influenced by moderated variables. 16 pairwise relationships derived from 150 empirical studies were analyzed. This analysis revealed that online trust exhibits significant relationships with selected antecedents (perceived security, disposition to trust, perceived reputation, perceived risk etc.,) and consequences (purchase intention, attitude, satisfaction, loyalty etc.,). The Hedges and Olkin (1985) procedure for analyzing correlated coefficients was suggested for analysis of each pairwise relationship.

Oliveira, T et al. (2017) this paper tested the path model that can have solutions to increase trust for internet vendors. The three main dimensions of trust in this path model are competence, integrity, and benevolence. And assessed the influence of overall trust of consumers. The analyzed various sources of trust i.e. consumer & firm characteristics, website design and interactions with consumers. The model is tested through collecting data from email survey. Results suggest that consumers with high overall trust demonstrate a higher intention in online purchasing.

Al-dweeri et al. (2017) e-satisfaction and e-trust as mediators the present study analyzes the relationship between e-SQ and e-loyalty (both behavioral and attitudinal elements) in online shopping. Confirmatory factor analysis and structural equation model were performed to a sample of 302 website users of amazon.com. Results showed that factors such as efficiency, privacy and customer services are

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considered as important factors of e-SQ. the relationship between e-SQ and behavioral and attitudinal loyalty are mediated by satisfaction.

Xiaolin Lin et al. (2018) this paper investigated on gender differences in the effects of perceived risk, vividness, interactivity and diagnosticity of consumers in making web-based purchase decisions. Attitude formation influences the perceived risk & interactivity more in males, in females it was vividness & diagnosticity. The results highlighted that importance must be given to gender while developing a website.

Dung H. Nguyen (2018) performed a systematic review of consumer behavior and order fulfillment in online retailing. The findings state that future research on developing consumer service strategies responses which found significant impact of order-fulfillment elements on consumer behavior.

Habeeb S & Francis K F (2019) examined the effects of service quality and satisfaction on consumer behavioral intentions. The results posit that e-service quality has a positive effect on e-satisfaction and influences behavioral intentions like word of mouth, website revisit and repurchase intentions.

Based on internet growth, online shopping is growing fast and could see great number of opportunities for e-vendors to rise and preserve interaction with customers. There is a difference between customers with respect to spending more money or spend less and buy often. Thus customer retention states to be very important concern for firms wishing to obtain a competitive advantage. Prior studies show that increase in customer retention leads to higher profits for the companies. In customer retention process, satisfaction of customer plays a vital role. Lee *et al.*, (2009), stated that a satisfied customer is more likely to return. Further it develops loyalty towards the product or service.

Till today, most of the researchers have focused on how to acquire the customer, especially focusing on the service quality and satisfaction. As the technology advancements in the online shopping and competition among the major players in India, companies such as Amazon, Flipkart, Snapdeal, Myntra, Homeshop18, pepperfry, Infibeam etc trying to satisfy the customer and making them to repurchase the product or service. It is the need of the hour to study how repurchase intention will develop in the Indian consumers and what factors influence it.

In Asia, India shares half billion of internet users. Rababah et al (2011) mentioned that the success of e-commerce is not just because of web site, low price but also because of the delivery and quality of the web site; if these factors are good, customers are willing to pay more for the product or service. This represents that quality plays a crucial role in attracting and retaining customers to the success of the company on online shopping.

Variety of firms and organizations are creating business opportunities on the internet and these corporations are spending more and more money on websites, advertising with a hope of creating customers to buy product and services through online. (Bahram Ranjbarian, Saeed Fathi, 2012) stated in a study that the success or failure for e-commerce businesses is not because of web existence or low price but delivering right quality of e-service. The researchers have conducted an empirical investigation which proposes and tested an e-satisfaction model. The adopted model categorizes five dimensions representing satisfaction with internet purchase experience and analyzes online-customers attitude towards internet shopping based on their perceptions based convenience, the kind of merchandising, website design, security in doing transaction and serviceability in e-satisfaction. Factor analysis was used and the findings shown that four factors such as convenience, merchandising, security and serviceability have influence on customer e-satisfaction but the influence of website design on e-satisfaction was not sustained despite its indirect impact on security and serviceability.

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RESEARCH GAP

Considering the development in e-commerce, growth in number of internet users, competition the market, the websites or online sellers are not able to meet the demands and needs of their customers like before, the reason could be continuous rise in customers' expectations and demand for better and cheap products or services. Seyed & Jamalabad (2011), stated in a study that there is a danger of attracting our unsatisfied customers by the competitors and this ends up in losing profits to the company. So, the business specialists should understand that losing customers is very costly to the company and developing customers trust, making repurchase happening is what needed. One of the main goals of a marketer is that look for satisfying the customers, develop trust in them which in return makes the customer to become loyal to the company and repurchase.

As the e-commerce market becomes increasingly dynamic and competitive, the marketers have acknowledge that the best core marketing strategy is to retain existing customers by satisfying them through service in terms of delivery and service quality (Bai et al, 2008; Udo et al, 2010; Kim, 2010; Ankit keshawani et al, 2017). Indian market conditions has become more competitive than before, there is need for a business to deliver consumer value by enchanting customers in long term relationships in order to increase greater chances of re-purchase.

The review of literature on online shopping has revealed that majority of research in this area has conducted outside India. There is dearth of literature available in India which explores the acceptance of online shopping by identifying the motivating factors and various challenges of online shopping. Earlier studies have focused on the influence of e- Word of mouth on consumer behavior along with antecedents and consequences (Hennig T et al, 2014; Khammash & Griffiths, 2011). Few studies have focused considering online shopping habits and experience (Khalifa et al, 2007; Meng-Hsiang Hsu et al, 2015). Most of the studies have explored the effect of isolated dimensions of information (quality & credibility) separately (Park et al, 2007; Cheung et al, 2008). Other studies have focused on the trust and website usefulness as the important determinants in explaining consumer behavior in the context of online shopping (Gefen et al, 2003; Chiu et al. 2012). However, very few studies have explained the influence of diverse online shopping determinants and consumer characteristics on e-trust and repurchase from a holistic perspective. Indian market conditions has become more competitive than before, there is need for a business to deliver consumer value by enchanting customers in long term relationships in order to increase greater chances of re-purchase.

To address the above gap, the present study develops a model to explain how quality attributes influence customer satisfaction and then the impact on customer trust and customer loyalty and their influence on customer repurchase intentions.

Conceptual Framework of the Study

Boston Consulting Group (BCG) and Internet and Mobile Marketing Association of India (IAMAI) stated in a report that Indian internet users could cross 550 million in 2018 making India online population to stand in second position in the world. The report also states that Indian e-commerce is being used by only 11 percent of internet population when compared China internet population uses 50 percent of e-commerce. With the upcoming on 4G network and cheap internet providers Indian online shopping is emerging fastly. There exist a great number of opportunities for the Indian online players to rise. The Indian e-players or e-vendors have to rise up and grab the customer base in India. There are several factors

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contributing to the growth of e-commerce in India, firms need to understand and build on competencies that will hold the customer. Thus to with stand in a fierce competition the Indian ecommerce players had to think about customer retention.

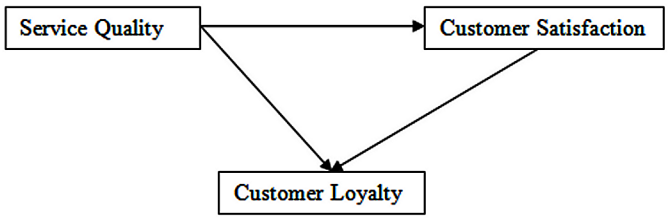
Among the most important researched concepts in practice and in academia customer loyalty, satisfaction, service quality and repurchase had to be given more important in order to study about a consumer behavior. In order to have an upper hand in competitive markets and to stand tall in grabbing the competitive advantage; customer satisfaction, loyalty, service quality and repurchase intentions shows powerful impact on e-commerce vendors (Tamilla Curtis 2013, Zineldin 2006). Despite of ample research on the relationships between customer satisfaction, service quality, loyalty and repurchase, these relationships look to be complex and are therefore not well understood. Thus this study would be performed to know which among the above relationships would grab and retain the online customers to repurchase again and again.

For setting efficient and effective business objectives and implement them, the e-commerce players should know it's customers needs, characteristics and behaviors. Allessandro Russieri, Cecilia Silvestri, (2014); Srivastava Rai, (2013); Cussignani Mular, (2009); mentioned in their studies that e-commerce players need to adopt new strategies in order to target new customers. E-commerce players should also care about retaining the old customers by making them do repeat purchases.

Yingsheng Du & Youchun Tang (2014), mentioned that in any industry customer satisfaction is to know their needs and fulfilling their needs by offering something extra. Once the customer is satisfied with the products and services provided by the e-commerce sellers, the customers become loyal to the e-commerce company. On the other hand, service quality is known to be the antecedent of customer satisfaction and service quality cannot exist without customer satisfaction. Allessandro Russieri &Cecilia Silvestri (2014), pointed that customer loyalty cannot be taken for granted since customers are attracted to cheap products and discounts from other competitors. If customer satisfaction can be pursued with service quality, there are greater choices of having satisfied customers.

(Caruana, 2000; Hou Xinggi, 2008; Deng Yingsu, 2013; Peng yan, 2006) carried out studies on relationships containing service quality, customer satisfaction, customer loyalty and proved that service quality affects customer loyalty indirectly through customer satisfaction. The model is represented in figure 1. These relationships were examined in various industries like training, catering and hotel industries and online securities trading. So the scope of future research can be done on online shopping or e-commerce industry.

Figure 1. Caruana (2000), Hou Xingqi (2008) Model stating relationship between service quality, customer satisfaction and customer loyalty



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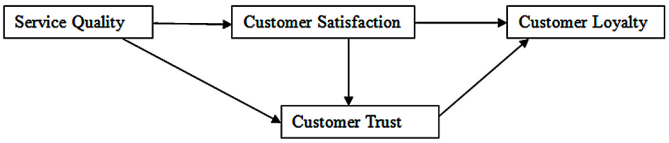
Chang Yaping et al (2009) and Zou Jianping (2010) worked on the concepts including service quality, customer satisfaction, customer trust and customer loyalty in the network and express industries. From the figure 2 it is seen, researchers stated that service quality affects customer loyalty through intervening variables like customer satisfaction and customer loyalty separately.

Figure 2. Chang Yaping et al (2009); Zou Jianping (2010) Model stating relationship between service quality, customer satisfaction, customer loyalty and customer trust



In above both models the researchers discussed stipulated variables such as service quality, customer satisfaction, customer loyalty and customer trust. To make the present study more interesting and result oriented, the researcher would like to add another variable i.e. repeat purchase. Because researcher have found the variable repeat purchase is yet to be tapped with respect to online shopping in India.

There are no fixed research models containing above relationships like service quality, customer satisfaction and customer loyalty. Based on existing literatures researchers or scholars should build their own research models for future study. Thus the literature reviewed in this paper gives a scope to add one more variable called repurchase intentions. Thus Zou Jianping (2010) model can be extended with adding repurchase intention or repurchase behavior to the existing model. The proposed models 1, 2, 3 are respectively shown in figure 3, figure 4, and figure 5.

Figure 3. Proposed model l

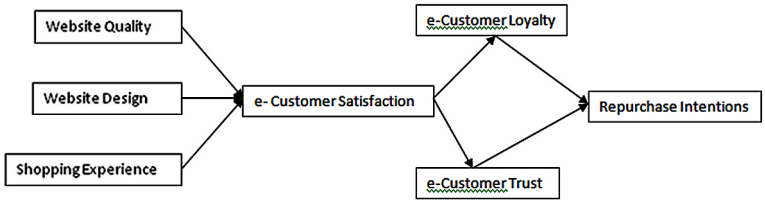


Figure 4. Proposed model 2

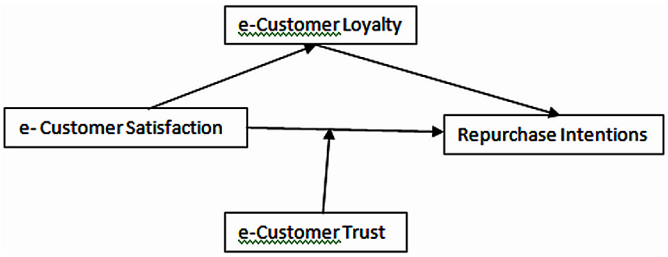


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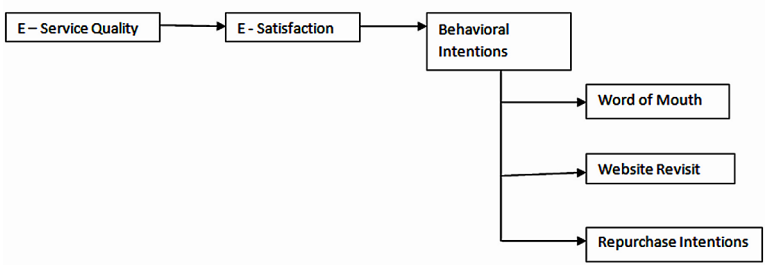
Figure 5. Proposed model 3



Our study tries to attempt considering previous reported findings to explain the various relationships of above mentioned proposed model. The questions with respect to the model will be asked like;

1. Does e-customer satisfaction antecedents impact directly or indirectly on customer repurchase behavior.
2. Does e-customer satisfaction and e-trust influence positively the e-customer loyalty and leads to customer repurchase behavior.
3. Does e-customer trust moderately influence the relationship between e-customer satisfaction and repurchase intentions?

DISCUSSION

Cameran et al (2010); Deng et al (2010); Ojo et al (2010); Pantouvakis, (2010); in their studies found that customer satisfaction is an effective post purchase evaluation with respect to service management literature. Bayraktar et al (2010), stated that customer may switch to other online sellers if they are not satisfied with the service provided by the seller. Cameran et al (2010); Grigoroudis et al (2007); Sanchez-Hernandez et al (2010); mentioned in their studies that service quality was found to be the main determinant of customer satisfaction and also influences purchase intentions.

Caceres & Paparoidamis (2007), mentioned in his study that customer trust has more influence on customer loyalty. The online customers will continually purchase and even recommend the service if there is a prompt service is provided, this is when the customer trust the sellers (Deng et al., 2010). Grewal (2004), mentioned that positive customer trust gives high-level repurchase intentions to the online seller. Trust is a critical factor influencing repurchase behavior (Gounaris, 2005), because it makes a strong bond between the supplier and the customer.

In order to remain loyal to the sellers the consumers wants satisfaction (young & Peterson, 2004). Since the nature of the business in present days is aggressive and competitive, thus the need exists for a retailer to give some advantage and Importance to their customers to retain them (McElheran, 2013). (Ali & Sankaran, 2010: Mattson, 2009) stated that customer satisfaction is one of the main antecedent to the variables like customer loyalty, customer trust and repurchase behavior. Bagram & Khan (2012), customers becoming loyal to a company is that easy, because they do not get satisfy that easily. Thompsom (2005), in achieving competitive advantage over other online sellers, the customer loyalty plays an important role with respect to making repurchasing decisions. Thus there is a link between customer

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loyalty and repurchase intentions (Van Vuuren, Roberts-Lombard & Tonder 2012; Singh & Khan, 2012; Vesel & Zabkar, 2009; Ang & Buttle, 2006; Thompson, 2005).

Owusuah, (2012); Rust & Chung, (2006); Thompson, (2005); mentioned in their studies that repurchase behavior or repurchase intention is the main variable considered for sales and business growth. Observing various relationships mentioned in the above literature and this leaves a gap to be filled in future studies measuring customer satisfaction influence on both trust and loyalty as mediator variables and results in causing a repurchase behavior. Thus from the above literature there exists a gap to fill, that there is very little research done on repurchase intentions along with service quality, customer satisfaction, trust and loyalty with respect to online shopping in India.

Thus there is a need to research with the combination of customer satisfaction, service quality, trust, loyalty and repurchase behavior of an online customer in India. From the above literature it is proven that customer satisfaction, service quality, loyalty, trust and repurchase intentions together are not studied. Thus studies in Indian e-commerce can be done in specific to this relationship.

CONCLUSION

Repurchase intention refers to the consumer's willingness to buy for a long time from the same company (Gounaris, Dimitriadis & Stathakopoulos, 2010). It can also refer to the individual's judgment about buying again a designated service from the same company (Lacey & Morgan, 2009).). Consumer buying behavior can be understood in two stages, thus encouraging people to purchase and enhancing them to repurchase (Zhang et al 2011). Customer repurchase expectation is of principal significance to business specialists since it means that business progression, future revenue prospects and henceforth business productivity (Chang, 2012). The intention to re-purchase is a post purchase behavioral intention that influences customer loyalty, complaint and switch intentions (Meng et al, 2011). The goal of shoppers to repurchase is subject to customer's assessment of the past purchase transactions (Maziriri et al, 2015).

Thus, both business experts and academicians alike have been keen on recognizing the precursors of customer repurchase goal. Strikingly to note, customer satisfaction, customer trust and customer loyalty are reliably among a portion of those elements that have progressively being perceived in the surviving writing as indicators of customer goal to repurchase (Flavian et al, 2006; Kandampully & Juwaheer, 2009; Sirdeshmurk et al, 2012; Chinomona, R., & Sandada, M. 2013). Many other researchers also mentioned that it very necessary to provide products and services which satisfy customer since satisfied customers develop trust in the company and become loyal and ends up in repurchase (Boshoff & du Plessis, 2009; Hong & Cho, 2011; Dabholkar & Sheng, 2012; Kun D, 2013, Zeki et al, 2015).

FUTURE RESEARCH

The future of E-Commerce is not that easy to predict. There are various factors responsible for the growth of e-commerce. E-commerce industry is also faced with serious challenges; these challenges have to be overcome for an online player to succeed in this tense competition.

Future research could collect a broader, more controlled sample and use a greater variety of products. Prospective research could also investigate elements influencing consumers' subsequent purchase behaviors, such as product quality, delivery methods, and after-sales service. In future research, Researcher

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may study other possible factors affecting online initial trust, such as marketing tactics, product varieties, price ranges, online service, web site quality and levels of convenience.

Today's consumers continue to desire more and for a business to withstand in such a fierce competition, the businesses should target the consumers with providing services in a better manner, faster and cheaper. Businesses should target new consumer needs and trends since internet is available cheaply, internet audience have various choices to prefer. Considering the advancement in technology, the e-commerce players' need's to grab the advantage. E-commerce has to look forward to consumers repurchase and also look forward to grab loyal customer. So an e-commerce player should target in retaining the old customer and use its positive features in attracting new customers. However, e-commerce has its disadvantages including consumer uncertainties, thus these uncertainties have to be resolved with better business practices. This literature will guide the e-commerce players or sellers to prosper with much success and profitability.

DISCUSSION QUESTIONS

1. What are the steps to be taken to grab the customer's attention in the present competitive Indian online market?
2. Compare and contrast online shopping with that of offline shopping.
3. What are the main factors that affect the online consumer when considering a repurchase over the internet?
4. Explain the connection between customer satisfaction and repurchase intentions. Do customers repurchase if satisfied. Why and Why not?
5. Do you agree that studying antecedents of repurchase intentions give some scope for solutions to the organizations over the competition in present fierce online Indian market? Give your suggestions.

REFERENCES

Al-dweeri, R. M., Obeidat, Z. M., Al-dwiry, M. A., Alshurideh, M. T., & Alhorani, A. M. (2017). The impact of e-service quality and e-loyalty on online shopping: Moderating effect of e-satisfaction and e-trust. *International Journal of Marketing Studies*, *9*(2), 92–103. doi:10.5539/ijms.v9n2p92

Ariff, M. S. M., Yun, L. O., Zakuan, N., & Ismail, K. (2013). The impacts of service quality and customer satisfaction on customer loyalty in internet banking. *Procedia: Social and Behavioral Sciences*, *81*, 469–473. doi:10.1016/j.sbspro.2013.06.462

Brady, M. K., & Cronin, J. J. Jr. (2001). Some new thoughts on conceptualizing perceived service quality: A hierarchical approach. *Journal of Marketing*, *65*(3), 34–49. doi:10.1509/jmkg.65.3.34.18334

Bulut, Z. A. (2015). Determinants of repurchase intention in online shopping: A Turkish consumer's perspective. *International Journal of Business and Social Science*, *6*(10), 55–63.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Carter, M., Wright, R., Thatcher, J. B., & Klein, R. (2014). Understanding online customers' ties to merchants: The moderating influence of trust on the relationship between switching costs and e-loyalty. *European Journal of Information Systems*, *23*(2), 185–204. doi:10.1057/ejis.2012.55

Chandar & Sarangal. (2016). A study of significance of E-servqual in determining service quality of online websites. *International Journal of Business Management and Scientific Research, 15*.

Doherty, N. F., & Ellis-Chadwick, F. (2010). Internet retailing: The past, the present and the future. *International Journal of Retail & Distribution Management*, *38*(11/12), 943–965. doi:10.1108/09590551011086000

Dwivedi, A. (2012). A higher-order model of consumer brand engagement and its impact on loyalty intentions. *Journal of Retailing and Consumer Services*, *24*, 100–109. doi:10.1016/j.jretconser.2015.02.007

Eid, M. I. (2011). Determinants of e-commerce customer satisfaction, trust, and loyalty in Saudi Arabia. *Journal of Electronic Commerce Research*, *12*(1), 78.

Elbeltagi, I., & Agag, G. (2016). E-retailing ethics and its impact on customer satisfaction and repurchase intention: A cultural and commitment-trust theory perspective. *Internet Research*, *26*(1), 288–310. doi:10.1108/IntR-10-2014-0244

Fang, Y., Qureshi, I., Sun, H., McCole, P., Ramsey, E., & Lim, K. H. (2014). Trust, satisfaction, and online repurchase intention: The moderating role of perceived effectiveness of e-commerce institutional mechanisms. *Management Information Systems Quarterly*, *38*(2), 407–427. doi:10.25300/MISQ/2014/38.2.04

Ganguly, B., Dash, S. B., Cyr, D., & Head, M. (2010). The effects of website design on purchase intention in online shopping: The mediating role of trust and the moderating role of culture. *International Journal of Electronic Business*, *8*(4-5), 302–330. doi:10.1504/IJEB.2010.035289

Giovanis, A. N., & Athanasopoulou, P. (2014). Gaining customer loyalty in the e-tailing marketplace: the role of e-service quality, e-satisfaction and e-trust. *International Journal of Technology Marketing, 9*(3), 288-304.

Gong, W., Stump, R. L., & Maddox, L. M. (2013). Factors influencing consumers' online shopping in China. *Journal of Asia Business Studies*, *7*(3), 214–230. doi:10.1108/JABS-02-2013-0006

Grewal, D., Levy, M., & Kumar, V. (2009). Customer experience management in retailing: An organizing framework. *Journal of Retailing*, *85*(1), 1–14. doi:10.1016/j.jretai.2009.01.001

Ha, H. Y., Janda, S., & Muthaly, S. K. (2010). A new understanding of satisfaction model in e-re-purchase situation. *European Journal of Marketing*, *44*(7/8), 997–1016. doi:10.1108/03090561011047490

Ha, H. Y., Muthaly, S. K., & Akamavi, R. K. (2010). Alternative explanations of online repurchasing behavioral intentions: A comparison study of Korean and UK young customers. *European Journal of Marketing*, *44*(6), 874–904. doi:10.1108/03090561011032757

Ha, H. Y., Muthaly, S. K., & Akamavi, R. K. (2010). Alternative explanations of online repurchasing behavioral intentions: A comparison study of Korean and UK young customers. *European Journal of Marketing*, *44*(6), 874–904. doi:10.1108/03090561011032757

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Ha, S., & Stoel, L. (2012). Online apparel retailing: Roles of e-shopping quality and experiential e-shopping motives. *Journal of Service Management*, *23*(2), 197–215. doi:10.1108/09564231211226114

Habeeb, S., & Sudhakar, K. F. (2019). Analyzing Causality Among the Service Quality, Customer Satisfaction and Behavioral Intention Variables with Respect to E-Shopping: An Empirical Take. *International Journal of Online Marketing*, *9*(1), 38–59. doi:10.4018/IJOM.2019010103

Hsu, C. L., Wu, C. C., & Chen, M. C. (2013). An empirical analysis of the antecedents of e-satisfaction and e-loyalty: Focusing on the role of flow and its antecedents. *Information Systems and e-Business Management*, *11*(2), 287–311. doi:10.100710257-012-0194-8

Khan, M. M., & Fasih, M. (2014). Impact of service quality on customer satisfaction and customer loyalty: Evidence from banking sector. *Pakistan Journal of Commerce and Social Sciences*, *8*(2), 331–354.

Kim, H. W., Xu, Y., & Gupta, S. (2012). Which is more important in Internet shopping, perceived price or trust? *Electronic Commerce Research and Applications*, *11*(3), 241–252. doi:10.1016/j.elerap.2011.06.003

Kim, Y., & Peterson, R. A. (2017). A Meta-analysis of Online Trust Relationships in E-commerce. *Journal of Interactive Marketing*, *38*, 44–54. doi:10.1016/j.intmar.2017.01.001

Lin, C., & Lekhawipat, W. (2014). Factors affecting online repurchase intention. *Industrial Management & Data Systems*, *114*(4), 597–611. doi:10.1108/IMDS-10-2013-0432

Lin, X., Featherman, M., Brooks, S. L., & Hajli, N. (2018). Exploring gender differences in online consumer purchase decision making: An online product presentation perspective. *Information Systems Frontiers*, 1–15.

Lin, Y., Luo, J., Cai, S., Ma, S., & Rong, K. (2016). Exploring the service quality in the e-commerce context: A triadic view. *Industrial Management & Data Systems*, *116*(3), 388–415. doi:10.1108/IMDS-04-2015-0116

Matute, J., Polo-Redondo, Y., & Utrillas, A. (2016). The influence of EWOM characteristics on online repurchase intention: Mediating roles of trust and perceived usefulness. *Online Information Review*, *40*(7), 1090–1110. doi:10.1108/OIR-11-2015-0373

Mummalaneni, V., & Meng, J. (2009). An exploratory study of young Chinese customers' online shopping behaviors and service quality perceptions. *Young Consumers*, *10*(2), 157–169. doi:10.1108/17473610910964732

Nguyen, D. H., de Leeuw, S., & Dullaert, W. E. (2018). Consumer behaviour and order fulfilment in online retailing: A systematic review. *International Journal of Management Reviews*, *20*(2), 255–276. doi:10.1111/ijmr.12129

Oliveira, T., Alhinho, M., Rita, P., & Dhillon, G. (2017). Modelling and testing consumer trust dimensions in e-commerce. *Computers in Human Behavior*, *71*, 153–164. doi:10.1016/j.chb.2017.01.050

Pham, T. S. H., & Ahammad, M. F. (2017). Antecedents and consequences of online customer satisfaction: A holistic process perspective. *Technological Forecasting and Social Change*, *124*, 332–342. doi:10.1016/j.techfore.2017.04.003

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Rahim Mosahab, P. C. (2010). *Service Quality, Customer Satisfaction and Loyalty: A Test of Mediation*. Academic Press.

Ranjbarian, B., Fathi, S., & Jooneghani, R. B. N. (2012). The Effect of Brand Extension Strategies upon Brand Image in the Sport Apparel Market. *International Journal of Academic Research in Business and Social Sciences*, *2*(10), 48.

Richard, M. O., Chebat, J. C., Yang, Z., & Putrevu, S. (2010). A proposed model of online consumer behavior: Assessing the role of gender. *Journal of Business Research*, *63*(9-10), 926–934. doi:10.1016/j.jbusres.2009.02.027

Segoro, W. (2013). The influence of perceived service quality, mooring factor, and relationship quality on customer satisfaction and loyalty. *Procedia: Social and Behavioral Sciences*, *81*, 306–310. doi:10.1016/j.sbspro.2013.06.433

Shehu, E., Papies, D., & Neslin, S. (2016). *Free Shipping and Product Returns*. Tuck School of Business Working Paper, (2864019).

Sinha, J., & Kim, J. (2012). Factors affecting Indian consumers' online buying behavior. *Innovative Marketing*, *8*(2), 46–57.

Sobihah, M., Mohamad, M., Ali, N. A. M., & Ismail, W. Z. W. (2015). E-commerce service quality on customer satisfaction, belief and loyalty: A proposal. *Mediterranean Journal of Social Sciences*, *6*(2), 260.

Srivastava, M., & Rai, A. K. (2013). Investigating the Mediating Effect of Customer Satisfaction in the Service Quality-Customer Loyalty Relationship. *Journal of Consumer Satisfaction, Dissatisfaction & Complaining Behavior*, 26.

Su, D., & Huang, X. (2011). Research on online shopping intention of undergraduate consumer in China-based on the theory of planned behavior. *International Business Research*, *4*(1), 86.

Subramanian, N., Gunasekaran, A., Yu, J., Cheng, J., & Ning, K. (2014). Customer satisfaction and competitiveness in the Chinese E-retailing: Structural equation modeling (SEM) approach to identify the role of quality factors. *Expert Systems with Applications*, *41*(1), 69–80. doi:10.1016/j.eswa.2013.07.012

Sullivan, Y. W., & Kim, D. J. (2018). Assessing the effects of consumers' product evaluations and trust on repurchase intention in e-commerce environments. *International Journal of Information Management*, *39*, 199–219. doi:10.1016/j.ijinfomgt.2017.12.008

Tontini, G., da Silva, J. C., Beduschi, E. F. S., Zanin, E. R. M., & Marcon, M. D. F. (2015). Nonlinear impact of online retail characteristics on customer satisfaction and loyalty. *International Journal of Quality and Service Sciences*, *7*(2/3), 152–169. doi:10.1108/IJQSS-02-2015-0021

Uzun, H., & Poturak, M. (2014). Factors Affecting Online Shopping Behavior of Consumers. *European Journal of Social and Human Sciences*, (3), 163-170.

Vinerean, S., Cetina, I., Dumitrescu, L., & Opreana, A. (2013). Modeling Trust To Study Consumers Acceptance Of Online Shopping. *Revista Economica*, *65*(2), 72–90.

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Zhang, Y., Fang, Y., Wei, K. K., Ramsey, E., McCole, P., & Chen, H. (2011). Repurchase Intention in B2C e-commerce - A relationship quality Perspective. *Information & Management*, *48*(6), 192–200. doi:10.1016/j.im.2011.05.003

Zheng, X., Lee, M., & Cheung, C. M. (2017). Examining e-loyalty towards online shopping platforms: The role of coupon proneness and value consciousness. *Internet Research*, *27*(3), 709–726. doi:10.1108/IntR-01-2016-0002

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Chapter 81
Effect of Online Second-Hand Shopping Experience on Repurchase Intention:
Evidence From Indian Shoppers

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ABSTRACT

Research on online shopping experience has been studied intensively over the past years. However, there are only few studies related to online second-hand shopping experience. The present study aims to investigate the effect of online second-hand shopping experience on trust, attitude, and repurchase intention. The results indicate that online second-hand shopping experience has a significant and positive effect on attitude, trust, and repurchase intention. Attitude and trust also have a positive influence on repurchase intention. This study provides implications to second-hand e-retailers to develop marketing strategies to retain the existing customers.

INTRODUCTION

In recent years, the dynamics of shopping patterns have been changing. Customers are so passionate towards buying products through e-commerce portals. People have shifted their shopping patterns from brick-and-mortar to online stores due to its varied advantages (Dholakia and Uusitalo, 2002). Products such as electronics, furniture, apparel, and home appliances are certain product categories that fascinate online buyers and attract huge profits to an online retailer (Overby and Lee, 2006). However, online retailers face many challenges to gain competitive advantage and sustain in the business (Papatla, 2011). Understanding and meeting customer expectations is crucial to e-retailers (Sheth, Sisodia, and Sharma,

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2000). Measuring the effect of customer's online shopping experience is pivotal to understand customer expectations and to develop and maintain customer relationships in online platform, since poor online customer experience can generate a loss of 24 per cent of online revenue (Econsultancy, 2011). Hence, e-retailers have to focus on providing a positive online shopping experience in order to survive in today's competitive online shopping environment.

Similar to online shopping, online second-hand shopping is highly booming in India (Singh, 2016). The rise of online second-hand shopping is increasing drastically because of expediency and cheaper rates. It attracts a large customer base by enabling customers to even dispose products respectably and still earn profit. Many studies have analysed the concept of online shopping experience in various contexts (e.g., Miyazaki and Fernandez, 2001; Zhou et al., 2007; Bilgihan, Kandampully and Zhang, 2016), only a few research have been conducted on examining the significance of online shopping experience in second-hand context. For instance, few researches have studied factors that motivates the customer to shop second-hand products offline (e.g., Guiot and Roux, 2010; Roux, and Guiot, 2008); few studies on customer initial trust towards online second-hand products (e.g., Lee and Lee, 2005); and few scholars have considered online second-hand business from seller's point of view (e.g., Turunen and Leskinen, 2015). Most of these studies have examined pre-purchase behaviour and motivating factors of online-second-hand consumers. There is a pressing need to investigate the post-purchase behaviour on online second-hand shoppers. Moreover, consumer behaviour often varies between new product and used goods consumption (Anderson and Ginsburgh, 1994). Most of the studies on second-hand shopping are based on developed countries, research on developing countries like India is essential (Kim, Ferrin, and Raghav Rao, 2009).

Hence, this study aims to address the above research gaps by testing the effect of shopping experience on customers' outcome variables. Specifically, this study examines the impact of online second-hand shopping experience on customer's attitude, trust and repurchase intention. The rest of the paper is divided as follows. The next section presents brief review of literature and develops hypotheses. We then present research methodology followed by discussion of findings and implications. Finally, the last section outlines the limitations of the present study and future research directions.

REVIEW OF LITERATURE

Online Shopping Experience

Online shopping has become the topmost activity among internet users (Bigne et al., 2008) and is attaining a popular growth, especially in India (Khare and Rakesh, 2011). According to Comscore (2013), India has the largest population of internet users and more than 100 million users opt for online shopping. As this figure keeps rising every year, online shoppers are becoming more than the number of internet users. This indicates that more users take privilege by shopping online (Farag, Schwanen, Dijst, and Faber, 2007) due to its enormous benefits. For instance, shoppers can buy products/services 24/7 through online and this enables customers to buy the products anytime at anywhere (Ling, Chai, and Piew, 2010). There are also other gains of online shopping such as time saving and comparison of prices with other sellers within a same e-commerce portal as well as other competitive e-commerce companies. In addition, customers can easily track their products, avail discounts, return and get refunds, and buy products from foreign market (Wu, Chen, Chen, and Cheng, 2014). Nevertheless, delivering positive

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online shopping experience is crucial to an online business firm (Khalifa and Liu, 2007). E-retailers need to implant positive online shopping experience to gain customer loyalty.

Most of the scholars believe that user-friendliness and visual efficiency of online shopping websites bestow best shopping experience (Wolfinbarger and Gilly, 2003). While it is true to some extent, online shopping experience also consist of other factors like interactivity, fun, reliability, accessibility, compatibility, and playfulness (Soopramanien, 2011). All these factors compose the process of online shopping and thus inculcating these variables can evoke a positive online shopping experience. Second-hand shopping is the process of purchasing the products that are already used by other people. Recent statistics show that online second-hand shopping continues to flourish at a higher rate (Ferraro, Sands, and Brace-Govan, 2016). The success rate of second-hand business relies on the availability of rare and quality products at cheaper rates. Online second-hand shopping is growing drastically as it enables people to purchase goods that are not easily available in the primary market (Sihvonen and Turunen, 2016). In simple words, obtaining an antique or rare product without searching physically from shop to shop is the reason behind its growth. Olx, Quikr, and eBay are the most popular online second-hand websites in India that allows people to buy and sell second-hand products through online.

HYPOTHESES DEVELOPMENT

Effect of Online Second-Hand Shopping Experience on Customer Attitude

Existing literature shows that customer experience is an important antecedent that effect the level of customer attitude (Sivadas and Baker, 2000). Customer experience consists of customer perception, information quality, website design, transaction processing, and convenience which influence customer attitude (Koo and Ju, 2010; Lee and Lin, 2005). Among the factors, convenience and website design are the most influencing factors in predicting online customer attitude (Srinivasan, Anderson and Ponnavolu, 2002). Several studies show that user experience influences attitudes towards websites and brands (e.g., Fang et al., 2014; Kim, Ferrin, and Raghav Rao, 2009). Based on the above findings, we hypothesize that:

H_1: Online second-hand shopping experience is positively related to customer attitude.

Effect of Online Second-Hand Shopping Experience on Customer Trust

Though online second-hand shopping provides a greater comfort to online shoppers, the usual purchasing process is quite a change in second-hand. This creates a deep concern regarding customer trust in the shopping process. The entire process of online shopping starting from information search to purchase decision relies completely on customer trust (Gounaris, 2005).

Customer trust does not simply rely on the outline process rather, it requires very positive experiential aspects (Eid, 2011). Marketers need to make and maintain the instruments that can magnify the online shopping experience of the customers so as to develop customer trust (Park, Hill, and Bonds-Raacke, 2015). This phase mainly involves easy flow of purchasing process with an emphasis on quality and reliability. Based on the above arguments that positive online shopping experience helps the customers to develop trust towards the company, we hypothesize that:

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H_2: Online second-hand shopping experience is positively related to customer trust.

Effect of Online Second-Hand Shopping Experience on Customer Repurchase Intention

Many studies have been conducted on identifying factors behind the formation of online repurchasing intention. Specifically, Van Schaik and Ling (2008) reveal that shopping experience based on website quality is the most influential factor in predicting customer repurchase intention. In addition, personal experience is also important for customers for repurchasing (Sun, Zuo and Kong, 2017). Coverdale and Wilbon (2013) examine that online shopping experience positively influences the intention to repurchase and recommend to other shoppers. Prior positive online shopping experience strengthens online customer repurchase intention (Bridges and Florsheim, 2008; Hwang, 2010). As customer intention to repurchase increases along with positive online shopping experience (Giannakos, Pateli and Pappas, 2012; Liu, 2016), we hypothesize that:

H_3: Online second-hand shopping experience is positively related to customer repurchase intention.

Effect of Customer Attitude on Customer Repurchase Intention

Customer attitude is the prominent factor of today's business world, particularly in e-commerce industry since rewarded customers are the ones to go for repeated purchasing (Hellier et al., 2003). Wu (2003) finds a positive relationship between customer attitude and online shopping. Relationship between customer attitude and customer repurchase intention is stronger in online than offline. Specifically, a sense of pleasure and perception are the major leads in generating customer attitude in online shopping platform (Jayawardhena, 2004). Customer attitude also influences customer loyalty (Anderson and Srinivasan, 2003) since retaining loyal customers is very important for e-commerce industries. As attitude stands as an influential factor for influencing customer repurchase intention in online shopping (Sorce, Perotti and Widrick, 2005), we hypothesize that:

H_4: Customer attitude is positively related to customer repurchase intention.

Effect of Customer Trust on Customer Repurchase Intention

Trust is a significant factor that helps in encouraging people to be engaged in a particular action (Safa and Ismail, 2013; Srivastava, Singh, and Srivastava, 2013). Several studies have assessed the effect of online trust on customer repurchase intention from various perspectives such as technological, behavioural, psychological, and economic approaches (Kirs and Bagchi, 2012). For instance, online customer trust stands as the immediate upshot involving any commercial exchanges and monetary transaction (Koh and Sundar, 2010). Customer trust based on security and safety of transaction increases repurchase intention. In addition, it inculcates confidence in customer mind in the process of online shopping, which in turn influence repurchase behaviour. Therefore, formation of customer trust is vital to maintain and develop customer relationships in the long-term and to engage them more in online transactions (Beldad, de Jong and Steehouder, 2010). Hence, we hypothesize that:

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H_5: Customer trust is positively related to customer repurchase intention.

METHODOLOGY

Sample and Data Collection

We collected data from online second-hand shoppers to empirically test the hypotheses. A self-completion questionnaire was mailed and posted on number of Facebook pages. The respondents were instructed to answer all the questions according to their experience in online second-hand shopping. Among the returned questionnaires, 700 responses were found to be useful for data analysis after exclusion of incomplete responses.

Measurements

To measure online second-hand shopping experience 8 items were adapted from Chen and Chang (2003). To measure customer attitude, items were adopted from (Zhou, Dai and Zhang, 2007; Mamoun, Mutaz and Al-Debei, 2015; Mutaz et al., 2015), customer trust (Ponte et al., 2015; Samuel, Balaji and Wei, 2015) and repurchase intention items were adopted from (Pappas et al., 2014). All the statements were measured based on a five-point Likert scale ranging from 5 'strongly agree' to 1 'strongly disagree'.

The research questionnaire also captured the demographic profile of the respondents including gender, age, education, occupation, and income. Demographic profile is shown in in Table 1. As an initial step, we checked the data for redundancy, factor loadings (<.5), cross loadings (<.4) (Hair et al., 1998) and reliability (<.7) (Nunally, 1978). This process ended up in deletion of certain items of all the constructs (see Table 5 in the Appendix).

ANALYSIS AND RESULTS

Measurement Model

This study tested the model shown in Figure 1. Measurement model validation was assessed based on reliability, convergent, and discriminant validity using Smart PLS 3.2.6. Reliability was tested using composite reliability (CR) values, where the results show that the values of CR ranged from 0.90 to 0.95, exceeding the indicated value of 0.7 (Hair et al., 1998), confirming construct reliability. Next, convergent validity was examined using the criteria that all indicator loadings should be significant and exceed 0.70 and the average variance extracted (AVE) of all the constructs should exceed 0.50 (Fornell and Larcker, 1981). The results showed that each factor loading values exceeded 0.7 and the AVE values ranged from 0.70 to 0.80 indicating that convergent validity is good enough. The results of composite reliability and convergent validity are presented in Table 2. Discriminant validity was determined using the criteria that the square root of AVE should be greater than all other cross-correlations shared between one construct and another in the model (Fornell and Larcker, 1981). The results showed that the entire diagonal values exceeded inter-construct correlations. Discriminant validity is presented in Table 3.

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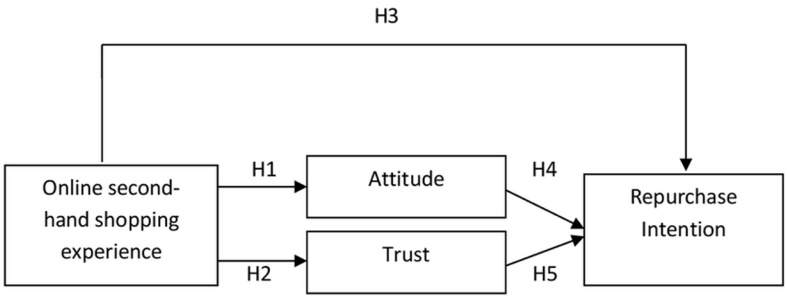
Figure 1. Effect of online second-hand shopping experience on customer outcomes



Structural Model

We then tested the structural model using bootstrapping technique in Smart PLS 3.2.6. The results of the structural model showed that online second-hand shopping experience significantly predicts customer attitude, trust, and repurchase intention. Thus, we found support for H_1, H_2, and H_3. In addition, customer attitude and trust also had significant positive relationship with customer repurchase intention. Thus, H_4 and H_5 were also supported. Structural Model results are shown in Table 4.

DISCUSSION AND IMPLICATIONS

This study has tested a model containing the relationships among shopping experience, customer attitude, trust, and intention to repurchase in online second-hand shopping context and found positive relationships among all the constructs.

This study contributes to the online second-hand shopping literature in many ways. First, this study has developed new hypotheses containing the relationship between online second-hand shopping experience and customer outcomes. Secondly, this study has developed and tested an empirical model in online second-hand shopping context. Next, this study is the first attempt to explore the significance of online second-hand shopping experience by predicting its potential outcome variables (Fang et al., 2014; Kim, Ferrin, and Raghav Rao, 2009).

In general, the findings of this research reveal that positive online second-hand shopping experience influences customer attitude, and trust, which in turn positively triggers customer repurchase behaviour. This indicates that consumer behaviour is highly dependent on pleasant experience (Guo, 2004). Specifically, this study finding indicates that shopping experience creates positive attitude among the customers. This implies the e-retailers to make their customers feel that purchases of second-products are useful and buying used goods through online is an enjoyable task. Relationship between experience and trust suggests that online retailers should make an attempt to give assurance about the safety of transaction and delivery. As attitude and trust have a significant relationship with repurchase behaviour, e-retailers should create positive attitude and build trust to covert acquired customers to loyal customers.

This study finding signifies strong relationship between shopping experience and customer retention. This implies the second-hand retailers to provide user friendly website interface; assure safe transaction and delivery; and create convenience to buy the products through the websites. This will eventually lure

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the customers to visit the website in future. On the whole, online second-hand retailers need to create unique shopping process to gain positive attitude and trust among customers to achieve profits. They ought to fill the basic requirements of customers such as secured payment systems, privacy policies, full time servicing, flexible and easy returns to gain faith and repeat customers.

Table 1. Demographic profile

Items	N	%
Gender		
Male	374	53.4
Female	326	46.6
Age		
Less than 20 years	207	29.6
21-30 years	432	61.7
31-40 years	51	7.3
41-50 years	6	0.9
51-60 years	4	0.6
Education		
Undergraduate	226	32.4
Post-graduate	159	22.7
Others	315	45.0
Occupation		
Private sector	107	15.3
Public sector	101	14.4
Student	385	55.0
Business	97	13.9
Others	10	1.4
Income per annum		
0 - 5 lakhs	604	86.3
5-10 lakhs	7	1.0
10-15 lakhs	76	10.9
15-20 lakhs	2	0.3
More than 20 lakhs	11	1.6
Have you purchased second-hand products from online?		
YES	700	100.0
NO	0	0
Website		
OLX	333	47.6
QUIKR	159	22.7
Others	208	29.7

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Table 2. Results of measurement model

Constructs	Measurement Items	Loadings	p-Value	Cronbach's Alpha	AVE	Composite Reliability
Online Second-hand Shopping Experience	OSSE1	0.83	***	0.87	0.66	0.91
	OSSE3	0.86	***			
	OSSE4	0.74	***			
	OSSE5	0.77	***			
	OSSE6	0.84	***			
Attitude	ATT1	0.85	***	0.91	0.74	0.94
	ATT2	0.86	***			
	ATT3	0.88	***			
	ATT4	0.87	***			
	ATT5	0.85	***			
Trust	TR1	0.86	***	0.86	0.70	0.90
	TR2	0.78	***			
	TR3	0.88	***			
	TR4	0.82	***			
Repurchase Intention	ORP1	0.86	***	0.92	0.75	0.94
	ORP2	0.90	***			
	ORP3	0.88	***			
	ORP4	0.87	***			
	ORP5	0.84	***			

Table 3. Discriminant validity

Constructs	1	2	3	4
Online Second-hand Shopping Experience	**0.81**			
Attitude	0.57	**0.86**		
Trust	0.58	0.60	**0.84**	
Repurchase Intention	0.76	0.68	0.68	**0.87**

Note - The diagonal elements are the AVE values and the off-diagonal elements are the squared inter-construct correlations.

Table 4. Structural model

Hypothesized Paths			*t*-Values	*p*-Values	Hypotheses
Attitude	<--	Online second-hand shopping experience	17.77	***	Accepted
Trust	<--	Online second-hand shopping experience	18.30	***	Accepted
Repurchase intention	<--	Online second-hand shopping experience	13.25	***	Accepted
Repurchase Intention	<--	Attitude	7.08	***	Accepted
Repurchase Intention	<--	Trust	7.67	***	Accepted

*** statistically significant at P<0.001

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CONCLUSION AND FUTURE RESEARCH DIRECTIONS

This study indicates that shopping experience positively influences customer repurchase behaviour while shopping second-hand products through online. When customers gain enjoyments, convenience, credibility, and other benefits in second-hand shopping, they intend to develop positive attitude and trust to repurchase the products through the same website.

Though this study is the first attempt in testing an empirical model in online second-hand literature, we acknowledge certain limitations. First, the hypothesized relationships are tested using a cross-sectional research design. To enhance the generalizability of the findings, future researchers can use longitudinal research to test the research model of this study. Second, sample was chosen based on Facebook pages and groups on second-hand. Generalization based on this study sample warrants caution. Future researchers may replicate the study using broader and cross-sectional segments of second-hand shoppers. Third, future researches can test the mediation effect of attitude and trust between experience and repurchase intention. Fourth, other variables such as satisfaction and word-of-mouth can be tested in the hypothesized model. Finally, factors that compose second-hand shopping with respect to different product categories can be explored in future research.

REFERENCES

Anderson, R. E., & Srinivasan, S. S. (2003). E-satisfaction and e-loyalty: A contingency framework. *Psychology and Marketing*, *20*(2), 123–138. doi:10.1002/mar.10063

Anderson, S. P., & Ginsburgh, V. A. (1994). Price discrimination via second-hand markets. *European Economic Review*, *38*(1), 23–44. doi:10.1016/0014-2921(94)90003-5

Beldad, A., De Jong, M., & Steehouder, M. (2010). How shall I trust the faceless and the intangible? A literature review on the antecedents of online trust. *Computers in Human Behavior*, *26*(5), 857–869. doi:10.1016/j.chb.2010.03.013

Bigne-Alcaniz, E., Ruiz-Mafé, C., Aldas-Manzano, J., & Sanz-Blas, S. (2008). Influence of online shopping information dependency and innovativeness on internet shopping adoption. *Online Information Review*, *32*(5), 648–667. doi:10.1108/14684520810914025

Bilgihan, A., Kandampully, J., & Zhang, T. (2016). Towards a unified customer experience in online shopping environments: Antecedents and outcomes. *International Journal of Quality and Service Sciences*, *8*(1), 102–119. doi:10.1108/IJQSS-07-2015-0054

Bridges, E., & Florsheim, R. (2008). Hedonic and utilitarian shopping goals: The online experience. *Journal of Business Research*, *61*(4), 309–314. doi:10.1016/j.jbusres.2007.06.017

Chen, S. J., & Chang, T. Z. (2003). A descriptive model of online shopping process: Some empirical results. *International Journal of Service Industry Management*, *14*(5), 556–569. doi:10.1108/09564230310500228

Comscore. (2013). India Digital Future in Focus. Retrieved from https://www.comscore.com

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Coverdale, T., & Wilbon, A. D. (2013). The Impact of In Group Membership on e-Loyalty of Women Online Shoppers An Application of the Social Identity Approach to Website Design. *International Journal of E-Adoption*, *5*(1). doi:10.4018/jea.2013010102

Dholakia, R. R., & Uusitalo, O. (2002). Switching to electronic stores: Consumer characteristics and the perception of shopping benefits. *International Journal of Retail & Distribution Management*, *30*(10), 459–469. doi:10.1108/09590550210445335

Econsultancy. (2011). Internet Statistics Compendium. *Econsultancy.com Ltd.*

Eid, M. I. (2011). Determinants of e-commerce customer satisfaction, trust, and loyalty in Saudi Arabia. *Journal of Electronic Commerce Research*, *12*(1), 78–93.

Fang, Y., Qureshi, I., Sun, H., McCole, P., Ramsey, E., & Lim, K. H. (2014). Online repurchase intention: The moderating role of perceived effectiveness of e-commerce institutional mechanisms. *Management Information Systems Quarterly*, *38*(2), 407–427. doi:10.25300/MISQ/2014/38.2.04

Farag, S., Schwanen, T., Dijst, M., & Faber, J. (2007). Shopping online and/or in-store? A structural equation model of the relationships between e-shopping and in-store shopping. *Transportation Research Part A, Policy and Practice*, *41*(2), 125–141. doi:10.1016/j.tra.2006.02.003

Ferraro, C., Sands, S., & Brace-Govan, J. (2016). The role of fashionability in second-hand shopping motivations. *Journal of Retailing and Consumer Services*, *32*, 262–268. doi:10.1016/j.jretconser.2016.07.006

Giannakos, M. N., Pateli, A. G., & Pappas, I. O. (2013). Identifying the direct effect of experience and the moderating effect of satisfaction in the Greek online market. In Mobile Opportunities and Applications for E-Service Innovations (pp. 77–97). Hershey, PA: IGI Global. doi:10.4018/978-1-4666-2654-6.ch005

Gounaris, S. P. (2005). Trust and commitment influences on customer retention: Insights from business-to-business services. *Journal of Business Research*, *58*(2), 126–140. doi:10.1016/S0148-2963(03)00122-X

Guiot, D., & Roux, D. (2010). A second-hand shoppers' motivation scale: Antecedents, consequences, and implications for retailers. *Journal of Retailing*, *86*(4), 355–371. doi:10.1016/j.jretai.2010.08.002

Guo, Y. M. (2004). Online Shopping Experience: A Conceptualization and The social and cognitive impacts of e-commerce on modern organizations.

Hellier, P. K., Geursen, G. M., Carr, R. A., & Rickard, J. A. (2003). Customer repurchase intention: A general structural equation model. *European Journal of Marketing*, *37*(11/12), 1762–1800. doi:10.1108/03090560310495456

Hwang, Y. (2010). The moderating effects of gender on e-commerce systems adoption factors: An empirical investigation. *Computers in Human Behavior*, *26*(6), 1753–1760. doi:10.1016/j.chb.2010.07.002

Jayawardhena, C. (2004). Personal values' influence on e-shopping attitude and behaviour. *Internet Research*, *14*(2), 127–138. doi:10.1108/10662240410530844

Khalifa, M., & Liu, V. (2007). Online consumer retention: contingent effects of online shopping habit and online shopping experience. *European Journal of Information Systems, 16*(August), 780-792.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Khare, A., & Rakesh, S. (2011). Antecedents of Online Shopping Behavior in India: An Examination. *Journal of Internet Commerce*, *10*(4), 227–244. doi:10.1080/15332861.2011.622691

Kim, D. J., Ferrin, D. L., & Raghav Rao, H. (2009). Trust and satisfaction, two stepping stones for successful e-commerce relationships: A longitudinal exploration. *Information Systems Research*, *20*(2), 237–257. doi:10.1287/isre.1080.0188

Kirs, P., & Bagchi, K. (2012). The impact of trust and changes in trust: A national comparison of individual adoptions of information and communication technologies and related phenomenon. *International Journal of Information Management*, *32*(5), 431–441. doi:10.1016/j.ijinfomgt.2012.02.003

Koh, Y. J., & Sundar, S. S. (2010). Effects of specialization in computers, web sites, and web agents on e-commerce trust. *International Journal of Human-Computer Studies*, *68*(12), 899–912. doi:10.1016/j.ijhcs.2010.08.002

Koo, D. M., & Ju, S. H. (2010). The interactional effects of atmospherics and perceptual curiosity on emotions and online shopping intention. *Computers in Human Behavior*, *26*(3), 377–388. doi:10.1016/j.chb.2009.11.009

Lee, G. G., & Lin, H. F. (2005). Customer perceptions of e-service quality in online shopping. *International Journal of Retail & Distribution Management*, *33*(2), 161–176. doi:10.1108/09590550510581485

Lee, S. M., & Lee, S. J. (2005). Consumers' initial trust toward second-hand products in the electronic market. *Journal of Computer Information Systems*, *46*(2), 85–98.

Lee Hao Suan Samuel, M. S. (2015). An Investigation of Online Shopping Experience on Trust and Behavioral Intentions. *Journal of Internet Commerce*, *4*(2), 233–254. doi:10.1080/15332861.2015.1028250

Ling, K. C., Chai, L. T., & Piew, T. H. (2010). The effects of shopping orientations, online trust and prior online purchase experience toward customers' online purchase intention. *International Business Research*, *3*(3), 63. doi:10.5539/ibr.v3n3p63

Liu, S. (2016). How the user liaison's understanding of development processes moderates the effects of user-related and project management risks on IT project performance. *Information & Management*, *53*(1), 122–134. doi:10.1016/j.im.2015.09.004

Mamoun, N. (2015). An integrated model of factors affecting consumer attitudes towards online shopping. *Business Process Management Journal*, *21*(6), 1353–1376. doi:10.1108/BPMJ-02-2015-0022

Miyazaki, A. D., & Fernandez, A. (2001). Consumer perceptions of privacy and security risks for online shopping. *The Journal of Consumer Affairs*, *35*(1), 27–44. doi:10.1111/j.1745-6606.2001.tb00101.x

Mutaz, M. (2015). Consumer attitudes towards online shopping. *Internet Research*, *25*(5), 707–733. doi:10.1108/IntR-05-2014-0146

Overby, J. W., & Lee, E. J. (2006). The effects of utilitarian and hedonic online shopping value on consumer preference and intentions. *Journal of Business Research*, *59*(10–11), 1160–1166. doi:10.1016/j.jbusres.2006.03.008

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Papatla, P. (2011). Do online shopping styles affect preferred site attributes? An empirical investigation and retailing implications. *Journal of Retailing and Consumer Services*, *18*(4), 362–369. doi:10.1016/j.jretconser.2011.04.002

Pappas, I.O., Pateli, A.G., Giannakos, M.N., & Chrissikopoulos, V. (2014). Moderating effects of online shopping experience on customer satisfaction and repurchase intentions. *International Journal of Retail & Distribution Management*, *42*(3), 187–204. doi:10.1108/IJRDM-03-2012-0034

Park, J., Hill, W. T., & Bonds-Raacke, J. (2015). Exploring the relationship between cognitive effort exertion and regret in online vs. offline shopping. *Computers in Human Behavior*, *49*, 444–450. doi:10.1016/j.chb.2015.03.034

Ponte, E. B., Carvajal-Trujillo, E., & Escobar-Rodríguez, T. (2015). Influence of trust and perceived value on the intention to purchase travel online: Integrating the effects of assurance on trust antecedents. *Tourism Management*, *47*, 286–302. doi:10.1016/j.tourman.2014.10.009

Roux, D., & Guiot, D. (2008). Measuring second-hand shopping motives, antecedents and consequences [English Edition]. *Recherche et Applications en Marketing*, *23*(4), 63–91. doi:10.1177/076737010802300403

Safa, N. S., & Ismail, M. A. (2013). A customer loyalty formation model in electronic commerce [Doctoral thesis]. University of Malaya.

Sheth, J. N., Sisodia, R. S., & Sharma, A. (2000). The Antecedents and Consequences of Customer-Centric Marketing. *Journal of the Academy of Marketing Science*, *28*(1), 55–66. doi:10.1177/0092070300281006

Sihvonen, J., & Turunen, L. L. M. (2016). As good as new-valuing fashion brands in the online second-hand markets. *Journal of Product and Brand Management*, *25*(3), 285–295. doi:10.1108/JPBM-06-2015-0894

Singh, S. (2016). Rise of used goods markets: Why e-commerce companies like OLX, eBay are chasing second-hand goods. *India Times*. Retrieved from http://economictimes.indiatimes.com

Sivadas, E., & Baker-Prewitt, J. L. (2000). An examination of the relationship between service quality, customer satisfaction, and store loyalty. *International Journal of Retail & Distribution Management*, *28*(2), 73–82. doi:10.1108/09590550010315223

Soopramanien, D. (2011). Conflicting attitudes and scepticism towards online shopping: The role of experience. *International Journal of Consumer Studies*, *35*(3), 338–347. doi:10.1111/j.1470-6431.2010.00945.x

Sorce, P., Perotti, V., & Widrick, S. (2005). Attitude and age differences in online buying. *International Journal of Retail & Distribution Management*, *33*(2), 122–132. doi:10.1108/09590550510581458

Srinivasan, S. S., Anderson, R., & Ponnavolu, K. (2002). Customer loyalty in e-commerce: An exploration of its antecedents and consequences. *Journal of Retailing*, *78*(1), 41–50. doi:10.1016/S0022-4359(01)00065-3

Srivastava, R. K., Singh, S., & Srivastava, V. (2013). The Role of Trust and Technology Acceptance Model (TAM) on Customer Acceptance of Mobile Banking: An Integrated Model to Improve Mobile Banking in Banking Sector-A Conceptual Paper. *International Journal of Asian Business and Information Management*, *4*(1), 31–43. doi:10.4018/jabim.2013010104

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Sun, K., Zuo, M., & Kong, D. (2017). What Can Product Trial Offer?: The Influence of Product Trial on Chinese Consumers' Attitude towards IT Product. *International Journal of Asian Business and Information Management*, *8*(1), 24–37. doi:10.4018/IJABIM.2017010102

Turunen, L. L. M., & Leipämaa-Leskinen, H. (2015). Pre-loved luxury: Identifying the meanings of second-hand luxury possessions. *Journal of Product and Brand Management*, *24*(1), 57–65. doi:10.1108/JPBM-05-2014-0603

Van Schaik, P., & Ling, J. (2008). Modelling user experience with web sites: Usability, hedonic value, beauty and goodness. *Interacting with Computers*, *20*(3), 419–432. doi:10.1016/j.intcom.2008.03.001

Wolfinbarger, M., & Gilly, M. C. (2003). eTailQ: Dimensionalizing, measuring and predicting etail quality. *Journal of Retailing*, *79*(3), 183–198. doi:10.1016/S0022-4359(03)00034-4

Wu, L. Y., Chen, K. Y., Chen, P. Y., & Cheng, S. L. (2014). Perceived value, transaction cost, and repurchase-intention in online shopping: A relational exchange perspective. *Journal of Business Research*, *67*(1), 2768–2776. doi:10.1016/j.jbusres.2012.09.007

Wu, S. I. (2003). The relationship between consumer characteristics and attitude toward online shopping. *Marketing Intelligence & Planning*, *21*(1), 37–44. doi:10.1108/02634500310458135

Zhou, L., Dai, L., & Zhang, D. (2007). Online shopping acceptance model-A critical survey of consumer factors in online shopping. *Journal of Electronic Commerce Research*, *8*(1), 41.

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APPENDIX

Table 5. Measurement items

o.	Items	Source
	Online Second-Hand Shopping Experience	
1	I'm able to find what I wanted very easily	(Chen and Chang, 2003)
2	The transaction is very secure *	
3	It is convenient to shop with the Internet vendor	
4	It saves me a lot of time in shopping	
5	I'm able to place the order at the time convenient to me	
6	The Internet vendor offered a large selection	
7	The transaction is of considerable value *	
8	There is no privacy concerns involved with the transaction *	
	Trust	
9	I feel that second-hand shopping through online is trustworthy	(Ponte et al., 2015; Samuel, Balaji and Wei, 2015)
10	I believe that second-hand shopping through online is dependable	
11	I believe that second-hand shopping through online is reliable	
12	I feel that second-hand shopping through online is believable	
13	I feel that second-hand shopping through online is realistic *	
	Attitude	
14	My attitude towards online second-hand shopping is positive	(Zhou, Dai and Zhang, 2007; Mamoun, Mutaz and Al-Debei, 2015; Mutaz et al., 2015)
15	I feel that it is a best idea to go for online second-hand shopping	
16	I feel using online platform for shopping second-hand goods is a wise decision	
17	I feel that online second-hand shopping is very useful	
18	I feel that second-hand shopping through online is a pleasant thing to do	
	Online repurchase intention	
19	I will continue using online platform for shopping second-hand products in the future	(Pappas et al., 2014)
20	I have a strong intention to go for online second-hand shopping in the future	
21	I will regularly use online platform for buying second-hand products in the future	
22	My intention to buy second-hand products through online is high	
23	If I were to buy second-hand products, I would consider buying it from online platform	

* removed based on poor loadings

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Chapter 82
Consumer E-Loyalty for E-Grocery Shopping in a Metro City of India:
Role of Flow and TAM Antecedents

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ABSTRACT

This study focuses on the e-loyalty of the grocery consumers. Understanding online behavior in developing countries is an emerging issue in these days. The purpose of this research is to examine the effects of antecedents of flow on attitude and perceived ease of use in the context of online grocery purchase behavior in a developing country perspective. Further, the study also examines the role of attitude and perceived ease of use in building e-loyalty. The present study analyzes the data of 250 respondents collected through an online survey. The data were analyzed employing exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equational modeling (SEM). The results show that the flow variables (concentration and enjoyment) have a positive but differential effect on attitude towards online grocery purchase. However, both concentration and enjoyment were equally important in influencing the perceived ease of use. The study also found that attitude positively influences the e-loyalty, and perceived ease of use influences both attitude and e-loyalty.

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INTRODUCTION

Globally, the Information and Communication Technology (ICT) have provided various online shopping platforms that led to increasing up the number of online grocery shoppers (Van Droogenbroeck and Van Hove, 2017). Grocery is an essential daily need for all households. Conventionally, the grocery goods were bought from nearby Kirana stores (similar to mom-and-pop shops), shopping centers, convenience stores, and supermarkets. Since, the advent of internet enabled business, several grocery companies are selling their products online. However, much of their business has been restricted to few big cities primarily the metro cities. A majority of online grocery companies sell in to non-metro cities thus losing huge potential for e-grocery companies (Dattagupta, 2018). Indian consumers spent a significant proportion (~50%) of their income on groceries (Hindustan Times, 2018; Kureshi & Thomas, 2019). Retail grocery market could be around 60% of the India's overall retail market. Therefore, retail grocery has been the largest consumer segment (The Wharton School, 2018). The retail grocery market in India has been estimated between $400 billion to $600 billion (The Wharton School, 2018). Some sources stated it about $428bn thus making India as world's third largest grocery market after China (~$1400bn), and U.S.A. (~$830bn) (Financial Times, 2017; RedSeer, 2019). It is also estimated that the grocery market in India could cross $700 billion mark by 2022 (The Wharton School, 2018; Reportlinker, 2015).

It is worth mentioning that even though online shopping is gaining popularity in India the concept of buying grocery is still new. Among many motivating factors the rise in online payments, increasing penetration of Internet and rise in the usage of smart phones are some notable actors e-grocery shopping in India (Business Today, 2013). Indian has huge opportunity in e-grocery segment which is currently less than 1% ($150 mn) of total grocery market ($428bn) (Financial Times, 2017; Businesswire, 2019). Comparably the current e-grocery market share in India is much lower than many other countries such as U.K. (6.9%), China (4.2%), and U.S. (1.4%). Currently, the 'e-grocery market' in the country is projected to achieve growth of CAGR of 60% during 2019 – 2022 (RedSeer, 2019).

Rapid growth in internet and smart phone consumption is driving the growth in e-tailing in general and e-grocery shopping in particular. It is anticipated that number of internet users in India will grow from 480 million in 2019 to 660 million in 2023 (Diwanji, 2020). Thus, the size of internet user is likely to reach 55 percent in 2023 from 40 percent in 2019 thus adding more e-shopper base in India for e-grocery shopping. Generally, young adults shop groceries online because it is difficult for the parent to shop on smart phones or on internet in India (Hindustan Times, 2018). In India, majority of online buyers include 'tech-savvy' millennial (aged 18-35 years) who comprise about 34% of the total population (The Economic Times, 2018). While in the developed countries like U.S.A. and European countries, generation X (aged 36-51 years) made more purchases than the millennial (KPMG, 2017). In India, grocery retail is more than 60% of the country's total retail market ranging from $400 billion to $600 billion at present and has the potential to cross $700 billion by 2022. Out of which, Online grocery is ranging from $500 million to $1 billion and expected to increase $3 billion to $5 billion by 2022. Groceries are an essential purchase for Indians, and they spend more than 50% of their income on groceries shopping (The Economics Times, 2018; Knowledge@Wharton, 2018, The Times of India, 2018).

It is quite difficult to understand the customer behaviour of attracting the new customer over the internet (Van Droogenbroeck & Van Hove, 2020). Focusing on existing consumersby retaining and understanding what makes them more loyal has become imperative for today's e-marketers. Thus, the loyalty of the customer has become one of the critical factors in determining the long-term success of the firm. There is a need to study for the antecedent variable of customer loyalty (Srinivasan, Anderson, &

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Ponnavolu, 2002). Grocery e-tailing has the opportunity of high repeat orders if a customer is satisfied in first order (Business Today, 2013). Still, there are not enough studies investigating the customer loyal over the internet in general and mainly focusing e-grocery store (Patro, 2016). Further, the competitive environment of e-retailer has compelled them to strive for gaining competitive advantages (Rao, Patro, Nkechi, Ewomaoghene, Egenti, & Saha, 2016). Therefore, it has become the need of carrying out the study for fostering the loyalty intention of the customer. The present study aims to investigate the antecedent constructs for determining the loyalty intention of the customer from the perspective of online grocery shopping. The present study tests a theoretical model that answers the following questions.

- Do the flow constructs (concentration and enjoyment) affect the attitude and perceived ease of use (PEOU) for e-grocery shopping?
- Does Perceived ease of use (EOU) influences the attitude of the customer towards e-grocery shopping?
- Do attitude and perceived ease of use (EOU) affects the loyalty intention of the customer for e-grocery shopping.

This study extends the literature in three different ways. Firstly, the present study develops a model for the customer loyalty from the technology acceptance perspective. Secondly, the study extends the TAM model by amalgamating the relevant flow constructs (concentration and enjoyment). Finally, the research findings of this study show that the flow constructs such as concentration and enjoyment influence the perceived ease of use and customer attitude, which subsequently affects customer loyalty. The remaining part of the research paper consists of following subsections, the first section derives the hypotheses from the review of the literature, and further the methodology, results, discussion and conclusion are presented. The study concludes with limitations and future research direction.

THEORETICAL FRAMEWORK

Since its introduction, more and more researchers have been applying and integrating the concept of flowand its antecedents and consequences in the context of human-computer interaction. The concept of flow has been borrowed from psychology, researchersconceive flow as an essential factor determining the interactions of the individual with computers, and applied technologies, specifically the users' positive experience with computers and the technology (see classic works such as Csikszentmihalyi, 1990; Ghani, Supnick, & Rooney, 1991; Trevino & Webster 1992; Webster, Trevino, & Ryan, 1993). Specifically, the originator of the concept of flow, Csikszentmihalyi (1975), defines it as the holistic feeling that people experience when they act with full involvement, which can occur not only in the exercise of physical activities but in interactions with symbolic systems such as, for example, mathematics and computer languages. The state is so satisfactory that individuals tend to repeat the activity continuously. In this sense, the flow can be conceivedas an optimal, intense and intrinsically enjoyable experience evoked when the individual engages in an activity with total involvement and concentration. In the first place, it feels an intrinsic interest for the exercise of it; second, he experiences a distortion of time (Privette & Bundrick, 1987). In short, the flow induces a state where navigation itself becomes the primary reward against the results derived from its execution. The flow is therefore a useful dimension to describe the

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interactions between the user and the computer. Following the previous investigations, the flow can be assimilated with a state of intrinsic enjoyment.

Precisely, the concept of intrinsic enjoyment is defined as the degree to which the activity is perceived as enjoyable per se, beyond the consequences that can be anticipated (Davis, Bagozzi, & Warshaw, 1992); and it is identified as an essential intrinsic motivational factor in the use of computers, contributing to the evocation of creativity and exploratory behavior (Ghani et al., 1991). Specifically, the flow as enjoyment is a reason for acceptance and use that not only incorporates a perception of the balance between the skills and challenges proposed but also incorporates processes such as telepresence and time distortion, play, concentration, etc. (Marr, 2000, cited in Sanchez-Franco, 2006). Many authors have proposed that users also experience states of enjoyment in their use of online shopping, etc. (see, for example, Trevino & Webster, 1992; Ghani & Deshpande, 1994; Sánchez-Franco & Roldán, 2005; Giao, Vuong, & Quan, 2020).

In sum, the research on the use of the Web finds empirical support in consideration of the flow as a catalyst of the intention and use of the Websites. If individuals enjoy their browsing experiences, their perceptions of online services and, in short, their intentions to use the internet for shoppingwill be significantly enhanced. That is, the websiteusagecan evoke values that are not easily picked up by dimensions such as perceived ease of use or utility (Hoffman & Novak, 1996; Singh & Dalal, 1999). Browsing an online shopping site goes beyond utilitarian aspects to motives based on optimal experiences. In this sense, Davis et al. (1992) argue that while the utility is a significant factor in the intentions of computer use at work, enjoyment will also help explain its variance beyond that explained by the factors of utilitarian nature.

Davis et al. (1992) apply the theory of motivation to the understanding of the adoption and use of technologies. They proposed a novel model, the motivational model (MM), where one of the traditional factors of the TAM model (i.e. the perceived utility) was renamed as extrinsic motivation, and an additional constituents of intrinsic motivation was added named as perceived enjoyment. Further, Venkatesh, Speier, & Morris, 2002) have presented an extended model that integrates intrinsic motivation within an original TAM model. The measures of the intrinsic motives may refer to enjoyment, pleasure and fun in use etc.

Relationship of Flow Constructs

For its part, Koufaris (2002) applies the theory of flow status to online consumer behavior to examine emotional responses in visits to online stores. This author proposes that greater enjoyment and concentration should result in greater conative loyalty. Therefore, by accepting the proposals on flow relationships, we find support for their consideration as a promoter of the behavior and use of the internet. If individuals enjoy their 'navigations', they will also favorably assess their usefulness, in short, accept, and use the internet site more frequently. The navigation through a website can go beyond utilitarian aspects and rest on intrinsic motives. In this context, the research published to date suggests that the flow as a state of intrinsic enjoyment would present relationships with perceived utility and ease of use. For example, Venkatesh (2000) shows that enjoyment indirectly influences utility via ease of use, with the greatest effects as users gain more experience and control of use. Further, Agarwal & Karahanna (2000) proposed that cognitive absorption (similar to the flow state) influences utility. Individuals seek to explain their behaviour with reasons that arise from outside of themselves, and when they do not find such explanations fully satisfactory, they turn to their interior for additional (intrinsic) causes. That is,

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individuals who behave in a concrete way, could infer that their behavior are also due to enjoyment and satisfaction derived from the execution of the task (Bem, 1972 cited in Gruman, Schneider, & Coutts, 2016). Csikszentmihaly (1975) argues that the flow can improve if the individual perceives that the activity can be easily executed. The perceived ease of use can therefore be associated with the flow: the easier a system is to use, the more enjoyable it is. Empirical research has found support for the relationship between ease and enjoyment in the work of Igbaria, Parasuraman, & Baroudi, 1996). It is therefore conceivable that a user-friendly website that avoids user boredom to a threshold level can provide better feedbacks that stimulate the user and, consequently, lead to a higher state of enjoyment. Based on the discussion we thus propose.

H1: Concentration has a significant influence on H1A) Attitude towards online grocery shopping and H1B) perceived ease of use in online grocery context.
H2: Enjoyment has a significant influence on H2A) Attitude towards online grocery shopping and H2B) perceived ease of use in online grocery context.

Perceived Ease of Use and Attitude

Perceived ease of use defined under TAM is a belief that technology adoption will have no physical and mental effort (Davis, Bagozzi, & Warshaw, 1989). And the complexity in adoption will have adverse effect on technology adoption (Van Droogenbroeck & Van Hove, 2020). Also, ease-of-use (PEOU) is the degree to which a user believes that using a particular technology would be free from effort and helps in the adoptionof technologies including internet (Nadim and Begum, 2008). Perceived ease of use is an important construct which affects the customer intention to shop online the customer's plan to purchase products online (Cass & Fenech, 2003), and positive attitude towards an object is the result of customer expectation and satisfaction (Lee, 2007). Chen, Li & Li. (2011) mentioned that perceived usefulness (PU) and ease of use (EOU) influences customer attitude towards usage of technology.

H3: Perceived ease of use by customer influences the customer attitude towards e-grocerry shopping.

Attitude Towards Online Grocery Shopping and Loyalty

Attitude is a psychological tendency of the customers which they continuously evaluate a particular object and favor or disfavor to a particular object or situation (Eagly & Chaiken, 2007; Hasan, 2010; Haque, Sadeghzadeh, and Khatibi, 2011). The state of mind regarding internet and online shopping affects the consumer attitude online purchasing behavior (Lennon et al., 2007). Attitude affects the consumer purchase behavior (Ajzen & Fishbein, 1980; Kim & Hunter, 1993). Attitude affects social shopping behavioral intention (Kang & Johnson, 2013; Daliri, Rezaei, & Ismail, 2014). And, attitude also influences the intention to purchase online (Rodríguez-Ardura, Martínez-López, & Luna, 2010). In addition, consumer's positive attitude affects the customer loyalty (Dick & Basu, 1994; Macintosh & Lockshin, 1997; Anderson & Fornell, 2000; Yi & Jeon, 2003). And, customer loyalty has been defined in the two forms i.e. attitudinal and behavioral (Dick & Basu, 1994; Leung, Li & Au, 1998; Oliver, 1999). Attitudinalloyalty, which is related to the customer state of mind and a customer, will be loyal if it has positive or preferential attitude. Behavioral definition does not consider the state of mind, but is related to the actual conduct of customer and a customer is loyal if he buys products and continues to

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buy (Uncles, Dowling, & Hammond, 2003). Attitude has shown a positive relationship with behavioral intention (Ramayah, Lian, Rahman, and Taghizadeh, 2017).

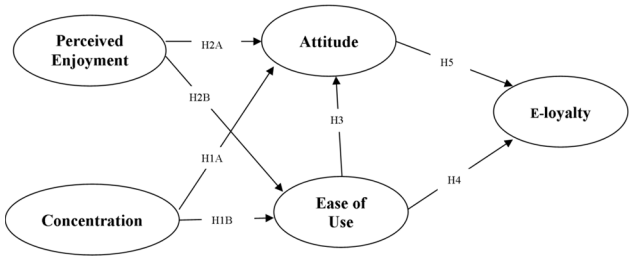
H5: Attitude of customers towards e-grocery shopping leads to customer loyalty.

Perceived Ease of Use and Loyalty

Perceived Ease of Use (PEU) is the extent to which a particular customer uses the technology with less effort (Hamid, Razak, Bakar, & Abdullah, 2016). Ease of use affects consumer intention to use smartphone (Okumus & Bilgihan, 2014).Ease of use has a direct effect on the attitude of the customers towards use (Liu & Yu, 2017) and customer intention to adopt particular technology (Ozturk, Bilgihan, Nusair, & Okumus, 2016; Abdullah, Ward, & Ahmed, 2016). If ease of use affects positively, it will lead to repeat purchase behavior and vice-versa either directly or indirectly (Jackson, Chow, & Leitch, 1997; Chiu & Wang, 2008; Filieri & Lin, 2016). Further, organizations have to pay more for acquiring a new customer than the cost of retaining the old one (Kim, Wong, Chang, & Park, 2016). Also, brand loyalty can leads to the repeat purchase of product of particular brand (Tho, Lai & Yan, 2017). Loyal consumers to specific brand are willing to pay more for that product (Shin, 2015). So, it can be said that ease of use will leads to brand loyalty(Can & Erdil, 2018) (Figure 1).

H4: perceived ease of use has asignificant impact on loyalty intention of the customer

Figure 1. Proposed research model



RESEARCH METHODOLOGY

Researcher adopted multi-item constructs (PerceivedEnjoyment, Attitude, Concentration, Easeof Use and E- loyalty*)* from the preivious literature e.g. *Perceived Enjoyment (*Chen, Hsu and Lu, 2018*), Attitude (*Amaro & Duarte, 2015), *Concentration (*Chen et al*.,* 2018*), Ease of Use (*Chin et al*.,* 2008*)* and *E-loyalty* (Khan & Khan, 2018a). The survey consists of 18 items under the five constructs adapted for measuring e-loyaty for e-grocery shoping. Kindly consult the **Table 1** for instrument items and their respective sources.

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Table 1. Questionnaire development

Construct	Code	Item	Source
Perceived Enjoyment	EN1	I found my visit to online grocery websites interesting.	Chen, Hsu & Lu (2018)
	EN2	I found my visit to online grocery websites enjoyable	
	EN3	I found my visit to online grocery websites exciting.	
	EN4	I found my visit toonline grocery websites fun	
Attitude	AT1	Shopping grocery online is a good idea	Amaro & Duarte (2015)
	AT2	Shopping grocery online is a wise idea	
	AT3	Shopping grocery online is a practical idea	
	AT4	Shopping grocery online an important idea	
Ease of Use	EOU1	Learning to use internet to shop grocery online would be easy for me.	Chin *et al.* (2008)
	EOU2	My interaction with online grocery websites is clear and understandable.	
	EOU3	It would be easy for me to become skilful at using online grocery websites	
Concentration	C1	While buying grocery online…..I was absorbed intensely in activity	Chen *et al.* (2018)
	C2	While buying grocery online…..My attention was focused on the activity.	
	C3	While buying grocery online….. I concentrated fully on the activity.	
	C4	While buying grocery online…..I was deeply engrossed in the activity.	
E-loyalty	EL1	Online grocery websites have adequate security features.	Khan & Khan (2018a)
	EL2	I feel safe in my transactions with online grocery websites	
	EL3	I feel my privacy is protected while shopping through online grocery websites.	

Source: Prepared by the researcher

Data Collection

The data was collected from Delhi (capital and metro-city of India) by both the researchers themselves during March-April 2019. In India, the population centres are categorized into four categories. Metropolitan centers (10, 00,000 and above), Non-metropolitan centers (from 1, 00,000 to 9, 99,999), Semi-Urban centre (population ranging from 10,000 to 99,999) and Rural Centre (Population up to 9,999) (Census, 2011). The sample frame of this research consists of online shoppers from e-grocery shoppers. The sample of this research consists of 250 responses through the researcher controlled sampling. Personal administration of questionnaire during data collection was helpful in clearing doubts of the respondents if any (Khan & Khan, 2018b). They asked to respond on a structured, non-disguised close-ended questionnaire on five-pointLikert scales, ranging from‘1’ for ‘strongly disagree’ to ‘5’ for ‘strongly agree’ for all items. As the population was unknown and the sample-size according to Hair, Black, Babin, Anderson, & Tatham (2010) for multivariate research should be more than 10 times of the study items. Our sample size is about 14 times of the study items and is well above the recommended size (Hair et al., 2010).

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Sample Characteristics

The sample characteristics of the final sample consists of 250 respondents are shown in Table 2. The variables for the sample characteristics were gender, monthly family income, education and marital status.

Table 2. Sample characteristics

Demographic Variable	Attribute	Frequency	Percentage
Gender	Male	165	66
	Female	85	34
Monthly Family Income	Below 50,000	137	54.8
	50,001 – 1,00,000	102	40.8
	Above 1,00,000	11	4.4
Marital Status	Married	17	6.8
	Unmarried	233	93.2
Educational Qualification	Below Graduation	56	22.4
	Graduation	112	44.8
	Post-graduation and Above	82	32.8

Source: Prepared by the researcher

The sample consists of male respondents 165 (~66%) and 85 female respondents (~34%). The gender gap is due to the fact that only 30 percent of women shop over internet in India (Ayyar, 2018). Also, men are more frequent shoppers online than women because of demographic and purchase behavior differences (Karnik, 2016; Ahmad & Khan 2017). Most of the respondents were unmarried (~93%). As, the majority of e-shoppers in India include 'tech-savvy' millennials (aged 18-35 years) whose proportion is about 34% of the total population (The Economic Times, 2018). While discussing about the monthly family income, 137(~54%) respondents were having income less than ₹50, 000. And 112 (45.2%) respondents were having income more than ₹50,000. The educational qualification of the respondent below graduation was 22.4%, and majority of respondents was graduate (~44%) and about 32% respondents were post-graduate and above (~32%). In addition, educated people are tech-savvy and prefer shopping online to shopping from traditional e-retailer (Ahmad & Khan, 2017; Abeler, Becker, & Falk, 2014). Thus, it indicates the adequate representation of different characteristics of the respondents of the sample.

MEASUREMENT MODEL

Researcher used the statistical analysis tools such as SPSS 20.0 and AMOS 20.0 for reliability and validity analysis and for structural equation modelling (Khan & Khan, 2018b; Hair et al., 2010). Also, the postulates related to structural equation modeling including *Normality*, *Linearity* and *Multi-collinearity* was checked through SPSS 20 and found to be in acceptable range (Hair et al., 2010).

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Exploratory Factor Analysis

The measurement model was examined using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The EFA was conducted using Principal Component Analysis (PCA) using varimax rotation with *Kaiser Normalisation*. The SPSS software was used for performingthe EFA. The EFA resulted in a clean component matrix with five latent factors as specified in the model. None of the cross loadings above 0.3 was detected and all the factor loadings were above 0.60 ranging from 0.617 to 0.859 thus demonstrating sufficient convergent and discriminant validity. The values of communalities were also above 0.4 (Hair et al., 2010) indicating that each item correlates well with other items. Further, we also the KMO value which was 0.873 exhibiting the sampling adequacy for EFA. All the factors could explain 68.55% variance in the measurement model. Thus, overall the measurement model has qualified the threshold criterions and can be deemed suitable for further analysis (Table 3).

Table 3. Exploratory factor analysis

Items	Enjoyment	Attitude	Concentration	Ease of Use	E-loyalty
EN3	0.842				
EN2	0.81				
EN4	0.788				
EN1	0.697				
AT2		0.764			
AT4		0.753			
AT3		0.713			
AT1		0.67			
C3			0.767		
C1			0.749		
C4			0.674		
C2			0.617		
EOU2				0.859	
EOU3				0.775	
EOU1				0.689	
EL1					0.747
EL2					0.731
EL3					0.699

Source: Prepared by the researcher

Confirmatory Factor Analysis

In the second step we performed the Confirmatory Factor Analysis (CFA) by employing the Maximum Likelihood Method (MLE) (Hair *ET AL.,* 2010). The fit indices in the measurement model were in reasonably well limits within the recommended criterion. The measurement model exhibited an acceptable level of fit ($\chi 2$ =213.60, df = 109, $\chi 2$/df= 1.960, CFI = .947 TLI = .934, RMSEA= .062).

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The composite reliabilities (CR) for each construct were also calculated. The CR values for each construct; Ease of Use (0.819), Perceived Enjoyment (0.867), Attitude (0.820), Concentration (0.799), and E-loyalty (0.783), met the recommended criterion of 0.70 and above (Hair et al., 2010). Further, AVE for all constructs, Ease of Use (0.604), Perceived Enjoyment (0.622), Attitude (0.536), Concentration (0.575), E-loyalty (0.549), were 0.5 and above (Hair et al., 2010). Hence, convergent validity was established (see Table 4). To establish the discriminant validity, the Fornell & Larcker (1981) criteria ($\sqrt{}$AVE> multiple correlation) was employed.

Table 4. Validity and reliability analysis

Item	Standardised loading	CR	AVE	MSV
EN3	.851	0.867	0.622	0.272
EN2	.867			
EN4	.643			
EN1	.774			
AT2	.815	0.820	0.536	0.387
AT4	.576			
AT3	.710			
AT1	.803			
C3	.634	0.799	0.575	0.347
C1	.884			
C2	.736			
EOU2	.879	0.819	0.604	0.360
EOU3	.730			
EOU1	.712			
EL1	.791	0.783	0.549	0.387
EL2	.808			
EL3	.608			

Source: Analyzed by the researcher

The square root of AVE for 'Ease of Use' is greater than the correlation of 'Ease of Use' with any other construct. Likewise, the square root of AVE for Perceived Enjoyment, Attitude, Concentration and E-loyalty is greater than the correlation of these constructs with any other constructs. Please consult the Table 5 for discriminant validity. The bold values in the diagonal shows the value of square root of AVE for each constructs. Other values in each column represent the values of correlation between the constructs (Table 5).

Structural Model

The structural model consisted of the questionnaire scales validated in the previous step was drawn in the AMOS. This model was tested using Maximum Likelihood Estimation (MLE). Seven hypotheses

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have been tested for this research. First, four hypotheses examined the influence of each of the two flow variables (Concentration and Enjoyment) with each of attitude and perceived ease of use. Further, the influence of both Attitude and perceived ease of use on e-loyalty and influence of perceived ease of use on attitude has been examined (Table 6).

Table 5. Inter-construct correlation

	Ease of Use	Perceived-Enjoyment	Attitude	Concentration	E-loyalty
Ease of Use	**0.777**				
Perceived Enjoyment	0.476	**0.789**			
Attitude	0.513	0.496	**0.732**		
Concentration	0.475	0.522	0.589	**0.758**	
E-loyalty	0.600	0.502	0.622	0.483	**0.741**

Source: Analyzed by the researcher

Table 6. Results of structural equation modeling

Hypothesis	Standardized Coefficient	Unstandardized Coefficient	p-value
H1A: Concentration→ Attitude	.380	.443	.000
H2A: Perceived Enjoyment→ Attitude	.194	.165	.014
H2B:Perceived Enjoyment→ Ease of Use	.325	.289	.000
H1B: Concentration→ Ease of Use	.310	.377	.000
H3: Ease of Use→ Attitude	.238	.228	.002
H4: Attitude→ E loyalty	.435	.449	.000
H5: Ease of Use→ E loyalty	.386	.382	.000

Source: Prepared by the researcher

All seven hypotheses were significant however, the strength of relationships deferred for each relationship. Both concentration and perceived enjoyment influenced the personal attitude towards online grocery shopping. However, strength of relationship of concentration with attitude (Concentration→Attitude, beta=.380, p=.000) was greater than the strength of relationship of perceived enjoyment with attitude (Perceived Enjoyment→ Attitude, beta=.194, p=.014). Further, both concentration (H1B: Concentration→ Ease of Use, beta=.310, p=.000) and perceived enjoyment (H2B: Perceived Enjoyment→ Ease of Use, beta=.325, p=.000) also influenced the perceived ease of use. Thus, both the variables had almost equal impact on perceived ease of use. Further, apart from the influence of concentration and enjoyment on attitude we have also checked the influence of perceived ease of use on attitude. The relationship was positive and significant (Ease of Use→ Attitude, beta=.238, p=.002). Both attitude (Attitude→E loyalty, beta= .435, p=.000) and Ease of Use (Ease of Use→ E loyalty, beta=.386, p=.000) predicted the e-loyalty. However, Attitude was more closely related with e-loyalty. Overall, the model was a good fit as all the indices meet recommend threshold for goodness of fit ($\chi2$=218.099, df = 111, $\chi2$/df =1.965, CFI= .946, TLI=.933 RMSEA=.062).

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DISCUSSION

Generally, the internet is being used in almost all sphere of life and e-shopping is also one of them. There are various factors which customer generally prefers and give priorities to them. The basic strategy of the marketers is to retain the customer and making them loyal towards the particular web store of e-grocery because loyalty of the customer is important for e-stores (Pee, Jiang, & Klein, 2018; Liao, Pham, Cheng, & Teng, 2020). In the present study as mentioned earlier, researcher extended the TAM model to measure the customer loyalty in e-grocery shopping by collaborating flow constructs such as concentration and enjoyment. The researchers adapted the questionnaire from previous studies from the perspective of e-grocery shopping and used exploratory and confirmatory factor analysis for checking the validity and reliability of the scale. Further, it has been found that concentration has significant influence on Attitude towards online grocery shopping, thus accepting the hypothesis H1A. This relationship is inline with the previous study which says concentration is positively related to attitude (Moshrefjavadi et al*.,* 2012). Further, concentration also has significant effect on perceived ease of use in online grocery context, accepting hypothesis and H1B. This result shows similar observation like the previous study on acceptance of instant messaging (Lu, Zhou, & Wang, 2009).

Enjoyment has significant influence on Attitude towards online grocery shopping, accepting the H2A. This is similar to the results of previous studies which were done on attitude for e-shopping (Zhang, 2020; Hussein & Hassan, 2017; Chiu, Chang, Cheng, & Fang, 2009; Monsuwé, Dellaertand & De Ruyter, 2004). Also, Enjoyment has significant effect on perceived ease of use in online grocery context, thereby, accepting H2B. This result is in line with the previous study by Sun & Zhang (2006).

Perceived ease of use influences the customer attitude towards e-grocery shopping significantly, thus accepting the H3. This result is in line with previous study which demonstrates that perceived ease of use (PEU) directly affects consumer's attitude towards use (Liu & Yu, 2017; Ramayah et al*.,* 2017; Hussein & Hassan, 2017). Perceived ease of use has significant effect on loyalty intention of the customer, thus accepting the hypothesis H5. This result is similar to the study by previous researcher (Abdullah et al*.,* 2016; Low, Goh, Tan, & Rasli, 2017; Can & Erdil, 2018). Different previous studies conducted in European countries e.g. Germany (Pechtl, 2003), France (Picot-Coupey et al, 2009) and England/ Denmark (Ramus & Nielson, 2005) reported that ease of use i.e. convenience is a pertinent motivational factor for online grocery behavior. The result is in line with the study conducted by Rishi, Pradeep & Vishwanathan (2018) in an India metro city and by Pham, Tran, Misra, Maskeliūnas, & Damaševičius (2018) in Taiwan for e-grocery shopping consumers.

Attitude of customers towards e-grocery shopping leads to customer loyalty, thus accepting the hypothesis H4. This result of present study is similar to previous studies, which were done by previous researchers in different context (Verhagen & Van Dolen, 2007; Hsu, Chuang, & Hsu, 2014; -Debei, Akroush, & Ashouri, 2015).

CONCLUSION AND LIMITATIONS

This study gives us insight concerning the role of flow in influencing the attitude perceived ease of use in the context of online grocery shopping. Further, we also examined the role of attitude and ease of use in shaping the loyalty towards shopping online grocery. We studied two aspects of flow, i.e. concentration and enjoyment and examined their influence on attitude and PEOU. Both the elements of flow influence

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the consumer's attitude towards online grocery. However, we observed that concentration, as compared with enjoyment, is more closely related to the attitude.

Further, both components of flow influences PEOU equally well. Thus, we can conclude that among the two flow factors, concentration is more important in influencing the attitude while both are almost equally good in influencing PEOU. Next, we also examined the role of attitude in influencing loyalty and PEOU in influencing both attitude and loyalty. Both attitude and PEOU were positively related with Loyalty, attitude having a stronger relationship with the loyalty.

We have conducted the study on young people for shopping the grocery product online. Future researchers can enhance the population segment to include the household as well. The prospective researchers can compare the consumer behavior from online shopping with traditional shopping. Further, we have conducted the study in the north Indian city, and the future research can be done to compare with different Tier-1 and Tier-2 cities.

REFERENCES

Abdullah, F., Ward, R., & Ahmed, E. (2016). Investigating the influence of the most commonly used external variables of TAM on students' Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) of e-portfolios. *Computers in Human Behavior*, *63*, 75–90. doi:10.1016/j.chb.2016.05.014

Abeler, J., Becker, A., & Falk, A. (2014). Representative evidence on lying costs. *Journal of Public Economics*, *113*, 96–104. doi:10.1016/j.jpubeco.2014.01.005

Agarwal, R., & Karahanna, E. (2000). Time flies when you're having fun: Cognitive absorption and beliefs about information technology usage. *Management Information Systems Quarterly*, *24*(4), 665–694. doi:10.2307/3250951

Ahmad, A., & Khan, M. N. (2017). Developing a website service quality scale: A confirmatory factor analytic approach. *Journal of Internet Commerce*, *16*(1), 104–126. doi:10.1080/15332861.2017.1283927

Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behaviour*. Prentice-Hall.

Al-Debei, M. M., Akroush, M. N., & Ashouri, M. I. (2015). Consumer attitudes towards online shopping. *Internet Research*, *25*(5), 707–733. doi:10.1108/IntR-05-2014-0146

Amaro, S., & Duarte, P. (2015). An integrative model of consumers' intentions to purchase travel online. *Tourism Management*, *46*, 64–79. doi:10.1016/j.tourman.2014.06.006

Anderson, E. W., & Fornell, C. (2000). Foundations of the American customer satisfaction index. *Total Quality Management*, *11*(7), 869–882. doi:10.1080/09544120050135425

Ayyar, R. (2018). Number of Indian internet users will reach 500 million by June 2018, IAMAI says. *Times of India*.https://timesofindia.indiatimes.com/business/india-business/number-indian-internet-users-will-reach-500-million-by-june-2018-iamai-says/articleshow/62998642.cms

Barnes, S. J., Bauer, H. H., Neumann, M. M., & Huber, F. (2007). Segmenting cyberspace: A customer typology for the internet. *European Journal of Marketing*, *41*(1/2), 71–93. doi:10.1108/03090560710718120

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Brengman, M., Heuens, M., Weijters, B., Smith, S. M., & Swinyard, W. R. (2005). Segmenting internet shoppers based on their web-usage related lifestyle: A cross cultural validation. *Journal of Business Research*, *58*(1), 79–88. doi:10.1016/S0148-2963(02)00476-9

Brown, M., Pope, N., & Voges, K. (2003). Buying or browsing? An exploration of shopping orientations and online purchase intention. *European Journal of Marketing*, *37*(11/12), 1666–1684. doi:10.1108/03090560310495401

Business Today. (2013). *Virtual Grocer*. Retrieved from: https://www.businesstoday.in/moneytoday/smart-spending/online-grocery-shopping-vegetables-new-trend-in-india/story/197141.html

Businesswire. (2019). *Indian Online Grocery Market Outlook (2019-2023) with Historic Analysis (2016-2019).* https://www.businesswire.com/news/home/20190729005605/en/Indian-Online-Grocery-Market-Outlook-2019-2023-Historic

Can, Y., & Erdil, O. (2018). Determining Antecedent of Re-Purchase Intention: The Role of Perceived Value and Consumer's Interest Factor. *International Business Research*, *11*(4), 17. doi:10.5539/ibr.v11n4p17

Cass, A. O., & Fenech, T.. (2003). Web Retailing Adoption. *Exploring the Nature of Internet Users Web Retailing Behaviour*, *10*, 81–94.

Census. (2011). http://censusindia.gov.in/2011-prov-results/paper2/data_files/India2/1.%20Data%20Highlight.pdf

Chen, S. C., Shing-Han, L., & Chien-Yi, L. (2011). Recent related research in technology acceptance model: A literature review. *Australian Journal of Business and Management Research*, *1*(9), 124.

Chen, Y. M., Hsu, T. H., & Lu, Y. J. (2018). Impact of flow on mobile shopping intention. *Journal of Retailing and Consumer Services*, *41*, 281–287. doi:10.1016/j.jretconser.2017.04.004

Chin, W. W., Johnson, N., & Schwarz, A. (2008). A fast form approach to measuring technology acceptance and other constructs. *Management Information Systems Quarterly*, *32*(4), 687–70. doi:10.2307/25148867

Chiu, C. M., Chang, C. C., Cheng, H. L., & Fang, Y. H. (2009). Determinants of customer repurchase intention in online shopping. *Online Information Review*, *33*(4), 761–784. doi:10.1108/14684520910985710

Chiu, C. M., & Wang, E. T. G. (2008). Understanding Web-based learning continuance intention: The role of subjective task value. *Information & Management*, *45*(3), 194–201. doi:10.1016/j.im.2008.02.003

Csikszentmihalyi, M. (1990). *Flow: The Psychology of Optimal Experience*. Harper & Row.

Csikszentmihalyi, M., & Csikszentmihalyi, I. (1975). *Beyond boredom and anxiety* (Vol. 721). Jossey-Bass.

Daliri, E., Rezaei, S., & And Ismail, W. K. W. (2014). Online social shopping: The impact of attitude, customer information quality, effectiveness of information content and perceived social presence. *Int. J. Business Environment*, *6*(4), 426–450. doi:10.1504/IJBE.2014.064995

Dattagupta, I. (2018). *Walmart's Flipkart Buy Is a Winning Deal for Consumers*. https://thewire.in/economy/walmarts-flipkart-buy-is-a-winning-deal-for-consumers

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, *35*(8), 982–1003. doi:10.1287/mnsc.35.8.982

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace 1. *Journal of Applied Social Psychology*, *22*(14), 1111–1132. doi:10.1111/j.1559-1816.1992.tb00945.x

Dick, A. S., & Basu, K. (1994). Customer loyalty: Toward an integrated conceptual framework. *Journal of the Academy of Marketing Science*, *22*(2), 99–113. doi:10.1177/0092070394222001

Diwanji, S. (2020). *Number of internet users in India from 2015 to 2018 with a forecast until 2023*. https://www.statista.com/statistics/255146/number-of-internet-users-in-india/

Eagly, A. H., & Chaiken, S. (2007). The advantages of an inclusive definition of attitude. *Social Cognition*, *25*(5), 582–602. doi:10.1521oco.2007.25.5.582

Ferdig, R. E. (Ed.). (2008). *Handbook of research on effective electronic gaming in education*. IGI Global.

Filieri, R., & Lin, Z. (2016). The role of aesthetic, cultural, utilitarian and branding factors in young Chinese consumers' repurchase intention of smartphone brands. *Computers in Human Behavior*, *67*, 139–150. doi:10.1016/j.chb.2016.09.057

Financial Times. (2017). *Amazon gears up for assault on India's grocery sector*. https://www.ft.com/content/8d1d40ce-54b3-11e7-9fed-c19e2700005f

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *JMR, Journal of Marketing Research*, *18*(1), 39–50. doi:10.1177/002224378101800104

Ghani, J. A., & Deshpande, S. P. (1994). Task characteristics and the experience of optimal flow in human—Computer interaction. *The Journal of Psychology*, *128*(4), 381–391. doi:10.1080/00223980.1994.9712742

Ghani, J. A., Supnick, R., & Rooney, P. (1991). The Experience of Flow in Computer-mediated and in Face-to-face Groups. In ICIS (Vol. 91, pp. 229-237). Academic Press.

Giao, H., Vuong, B., & Quan, T. (2020). The influence of website quality on consumer's e-loyalty through the mediating role of e-trust and e-satisfaction: An evidence from online shopping in Vietnam. *Uncertain Supply Chain Management*, *8*(2), 351–370. doi:10.5267/j.uscm.2019.11.004

Goethals, F., Leclercq-Vandelannoitte, A., & Tütüncü, Y. (2012). French consumers' percep- tions of the unattended delivery for e-grocery retailing. *Journal of Retailing and Consumer Services*, *19*(1), 133–139. doi:10.1016/j.jretconser.2011.11.002

Gruman, J. A., Schneider, F. W., & Coutts, L. M. (Eds.). (2016). *Applied Social Psychology: Understanding and Addressing Social and Practical Problems*. SAGE Publications.

Hair, J. F., Black, W. C., Babin, B. Y. A., Anderson, R., &Tatham, R. (2010). *RE [2010]: Multivariate Data Analysis. A Global Perspective*. Academic Press.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hamid, A. A., Razak, F. Z. A., Bakar, A. A., & Abdullah, W. S. W. (2016). The Effects of Perceived Usefulness and Perceived Ease of Use on Continuance Intention to Use E-Government. *Procedia Economics and Finance, 35*, 644-649. doi:10.1016/S2212-5671(16)00079-4

Hand, C., Dall'Olmo Riley, F., Harris, P., Singh, J., & Rettie, R. (2009). Online grocery shopping: The influence of situational factors. *European Journal of Marketing*, *43*(9/10), 1205–1219. doi:10.1108/03090560910976447

Hansen, T. (2005). Understanding consumer online grocery behavior: Results from a Swedish study. *Journal of Euromarketing*, *14*(3), 31–57. doi:10.1300/J037v14n03_03

Hanus, G. (2016). Consumer Behaviour during Online Grocery Shopping. *CBU International Conference Proceedings*, *4*, 10. doi:10.12955/cbup.v4.737

Haque, A., Sadeghzadeh, J., & Khatibi, A. (2011). Identifying potentiality online sales in Malaysia: A study on customer relationships online shopping. *Journal of Applied Business Research*, *22*(4). Advance online publication. doi:10.19030/jabr.v22i4.1420

Hasan, B. (2010). Exploring gender differences in online shopping attitude. *Computers in Human Behavior*, *26*(4), 597–601. doi:10.1016/j.chb.2009.12.012

Hindustan Times. (2018). *Average Indian's monthly expense: 40% on food, 4% on education*. https://www.hindustantimes.com/union-budget/average-indian-s-monthly-expense-40-on-food-4-on-education/story-4ivqPm7vTX6uR65J90tdoL.html

Hoffman, D. L., & Novak, T. P. (1996). Marketing in hypermedia computer-mediated environments: Conceptual foundations. *Journal of Marketing*, *60*(3), 50–68. doi:10.2307/1251841

Hsu, M. H., Chuang, L. W., & Hsu, C. S. (2014). Understanding online shopping intention: The roles of four types of trust and their antecedents. *Internet Research*, *24*(3), 332–352. doi:10.1108/IntR-01-2013-0007

Hui, T.-K., & Wan, D. (2009). Who are the online grocers? *Service Industries Journal*, *29*(11), 1479–1489. doi:10.1080/02642060902793334

Hussein, R., & Hassan, S. (2017). Customer engagement on social media: How to enhance continuation of use. *Online Information Review*, *41*(7), 1006–1028. doi:10.1108/OIR-02-2016-0047

Igbaria, M., Parasuraman, S., & Baroudi, J. J. (1996). A motivational model of microcomputer usage. *Journal of Management Information Systems*, *13*(1), 127–143. doi:10.1080/07421222.1996.11518115

Jackson, C. M., Chow, S., & Leitch, R. A. (1997). Toward an understanding of the behavioral intention to use an information system. *Decision Sciences*, *28*(2), 357–389. doi:10.1111/j.1540-5915.1997.tb01315.x

Kang, J.-Y. M., & Johnson, K. K. P. (2013). How does social commerce work for apparel shopping? Apparel social e-shopping with social network storefronts. *Journal of Customer Behaviour*, *12*(1), 53–72. doi:10.1362/147539213X13645550618524

Karnik, M. (2016). *600 million people are now part of India's middle class–including your local carpenter.* Quartz India.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Khan, M. A., & Khan, S. (2018a). Service Convenience and Post-Purchase Behaviour of Online Buyers: An Empirical Study. *Journal of Service Science Research*, *10*(2), 167–188. doi:10.100712927-018-0006-x

Khan, S., & Khan, M. A. (2018b). Measuring service convenience of e-retailers: An exploratory study in India. *International Journal of Business Forecasting and Marketing Intelligence*, *4*(3), 353. doi:10.1504/IJBFMI.2018.092789

Kim, M. K., Wong, S. F., Chang, Y., & Park, J. H. (2016). Determinants of customer loyalty in the Korean smartphone market: Moderation effects of usage characteristics. *Telematics and Informatics*, *33*(4), 936–946. doi:10.1016/j.tele.2016.02.006

Kim, M. S., & Hunter, J. E. (1993). Relationships among attitudes, behavioural intentions, and behaviour: A meta-analysis of past research. Part 2. *Communication Research*, *20*(3), 331–364. doi:10.1177/009365093020003001

Knowledge@wharton. (2018). *Why India's Online Grocery Battle Is Heating Up*. Retrieved from: http://knowledge.wharton.upenn.edu/article/indias-online-grocery-battle-heating/

Koufaris, M. (2002). Applying the technology acceptance model and flow theory to online consumer behavior. *Information Systems Research*, *13*(2), 205–223. doi:10.1287/isre.13.2.205.83

Kureshi, S., & Thomas, S. (2019). Online grocery retailing–exploring local grocers beliefs. *International Journal of Retail & Distribution Management*, *47*(2), 157–185. doi:10.1108/IJRDM-05-2018-0087

Lee, R. (2007). *The Dilemma of Attitude versus Satisfaction for Customer Loyalty Studies* (Doctoral dissertation). University of Otago.

Lennon, S. J., Kim, M., Johnson, K. K. P., Jolly, L. D., Damhorst, M. L., & Jasper, C. R. (2007). A longitudinal look at rural consumer adoption of online shopping. *Psychology and Marketing*, *24*(4), 375–401. doi:10.1002/mar.20165

Leung, K., Li, W.-K., & Au, Y. F. (1998). The impact of customer service and product value on customer loyalty and purchase behaviour. *Journal of Applied Social Psychology*, *28*(18), 1731–1741. doi:10.1111/j.1559-1816.1998.tb01343.x

Liao, G. Y., Pham, T. T. L., Cheng, T. C. E., & Teng, C. I. (2020). Impacts of real-world need satisfaction on online gamer loyalty: Perspective of self-affirmation theory. *Computers in Human Behavior*, *103*, 91–100. doi:10.1016/j.chb.2019.09.016

Liu, N., & Yu, R. (2017). Identifying design feature factors critical to acceptance and usage behavior of smartphones. *Computers in Human Behavior*, *70*, 131–142. doi:10.1016/j.chb.2016.12.073

Low, Y. M., Goh, C. F., Tan, O. K., & Rasli, A. (2017). Users Loyalty towards Mobile Banking in Malaysia. *Journal of Internet Banking and Commerce*, ●●●, 1–12.

Lu, Y., Zhou, T., & Wang, B. (2009). Exploring Chinese users' acceptance of instant messaging using the theory of planned behavior, the technology acceptance model, and the flow theory. *Computers in Human Behavior*, *25*(1), 29–39.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Macintosh, G., & Lockshin, L. S. (1997). Retail relationships and store loyalty: A multi-level perspective. *International Journal of Research in Marketing*, *14*(5), 487–497. doi:10.1016/S0167-8116(97)00030-X

Marr, A. J. (2000). *Intrinsic motivation and Csikszentmihalyi's flow experience: A critique of two factor theories of human motivation in social psychology*. Academic Press.

Monsuwé, T. P., Dellaert, B. G. C., & De Ruyter, K. (2004). What drivers consumers to shop online? a literature review. *International Journal of Service Industry Management*, *15*(1), 102–121. doi:10.1108/09564230410523358

Moshrefjavadi, M. H., Rezaie Dolatabadi, H., Nourbakhsh, M., Poursaeedi, A., & Asadollahi, A. (2012). An Analysis of Factors Affecting on Online Shopping Behavior of Consumers. *International Journal of Marketing Studies*, *4*(5). Advance online publication. doi:10.5539/ijms.v4n5p81

Nadim, J., & Begum, N. (2008). The role of perceived usefulness, perceived ease of use, security and privacy, and customer attitude to engender customer adaptation in the context of electronic banking. *African Journal of Business Management*, *2*(2), 32.

Naseri, M. B., & Elliott, G. (2011). Role of demographics, social connectedness and prior inter- net experience in adoption of online shopping: Applications for direct marketing. Journal of Targeting. *Measurement and Analysis for Marketing*, *19*(2), 69–84. doi:10.1057/jt.2011.9

Okumus, B., & Bilgihan, A. (2014). Proposing a model to test smartphone users' intention to use smart applications when ordering food in restaurants. *Journal of Hospitality and Tourism Technology*, *5*(1), 31–49. doi:10.1108/JHTT-01-2013-0003

Oliver, R. (1999). Whence consumer loyalty? *Journal of Marketing*, *63*(special issue), 33–44. doi:10.1177/00222429990634s105

Ozturk, A. B., Bilgihan, A., Nusair, K., & Okumus, F. (2016). What keeps the mobile hotel booking users loyal? Investigating the roles of self-efficacy, compatibility, perceived ease of use, and perceived convenience. *International Journal of Information Management*, *36*(6), 1350–1359. doi:10.1016/j.ijinfomgt.2016.04.005

Patro, C. S. (2016). Attitudes of E-Shoppers and Non E-Shoppers towards E-Shopping: A Comparative Study. *International Journal of Cyber Behavior, Psychology and Learning*, *6*(2), 96–108. doi:10.4018/IJCBPL.2016040106

Pechtl, H. (2003). Adoption of online shopping by German grocery shoppers. *International Review of Retail, Distribution and Consumer Research*, *13*(2), 145–159. doi:10.1080/0959396032000099088

Pee, L., Jiang, J., & Klein, G. (2018). E-store loyalty: Longitudinal comparison of website usefulness and satisfaction. *International Journal of Market Research*. Advance online publication. doi:10.1177/1470785317752045

Pham, Q., Tran, X., Misra, S., Maskeliūnas, R., & Damaševičius, R. (2018). Relationship between Convenience, Perceived Value, and Repurchase Intention in Online Shopping in Vietnam. *Sustainability*, *10*(2), 156. doi:10.3390u10010156

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Picot-Coupey, K., Huré, E., Cliquet, G., & Petr, C. (2009). Grocery shopping and the Internet: Exploring French consumers' perceptions of the 'hypermarket' and 'cybermarket' formats. *International Review of Retail, Distribution and Consumer Research*, *19*(4), 437–455. doi:10.1080/09593960903331477

Privette, G., & Bundrick, C. M. (1987). Measurement of experience: Construct and content validity of the experience questionnaire. *Perceptual and Motor Skills*, *65*(1), 315–332. doi:10.2466/pms.1987.65.1.315

Ramayah, T., Lian, L. S., Rahman, S. A., & Taghizadeh, S. K. (2017). Modelling mobile money adoption: A Malaysian perspective. *Int. J. Mobile Communications*, *15*(5), 491–513. doi:10.1504/IJMC.2017.086365

Ramus, K., & Asger Nielsen, N. (2005). Online grocery retailing: What do consumers think? *Internet Research*, *15*(3), 335–352. doi:10.1108/10662240510602726

Rao, K. R. M., Patro, C. S., Nkechi, E. E., Ewomaoghene, E. E., Egenti, N., & Saha, P. (2016). A study on Consumer Perception towards E-Shopping. RAY. *International Journal of Multidisciplinary Studies*, *1*(2), 26–35.

RedSeer. (2019). https://redseer.com/newsletters/online-grocery-market-updates/

Reportlinker. (2015). *India Online Grocery Market Outlook to 2019 - High Growth Prospects due to Increasing Internet Coverage and Smart Cities Emergence*. https://www.reportlinker.com/p03026030/India-Online-Grocery-Market-Outlook-to-High-Growth-Prospects-due-to-Increasing-Internet-Coverage-and-Smart-Cities-Emergence.html

Rishi, B., Pradeep, H., & Vishwanathan, M. (2018). Hesitation to adoption in the e-grocery retailing in an emerging market. *International Journal of Business Innovation and Research*, *15*(1), 99–118. doi:10.1504/IJBIR.2018.088476

Rodríguez-Ardura, I., Martínez-López, F. J., & Luna, P. (2010). Going with the consumer towards the social web environment: A review of extant knowledge. *International Journal of Electronic Marketing and Retailing*, *3*(4), 415–440. doi:10.1504/IJEMR.2010.036885

Sanchez-Franco, M. J. (2006). Exploring the influence of gender on the web usage via partial least squares. *Behaviour & Information Technology*, *25*(1), 19–36. doi:10.1080/01449290500124536

Sánchez-Franco, M. J., & Roldán, J. L. (2005). Web acceptance and usage model: A comparison between goal-directed and experiential web users. *Internet Research*, *15*(1), 21–48. doi:10.1108/10662240510577059

Shin, D. H. (2015). Effect of the customer experience on satisfaction with smartphones: Assessing smart satisfaction index with partial least squares. *Telecommunications Policy*, *39*(8), 627–641. doi:10.1016/j.telpol.2014.10.001

Singh, S. N., & Dalal, N. P. (1999). Web home pages as advertisements. *Communications of the ACM*, *42*(8), 91–98. doi:10.1145/310930.310978

Srinivasan, S. S., Anderson, R., & Ponnavolu, K. (2002). Customer loyalty in e-commerce: An exploration of its antecedents and consequences. *Journal of Retailing*, *78*(1), 41–50. doi:10.1016/S0022-4359(01)00065-3

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Sun, H., & Zhang, P. (2006). Causal relationships between perceived enjoyment and perceived ease of use: An alternative approach. *Journal of the Association for Information Systems*, *7*(1), 24.

The Economic Times. (2018a). *Indian malls resurge, e-commerce pose threat in Tier-II, III cities*. https://economictimes.indiatimes.com/industry/services/retail/indian-malls-resurge-e-commerce-pose-threat-in-tier-ii-iii-cities-report/articleshow/65682844.cms

The Economics Times. (2018b). *Startups fight big global e-commerce firms to win online grocery battle*. https://economictimes.indiatimes.com/small-biz/startups/newsbuzz/startups-fight-big-global-e-commerce-firms-to-win-online-grocery-battle/articleshow/64955391.cms

The Times of India. (2018c). *Grofers stops veggie sales, will focus on FMCG biz*. Retrieved from: http://timesofindia.indiatimes.com/articleshow/65032142.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

The Wharton School. (2018, April 26). *Why India's online grocery battle is heating up - Knowledge@Wharton*. Retrieved from http://knowledge.wharton.upenn.edu/article/indias-online-grocery-battle-heating

Tho, N. X., Lai, M. T., & Yan, H. (2017). The Effect of Perceived Risk on Repurchase Intention and Word – of – Mouth in the Mobile Telecommunication Market: A Case Study from Vietnam. *International Business Research*, *10*(3), 8–19. doi:10.5539/ibr.v10n3p8

Trevino, L. K., & Webster, J. (1992). Flow in computer-mediated communication: Electronic mail and voice mail evaluation and impacts. *Communication Research*, *19*(5), 539–573. doi:10.1177/009365092019005001

Uncles, M. D., Dowling, G. R., & Hammond, K. (2003). Customer loyalty and customer loyalty programs. *Journal of Consumer Marketing*, *20*(4), 294–316. doi:10.1108/07363760310483676

Van Droogenbroeck, E., & Van Hove, L. (2017). Adoption of Online Grocery Shopping: Personal or Household Characteristics? *Journal of Internet Commerce*, *16*(3), 255–286. Advance online publication. doi:10.1080/15332861.2017.1317149

Van Droogenbroeck, E., & Van Hove, L. (2020). Triggered or evaluated? A qualitative inquiry into the decision to start using e-grocery services. *International Review of Retail, Distribution and Consumer Research*, *30*(2), 103–122. doi:10.1080/09593969.2019.1655085

Venkatesh, V., Speier, C., & Morris, M. G. (2002). User acceptance enablers in individual decision making about technology: Toward an integrated model. *Decision Sciences*, *33*(2), 297–316. doi:10.1111/j.1540-5915.2002.tb01646.x

Verhagen, T., & Van Dolen, W. (2007). *Explaining Online Purchase Intentions: A Multi-Channel Store Image Perspective.* Vu Serie Research Memoranda.

Verhoef, P. C., & Langerak, F. (2001). Possible determinants of consumers' adoption of electronic grocery shopping in the Netherlands. *Journal of Retailing and Consumer Services*, *8*(5), 275–285. doi:10.1016/S0969-6989(00)00033-3

Webster, J., Trevino, L. K., & Ryan, L. (1993). The dimensionality and correlates of flow in human-computer interactions. *Computers in Human Behavior*, *9*(4), 411–426. doi:10.1016/0747-5632(93)90032-N

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Yi, Y., & Jeon, H. (2003). Effects of loyalty programs on value perception, program loyalty and brand loyalty. *Journal of the Academy of Marketing Science*, *31*(3), 229–240. doi:10.1177/0092070303031003002

Zhang, R. (2020). *Understanding customers' attitude and intention to use driverless cars* (Doctoral dissertation). Northumbria University.

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Chapter 83
Adoption of E-Commerce Among Travel Agents in Brunei Darussalam

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ABSTRACT

Information and communication technology has played an important role in the tourism industry. The internet has completely changed the tourism industry's landscape, particularly for travel agencies. Travel agencies are small and medium-sized enterprises that manage, coordinate, and provide transportation, leisure, and hospitality services. Based on prior research, travel agencies are regarded as slow adopters of e-commerce. Moreover, three factors affect the adoption of e-commerce among travel agents, which are environmental pressure, benefits of adoption, and perceived barriers. In achieving this study's aim in reference to Brunei Darussalam, an integrated conceptual framework was developed based on the technology acceptance model. A quantitative approach via questionnaires was used in the data collection. If managers are able to recognise the aforementioned factors, it could help them develop strategies to improve and sustain their businesses.

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INTRODUCTION

Since e-commerce was introduced, traditional means of commerce where exchange of goods and services done face-to-face have since declined. An example of a traditional commerce is the use of a travel agency, which requires appointments with travel agents. Travel packages for different types of travellers are offered, with affordable prices and suitable locations that have been effectively researched and safety vouched for by the travel agents (Sokanu, 2019). Many things have caused the decline of the use of travel agency services, mainly the availability of online reservations or booking systems.

Online booking or eBooking is a software that allows companies to manage bookings and reservations (Odgers, 2017). As it is more convenient and faster to book online, potential travellers can now purchase their own flight tickets, book accommodations, or even buy event tickets, such as for concerts or amusement or theme park tickets, themselves. The Internet has made it easier to get information through travel blogs and YouTube, where people upload videos or video logs (vlogs) of their vacation. Twitter, Facebook, and Instagram are other online platforms which can help travellers get information on attractions and notable local food. Booking.com and Airbnb are some of the more popular accommodation websites that help make travelling bookings easier, while Trivago combines, compares, and finds the best hotel price for customers.

Travel agencies need to start adopting e-commerce, particularly Booking Commerce, in order to sustain themselves in the current industry. Booking Commerce or website booking allows travel agencies to design their own booking system that consumers can easily access with the Internet (Hackernoon, n.d). Website booking allows customers to book their tickets or make reservations through website services offered by the travel agencies. Integrating the use of website booking into their current process may expand the business of travel agencies.

As for the objective of this chapter, it is to find out the perceived benefits and perceived barriers of the e-commerce adoption among travel agents in Brunei Darussalam and how these factors influence the manager's decision. In addition to that, it is also to find out the external pressures that have led travel agents in Brunei Darussalam to adopt e-commerce to help them survive and to complete with rivals. Furthermore, this chapter would also determine the e-commerce adoption level among travel agents in Brunei Darussalam. Whereas the scope of this chapter will concentrate on the factors that influence the adoption of e-commerce among travel agents in Brunei Darussalam, specifically in Brunei-Muara, Belait and Temburong. In the next section, the chapter will look further into detail about the development of e-commerce over the years.

BACKGROUND

E-commerce

In the late 1970s, Electronic Commerce or e-commerce was referred to as the exchange of business documents, information, and transactions using Electronic Data Interchange (EDI) and Electronic Funds Transfer (EFT). However, when the Internet was introduced and opened to the public for commercial purposes in 1991, the definition of e-commerce has changed to the process of purchasing and selling goods and services over the internet. According to Nanehkaran (2013), e-commerce first began in the

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United States and a few European countries in 1998, and Amazon.com was the first American company to create e-commerce websites which allows electronic transactions. In 2015, many cities in America, Western Europe, and East Asia began using the Internet to conduct their businesses via e-commerce.

Over the years, e-commerce has grown in popularity as people have greater access to technology, improved Internet connections, as well as benefits for users and business owners. Nanehkaran (2013) states that the advantages of e-commerce include easier price comparison between websites, ability to reach a larger global market audience, and reduced costs compared to setting up physical stores. In fact, as e-commerce becomes increasingly important for the distribution of goods and services, it has even replaced some traditional brick-and-mortar stores. On the other hand, some retailers have changed their business model to "click and mortar" after realising the advantages of adopting e-commerce for their businesses. For instance, an American grocery store company, Albertsons, has introduced e-commerce to grow sales.

According to Tamilarasi and Elamathi (2017), the basic types of e-commerce can be classified into five categories or models: 1) Business-to-business (B2B) 2) Business-to-consumer (B2C) 3) Consumer-to-consumer (C2C), 4) Consumer-to-business (C2B), and 5) Mobile commerce. The B2B model is the largest form of e-commerce, and involves online transactions of goods and services between two companies. The B2C model is the most common form of e-commerce and refers to an online transaction between companies and the end-user of products. Meanwhile, the C2C model is online transactions that take place between individuals; the C2B model is when consumers create value and provide services for businesses; and the mobile commerce model is the use of wireless digital devices to conduct online transactions.

Abou-Shouk (2012) states that there are four stages of e-commerce adoption: 1) Static web presence; 2) Interactive online presence; 3) Electronic transactions; and 4) Electronic integrations. Static web presence and interactive online presence are categorised as low-level e-commerce practices, while electronic transactions and electronic integrations are classified as advanced-level e-commerce practices. Static web presence is the use of the Internet to search for suppliers and customers, homepage to disseminate information, and email to communicate with suppliers, customers, and business partners. Meanwhile, interactive online presence refers to two-way communication between firms and customers through the company's portal, managing booking and orders with suppliers, receiving customers' orders through email, and the electronic exchange of documents within firms. An electronic transaction is when online orders, payments, and bookings are processed and received, and services are delivered digitally. Lastly, electronic integration includes post-sales services, employees' interactions using the intranet, and collaboration with business partners using the extranet.

LITERATURE REVIEW

Travel Agents and the Adoption of E-commerce

The travel and tourism industry is one of the largest economic sectors in the world and plays a significant role in a country's development. The travel and tourism industry has created jobs, increased a country's revenue, and improved infrastructure and facilities. Therefore, the role of travel agents has become more crucial in promoting travel and tourism.

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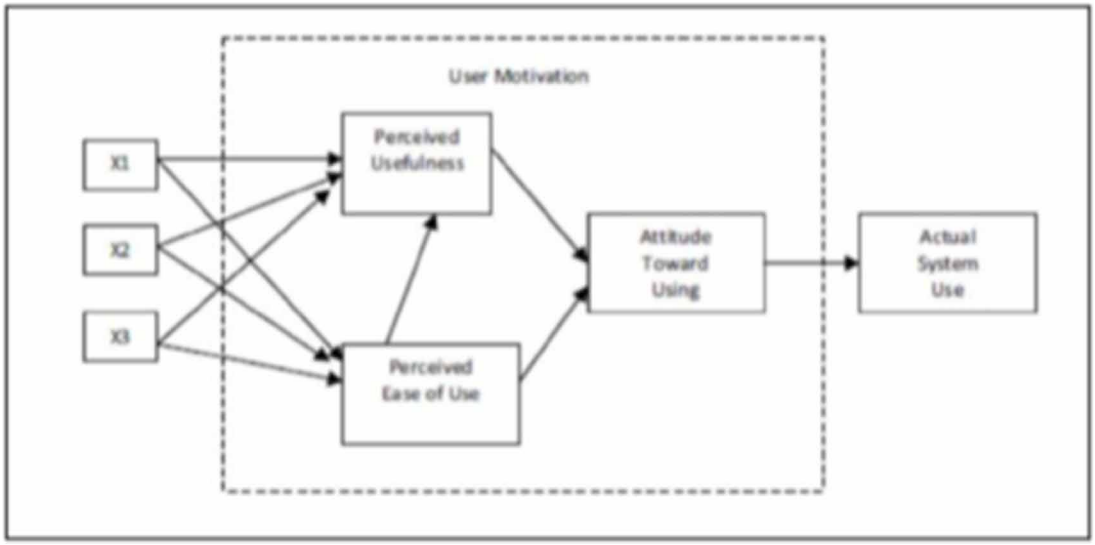
A travel agent is a middleman or an intermediary between suppliers and customers who provides travel and tourism services such as transportation tickets, accommodation, package tours, as well as car rentals. Traditional travel agents are involved in three main activities: 1) sharing information from suppliers to clients; 2) selling tickets and processing customers' transactions; and 3) providing travel plans and advice on destinations to customers (Tsai et. al., 2005). In the past, travel agents had been quite successful in gaining customers' interests in using their services by providing relevant information and tips, aesthetic photos, and maps of the travel destinations. The Internet and World Wide Web have provided suppliers, including airlines, hotels and transportation companies, the opportunity to establish their own websites that enables customers to purchase flight and transportation tickets as well as book hotels and accommodation directly online. These online travel websites became a major competitive threat to brick-and-mortar travel agencies (Heung, 2003). The disintermediation of traditional travel agencies by suppliers has also raised many questions about their future in the travel and tourism industry (Law et. al., 2004).

Therefore, in order to make their businesses more sustainable and competitive, travel agencies have adopted e-commerce that enables ticket booking and payments online. Ozturan and Roney (2004) states that e-commerce adoption in travel agencies provides many benefits such as efficiency, convenience, and access to wider international markets at a cheaper cost. On the consumer's side, it allows them to easily compare hotel and flight prices between online sites.

Figure 1. The original Technology Acceptance Model (Davis, 1989)
Source: Lai, 2017



Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) shown in Figure 1 was developed by Fred Davis in 1986 (Lai, 2017). TAM is adapted from the Theory of Reasonable Action and is used to understand the adoption of technology.

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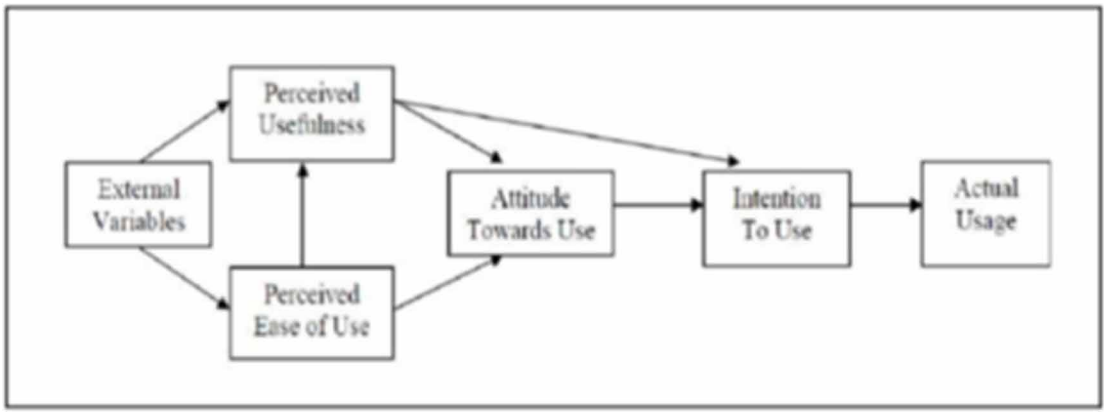
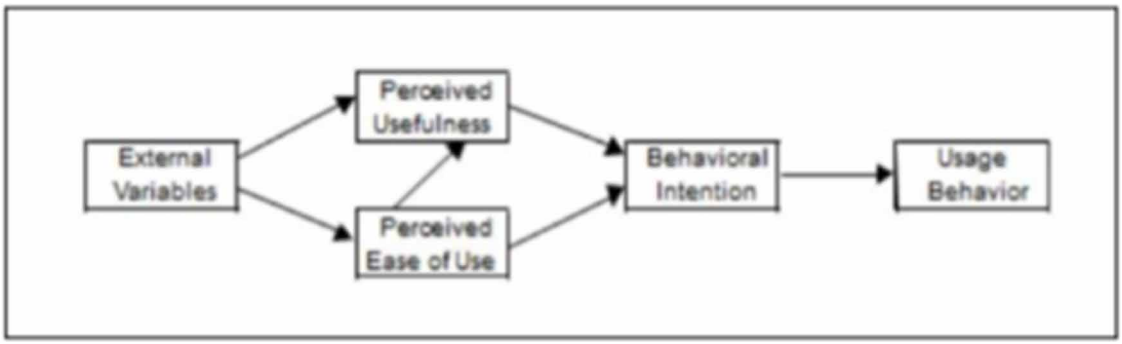
Davis (1989) uses TAM to explain computer usage behaviour, as seen in Figure 2. It helps to identify the general determinants of computer acceptance that leads to understanding the user's behaviour towards technology. Davis (1989) stated that there are two levels in the original TAM, perceived usefulness (PU) and perceived ease of use (PEU). PU refers to the degree to which the use of technology will help improve the performance of an individual, while PEU refers to the individual's belief where they do not have to make an effort in using the technology. In TAM, factors that affect a person's belief towards the system is known as external variables.

Figure 2. The first revised Technology Acceptance Model (Davis et. al., 1989)
Source: Lai, 2017



The final TAM version was developed by Venkatesh and Davis (2000), as seen in Figure 3. This TAM version is formed after Davis discovers that PU and PEU directly influence behaviour intention, thus there is a need to eliminate the idea of attitude.

Figure 3. The final Technology Acceptance Model (Venkatesh & Davis, 2000)
Source: Lai, 2017



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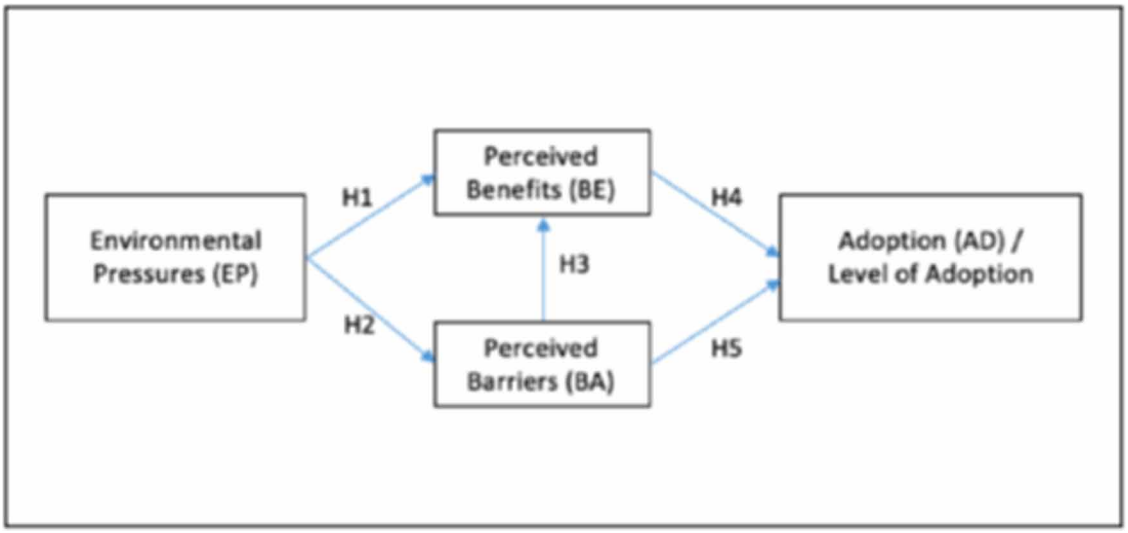
THEORETICAL FRAMEWORK

The conceptual framework for this study is developed based on TAM, adapted from Abou-Shouk (2012). Based on this model, this chapter looks at the environmental pressures (external variables in TAM), to find out whether it has any influence on the perceived benefits (PU in TAM) and perceived barriers (PEU in TAM), and to further investigate if these three factors have any effect on the level of e-commerce adoption among travel agents in Brunei Darussalam.

Figure 4. Conceptual framework based on the Technology Acceptance Model (Abou-Shouk, 2012)



The operational meaning of the variables in the framework are:

External pressures: Threats which coerce travel agents towards e-commerce adoption. These forces can be identified through potential and existing customers, suppliers, partners, or even rivals; the constant technological changes which will eventually lead to adaptation of these changes; the consequences brought about by globalisation such as disintermediation threats to travel agents; hence, the need for survival.

Perceived benefits: All the advantages brought about through e-commerce adoption, which could aid in the increase of the company's competitive edge in the market. Some advantages could be related to the company's survival in terms of financial performance, the firm's overall performance, or the relationship between the travel agent and customers, partners, or suppliers.

Perceived Barriers: This includes technological and organisational factors which could negatively affect the decision to adopt e-commerce among travel agents. Some internal factors which could be considered as barriers are resource availability, expertise, the firm's readiness in adopting the technology, or technological features such as trialability, complexity, or compatibility. Meanwhile, external factors could include suppliers, customers, or the government's readiness, or the fear of online transaction security.

The level of e-commerce adoption comes in four stages: 1) Static web presence; 2) Interactive online presence, 3) Electronic transactions; and 4) Electronic integrations (Abou-Shouk, 2012).

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Research Hypothesis

Five hypotheses have been developed for this study in order to achieve this chapter's objectives.

Cheung and Lam (2009) mention that some causes that have forced travel agents to change are the increase in competition due to globalisation, the increase in expectations and demands from customers, and customer's increase in knowledge on technology. Technological improvement has also enhanced the diffusion of information, which has led to the reduction of intermediaries in the global travel market. Airlines are now providing booking functions on their website, resulting in the decrease on the importance of using travel agencies in making ticket bookings, as opposed to when airline websites were still non-existent. Therefore, the following proposed hypothesis has been developed:

Hypothesis one: Environmental pressures have a positive influence on the perceived benefits of e-commerce adoption.

In developing countries, studies have found that the essential infrastructure needed to implement e-commerce is not available; hence, hindering companies from adopting e-commerce (Abou-Shouk et. al., 2016). This could be due to the lack of accessible Internet services. Therefore, the following proposed hypothesis has been developed:

Hypothesis Two: Environmental pressures have a negative influence on the perceived barriers of e-commerce adoption.

In a study conducted in Hong Kong, Law et. al. (2001) found out that one of the reasons why travel agencies are not using the Internet or e-commerce is due to the shortage of resources and technological expertise, and considered as perceived barriers. Therefore, the following proposed hypothesis has been developed:

Hypothesis Three: Perceived barriers have a negative influence on the perceived benefits of e-commerce adoption.

Abou-Shouk (2012) has found that perceived benefits affect the adoption of e-commerce positively within travel agencies in Egypt. In the study, respondents agree that the benefits of e-commerce improve the company's marketing service, thus increases the chances of adoption. Therefore, the following proposed hypothesis has been developed:

Hypothesis Four: Perceived benefits have a positive influence on the level of e-commerce adoption.

Abu Abid et. al. (2010) reports that a business's external barriers are not considered to be a significant factor in adopting e-commerce compared to the internal barriers. Therefore, the following proposed hypothesis has been developed:

Hypothesis Five: Perceived barriers have a negative influence on the level of e-commerce adoption.

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Hypothesis Development

Table 1. Table of hypotheses

Hypothesis	
H1	Environmental pressures have a positive influence on the perceived benefits of e-commerce adoption.
H2	Environmental pressures have a negative influence on the perceived barriers of e-commerce adoption.
H3	Perceived barriers have a negative influence on the perceived benefits of e-commerce adoption.
H4	Perceived benefits have a positive influence on the level of e-commerce adoption.
H5	Perceived barriers have a negative influence on the level of e-commerce adoption.

RESEARCH METHODOLOGY

Sampling and Data Collection

The aims of this chapter are to recognise and investigate the use of e-commerce in respective travel agencies, as well as to examine how the implementation of digital technologies brings benefits and challenges in travel agencies.

This section focuses on the travel agencies in Brunei Darussalam. Fifty-six travel agencies are listed under the Brunei Darussalam Tourism Development Department. A quantitative approach was used in this study, whereby 56 self-administered questionnaires were distributed. However, only 15 were returned and considered valid for analysis.

Instruments

The questionnaire was adapted from the research done by Abou-Shouk (2012) and was distributed online via Google Forms. It is divided into four parts: Part 1, to figure out the use of computers in the travel agency; Part 2, to identify internet access and pattern problems in the travel agency; Part 3, to investigate whether or not the agents are already utilising e-commerce; and Part 4, to obtain managers' and travel agents' personal details. This research uses a research model which consists of four variables: environmental pressures, perceived benefits, perceived barriers, and level of adoption. Table 2 shows these four variables and their operational definition.

Table 2. Variables and operational definition

Variables	Operational Definition
Environmental Pressures (EP)	The external factors that have forced the agency to implement e-commerce.
Perceived Benefits (BE)	E-commerce adoption/level of adoption that could help achieve perceived benefits.
Perceived Barriers (BA)	Decision to adopt e-commerce might be influenced by organisational and technological factors.
Adoption/Level of Adoption (AD)	The difference between the agents who adopt e-commerce and the agents who do not.

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Semi-structured interview questions were also derived from the research by Abou-Shouk (2012). Quantitative analysis emphasises on the advantages of e-commerce to travel agencies, problems that arise from implementing and creating the website's booking system, and the manager's recommendations on how to implement e-commerce effectively in travel agencies.

Data Analysis

IBM SPSS Version 21 and Microsoft Excel 2013 are used for statistical analysis. To help measure the reliability of the data, Cronbach's alpha is used to measure reliability, while regression analysis is used for hypothesis testing.

Table 3. Statistical analysis used in this study

Measures	Statistical Analysis
To illustrate respondent's demographic factors.	Descriptive analysis
Reliability analysis of the independent variables (EP, BE, and BA) and dependent variable (AD)	Cronbach's alpha
Relationship analysis between dependent variable (AD) and independent variables (EP, BE, and BA)	Regression analysis

RESULTS

Descriptive Analysis

The statistical analysis result data are based on the application of IBM SPSS Version 21 and Microsoft Excel. In descriptive analysis, summarised data are analysed on the travel agencies' responses to gender, age, agency's age, agency's served market, rate of employee's computer capabilities, implementation of website, and e-commerce.

Gender

Table 4 indicates that out of the 15 respondents, 9 respondents are male and 6 respondents are female. It shows that male managers are more dominant in travel agencies than female.

Table 4. Respondent's gender

Gender	Respondent	Percentage
Male	9	60%
Female	6	40%
Total	**15**	**100%**

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Age

In Table 5, all 15 respondents are above the age of 21. Seven out of 15 respondents are between the ages of 21 and 30; four are in the 41-50 age range; while there are two respondents each in the 31-40 and 51-60 age range. Judging by the data in Table 5, it can be deducted that those aged between 21-30 are more likely to be hired in travel agencies.

Table 5. Respondent's age

Age	Respondent	Percentage
<21	0	0%
21-30	7	46.7%
31-40	2	13.3%
41-50	4	26.7%
51-60	2	13.3%
>60	0	0%
Total	**15**	**100%**

Number of Years in Operation

Table 6 shows that all agencies have been operating for more than one year. A majority of the respondents have been operating for more than 11 years; five have been operating for 11 to 15 years; and another five have been operating for more than 30 years. It is expected for companies that have been in operation for a long time to adopt the use of e-commerce. They have been in the industry for a long time and have gained a lot of experience and knowledge. The findings show that the five agencies that have been operating for more than 30 years do have a website and they also implement e-commerce. However, only two out of the five agencies that have been operating between 11 to 15 years have a website and implement e-commerce. Meanwhile, the remaining three agencies only have a website, which they use to provide information on their agency and services, online brochures, interactive travel planner or organiser, online search for other services, accepting inquiry and feedback, and customer care.

Served Market

In Table 7, a majority of the respondents state that their agencies serve both national and international markets (93.3%) while one respondent states that their agency only serve international market (6.7%). To surmise, in a competitive travel industry, 14 out of 15 companies serve both national and international market. However, the main tourist activity for each company differs, with some responses including outbound/ticketing/holidays overseas, tours in Brunei, niche market and cruise ship, Singapore, Temburong trips, Ticketing, full-day city tours, hajj and umrah packages, and rainforest.

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Table 6. Number of years in operation (company's age)

Number of Years in Operation	Respondent	Percentage
Less than 1 year	0	0%
1-5 years	4	26.7%
6-10 years	1	6.7%
11-15 years	5	33.3%
16-20 years	0	0%
21-25 years	0	0%
26-30 years	0	0%
More than 30 years	5	33.3%
Total	**15**	**100%**

Table 7. Travel agency's served market

Served market	Respondent	Percentage
National	0	0%
International	1	6.7%
Both	14	93.3%
Total	**15**	**100%**

Level of Computer Capabilities

Table 8 shows that nine out of 15 respondents rate their employees' computer capabilities at intermediate level, while three rate their employees' computer capabilities at professional level, and another three rate theirs at advanced level. In general, the employees' computer capabilities are between intermediate level and professional level. This may be due to the difference in academic background, working experience, and technological advancement.

Table 8. Level of employees' computer capabilities

Level of Employees' Computer Capabilities	Respondent	Percentage
Lack of skill	0	0%
Beginner	0	0%
Intermediate	9	60%
Advanced	3	20%
Professional	3	20%
Total	**15**	**100%**

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Website Availability

Table 9 shows that a majority of the respondents (86.7%) say that their agencies do have a website while the remainder (13.3%) say that they don't. All agencies have internet access, email address, and social media platforms such as Facebook and Instagram. Moreover, 13 out of 15 agencies have a website that are used to provide information or services to customers including online brochures, and online booking. As for the two agencies with no website, perhaps they use email address and social media platforms to communicate with customers.

Table 9. Website adoption

Is there a website at the travel agency?	Respondent	Percentage
Yes	13	86.7%
No	2	13.3%
Total	**15**	**100%**

Adoption of E-commerce

Table 10 indicates that a majority of respondents answered yes (66.7%) and only a fraction answered no (33.3%). As mentioned, all respondents have access to the Internet in their agencies. They also have email address, social media such as Facebook and Instagram, and nearly all the agencies have a website. In addition, a majority have also implemented the use of e-commerce.

Table 10. The adoption of e-commerce

Is e-commerce used by your agency?	Respondent	Percentage
Yes	10	66.7%
No	5	33.3%
Total	**15**	**100%**

Reliability Analysis

In this study, the analysis on reliability is measured using Cronbach's alpha. A reliability test is conducted to ensure the consistency of the three variables, BE, EP, and BA, with the dependent variable AD. As Table 11, 12, and 13 present, Cronbach's alpha for all items range from 0.487 to 0.930. As Sharma (2016) mentions, Cronbach's alpha $\alpha < 0.6$ is questionable, $\alpha < 0.7$ is acceptable, and $\alpha < 0.8$ is good; hence, the acceptable Cronbach's alpha value for this study is above 0.7, and those below that value are rejected and considered as unreliable. All of the items have coefficient alpha with more than 0.7 (essential benefit $\alpha = 0.885$, competition and marketing benefits $\alpha = 0.798$, business internal efficiency $\alpha = 0.930$, resource limitation $\alpha = 0.842$, business internal environment $\alpha = 0.835$, and business external environment $\alpha = 0.838$), with an exception of two items which have coefficient alpha less than 0.7 (perceived environment

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pressure $\alpha = 0.671$ and adopted technology attributes $\alpha = 0.487$). Although the results indicate that all items in each variable are reliable except for perceived environment pressure and adopted technology attributes, the latter is considered as acceptable even though Cronbach's alpha value is $\alpha = 0.487$. This is because a majority of researchers have agreed that technology has also become a factor that hinders the adoption of website creation due to high developing cost and maintenance. In fact, some managers have also mentioned that expensive technological cost affects website adoption.

Table 11. Reliability analysis of variable perceived benefits

Variable	Items	Measures	N	α	Min	Max	μ
Perceived benefits	Essential benefit	A. Increase in sales, revenue, and profits.	15	.885	1	5	4.26667
		B. Assists in re-intermediation effectively (re-intermediation is the introduction of a new intermediary between consumers and suppliers).	15		1	5	4.00000
		C. Attracts new investors or services.	15		1	5	3.93333
		D. Allows and assists cooperation/partnership.	15		1	5	3.93333
	Competition and marketing benefits	E. Enhances distribution channels (the intermediaries/ network through which goods and/or services travel from suppliers to consumers).	15	.798	1	5	3.86667
		F. Creates image/reputation within the global markets.	15		1	5	4.20000
		G. Customisation of services according to customer's needs.	15		1	5	4.20000
		H. Increases customer satisfaction.	15		1	5	4.13333
		I. Gains competitive edge.	15		1	5	4.13333
	Business internal efficiency	J. Collaborates with partners or suppliers effectively.	15	.930	1	5	4.00000
		K. Enhances responsibility.	15		1	5	4.06667
		L. Increases employee satisfaction.	15		1	5	3.73333
		M. Easy to perform transactions.	15		1	5	3.93333
		N. Improves flow and sharing of internal knowledge.	15		1	5	4.06667
		O. Supports strategic decision making.	15		1	5	3.86667

Note: α<0.6 questionable, α<0.7 acceptable, α<0.8 good (Sharma, 2016)

Table 12. Reliability analysis of variable environmental pressure

Variable	Items	Measures	N	α	Min	Max	μ
Environmental pressure	Perceived environmental pressure	A. Reaction to competitive pressures.	15	.671	1	5	3.9333
		B. Development of supplier programmes.	15		1	5	3.6667
		C. Influence of business partner.	15		1	5	3.8667
		D. Embracing the changes in technology.	15		1	5	4.3333
		E. Issues of globalisation.	15		1	5	3.7333
		F. To survive in the future.	15		1	5	4.1333

Note: α<0.6 questionable, α<0.7 acceptable, α<0.8 good (Sharma, 2016)

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Table 13. Reliability analysis of variable perceived barrier

Variable	Items	Measures	N	α	Min	Max	μ
Perceived barriers	Resource limitation	A. Little awareness and/or knowledge regarding the benefits of e-commerce.	15	.842	1	5	3.73333
		B. Inadequate resources to implement e-commerce.	15		1	5	3.6667
		C. Employees refuse to change how they work/stick to/persist with their old ways of doing work.	15		1	5	3.40000
		D. Refuse to take risks and unsure of the benefits of e-commerce.	15		1	5	3.3333
	Business internal environment	E. Characteristics/features of the business (small sized and remote location).	15	.835	1	5	3.2000
		F. Technological preparation is lacking.	15		1	5	3.40000
		G. Unskilled IT labour.	15		1	5	3.13333
		H. Lack of business planning and strategy (to expand the business).	15		1	5	2.68667
		I. Changing traditional to new methods is time consuming.	15		1	5	3.2000
	Business external environment	J. Regulatory issues such as privacy, copyright protection, and transaction.	15	.838	1	5	3.33333
		K. Factors influence the external environment of business operations in legal, economics, and socio-cultural.	15		1	5	3.40000
		L. Lack of initiatives and support from government.	15		1	5	3.46667
		M. Lack of availability to public infrastructure and Internet access.	15		1	5	3.33333
		N. Few successful e-commerce and verified business models.	15		1	5	3.46667
		O. Issues on customer belief, culture, and satisfaction.	15		1	5	3.60000
	Adopted technological attributes	P. Unable to implement e-commerce software during trial period.	15	.487	1	5	3.00000
		Q. E-commerce is a complicated technology.	15		1	5	3.00000
		R. E-commerce is unsuitable for travel agency.	15		1	5	2.13333

Note: α<0.6 questionable, α<0.7 acceptable, α<0.8 good (Sharma, 2016)

Table 14. Regression analysis

Model Summary				
Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	0.578[a]	0.334	0.152	0.22816

Predictors (constant): Environmental pressures, perceived benefits, and perceived barriers. Dependent Variable: Level of website adoption.

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Regression Analysis

Regression analysis is conducted to examine the influence of independent variables (EP, BE, and BA) on a dependent variable (AD). The R-Squared in regression model explains the percentage of variance in independent variables in response to the variance in the dependent variable. As seen in Table 14, the R-squared value for this regression model is 0.334. This means that only 34% of the variance in EP, BE, and BA can explain the level of website adoption among travel agents in Brunei Darussalam.

Table 15. Regression analysis of variable perceived benefits

Perceived Benefits	Sig
A. Increases sales, revenue, and profits.	.000
B. Assists re-intermediation effectively.	.000
C. Attracts new investors or services.	.000
D. Allows and assists cooperation/partnership.	.000
E. Enhances distribution channels.	.000
F. Creates image/reputation within the global markets.	.000
G. Customisation of services according to customer needs.	.000
H. Increases customer satisfaction.	.000
I. Gains competitive edge.	.000
J. Collaborates with partners or suppliers effectively.	.000
K. Enhances responsibility.	.000
L. Increases employee satisfaction.	.000
M. Easy to perform transactions.	.000
N. Improves the flow and sharing of internal knowledge.	.000
O. Supports strategic decision making.	.000

Predictors (constant): Environmental pressures, perceived benefits, and perceived barriers. Dependent Variable: Level of website adoption. Significant $p<0.05$, Not significant $p>0.05$

Table 16. Regression analysis of variable environmental pressures

Environmental Pressures	Sig
A. Reaction to competitive pressures.	.000
B. Development of supplier programmes.	.000
C. Influence of business partner.	.000
D. Embracing the changes in technology.	.000
E. Issues of globalisation.	.000
F. To survive in the future.	.000

Predictors (constant): Environmental pressures, perceived benefits, and perceived barriers. Dependent Variable: Level of website adoption. Significant $p<0.05$, Not significant $p>0.05$

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Table 15, 16, and 17 illustrate the significance of regression coefficient and p-values for all variables (BE, EP, and BA) in this regression model are $p = 0.000$. Since all p-values for each variable are less than the significance level of 0.05 ($p < 0.05$), this indicates that all of the variables are significant in affecting the level of website usage among travel agents in Brunei Darussalam.

Table 17. Regression analysis of variable perceived barriers

Perceived Barriers	Sig
A. Little awareness and/or knowledge regarding the benefits of e-commerce.	.000
B. Inadequate resources to implement e-commerce.	.000
C. Employees refuse to change how they work/stick to/persist with their old ways of doing work.	.000
D. Refuse to take risks and unsure of the benefits of e-commerce.	.000
E. Characteristics/features of the business (small sized and remote location).	.000
F. Technological preparation is lacking.	.000
G. Unskilled IT labour.	.000
H. Lack of business planning and strategy (to expand the business).	.000
I. Changing traditional to new methods is time consuming.	.000
J. Regulatory issues such as privacy, copyright protection, and transaction.	.000
K. Factors influence the external environment of business operations in legal, economics, and socio-cultural.	.000
L. Lack of initiatives and support from government.	.000
M. Lack of availability of public infrastructure and internet access.	.000
N. Few successful e-commerce and verified business models.	.000
O. Issues on customer belief, culture, and satisfaction.	.000
P. Unable to implement e-commerce software during trial period.	.000
Q. E-commerce is a complicated technology.	.000
R. E-commerce is unsuitable for travel agency.	.000

Predictors (constant): Environmental pressures, perceived benefits, and perceived barriers. Dependent Variable: Level of website adoption. Significant $p<0.05$, Not significant $p>0.05$

Hypothesis Testing

Table 18 shows the summary of hypothesis testing. The regression analysis in Table 15, 16, and 17 show the p-values for all variables (EP, BE, and BA) are $p = 0.000$. These p-values are less than the significant level of 0.05 ($p < 0.05$). This indicates that all variables are significant in influencing the level of website usage among travel agents in Brunei Darussalam. Thus, we accept all of the hypothesis. For hypothesis H1, it is accepted that there is a positive relationship between environmental pressures and perceived benefit of website usage. For hypothesis H2, it is accepted that there is a negative relationship between environmental pressures and perceived barriers of website usage. For hypothesis H3, it is accepted that there is a negative relationship between perceived barriers and perceived benefits of website usage. For hypothesis H4, it is accepted that there is a positive relationship between perceived benefits and the level of website usage. And finally, for hypothesis H5, it is accepted that there is a negative relationship between perceived barriers and the level of website usage.

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Table 18. Hypothesis testing

HYPOTHESIS	DESCRIPTION	ACCEPT/REJECT HYPOTHESIS
H1	Environmental pressures have a positive influence on perceived benefits of e-commerce adoption.	***Accept***
H2	Environmental pressures have a negative influence on perceived barriers of e-commerce adoption.	***Accept***
H3	Perceived barriers have a negative influence on perceived benefits of e-commerce adoption.	***Accept***
H4	Perceived benefits have a positive influence on the level of e-commerce adoption.	***Accept***
H5	Perceived barriers have a negative influence on the level of e-commerce adoption.	***Accept***

DISCUSSIONS

Significance of Perceived Benefits and its Effect on the Level of E-commerce Adoption

For the purpose of this study, perceived benefits consist of three variables: essential benefit, competition and marketing benefit, and business internal efficiency. Essential benefit includes the financial performance of the company; competition and marketing benefit lowers operating cost and at the same time increases the company's market reach (Khatibi et. al., 2005); and business internal efficiency are benefits that e-commerce can bring in terms of the company's internal operations, which includes improving employee satisfaction and easing transactions (Abou-Shouk, 2012).

These factors are proven to influence e-commerce adoption in businesses, as supported by a study in Malaysia by Khatibi et. al. (2005), where the ease of conducting transactions between travel agents and customers as well as decreased cost due to Internet communication are tools in a business, hence the adoption of e-commerce. Another study in Bosnia finds that respondents believe e-commerce can help enhance consumer interaction and intermediation, which can provide a new marketplace. Furthermore, it can also help save time and cost (Ozlen et. al., 2014).

Significance of Environmental Pressure and its Effect on the Level of E-commerce Adoption

Environmental pressure in this context can refer to pressures from competitors, suppliers, business partners, the evolution of technology, globalisation, and the company's future survival. In this study, the significant factors that influence travel agents to adopt e-commerce are technological changes and the company's survival. Wang and Hou (2012) find that with globalisation and the movement of open sources, SMEs are influenced to adopt e-commerce when large corporations adopt the technology. This proves that competitors and technology play important roles in e-commerce adoption among SMEs.

A study in Malaysia conducted by Kurnia et. al. (2009) also finds that EP has a positive effect towards e-commerce adoption among companies. The study is supported by Abou-Shouk (2012), who finds that travel agents in Egypt are also pressured to adopt e-commerce, mainly for their company's survival.

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Significance of Perceived Barriers and its Effect on the Level of E-commerce Adoption

The quantitative results for BA in adopting website booking system is divided into four categories. The first category is the attributes of adopted technology. Despite being rejected due to its low reliability, attributes of adopted technology play a significant role in preventing travel agencies from implementing the website booking system. Based on the results, travel agencies in Brunei Darussalam view the website booking system as insignificant. The result is consistent with studies conducted by Abou-Shouk (2011), whereby e-commerce adoption does not fit with the nature of services provided by the travel agency in Egypt as their market are targeted towards religious tourism, which prefers direct and personal contact rather than using a website. Another factor to be considered as a barrier to website booking adoption is complexity. Based on answers given by managers, it is found that website booking system are difficult for staff to operate. This result is in line with findings from research on travel agencies that adopt sophisticated website booking system that are difficult for staff to understand (Alrousan, 2014).

The second category is the external environment. This category encompasses the lack of support from the government in encouraging travel agents to adopt a website booking system. According to Kassim (2014), government support is defined as support through electronic infrastructure, legislation, training programme, and financial. The significance of government support in this research is consistent with previous findings, where studies show that companies with a high level of e-commerce adoption are more aware of benefits from government support than companies with a lower adoption level. Therefore, it can be deduced that the more government support the travel agents in Brunei Darussalam receive, the higher the likelihood of website booking system adoption.

The third category is the internal environment. Characteristics such as firm size play a significant role in influencing the manager's decision to adopt a higher level website booking system. Prior studies show that firm size does affect the adoption of advanced e-commerce for travel agencies because a bigger firm usually has higher financial resources, knowledge, and expertise in using the system. Moreover, bigger travel agencies are capable of handling failure in the implementation of e-commerce compared to smaller agencies (Gharibyan, 2016; Alrousan, 2014; Abou-Shouk, 2011). Another factor that hinders managers from adopting an advanced website booking system is not having fast Internet access and an inexperienced IT department (Abou-Shouk, 2011).

The final category is resource limitation. Resource limitation encompasses a firm's financial capability. Financial resources is a significant factor that hinders a company from adopting the website booking system. This is similar to a study conducted in Nigeria by Musawa and Wahab (2012), whereby a firm requires a large amount of financial investment, effort, and time in order to adopt advanced e-commerce. Therefore, travel agency managers are advised to study the feasibility and cost effectiveness of adopting an advance booking system for their business. It is vital to consider the lack of financial resources as a barrier for managers in adopting the booking system.

RESEARCH LIMITATIONS

One of the research limitations is time constraints. Due to the limited time available to complete the study, it is difficult to find more respondents or to revise the methodology and survey used in the study. The second limitation is that there was no pilot testing. The lack of pilot testing means that the study

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is unable to test the survey to find out which variables are compulsory and which are not. The lack of response from respondents is also a limitation; the researchers only received 15 out of 56 responses. The survey was initially distributed through emails and social media, which didn't get a response. The researchers were then forced to distribute the survey manually, which was more time consuming, difficult, and costly as the travel agencies had to be visited personally so that agents and managers could be given the survey, which then had to be picked up again upon completion. Information on the Brunei Darussalam Tourism Development Department database also has not been updated for a while, as the researchers discovered that two travel agencies have closed. Thus, there is a lack of information on the actual number of existing travel agencies in Brunei Darussalam.

RECOMMENDATIONS

As stated in the limitation, only 15 respondents took part due to time constraints and lack of initial response to the online survey on Google Forms. One of the recommendations is by increasing the number of respondents as it may help obtain a more empirically accurate data. Another recommendation is to have more reliable and updated sources. Having more time will also be helpful so that a pilot test can be conducted to check on the reliability of survey questions, and possibly increase the number of respondents. The use of other types of methodology can also help, such as interviews or a focus group study. These can provide a different insight and view with a more detailed narrative and base data.

CONCLUSION

In conclusion, the authors find that the adoption of e-commerce among travel agencies in Brunei Darussalam is influenced by the perceived benefits and the perceived barriers from environmental pressure such as competitors and globalisation. The levels of adoption are either beneficial or obstacles that influence travel agents to adopt or not adopt e-commerce. Therefore, while e-commerce adoption are mostly seen as beneficial for Brunei travel agencies to survive in the global market, barriers such as lack of IT employees restrict adoption.

REFERENCES

Abou-Shouk, M. A. (2012). *Investigating e-commerce adoption in small and medium sized tourism enterprises: A case of travel agents in Egypt*. Retrieved on 18 September 2019 from https://pearl.plymouth.ac.uk/handle/10026.1/1231

Abou-Shouk, M. A., Wai, M. L., & Megicks, P. (2016). Using competing models to evaluate the role of environmental pressures in e-commerce adoption by small and medium sized travel agents in developing countries. *Tourism Management*, *52*, 327–339. doi:10.1016/j.tourman.2015.07.007

Aldajani, D. M. (2011). *A critical analysis of e-commerce used by Jordanian travel agents*. Retrieved on 20 October 2019 from https://core.ac.uk/download/pdf/42605145.pdf

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Alrousan, M. K. (2014). *E-commerce adoption by travel agencies in Jordan* (Doctoral dissertation). Cardiff Metropolitan University. Retrieved on 24 September 2019 from https://pdfs.semanticscholar.org/05c8/ec0af3e5e0325b95b263e2fc28f40ba291ab.pdf

Cheung, R., & Lam, P. (2009). How does a travel agency survive in the e-business world? Communication of the IBIMA, 10.

Gharibyan, T. (2016). *Adoption of e-commerce in micro tourism firms located in Umea*. Academic Press.

Hackernoon. (n.d.). *How to create free online booking system?* Retrieved on 6 November 2019 from https://hackernoon.com/how-to-create-free-online-booking-system-3e5251e099f3

Khatibi, A., Shah Alam, A., Ismail, H., & Rusop, M. (2005). *Perceived benefits of e-commerce adoption in the electronic manufacturing companies in Malaysia*. Retrieved on 6 November 2019 from: https://www.researchgate.net/publication/26618936

Kurnia, S., Alhashmi, S. M., Alzougool, B., & Ali, M. (2009). *Adoption of electronic commerce technologies by SMEs in Malaysia.* Retrieved on 6 November 2019 from: https://www.researchgate.net/publication/221184595

Lai, P. C. (2017). The literature review of technology adoption model and theories for the novelty of technology. *Journal of Information Systems and Technology Management*, *14*(1), 21–38. doi:10.4301/S1807-17752017000100002

Law, R., Law, A., & Wai, E. (2001). The impact of the internet on travel agencies in Hong Kong. *Journal of Travel & Tourism Marketing*, *11*(2-3), 105–126. doi:10.1300/J073v11n02_06

Law, R., Leung, K. R., & Wong, J. (2004). The impact of the Internet on travel agencies. *International Journal of Contemporary Hospitality Management*, *16*(2), 100–107. doi:10.1108/09596110410519982

Musawa, M., & Wahab, E. (2012). The adoption of electronic data interchange (EDI) technology by Nigerian SMEs: A conceptual framework. *Journal of Business Management and Economics.*, *3*(2), 55–68.

Nanehkaran, Y., A. (2013). An introduction to electronic commerce. *International Journal of Scientific & Technology Research, 2*(4).

Odgers, T. (2017). What Exactly is an Online Booking System? *Checkfront*. Retrieved on 23 September 2019 from https://www.checkfront.com/what-is-an-online-booking-system

Ozlen, M. K., Mekic, E., & Kumbara, E. (2014). Perceived benefits of e-commerce among manufacturing and merchandising companies. *International Journal of Academic Research in Economics and Management Sciences, 3*(2). Retrieved on 6 November 2019 from https://www.researchgate.net/publication/266951813

Ozturan, M., & Roney, S. (2004). Internet use among travel agencies in Turkey: An exploratory study. *Tourism Management*, *25*(2), 259–266. doi:10.1016/S0261-5177(03)00097-9

Panda R. K., & Das B. (2011). Factors affecting adoption of electronic commerce by travel agencies Odisha. *International Journal of Research in IT and Management, 6*(7).

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Sokanu. (2019). *What does a travel agent do?* CareerExplorer. Retrieved on 23 September 2019 from https://www.careerexplorer.com/careers/travel-agent/

Tamilarasi, R., & Elamathi, N. (2017). E-commerce – Business technology society. *International Journal of Engineering Technologies and Management Research.*, *4*(10), 33–41. doi:10.29121/ijetmr.v4.i10.2017.103

Wang, H., & Hou, J. C. (2012). Factors affecting e-commerce adoption and implementation in small and medium-sized enterprises. *International Journal of Digital Content Technology and its Application, 6*(7). Retrieved on 7 November 2019 from https://pdfs.semanticscholar.org/5778/f009a613018b3f01307057e66d3adc012068.pdf

ADDITIONAL READING

Chang, B. Y., Magobe, M. J., & Kim, Y. B. (2015). *E-commerce applications in the tourism industry: A Tanzania case study.* Retrieved on 13 December 2019 from https://pdfs.semanticscholar.org/90b7/f773d125c62be76d0933f58dbafc34aad75c.pdf

Naufal, M. S., & Salamah, U. (2018). *Tourism industry: Adoption of information communications technology (ICT) in implementing e-tourism.* 2nd Indonesia International Graduate Conference on Communication (Indo-IGCC) Proceeding. Retrieved on 13 December 2019 from http://proceeding.indo-igcc.id/index.php/IndoIGCC/article/view/131/132

Shemi, A. P. (2012). F*actors affecting e-commerce adoption in small and medium enterprises: an interpretive study of Botswana.* Retrieved on 13 December 2019 from https://core.ac.uk/download/pdf/9842780.pdf

Standing, C., Tang-Taye, J. P., & Boyer, M. (2014). The impact of the internet in travel and tourism: A research review 2001-2010. *Journal of Travel & Tourism Marketing.* Retrieved on 12 December 2019 from https://www.tandfonline.com/doi/abs/10.1080/10548408.2014.861724

Stevic, S. R., & Stevic, I. (2012). *Challenges for the survival of travel agencies due to new tendencies on the tourism market.* Retrieved on 12 December 2019 from https://www.researchgate.net/publication/283318319_Challenges_for_the_survival_of_travel_agencies_due_to_new_tendencies_on_the_tourism_market

Van Rensburg, M. J. (2014). Relevance of travel agencies in the digital age. *African Journal of Hospitality, Tourism and Leisure*, *3*(2). Retrieved December 12, 2019, from https://www.researchgate.net/publication/272739476_Relevance_of_travel_agencies_in_the_digital_age

Zare, S., & Chukwunonso, F. (2015). How travel agencies can differentiate themselves to compete with online travel agencies in the Malaysian context. *e-Review of Tourism Research (eRTR),* 12(5/6), 226-240. Retrieved on 10 December 2019 from https://www.researchgate.net/publication/296331505_How_Travel_Agencies_Can_Differentiate_Themselves_to_Compete_With_Online_Travel_Agencies_in_the_Malaysian_Context

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KEY TERMS AND DEFINITIONS

E-Commerce: Comprises all types of transactions including purchasing, selling, and exchanging of information and services via the computer between the business organisation and other third parties.

Travel Agency: An agency that offers various travel related goods and services to customers on behalf of suppliers such as airlines, cruise ships, etc.

Website Booking: A software for managing booking purposes.

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Section 6
Critical Issues and Challenges

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Chapter 84
The Implications of Unethical and Illegal Behavior in the World of E-Commerce

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ABSTRACT

The main focus of this chapter is to identify the behaviors of the consumers and sellers of e-commerce in Bahrain. It also seeks to understand the ethical and legal issues faced by the users of e-commerce and the various reasons for such behavior. The perception of the consumers regarding online retailers discussed through appropriate measures and research data. The chapter clearly explains the historical development of e-commerce in Bahrain and the processes and procedures of setting up an online business in the country. The common legal and ethical issues faced by the consumers discussed in detail and supported by different models to understand user behavior. The research onion method used to gather quantitative and qualitative data. The primary data collected through questionnaires and interviews whereas the secondary data collected through literature. The data analysis shows the results of the mixed method supported by different graphs and models. The different recommendations provided to solve the most prevalent problems confronted by the buyers and the sellers of e-commerce.

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INTRODUCTION

In this modern world of Globalization, the world is changing at a rapid speed and so is the technology around us. The factors affecting our daily life, along with the lives of the upcoming generation cannot be overseen. The modern advancement and developments have narrowed the space between human beings and machines (Al-Alawi, 2014). As has been stated by Cabell (2001),"around two years ago, the total amount of knowledge on e-Commerce could be collected in a small bucket of bits. But two years from now, we might float in a sea of information on digital technology alone". This is because technology keeps changing over time and it is hard to keep pace with the continuously changing digital environment. On one hand, human beings are using technology and compromising on their privacy and on the other hand, technology is satisfying the needs of the people. But we cannot overlook the fact that human beings are unpredictable, and it is not easy to control them. Due to this fact, there is a rise in the cybercrimes and a large number of people are misusing the technology to intentionally or unintentionally harm the other users around them. Despite the fact that there are many regulations and laws that protect the individuals, there has been a drastic increase in these crimes (Al-Alawi & Abdelgadir, 2006; Al-Alawi, 2014). These crimes are not just limited to using social media and internet, but they have also left a negative impact on the e-Commerce activities around us. The world of e-Commerce is so vast that it is almost impossible to measure the extent of this impact. In the modern world, e-Commerce has gained a widespread popularity and is one of the most useful platforms for businesses as well as individuals.

The emergence of e-Commerce has made the traditional business practices expand and reduced the limitations involved in the way people used to do business. For example, the appearance and forms of businesses have changed compared to the traditional systems and these changes are the basis of decisions in all economies. With the development of virtual systems in the markets and stores, it is possible for the consumers to shop at their convenience anytime and anywhere in the world without leaving their homes. They can choose and order products or services from a wide variety of virtual shops and pay on the spot. At the same time businesses can market their products and services through advertisements (Nanehkaran, 2013).

One of the most important characteristics of the Internet is its ever-changing and fluid characteristic. Web pages vanish in seconds and users pass through the electronic highway at a relatively fast speed. The ever-changing technology is also bringing along a vast number of unethical practices and actions and this issue has been widely discussed ever since the emergence of digital technology (Cabell, 2001).

On one hand, we can reasonably conclude that e-commerce has a large number of benefits which include faster buying and selling around the clock all over the world, low costs of operations and better quality of services, easy start-up and marketing, simple and fast business services and improved customer services. But on the other hand, we cannot overlook the threats posed by availing these benefits which include privacy and security issues, fraud, illegal access, initial costs of setting up web applications and websites, User resistance, technical software and hardware issues, unsolicited emails, false advertising, product warranty, cybersquatting and cyber security.

Statement of the Problem

The expanding growth of internet and e-Commerce activities have given rise to a number of legal and ethical issues being questioned. Most of the people want to get their tasks done as quickly as possible without much hassles and e-Commerce has provided them with a great medium where they can save

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time, money and efforts. In the past, mobile phones, faxes and telephones have opened vast opportunities for business processes. But we cannot deny the fact that every new business is born with some associated risks and same is the case with e-Commerce. Therefore, it is extremely important and beneficial to identify these issues and the different risks they carry for the users in order to try and create a safe environment for the buyers as well as the sellers.

It is fairly easy for businesses to get sidetracked in the hassle of keeping up with the technology and as a result lose track of the ethical implications. These implications would generally be easily addressed during face to face interactions with the customers, but it is a big challenge when it comes to e-Commerce. E-Businesses around the world are affected due to some of the most commonly prevailing issues which include web tracking, privacy issues, disintermediation and reinter mediation, fraud, copyright infringements, domain names and many more. These issues have to be resolved through the practical application of universally applicable ethical and legal laws, so people do not hesitate to reap the benefits of e-Commerce facilities.

The purpose of this report is to identify the behaviors of the buyers and sellers involved in online transactions in the Kingdom of Bahrain. It is directed towards providing appropriate solutions for some of the most common issues faced by the consumers and sellers in the country.

Research Significance

Ethics are usually formed through personal beliefs, thoughts, morals and behaviors of the individuals. The two main building blocks of any relationship are trust and communication. The framework for ethical web accessibility is a critical factor towards the success of the e-Commerce initiatives around the world. Studying the important factors which contribute to these issues, will help to provide suitable solutions to help the widespread issues related to e-Commerce. Managers can formulate different strategies and regulations to control the unethical actions which result in losing the trust of the customers. This research aims to understand the behavior and perceptions of the consumers of e-Commerce and provide suitable solutions so that they can reap the benefits of e-Commerce without any hindrance. It will also help to understand the viewpoints of different e-Commerce service providers, how they overcome some of the most common issues in e-Commerce and their suggestions or recommendations to improve the e-Commerce situations.

Research Objectives

The main objectives of this research are:

- To provide an insight into different practices and models of e-Commerce
- To identify the different kinds of unethical and illegal behaviors faced by the buyers and sellers in e-Commerce.
- To study the reasons for unethical consumer behavior and its impact.
- To provide recommendations and solutions to solve the most common types of unethical or illegal problems.
- To discuss suitable solutions to eliminate the risk of losing information security and prevent unauthorized accessing.
- To conduct a research on the development of e-Commerce in Bahrain.

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- To study the factors influencing the e-Commerce behavior of the consumers in Bahrain.

Research Methodology

The secondary data in the literature review was collected through different websites, journal, articles and previous research studies. The research methodologies and the data collection techniques used in the literature review were reviewed properly and the most appropriate ones were used for this research. The first part of the methodology focuses on identifying the behavior of the consumers of e-Commerce. For this purpose, a quantitative method was adopted, and a survey was conducted which included a sample of 55 students from the University of Bahrain. This survey was conducted electronically through emails and other social media.

The data collected through the survey was then reviewed to focus on the main factors to be analyzed in the study. To analyze the data collected for this study, the study used the statistical packages of science (SPSS) software 22. In order to reach a more reasonable conclusion, the factors were further investigated by collecting the qualitative data. This was done by conducting interviews with the product and service providers of e-Commerce in the Kingdom of Bahrain. The interview was conducted with the owner of a UAE and Bahrain based online shop called MENA shoppers and with the IT project manager of the E-government authority in Bahrain. The research captured information from both the sources, which was analyzed to reach the appropriate conclusion.

Research Limitations

The research does not cover the social, technological and economic issues involved in e-Commerce and focuses only on the ethical and legal aspects. It focuses on the views, experiences and perceptions of some of the e-Commerce manufacturers in Bahrain. The sample consists of 2 manufacturers and around 55 consumers of e-Commerce. However, many consumers and manufacturers in Bahrain could not be interviewed and surveyed due to the access, time and cost limitations. In addition to this, one of the main obstacles was information access, since most of the organizations hesitate to provide confidential information about the issues they face with the customers and vice versa. This research provides suggestions and recommendations to improve the e-Commerce situations but does not help in implementing them.

Study Structure

The study consists of six sections. Section one provides a brief introduction about e-Commerce and the implications of different ethical and legal issues in the modern world of e-Commerce. Then it provides the research problem, significance, objectives, limitations and methodology.

Section two discusses the development of e-Commerce in Bahrain, while Section three consists of the literature review which discusses the history, definitions and types of e-Commerce and its objectives. It also illustrated the different factors affecting e-Commerce and the reasons for this behavior.

Section four provides an overview of the different methodologies used to conduct the research. It also discusses the research tools, procedures and the research design used in the report. The data collection method, instrument design and the sampling technique used in this research is also presented along with the procedures for data analysis.

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Section five is devoted to providing the data analysis, presentation and discussion. The main results and findings from different methods are presented, compared and tested with the pre-existing theories of the literature review.

Section six concludes the research by giving a short review of the findings and the research in general. It also provides different recommendations for the buyers and providers of e-Commerce in order to help them overcome the issues in e-Commerce.

The Research Management Plan

A systematic approach was followed in this research and the research work was divided into three main phases and nine activities (Table 1). This study management plan was developed in order to help and develop a better understanding of the study structure and to facilitate the management of the study work.

Table 1. The research management plan

	Phases	Activities	Outcome	Sections
Phase One	I. Research Project Definition.	1.Introduction of the research	1. Identifying the research problem, objectives, design, methodology and study structure.	Introduction
	II. Literature Review - General - Focused	2. Collect data based on pre-existing theories and previous studies through journals, articles, websites and previous research papers.	1.Understanding e-Commerce and its types. 2. Understanding the History and activities of e-Commerce in Bahrain. 3. Identifying the ethical and legal issues in e-Commerce	Literature Review
Phase Two	I. Quantitative Survey (Questionnaires).	1.Developing Questionnaire. 2. Selecting Sample population. 3. Distributing the Questionnaires.	1. Identifying the common issues faced by the consumers of e-Commerce and their importance. 2.Identifying the most common e-Commerce platforms. 3.Understanding the perceptions and reactions of the consumers. 4.Suggestions for improvement.	Methodology
	II. Qualitative Survey (Interviews).	1. Preparing Interview questions. 2.Conducting Interviews.	1. Understanding the reasons for unethical and illegal e-Commerce behaviors. 2. Identifying the issues. 3.Suggestions for improvement.	
Phase Three	I. Data Analysis	1.Entering data for analysis. 2.Findings Presentation	1. Testing the findings for research success factors. 2.Categorizing the responses.	Data Analysis
Phase Four	I. Conclusion and Recommendations. II. Write up and Submission.	1.Develop suggestions based on the findings. 2.Writing up the study	1. Concluding the research and providing solutions to solve the e-Commerce problems. 2. Final draft of the study.	Conclusion and Recommendations

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E-Commerce in Bahrain

The Kingdom of Bahrain is a small island situated in the Gulf. Although the population of Bahrain is relatively less compared to other GCC countries, but the interconnectedness of organizations to the internet, makes it one of the most digitally connected regions in the Gulf. Bahrain was one of the first countries in the Gulf to install a mainframe computer in 1962 and digitalized its national and international telephone network in 1992. The internet service was launched in Bahrain in 1995 whereas the wireless internet connection 'WiMax' was launched in 2007. It also became the first country in the world to establish a Next Generation Network (NGN) in 2008 (Ms. Vivian Jamal, Bahrain Economic Development Board, 2013). Internet usage all around the world is increasing day by day and so is the use of e-Commerce in Bahrain (Alajmi, 2014). The importance of e-Commerce was realized in Bahrain in the early 1999 but a major boom in the e-Commerce activities was witnessed in 2004, when the Ministry of Industry and Commerce established the Directorate of e-Commerce and IT. This was a great initiative to support and strengthen the framework of Information technology and e-Commerce in the country, because it helped the individuals as well as the industrial and commercial sectors to reduce cost and save time through direct contact methods. The official website of the ministry has been developed throughout the years and a wide variety of online services have been included. Many programs have been administered as well in order to enrich the e-Commerce activities for all local businesses in the region. The latest technologies have been used for enhancing the website to successfully provide the e-government services to the customers. In order to encourage the citizens to avail the e-Commerce facilities rather than wasting their time by using the conventional methods, the ministry is taking many steps to promote awareness of the electronic services in the Kingdom and push it towards a digital society (moic.gov.bh).

According to Trade Arabia News Service (2011), the internet usage in Bahrain had increased from 1.2 million (2000) to 18.7 million (2010). As stated in the report by Visa and Interactive Media in Retail Group (IMRG) International, in 2011 the online sales in Bahrain had reached BD 66.15 million (an estimated $175 million), which implies that the internet usage has increased upto 800 percent compared to the year 2000, meaning 55 out of every 100 Bahrainis are using internet. This percentage is one of the highest in the GCC. The government of Bahrain has paved new ways to e-Commerce through the development of Central Informatics Organization (CIO). Stephen Leeds, the business leader of Visa Middle East e-Commerce stated in one of his interview that the youth of Bahrain is striving towards the development of the digital society since online shopping in Bahrain is still in its initial stages but just like all the countries of this world, the Bahraini consumers are also facing certain barriers in e-Commerce such as privacy concerns and lack of trust. Bahrain, being one of the world's largest retail electronic payment networks, provides a number of mediums to its consumers in Bahrain in order to encourage them and restore their trust in shopping online. The head of the IMRG, Aad Weening asserts that the aim of spreading e-Commerce awareness among the consumers is to attract foreign investors and initiatives to develop domestic websites (tradearabia.com).

Bahrain is being tested on by many companies for the new ICT technologies. Bahrain also received a special award by the United Nations in June 2010 for the improvement of e-services and for building up the delivery of its services through e-participation (Bahrain.com). Since 2010, Viva Bahrain has invested almost $300 million for the improvement and innovation of applications for using e-services and e-Commerce in Bahrain (Bahrain.com,2013). Some of the well-known electronic manufacturers in Bahrain are Ameeri Industries who deal in manufacturing and distributing electronic products under brands including AMETECH, AMELITE and AMGARD and Awal Gulf, which is one of the biggest

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manufacturers of air conditioners in the GCC, and their products are sold in more than 40 countries worldwide (Vivian Jamal, Bahrain Economic Development Board, 2013).

According to a report by Trade Arabia Business News Information (Manama, 2011), more than Bahrain's online sales hit 175 US$ during 2010 of the retail sales in Bahrain are generated through online businesses. The "Middle East B2C e-Commerce Report 2014" shows that 90% of Bahrain's population use internet and almost 5% of internet users prefer shopping online and this figure is expected to increase by 20% in the next five years. It was also found that despite the increasing popularity of e-Commerce in Bahrain, the users also face some barriers which include predominance of cash on delivery payments, low acceptance of online shopping by the consumers and low adoption of retail channels by the local businesses. However, there are still a few markets that lead the region in the adoption of e-Commerce. The highest revenue in the region is generated through online sale of products including jewelry, computers, clothing, watches and electronics (Avinash Saxena, GDN, 2014; Manama, 2011).

E-Government Services

E-government and its services were launched in Bahrain soon after the increase in internet users and the development of e-Commerce, but it was major step taken by the government to promote e-services and save the time and processes of paying utility bills, traffic fines and applying visas. The National E-government Strategy of Bahrain in 2016 is to increase the number of e-services used by the citizens and organizations by more than 90 percent. Companies in Bahrain can now process most of the registration works, visa applications, banking services and eTendering of government contracts online.

Bahrain ranked second in the GCC in a survey conducted by United Nations Government in January 2012. Another survey which was conducted by the UN Global eGovernment Readiness among 192 countries, placed Bahrain on the 36th position worldwide for the successful application of ICT technologies for the citizens. The government has also taken measures for simplifying the procedures of obtaining a commercial registration and other business licenses. The Business Licensing Integrated System (BLIS) was launched in 2010 which aimed to enhance Bahrain's position and improve its competitiveness among other countries. It also ensured transparency in all the procedures and business processes and simplified the streamlining of all licensing requirements. (Vivian Jamal, Bahrain Economic Development Board, 2013).

Entrepreneurs in Bahrain

The Northwestern University of Qatar conducted a study in 2014 to identify the trends of social media usage in the GCC. The study showed that Bahrain had the largest number of Instagram users compared to Qatar, UAE, KSA, Egypt, Jordan, Lebanon and Tunisia. It was clear from the study that it is a great opportunity for businesses to target their audience in Bahrain through Instagram. This application which was designed by Mike Kreiger and Kevin Systrom is a great platform for the developing SME businesses in Bahrain. Some well-known entrepreneurs from the cottage industry include Rocky by Rose, Canvas.bh, Baked by T and Acai Bahrain, who have realized the early benefits and opportunities offered through Instagram. The vendors are able to communicate with the consumers for taking orders, delivering and collecting payments through emails, SMS, WhatsApp or through Direct Messaging on Instagram and market their products through posting the pictures or videos along with the features of the product and its prices. The most popular product categories include clothes, accessories, cosmetics and electronics.

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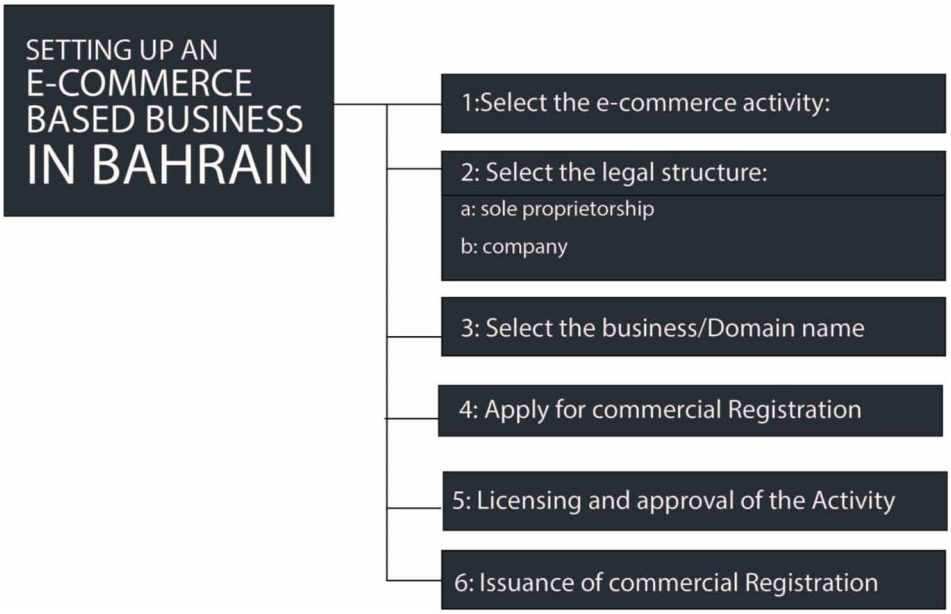
The vendors deliver the products through shipping companies like Aramex or directly at the customer's address and in some cases the customers pick them up personally from the shops. The trend of 'Instapraneurs' has been recognized by both the government and the local franchises of international brands. Despite the growth and success of e-Commerce in Bahrain, the ability to make online payments has been a hassle in the process. Although Credimax and Benefit gateways do exist, but they can be difficult to use for businesses that are being run without any IT support, as it has to be integrated into the websites of the business. However, Paytab which has been launched recently allows the vendors to offer invoices and payments online without having a website (www.eastinnovations.com, 2014).

Setting Up an e-Commerce Based Business in Bahrain

In the past, setting up an e-business in Bahrain was a big hassle but now it takes less than 24 hours to develop an e-Commerce-based website. It requires less efforts due to the cheap hosting services, seamless application integration, plus and play e-Commerce utilities and custom-built web templates. One of the first ministries to provide electronic services in Bahrain is the Ministry of Industry and Commerce. A person who wishes to start an online business can apply for commercial registration with the Ministry of Industry and Commerce (Al-Alawi & Al-Ali, 2015). Tracking the status and approval of the application can also be done electronically through Business Licensing Investment System (BLIS) by visiting the website (www.business.gob.bh). The government of Bahrain established the Directorate of e-Commerce and Information Technology at the Ministry of Industry and Commerce, to provide an environment which is hassle free for the e-traders. For this purpose, the Directorate works in collaboration with the government entities, ministries and other directorates. According to the Ministry of Industry and Commerce, the steps to start an e-business in Bahrain are as shown in Figure 1.

Figure 1. Setting up an e-commerce based business in Bahrain
(Source: http://bahrain.smetoolkit.org)



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Selecting an e-Commerce Activity

Investors do not have restrictions for investing in most of the business sectors in the Kingdom of Bahrain, but some activities are prohibited because of their impact on the society, economy and environment. 100% foreign ownership and investment is also allowed but there are certain business activities that are legally confined only to the GCC or Bahraini citizens or organizations. All the activities of e-Commerce like e-promotion of products and services, must be registered in the Ministry of Industry and Commerce. Individuals can start a new e-Commerce-based business, or they can add it to their existing Commercial Registration. Moreover, every applicant is entitled to have an eKey which includes the user ID and password for commencing the e-business. This eKey is provided either by the Ministry of Industry and Commerce or by the eGovernment Authority of Bahrain.

Selecting the Legal Structure

The next step for the investors is to select a legal structure for the e-business. There are certain rules and regulations for commercial companies which are imposed by the Kingdom of Bahrain for selecting the legal structures in order to establish a company. In some cases, the investor might be required to seek other government organizations or entities to choose the legal structure. For example, if the new online business is media based, the approval from the Ministry of Culture is required. Some of the most common forms of legal structures for IT and e-Commerce include:

1. **Sole Proprietorship:** This kind of legal structure is only allowed for Bahrainis or GCC citizens residing in Bahrain. It is owned only by a single person as a non-incorporated entity and he is solely responsible for the debts and liabilities related to the business and his personal assets can be sold to cover the debts.
2. **Company**: A company may be owned by a single person or by multiple corporate persons and the liabilities of the company are only limited to the capital allocated by each person. The types of companies include Foreign branch company, Partnership, Single person company or a Holding company.

Selecting the Business/Domain Name

It is very important to select a unique and different name which does not match any of the existing business names. The following points should be considered while selecting a name:

- The business interest name should be unique.
- The name of the e-Commerce website should not match any of the registered businesses existing in Bahrain or anywhere else in the world.
- The Ministry of Industry and Commerce must not have the name already registered in its database.

It is important to keep in mind the terms and conditions stated by the Directorate of e-Commerce and IT and it is preferred to choose a name that ends with.bh.com.

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Applying for Commercial Registration

There are two types of Commercial Registration that the investor can apply for. The first is the company commercial registration that can be applied to all types of company structures and the second is an individual commercial registration which can only be applied to a sole proprietorship. The applications for commercial registration of companies can be made at Bahrain's Investor Centre and the applications for individuals can be made at the Ministry of Industry and Commerce's Commercial Registration Directorates. The following are the required documents for the application process:

Documents required for an Individual establishment:

1. Application form
2. Registration form
3. Application form for the commercial name registration.
4. Copy of passport and CPR.
5. For employed applicants, a certificate from the applicant's employer is required stating that he has no objection on this matter and it should be signed and stamped by the employer.
6. For unemployed applicants, a proof is required that he is unemployed.

Documents required for a company:

1. Registration form
2. Single application form for the company registration.
3. Copy of CPR for Bahrainis and a copy of passport if the applicant is a GCC resident.
4. Draft of Memorandum of Association (for a single person company).
5. If the applicant is employed in the private sector and he is to hold a directorship or management post, he has to submit a no objection letter.
6. A copy of commercial agency, franchise or distribution agreement is required if the objectives of the company are related to such agreements.
7. If the company is one year old, a financial statement which is most recently audited is required.
8. A copy of the Commercial Registration of the company.
9. A license agreement for using a trademark (if applicable).
10. A resolution of the Board of Directors to join as partners.

Documents required for the single application form of company registration:

1. Copy of CPR and passport with visa pages (GCC residents).
2. Power of attorney for registration agent, if applicable.
3. A copy of commercial agency, franchise or distribution agreement is required if the objectives of the company are related to such agreements.
4. Copies of the CV, qualifications and a Draft of Memorandum of Association (for management and professional consultancy)
5. A reference letter either from a law firm, auditing firm or a licensed international bank (inside or outside Bahrain).

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Documents required for an e-Commerce Activity:

If a company or an individual proprietor wishes to add a new activity, they need to apply at the Ministry of Commerce and Industry along with the following requirements:

1. Copy of CPR or passport.
2. Copy of related certificates or qualifications.
3. The applicant should have enough time to conduct the e-Commerce activity.
4. The applicant must create a website for conducting e-Commerce activities.
5. The applicant should provide a medium for payment.
6. The applicant to provide the delivery services (if required).
7. The address for the customer service shop must be provided (if required)

Licensing and Approval of the Activity

For starting an e-Commerce-based business in Bahrain, it is enough to have a commercial registration issued by the Ministry of Industry and Commerce but for some business activities, a license or approval is required by the government authorities, before obtaining the commercial registration. No license is required if the e-commerce is enabling an existing business which is already licensed and registered but in case the business is listed in the "license required" list of Ministry of Industry and Commerce then the business has to go through the licensing process. For example, if the business is health related then it has to seek approval from the Ministry of Health and some other authorities. The approval sheet for e-Commerce can be obtained from the Directorate of e-Commerce and IT. The investors need to provide the details of the domain name, business concept, education and payment gateway for the setup of the e-Commerce business. The document is processed by the Directorate within one to three working days and they have to present their recommendations about it. Once it is approved, the Commercial Registration is processed.

Issuance of Commercial Registration

After the issuance of the Commercial Registration by the Ministry of Industry and Commerce, it has to be published in the official gazette. The only document that is required at this point of stage is a letter of request by the ministry. The Ministry of Justice's Public Notary carries out the notarization at the Bahrain Investor's Center (BIC). All the documents related to the legal structure should be issued either in Arabic or in English and Arabic both.

LITERATURE REVIEW

This section explains the literature review using primary data, which was collected through previous research papers, websites, journals and articles on e-Commerce. The literature review is divided into two sections. The first section describes the general literature review on e-Commerce, its types, history and definitions. The second part of the literature review is focused on e-Commerce and its implementation in the Kingdom of Bahrain. The purpose of this section is to investigate and form a comparative study on the implications of e-Commerce and the factors affecting it. The main ethical and legal issues involved

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in e-Commerce will be highlighted in this section, which form the basis of the research. The impact of these issues on user behavior will be explained through appropriate research models. The research also aims to identify the adoption of e-Commerce and the process of setting up an e-Commerce-based business in the Kingdom of Bahrain.

Defining e-Commerce

e-Commerce is those activities which relate to the purchasing and selling of goods and services on the Internet 24/7. Riggins and Rhee (1998), stated according to a survey conducted among a few managers and practitioners, e-Commerce is the "buying and selling of products and services over the internet". However, according to a researcher, e-Commerce should include a wide variety of activities which should not be confined to the buying and selling of products, trading, services by using Information Communications Technology (ICT). e-Commerce can be divides into nine main different classes which include Business to Business (B2B), Business to Consumer (B2C), Consumer to Business (C2B), Consumer to Consumer (C2C), Government to Business (G2B), Business to Government (B2G), Government to Consumer (G2C), Government to Government (G2G) and Intra-organizational. The activities and the concept of e-Commerce has increased and acceptance globally (Goyal, et al. 2019, Al-Alawi & Al-Ali, 2015; Kant et al., 2015; Balasoui, 2015; Korper & Ellis, 2000).

Vladimir (1996, pp 3) defines e-Commerce as "conducting business transaction, sharing business information and maintaining business relationships by using telecommunications networks." He believes that "e-Commerce does not only include buying and selling of goods and services but the different individual business practices within the organization as well". Treese and Stewart (2003) assert that e-Commerce is, "using Internet for purchasing and selling goods and services along with customer support and service after the sale. Internet is a great tool for providing product information and advertising, but the main focus is on the complete transaction. In a broader sense. e-Commerce includes the use of communication technologies and computing in inventory management, order processing, financial business and online airline reservation. Historically, the best idea behind using e-Commerce has been the Electronic Data (EDI)."

According to Minoli and Minoli (1997), "E-Commerce is the integration of security capabilities, communications and data management in order to enable the business applications in various organization to successfully exchange information related to the selling of products and services with each other". The WTO (World Trade Organization) has defined e-Commerce as, "the distribution, production, sales and marketing of products and services through electronic means."

e-Commerce vs Traditional Commerce

The increased popularity of e-Commerce has induced many small and large businesses to adopt it as a medium for a highly profitable sales channel. It should be noted that there are many differences between traditional commerce and e-Commerce and it is important to understand these differences to save time, efforts and money. In this fast-paced world, a business may even choose to have a mixture of e-Commerce and traditional commerce which is not only profitable, but it will help the business to grow drastically. Many businesses are developing business models which are based on both the e-Commerce and traditional commerce practices. Table 2 shows the most important differences between both:

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Table 2. E-commerce vs traditional commerce

Key Elements	e-Commerce	Traditional Commerce
Value Creation	Information	Product or service
Strategy	Sense and respond Simple rules	Classical
Competitive Edge	High Speed	Quality and Cost
Competitive Force	Low barriers of entry Power of the customers	Product Substitution Power of the suppliers
Resource Focus	Demand Side	Supply Side
Customer Interface	Screen-to-face	Face-to-face
Communication	Technology-mediated channels	Personal
Accessibility	24x7	Limited time
Customer Interaction	Self service	Seller Influenced
Consumer Behavior	Personalization One-to-One market	Standardization Mass/One-way marketing
Promotion	Word of mouth	Merchandising
Product	Commodity	Perishables, feel & touch

(Source: Rahul Kavaiyya, Scope of e-Commerce, 2015)

History of e-Commerce

Online shopping was introduced and invented by Michael Aldrich in 1979. With the emergence of internet technology, many businesses began to realize that it was great medium to share information for the consumers and also helped to create a unique brand image of the business in the consumer's mind. The advent of WWW (World Wide Web), opened doors of opportunities for businesses around the world and they found it a great source of reaching out to the customers and increase their sales by putting the information for the customers on their Webpages. This also helped to create a unique brand identity for the businesses. In no time, big companies such as Amazon and E-bay were established.

According to Traver and Laudon (2008), e-Commerce history dates back to the innovation of selling and buying electrical equipment, and the internet. The e-Commerce become feasible during 1991 when Internet was initiated for business usage, then thousands of commerce taken place at the web sites. The history of e-Commerce is a "history of a new, virtual world which is evolving according to the customer advantage. It is a world which we are all building together brick by brick, laying a secure foundation for the future generations".

Early Use of Web

Businesses began availing the opportunity of e-commerce in the early 1990's, even though the use of internet among common people was not much popular back then. Most of the websites only provided basic information about the company such as their products and services or contact numbers. Due to the evolution of the technology, the use of internet became common and when the marketing departments realized that the worldwide usage of websites have increased, they decided to introduce the idea of selling products and services online. These online sales started in 1994, increasing the popularity of credit cards.

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Early Online Sales

In 1994, a company called Netscape introduced SSL (Secured Socket Layer), through which the websites were able to encrypt data, and this made the use of credit cards much safer. Due to the increased security measures, many vendors and businesses shifted their focus to selling their products electronically.

Birth of Modern Web Sales

The evolution of technology soon resulted in developing websites, solely for the purpose of online buying and selling. Some examples of these websites include Amazon and eBay. Prior to the development of the modern websites, each product was manually added into the webpage, but with the invention of websites, up to 10,000 products could be added at a time which saved a lot of time. When the number of products displayed on the website increased, the online traffic and sales volume increased as well, which proved to be really beneficial for the businesses.

Advances in the Payment System

The SSL system was good, but it also had a few drawbacks. Firstly, people still did not fully trust the online transactions through credit cards. Secondly, it proved to be expensive for them while making small payments. The solution to this problem was provided by PayPal, which allowed safe and secure online payments and money transfer from bank accounts and credit cards without compromising on the users' privacy. Even today, PayPal is one of the most common and secured form of payment all around the globe.

Dot Com Boom of 2001

In the late 1990's the customer's trust began to deteriorate, and they started to hesitate using credit cards. Investments gained through Initial Public Openings (IPO) helped people to raise large amount of capital, which in turn proved to be quite profitable for companies, as it raised the value of the company. Even though many companies had good ideas, but their business plans were weak. The results were soon visible when many companies started to shut down their operations during 2001 and 2002 due to huge losses. A large number of investors started to sell their stocks below their actual values and companies like eToys were forced to shut down. Many other companies with poor business plans were also shut down during the period.

e-Commerce in Today's World

In the modern world, e-Commerce has not only revolutionized the way companies make profit, but it has also proved to be equally beneficial for the consumers. A wide variety of services including the exchange of information between the customers or other businesses, order processing through electronic means, supply chain management, electronic purchasing, and handling customer services, is effectively and efficiently carried out through e-Commerce. It cannot be denied that soon enough, e-Commerce will be the vital element of the global business marketplace. But at the same time, we cannot ignore some of the ethical issues involved in the world of e-Commerce which include "privacy and security issues,

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fraud, illegal access, unsolicited email, trustfulness, targeting children, false advertising, pornography, product warranty, plagiarism, intellectual property and cyber-squatting" (Jie, 2012).

The Evolution of e-Commerce

The three stages in the evolution of e-Commerce are Innovation (1995-200), Consolidation (2001-2006) and Reinvention (2006-future). Innovation was characterized by excitement and idealistic visions of market in which both the buyers and the merchants could easily avail quality information. However, these visions were not fulfilled by e-Commerce in the early years of its development. e-Commerce entered its second stage called Consolidation, after 2000. The use of e-Commerce became more popular among traditional firms and they started using Web to grow and enhance their existing businesses, but they gave less importance to creating new brands. In 2006, e-Commerce entered the present stage also known as the Reinvention Stage. e-Commerce was reinvigorated with new Web 2.0 applications and social networking which helped to create new business models (D'Andrea, Ferri & Grifoni, 2014). Table 3 shows the evolution of e-Commerce and its three stages.

Table 3. The evolution of e-commerce

1995-2000 **Innovation**	**2001-2006** **Consolidation**	**2006 - Future** **Reinvention**
First mover advantages	Strategic followers	New market (1st mover)
Pure play	Bricks & Clicks	Retail (bricks & clicks) New market (pure play);
Perfect markets	Imperfect markets, brands, network effects	Online market imperfections
Disintermediation	strengthening intermediaries	Propagation of small online intermediaries
Entrepreneurial	Traditional / old economy	Large pure web-based firms
Obtaining Finance through Venture Capital	Obtaining Finance through Traditional methods	Merger & Acquisition
Focus on the Revenue Growth	Focus on Profits and Earnings	Focus on the growth of Social network and Audience
Driven by Technology	Driven by Business	Driven by Community, Customer and Audience

(Source: Rahul Kavaiya, Scope of e-Commerce, 2015)

The Types of e-Commerce

Most of the people make the mistake of thinking that the idea of e-Commerce is limited to buying and selling of products and services online but that is not true. We can divide e-Commerce into six broad groups according to their functions. As seen in the model displayed in Figure 2 there are six different types of e-Commerce. The figure shows the different processes of e-Commerce and how they are linked with each other through mutual connections.

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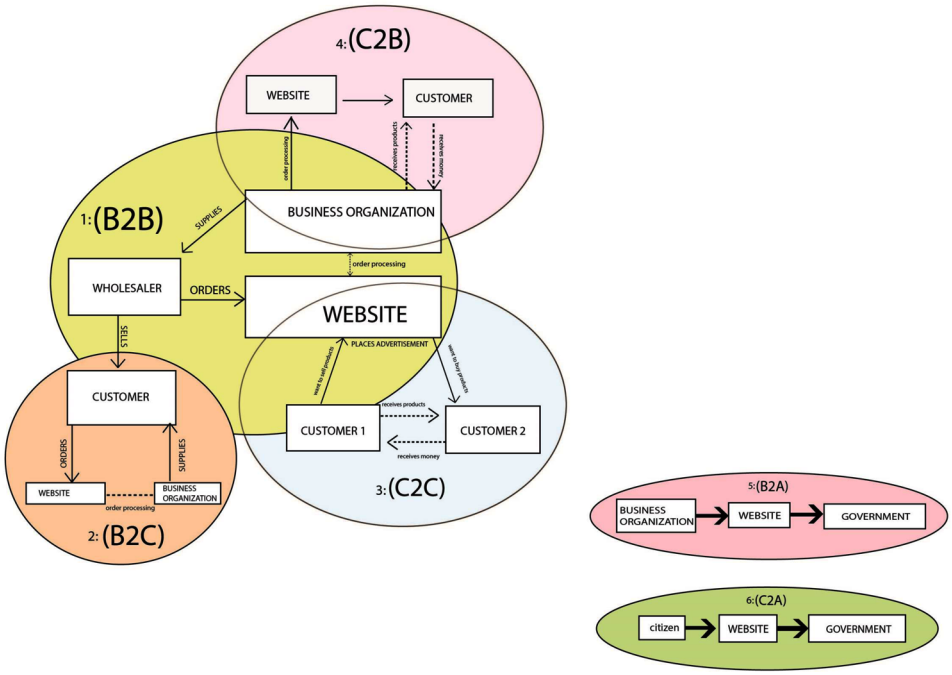
Figure 2. The types of e-commerce
(Source: Wall J.E, Types of e-Commerce, 2014)



Business-to-Business (B2B)

This type of business is also known as B2B and it includes the exchange of products and services or commercial transactions between two businesses rather than business to customers. Manufacturers or wholesalers generally indulge in this kind of e-Commerce. Alibaba, Staples, Quill, Office max, Medline are all some of the well-known companies dealing with B2B (Wall J. E, 2014).

Business-to-Consumer (B2C)

A business that sells the products and services directly to the customers is known as B2C business. This form of e-Commerce gained wide popularity during the Dot Com boom in the late 1990's. During that period, B2C was mainly referred to address the online retailers who sold products directly to the customers through internet (Nemat, 2011). This type of e-Commerce has been greatly developed and is one of the most common type of e-business, due to its popularity since the late 1990's. There are a large number of virtual stores and markets around the globe which sell books, cosmetics, medicines, software, electronics items, stationeries, cars, food, clothing etc. Compared to the traditional retail methods, B2C is much more convenient as it provides the customers with the necessary information of the product without leaving their homes. Most of the customers also find much cheaper products compared to other methods of purchasing with quick delivery and processing of their orders and an enhanced customer service (Wall, 2014). Amazon, Tesco, Starbucks, Taco bell and TOMS are some of the well-known examples of B2C business.

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Consumer-to-Consumer (C2C)

This type of e-business involves the transactions of a variety of goods and services between one consumer and another. Individuals use an electronic platform which acts as a third party, to advertise their products or to buy the products from other consumers. There are a large number of electronic platforms which are dedicated only to carry out the C2C transactions (Wall, 2014). Some examples include expatriates.com, E-bay and OLX.

Consumer-to-Business (C2B)

C2B is a complete reversal of the business to consumer e-business and involves the selling of products or services from the consumer to the business. Groups of individuals work together to provide a variety of goods or services that are being sought by the companies. There are a number of websites where graphic designers present some samples for company logos and the companies choose the best one amongst them to purchase it. IStockPhoto is a well-known market that sell images, royalty photographs, media and design elements (Wall, 2014).

Business-to-Administration (B2A)

This form of e-business mainly deals with all kind of online transactions between companies and public administrations. B2A involves a large number of services including employment, fiscal, legal documents, social security and registers etc. It has gained worldwide recognition in the form of e-government services with a lot of investments from the government. It is a form of facility provided by the government for the ease of the citizens, with the support of information technology (Wall, 2014). Example includes the University of Bahrain using the e-government portal for the payment of fees.

Consumer-to-Administration (C2A)

C2A e-Commerce involves all kinds of online transactions between consumers and public administration. It is mainly used for the purpose of the payments of taxes, distance learning in education, making payments for social security and fixing appointments or collecting information from health centers. This is also a facility provided by the government for the support and ease of the citizens (Wall, 2014). Table 4 shows the different types of e-Commerce and their examples.

The Objectives of e-Commerce

Many small and medium businesses are not financed enough, so they cannot afford to spend a large amount of money on expanding their market through expensive advertising. They are also unable to spend money on opening stores or hiring people for sales. e-Commerce allows such businesses to reap all these benefits without much investment. Some of the main objectives of e-Commerce are listed below:

- To reduce administrative and other costs
- Increase customers
- Enter global marketplaces

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- To offer customizable products

Galant (2005) has described the following in her article "Blending E-Commerce theory and application".

Table 4. Examples of e-commerce

Type of e-Commerce	Example
Business to Business (B2B)	Alibaba, Staples, Quill, Medline
Business to Consumers (B2C)	Amazon, TESCO, Starbucks
Consumer to Consumer (C2C)	Expatriates.com, e-bay, OLX
Consumer to Business (C2B)	Istockphoto
Business to Administration (B2A)	LMRA, EWA, e-government
Consumer to Administration (C2A)	E-government

Advantages to the Organization

1. By using e-Commerce, organizations can expand their businesses on a national and international level without much investment in the capital. They can also easily locate the potential suppliers, customers, competitors and business partners anywhere around the world.
2. Organizations can save a lot of money and paper work by providing the information on their web-sites instead of printing booklets or fliers for advertising and marketing.
3. e-Commerce helps the organization to create a strong brand image and identity.
4. It helps to provide a quick and better customer service.
5. It also helps to speed up the processes of the business and increase efficiency.
6. e-Commerce has facilitated the manufacturing process by using the just-in-time method, where the business process is started only after the customer places a request for the product or service (Galant, 2005).

Advantages to the Customers

1. Customers can buy or sell products and services around the clock from anywhere around the world without any time or geographical limitations. They can also avail the quick customer service in case of any enquiries.
2. Customers can use different applications and have a wide variety of choices. They can also track their orders and receive quick delivery of products.
3. They can compare the prices among the different products and sources and select the cheapest option available to save money.
4. Customers can provide feedback of their products and also read the reviews and comments from other users before buying the product.
5. Customers can have virtual auctions of their products.
6. Customers can have easy access to information in a short period of time without having to wait for days and weeks.

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7. Due to the increased competition as a result of e-Commerce, many organizations provide discounts in order to win the customers over the competitors (Galant, 2005).

Advantages to the Society

1. Since the customers do not need to travel to the physical stores in order to purchase the products, the traffic on the roads and air pollution is prevented.
2. e-Commerce helps to provide the products at a lower cost, so the less privileged people can easily afford them too.
3. People living in the urban and rural areas can have easy access to the products and services which were not available in their cities before.
4. The government uses e-Commerce to deliver public service messages and awareness campaigns to serve the society and educate them (Galant, 2005).

Factors Affecting e-Commerce

Since 1990's e-Commerce has not only become a fundamental part of people's life but it has also introduced a new way of conducting business (Al-Alawi & Al-Ali, 2015; Lee et al, 2007). A research in 2011 shows that 96% of the organizations of the sample population had used internet, while 69% used their own website (Chen &Holsapple, 2013). The e-Commerce has opened vast opportunities for employment for people all around the world and have also revolutionized the relationships between organizations and individuals (Lee & Lin, 2005). According to Harridge and March (2004), e-Commerce reduces the cost of the consumers since it eliminates the use of distribution channels by transferring the goods directly from the manufacturer to the consumer.

There are many classical ethical theories which were developed during the early days but most of those theories are inapplicable in today's business world since "e-Commerce is a new paradigm in business which was only developed back in 1993" (Greblikaite, Pervazaite, 2014). e-Commerce has been made possible because of the internet and this new digital technology has surely transformed the business environment, activities and processes (Judson and Kelly, 1999). Kracher and Corritore (2004) have written that "the ethical dimensions are very critical to examine in the world of e-Commerce due to the degree and speed at which its developing around the world". Big names, organizations and small or medium enterprises use e-Commerce as a basic necessity and it is one of the most appropriate method for conducting business. e-Commerce also has a positive impact on the environment protection factor, as it reduces some costs and processes (Tiwari, Singh, 2011). It provides a medium for sustainable development in digital technology and environment. Nevertheless, it should be mentioned that e-Commerce is also a way of conducting business and just like the traditional business practices, e-Commerce carries the risk of unethical and illegal behaviors and actions as well. As Freestone Mitchell (2004) states that e-Commerce is a "new environment for unethical behavior".

Kracher and Corritore (2004) state that "one of the most prominent differences in the application of ethics in the traditional business practices and e-Commerce is the *question of ethical lag,* which occurs when the speed of technology overtakes the ethical development". According to Marshall, there are several reasons for this lag. Firstly, the complexity and expense of the development of technology in today's world makes the technology developers draw more towards extremely focused and controlled business structures. And secondly, in a highly competitive environment, there are great economic returns offered

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by new technologies. Researches show that business ethics are quite slow in development as compared to technological developments and cultural environment which keeps on changing continuously. Krachure and Corritore (2004) also consider the "lack of exploration of e-Commerce ethics" as a main factor for the unawareness among individuals and corporations. They have also stated that e-Commerce consists of immoral and unacceptable problems that occur while confronting the e-Commerce websites. According to them, some of the main issues in e-Commerce include security of information, protection of children, access, trust, privacy and informed consent and intellectual property (Kracher & Corritore 2004).

The ability of people to stay connected on the internet at all times and to get an easy access to information can be one of the limitations for e-Commerce. Despite the fact that internet is available easily in most of the public places, the factors which determine the access to information is the time and the amount of information available. The issues related to intellectual property have actually become a source for development for the internet network. It is fairly easy to violate the personal rights of an individual, but it is extremely difficult to identify the person or organization responsible for it (Kracher & Corritore, 2004). Privacy and personal information is one of the most important issue in e-Commerce (Milne, Rohm, 2000). Copyrights, patents and trademarks give rise to a number of ethical and legal issues to be questioned (Maury & Kleiner, 2002). Niranjanamurthy and Chahar (2013) state that if the consumers fear a breach of their privacy and feel that their information on the website is not secure, they will hesitate to visit such e-Commerce websites. Paddison and Englefield (2003) assert that "making e-Commerce websites, web-site accessible is a way of assisting disabled users in achieving their freedom". However, research by Leitner and Strauss, (2008) and Lightner and Eastman (2002) shows that there are a lot of e-Commerce websites which fail to provide web accessibility. Many companies collect the usernames, address, contact numbers and emails of the users who visit their website, but the use of this personal information is often vague and such issues call for customer awareness. Privacy is mostly considered as a critical and central factor in the development of ethics in e-Commerce (Whysall, 2000).

When users give their personal information on websites, it gives birth to insecurity problems and invoke more distrust and difficulties compared to brick-and-mortar businesses (Kracher & Corritore 2004). The cookies on the browser store the personal information without the knowledge of the users and these cookies can be used in any way since there is no legal restriction to prevent it. Cookies are similar to small diaries where the data of the users' website history is stored and every time a user re-enters a website, a cookie is opened by the website. This is also called "data-mining" or "profiling" (Stead, Gilbert, 2001). Most of the customers are unaware of the fact that their private information can be used in an insecure and inappropriate way. According to Bart et al (2005) credit cards and financial security is the main base of security issues. In contrast to their statement, Venkatesh (1998) have argued that the development and extension of commerce in cyberspace gives everyone the right, freedom and place to establish their identity.

Internet and the possibilities of actions on the internet give rise to children pornography issues and special measures should be taken to protect the children. Unless the child is very young, webpage blocking might not be very effective as the information on the internet is easily available worldwide (Spencer, 2002). Customer trust is the basis of a buyer-seller relationship and in this technological environment, trust is often intangible (Hwang, Kim, 2006). Teo, Thompson and Jing (2007) conducted a research in U.S, Singapore and China to find out the cultural aspect and peculiarities of e-trust and they found out that the cultural environment does have an impact on e-trust. Social trust is beneficial for e-Commerce because it helps to decrease the transactional costs of interacting with other individuals. But when it

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comes to economic transactions, the need for monitoring the employee's behavior is being eliminated due to this trust and the transactions become economically affordable.

However, we cannot overlook the fact that in e-Commerce the distance between the buyer and seller is long, so unethical or illegal actions and behaviors are hard to notice due to their intangible nature. The entrepreneurs of e-Commerce are often young at age and therefore the moral quality of e-Commerce alone is not necessarily sufficient to maintain. At the same time the e-traders should also bear in mind that the customers do perceive ethics as something really valuable and expect to be treated fairly and ethically (McMurrian & Matulich, 2006). The traders can easily minimize the trust of the customers through unethical actions in the company or business or they can benefit profitably by being ethical and winning the trust of the customers (Donaldson, 2003, Kurt & Hocioglu, 2010).

This report focuses on the laws and ethics surrounding the e-Commerce world. According to Lyu (2012), "ethics and laws are similar to some extent but they are not same". Laws are formulated and approved by the government of the state or country whereas ethics are generally known as the rules and are in most cases unwritten. A couple of traditional theories provide some solutions for situations that are ethically questionable. "Just like the traditional business practices, ethical decision making can be incorporated in e-Commerce as well and values that are based on traditional ethics will be the basis for a strong and successful relationship between the customer and the seller" (Williams & Premchaiswadi, 2016).

Ethical Issues

Ethics can be defined as the knowledge between what is right and what is wrong. There are certain rules to follow when we interact with other people around us and our actions affect them on a great level. These rules are universal and applicable to everyone in certain situations. Business ethics are those ethical questions that the managers have to confront in their everyday decision-making. Similar to this, e-Commerce also has some ethical rules and regulation that have to be followed by e-businesses and by the consumers who avail the e-Commerce facilities (Shivani, 2012; Dozier, 2013)

The digital technology is really vast and is no doubt a great platform for e-Commerce. The e-Commerce has the ability to provide products and services at the convenience of the consumers in a fast and efficient manner, save time and money and secure the transactions through the use of credit cards. Furthermore, e-Commerce is not only a technology but a business availing the technology. Nonetheless, it is also surrounded by some rules and regulations that have to be followed while making use of the technology. This new form of technology has unrestrained advantages, but it also carries a few risks, which will now be discussed in detail (Babu, 2011; Nardal & Sahin, 2011). Table 5 shows the most common ethical issues and their definitions.

Web Tracking

Most of the businesses can track how the online visitors use their websites with the help of log files. When the log files are analyzed, the data is converted into application service or in some cases a software can be used to store the data. This is how companies track their users through cookie analysis and tracking software's, which raises an issue of privacy concerns. The tracking history is also stored in the hard disk of the Pc or laptop and this is how the computer already knows which websites have been visited by the user before. To prevent this, many users often install programs like Spam Butters, Cookie cutters etc. (Babu, 2011; Agag, 2019).

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Table 5. Ethical issues in e-commerce

Ethical Issues in e-Commerce	
Problem	**Definition**
1. Web Tracking	Website tracking is the act of storing the existing websites, in order to track the changes made to it overtime. (Wikipedia).
2. Privacy Invasion	Using the private information of someone without his/her knowledge or permission (Business Dictionary).
3.Disintermediation & Reintermediation	Disintermediation is known as the elimination of intermediaries like distributors and brokers that provided a link between the company and its customers and Reintermediation is known as the creation of new intermediaries between suppliers and customers in order to provide different services (Chaffey, 2009).
4.Counterfeit goods	The selling of high quality and branded products, under a different brand's name without the knowledge of the brand owner (Wikipedia).
5.False Advertising	The act of providing false information about a product or service in order to attract the consumers (Wikipedia).
6.Hacking	"Hacking is the process of accessing a computer or website in order to view, copy, or create data without destroying or harming the data or the computer (Urban Dictionary).
7.Email Spamming	Email spam involves sending identical messages via email to a large number of recipients at a time (Wikipedia).
8.Web Spoofing	Web spoofing means creating website identical to an existing website in order to lure the users and mislead them into thinking that it has been created by another source (Wikipedia).
9.Cyber Squatting	The process of registering names of famous companies or brands in order to resell them at a profit. (Wikipedia).

(Source: Wikipedia, Urban Dictionary, Business Dictionary)

Privacy Invasion

This problem is basically related to the consumers and is one of the most major issues faced by the consumers. Privacy invasion occurs when the personal information of the user is accessed or used by an unauthorized party. This can be done in four ways:

1. Many e-Commerce businesses may buy the personal information of the users like their webpage visits, shopping preferences or their personal details, with or without the user's consent. Websites which ask the users to fill in their personal information often sell this user data to other companies who use it for marketing purposes.
2. The personal data of the users can often be intercepted by a person other than the person to whom it is intended. The privacy of communication cannot be easily protected and in a vast pool of digital technology it is often impossible to avoid the interference of such intruders.
3. Since the internet cannot remember the history of a user or his frequently visited web pages, passwords or usernames, this information is stored in the cookies as a reminder. Due to this, when the user visits a webpage, malicious programs can automatically be delivered to reveal the confidential credit card information, passwords and usernames. Most of the electronic payment systems are aware of the identity of the users (Shivani, 2012).
4. Many companies track their employees' online activities through monitoring systems, in order to find out the amount of time they spend on business activities and the amount of time spent on non-

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business activities. This might put the employees at a risk of losing their jobs and this treatment may lead to raise many ethical questions (Babu, 2011).

Disintermediation and Reinter Mediation

One of the most common issue is related to the employees losing their jobs which is known as intermediation. The intermediaries help in providing information and value-added services like consultations. Matching and providing information can be done through portals or e-marketplaces which provide free services and are fully automated. On the other hand, the value-added services are partially automated, and they require some level of expertise. The circumstances which eliminate the intermediaries who offer matching and providing information is called disintermediation and this has a negative impact on the traditional sales channels. Whereas the brokers and agents who are providing value added services may not only grow but also survive this intermediation. This process is known as reinter mediation. The internet provides many opportunities for reinter mediation through the support of e-Commerce. Therefore, an expert computer mediator is required to predict the number of participants, and the processing of large information etc. (Babu, 2011; Nardal & Sahin, 2011; Agag, 2019, and Al-Alawi & Al-Bassam, 2019)

Counterfeit Customer Goods

Alibaba is one of the most widely used online source for purchasing products and it has about 8 million small sellers who sell about 8 million different products. According to BBC news, the website has spent $160m on fake goods. Many famous luxury brands like Armani, Gucci, Yves Saint Laurent and Balenciaga filed a case against Alibaba for selling fake products of their brands and earning millions through it.

Every business is based on winning the trust of the customers to gain customer loyalty and retention. When a company displays fake goods, it loses the trust of the customers and its reputation is negatively affected. One of the basic principle of ethics is to act true to the customers and to be honest with them and displaying fake goods is an unethical act. In order to remove the fake goods and replace them with the authentic ones, a huge amount of money and time is wasted.

False Advertising and Information

Many e-Commerce websites provide wrong information to the customers regarding the price and quality of the products. Many advertisements promote feature and prices which are not actually present in the products when they are delivered. In some cases, the customers also receive damaged products or something which they did not pay for to purchase. Many websites also sell outdated products. For instance, in 2013, the Walmart's website displayed computers and other electronic items at a price of $8.85 only. However, Walmart later claimed that this was a technical error, but this received a lot of attention from the customers (Kelly & Williams, 2016).

Firstpost.com featured an article about a well-known website in India called Snap Deal which hit the news when a customer ordered a Samsung phone from their website and received a brick and half a soap bar inside the delivery box. The soap company later had to send him a Samsung phone as a compensation. Such incidents shatter the trust of the customers and they hesitate to order products online. This act is not only unethical but also a huge loss for companies (Kelly & Williams, 2016).

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Hacking

Hacking is referred to as the act of bypassing the computers or its network system. e-Commerce websites are more prone to hacking due to the ability of online payments and the use of credit cards. Therefore, they are more attractive to the hackers. All the transactions occur at the server level as it is known as the "e-Commerce place of Business". The main website for the products and services as well as the customer's database is stored at the server and if the server is attacked, all the information can be lost in seconds.

Websites like E-bay have faced a hacking attack in 2014, where all the users' information and passwords were hacked. The hackers can use this information for wrong purposes and it is quite risky for the users. Therefore, E-bay warned its users to change their private information in order to avoid any inconvenience (Orji, et al. 2016). Around 13,000 credit card numbers and passwords were hacked by a hacking group from well-known websites like Wal-Mart and Amazon. All the information was posted on a site called Ghostbin which is a data sharing site (Methmali, 2015). The bank called HSBC was also a victim of hacking and 2.7 million credit cards were exposed (Paganini, 2014).

Email Spamming

Email Spamming occurs when companies send unwanted advertisements through emails for marketing purposes. A person who sends these emails is usually referred to as a spammer. A lot of spammers also send emails with their personal information to defraud people and use their credit card or account information. Many times, the spammers send emails with links that direct the users to a fake website that looks almost the same as an authorized one and lure them to enter their personal data like credit card details or their account numbers on that webpage. This is known as phishing and is one of the most widely faced ethical issue in the e-Commerce world (Shivani, (2012).

Web Spoofing

Attackers often set up a fake website which is similar to the original one in order to lure the users to provide their credit cards and accounts details. This is called web spoofing. An example of web spoofing is when the attacker sets up a website called www.micros0ft.com, where he uses the number zero instead of an "O". Many users can sometimes mistype alphabets, but it leads them to a similar website and they pass on their personal information by trusting the website. According to the Signal magazine, a web spoofing incident involving the U.S Air Force was on the rise in 2011. Many users were fooled when they entered their passwords and usernames on a fake website which was accessed by an unauthorized party. Only the most attentive users were able to spot the difference while the others fell victims to the incident (Rita Boland, The Signal Magazine, 2011).

Cyber Squatting

When a person uses the domain name of a well-known company in order to infringe its own trademark, it is known as cybersquatting. This is done mainly for the purpose of obtaining the payments and money from the original owner of the trademark. They offer the organization domain names at a far higher price than the purchasing price. Many cyber-squatters use derogatory remarks against the company which

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the domain is meant to represent, in order to force it to re-buy its own domain from them (e.g.www.amazonsucks.com).

In 2007 Belgium Domains, Domain Doorman and Capitol Domains were charged by Dell for cyber-squatting and selling a domain called dellfinancialservices.com. Similarly, BBC claimed back their rights to the domain bbcnews.com from a cyber-squatter (Faisal Alani, 2009).

Legal Issues

Companies involved in e-commerce must also consider the legal side of the e-Commerce and be aware of the potential risks involved in the process. When the buyers and the sellers involved in e-Commerce transactions do not know each other, the risk of crimes increase. However, the authorities who want to apply legal control and policies on e-Commerce may face many hurdles due to the global nature of internet. Similar to the traditional way of doing business, there are certain behaviors which require a legal action (Nasir, 2004). Table 6 highlights some of the major legal issues in the world of e-Commerce and their definitions:

Table 6. Legal issues in e-commerce

Legal Issues in e-Commerce	
Problem	**Definition**
1.Internet Fraud	It is known as the use of internet to take advantage of the victims and defraud them.
2.Intellectual Property infringement	It refers to the act of violating the rights of an intellectual property which include trademarks, patents and copyrights.
3.Freedom of Speech	It is known as the right to express one's opinions or beliefs without any restrictions or limitations.
4.Electronic Contracts	It is a kind of contract made between two parties, using electronic means.
5.Taxation	It is referred to as a process used by the government to bear its expenditures by charging the normal citizens or corporate entities

(Source: Wikipedia)

Fraud on the Internet

Due to the popularity of the websites and their usage, the cases of fraud in e-Commerce have increased over the years. It is a major issue for click-and-mortar as well as cyber merchants. Swindlers are the people who try to con the users to rob them off their money and they are mostly present in the area of stocks. Stock promoters try to lure the investors by promising them false profits. Auctions also induce fraud either by the buyer or the seller. The presence of pop-up ads and unsolicited emails have created a clear path for the financial criminals to gain an easy access to the personal information of the users. Phantom business opportunities and fake investments are also considered as a part of fraud on the internet (Babu, 2011; Agag, 2019). Websites like expatriates.com are widely used in Bahrain but it is also a main hub for scammers who try to lure people by promising them jobs and other incentives in order hack their systems and personal information or to rob them off their money.

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Infringement of Intellectual Property

Intellectual properties include copyrights, patents and trademarks and they cannot easily be used by anyone. The copyright laws generally protect the intellectual properties, but it cannot easily be protected in e-Commerce. When a person buys a software, he is authorized to use it but not distribute it because the distribution rights only lie with the person who owns the copyrights. Plagiarism and copying contents of websites is also considered against the copyright laws (Babu, 2011, Agag, 2019).

Freedom of Speech vs Censorship

Censorship can be defined as the attempt of the government to restrict the content displayed on the internet. If the users find the material offensive, they might report or present it for censorship, and this can also have an impact on e-Commerce. Some child protection laws are present in every country which protect the children from viewing inappropriate content. But this censorship is only useful if the children are at a very young age and do not have the proper skills to use internet. These facts have to be kept in mind while conducting an e-business (Udo, (2001).

Electronic Contracts

All contracts are based on an offer, acceptance and consideration between two parties. When these contracts are made and presented electronically, the human element is eliminated and therefore it loses its authenticity and the three basic elements (offer, acceptance and consideration) are difficult to establish. However, according to McDonald (2001), the Uniform Computer Information Transactions Act (2000) states that contracts can be made even without the physical presence or direct involvement of the human beings.

Taxations

This issue is related to the fairness in competition and has a huge impact on e-Commerce when it competes with off-line marketing channels that require the payment of taxes. The borderless nature of the internet and the globalization in e-Commerce makes it extremely hard for taxation. It is also quite tricky to predict the future of the e-business and therefore the government still cannot figure out how they can tax the e-Commerce activities. e-Commerce allows an individual to participate in multiple foreign marketplaces at a time, and deal with customers all around the world without having to enter any market in particular. This idea is not much welcomed according to the rules and regulation of the government of most countries and creates a big hurdle in taxation (Srivastava, 2018).

The Theory of Planned Behavior

Early attempts to understand the behaviors and issues of the consumers and merchants on e-Commerce led to the theory of Planned Behavior (Figure 3), which was formulated by Ajzen (1985,1991) as an extension to the Theory of Reasoned Action (TRA) (Ajzen and Fishbien, 1980). This theory will attempt to explain the impact of unethical and illegal behavior on the attitudes of the users. According to the TBP, “the attitudes of the users of e-Commerce, towards the target behavior and subjective norms of

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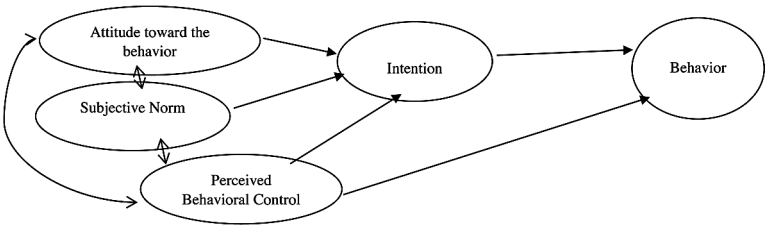
engaging in the behavior, greatly influence their intentions". It also stated that "the perceived behavioral control of indulging in the behavior also directly influences the intention". TBP has been used many times in the past for different studies on the behavior of users while purchasing online. TBP explains that the performance of an individual's behavior is determined by his intention to perform the particular behavior. The attitudes and subjective norms of the behavior and the perceptions on the success of the individual's behavior are responsible for informing the intent. Ajzen (1991) describes attitude either as "a positive or a negative evaluation of performing the behavior. The beliefs are responsible for informing the norms, the normative beliefs and motivation to comply are responsible for informing the norms and the beliefs about the individual's possession of the opportunities and the resources required to indulge in a particular behavior are responsible for informing the perceived behavioral control". TBP has not specified the particular beliefs, related to a particular behavior, so it is left up to the choice of the researcher to determine them (George, 2004).

Figure 3. The theory of planned behavior
(Source: Ajzen, 2009)



This study is based on the unethical and illegal behavior of the users of e-Commerce and TBP provides a strong framework for testing whether attitudes lead to indulge in a specific behavior or behavior lead to the formation of an attitude. Based on TBP, beliefs of the users about the safety and security of e-Commerce should also influence their intention to use e-Commerce which in turn will influence their behavior.

As mentioned earlier, privacy is one of the main concerns of the consumers while making purchases online and many users refrain from using e-Commerce websites due to privacy concerns. A poll of the internet users in March 2000, showed that 94% of the individuals had not purchased anything online due to privacy concerns, as they feel that the companies might use their personal information to send them irrelevant information (Business Week, 2000). In other words, this is known as Email Spamming. Byford (1998) has mentioned two aspects of privacy, "a social relationship view and a property view". "The social relationship view assumes privacy as a balance for social relationship development. On the other hand, in the property view, the individuals view privacy as the extent to which they can control their information online". Although both these views are equally important in order to understand the individual online behavior, but the property view is more specific and related to the individual's concern for privacy. For instance, the GVU internet survey conducted in 1997, showed that 53% of the online users know that their personal information is being collected by the Web sites, while 66% said that they do not make online purchases because they fear that their information might be used in an inappropriate way. Culnan and Smith (1993) conducted a research on "direct marketing and attitudes towards secondary information use". According to them, "there are two scales for measuring two different aspects of

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the user's attitudes towards using e-Commerce. The first one is the loss of control, and the second is the unauthorized secondary use. Loss of control scale refers to the loss of control of the users over their personal information and losing their privacy while using credit cards. Secondary use means that the information is being used for some other purpose rather than for what it was collected". Culnan reached a conclusion and found out that the people who are less concerned about their privacy, are more positive about using e-Commerce, and can easily cope with receiving unwanted information as compared to the users who are more concerned about their privacy. The findings of this study by Culnan can be used for studying internet privacy and the concerns of the users, which is directly related to their behaviors (George, 2004).

A similar instrument was developed by Smith et al. (1996) to measure the dimensions of the practices of information privacy by the organizations. They mentioned four different dimensions in their work, which include unauthorized secondary use, improper access, errors and collections. Although the focus of their study was on the user's attitude about how the organizations used their personal information, it can easily be used to measure the attitudes towards how different websites and online businesses deal with them or use their personal data (George, 2004; Al-Alawi & Hafedh, 2006).

An individual's attitude towards using e-Commerce for online purchasing, is influenced by their trust. Most of the users do not trust the websites enough with their personal data, to indulge in online transactions with them (Hoffman et al., 1999). A laboratory experiment conducted recently, showed that consumers perceived "online shopping as more risky as compared to print catalog shopping" (Jones and Vijayasarathy, 1998). This shows that the views of the consumers on the trustworthiness of internet, is expected to influence their willingness to make online purchases. Another study by George (2002) evaluated the trustworthiness of the users of e-Commerce by using three items which were taken from the GVU survey instruments. According to his findings, the positive attitudes toward online purchasing were developed only because of the "positive beliefs about the trustworthiness of the users". Pavlou (2002) used the TPB to prove that "the trust of the user on the online retailer was directly correlated with their attitudes towards online purchases and with perceived behavioral control" (George, 2004).

Mukherjee and Nath (2003), found out that the trust of the users is directly related to the commitment of the relationship to an online retailer. Although they did not clarify the instruments used by them for measuring the trust, but it presents a global measure for trust in the internet. In their study based on the Internet Banking, they mentioned that "the customer's orientation toward the technology of electronic communication and the Internet is frequently a proxy for their trust in Internet banking" (George, 2004).

SUMMARY

The purpose of this section was to explain the concept of e-Commerce in the modern world and its evolution since its existence. The material presented in this section also threw light on the different models of e-Commerce and its objectives, which helped to understand why e-Commerce exists and how it has facilitated our day to day lives in a positive or a negative way. Since the basis of this research is to identify the consumer behavior while using e-Commerce in the Kingdom of Bahrain, it highlighted the presence of e-Commerce and its development in the country along with the procedures of opening an e-Commerce-based business in Bahrain. The most important part refers to the factors which affect e-Commerce, aiming to explain some of the most common ethical and legal issues prevailing in the

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modern e-Commerce world. These behaviors of the consumers were supported and explained further on by using The Theory of Planned Behavior by Ajzen (1991). Therefore, it can be summed up that the literature review presented in this section revealed some pre-existing theories and concepts based on the subject of the research which provided a basis and will help to formulate the research methodology in next section.

METHODOLOGY

This section will focus on the different methodologies used to conduct the research for testing the study. There are different methods used by the researchers for collecting data for their research. The research can either be qualitative or quantitative or both depending on the preference of the researcher. This research will use a combination of quantitative and qualitative methods which include questionnaires and interviews to depict the viewpoints of the buyers and sellers. The research outcome will help to gain a better understanding of the major problems of e-Commerce, the behaviors of the individuals and the reactions of the consumers towards the unethical issues.

The concept of e-business is so vast that it definitely requires a philosophical research into the behaviors and actions which provoke the unethical problems. For the purpose of collecting qualitative and quantitative data, the research onion method will be adopted to undermine the issues and provide appropriate solutions to the problem. This research will help to develop an understanding of why people tend to engage in unethical behavior when dealing with online transactions and how we can help to prevent such behaviors.

Identifying e-Commerce Focus Area

The e-Commerce literature suggests that there are a number of ethical and legal issues prevailing in the e-Commerce activities which affect the attitude and behavior of the consumers and raises some important concerns for the e-Commerce users. Therefore, the research will focus on what are the most common e-Commerce issues of the consumers and how they affect their behavior. The influence of each factor will be tested using various techniques.

Research Tool

The research Onion method will be used in this research to collect the qualitative and quantitative data.

The Research Onion Method

The Research Onion method was developed by Saunders *et. al.,* (2007). In this method, he has explained the stages that should be covered to develop a research strategy. Each layer of the onion presents a different stage of the process (Saunders et. al., 2007). The core or inner most layer of the onion consists of the final elements of the research and they are closely related to the outer layers, which depict the design elements. It is a very useful model to design a research methodology which is adaptable for almost any type of research in any context (Bryman, 2012).

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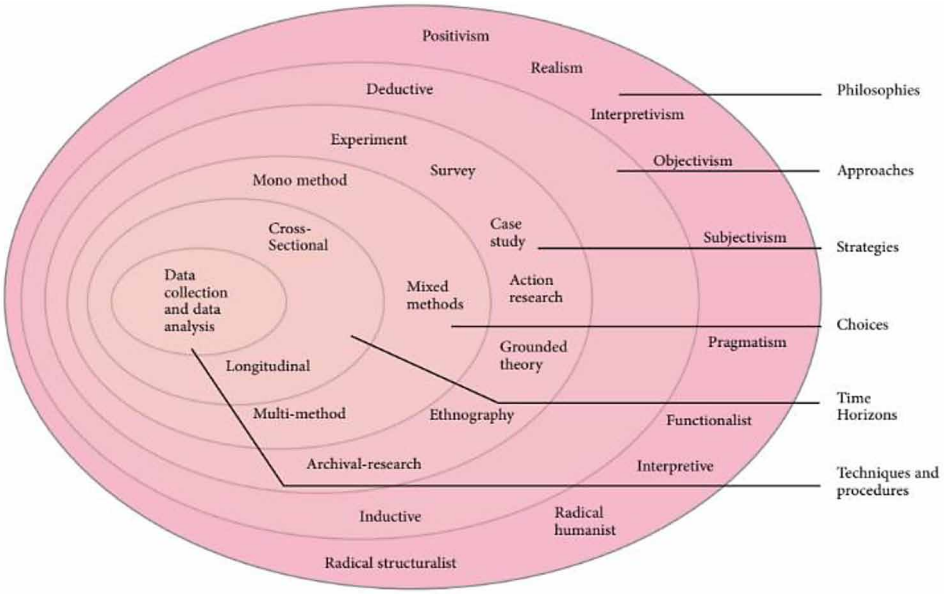
There are different stages that a researcher has to pass in order to design a methodology which is effective and useful. The six different layers of the onion have a different and specific role in formulating the methodology. The first layer consists of the philosophies and this acts as a starting point to reach the appropriate research approach, which is the second layer. The third layer focuses on the different strategies or methods which can be approached for the research. The fourth layer consists of the choices that can be used for collecting the data. The fifth layer identifies the time horizon of the research to decide whether it is going to be a long term or a short-term research. Finally, the sixth layer represents the techniques and procedures which help to identify the method for data collection.

Figure 4 shows the research onion method formulated by Mark Saunders and the six different layers of the research. Each of the layers will be discussed in detail to link them to the steps used in this research and to provide a clear vision for the adopted methodology.

Figure 4. The research onion
(Source: Saunders et al, 2007)



Research Philosophies

Research Philosophies are related to the beliefs of the researcher on the method through which the data is analyzed, used or gathered (Bryman, 2012). Saunders et al. (2009) has defined it as the "the development of the knowledge and the nature of that knowledge." These philosophies are different for achieving different types of goals and also for how those goals are going to be achieved (Goddard & Melville, 2004). They exemplify the importance of understanding the aim of the researcher and what methods he will adopt to develop knowledge on the particular topic in order to provide clarification for the assumptions used in the process of the research and how they relate to the methodology.

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Positivism

In order to generate questions for testing the hypothesis, positivism is used. The research questions can be tested, and they help us to measure the world's accepted knowledge. Positivism is generally concerned with adopting the philosophical stance where the researcher would like to observe and then predict the results of a particular situation. This phenomenon is quite similar to the situation of a scientist in a laboratory. Researchers who use this philosophy usually base their hypothesis on an existing theory. The existing hypothesis is properly tested before making any further developments which could be used by researchers in the future. This layer is based on the quantitative data and it needs a statistical analysis, in order to reach a conclusion. Therefore, it is known as a continuous process where the previous theories are tested and confirmed by the researchers (Saunders et al. 2009).

Interpretivism

Interpretivism is known as the study of a subject that the researcher wants to identify in the natural environment. The researcher should begin by understanding the different roles of the social actors which include human beings rather than any other sources. Saunders et al (2009) clarified the term social actors by saying that "the metaphor of the theatre suggests that being humans we are responsible for playing a different part on the stage of human life cycle. Similar to the actors who play different roles in theatrical productions and then act according to their interpretation". Interpretivism implicates that cultural factors can influence people's actions and by understanding the people's beliefs, actions and thoughts, cultural existence and change can also be understood.

Objectivism

According to this philosophy, there are forms of knowledge other than the social factors. It focuses on studying the nature of patterns, relationships, laws and regularities among the different situations measured in terms of social facts. A good example of this is to have a clear structure of the interested sample, job descriptions and duties, organizational hierarchy etc. This structure can be different for different organizations and places, but the content remains the same. In other words, true and fair information is available everywhere which is distinct from the feelings or interpretations of an individual (Saunders et al. 2009). Another example of the phenomenon is heavy rain where the people who want to go outside for the picnic are the social actors. In this case the rain exists and is real and it is acknowledged by everyone except the people who had their plan ruined due to the social phenomenon.

Subjectivism

Unlike objectivism, subjectivism in emotionally driven and refers to the judgments and decisions based on an individual's personal beliefs and opinions instead of being based on facts. Remenyi et al. (1998) states that it is important to understand and study the phenomenon in detail and try to identify the reasons behind such beliefs or perceptions in order to gain a better understanding of the situation. Decisions based solely and separately other than the social factors are based on objectivism, while subjectivism revolves around emotional values.

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Philosophies Used

The philosophies used in this research are a combination of positivism and objectivism. Using positivism, the pre-existing theories on e-Commerce and its issues are revised and tested to check if the new theories are in line with the previous ones or if they are opposing them. This was done by providing proofs and evidences. Objectivism provides a scientific information which will refrain from providing personal judgments and opinions and their interference in the results presented by this study.

Research Approaches

The second layer of the research onion consists of the research approaches. After selecting the appropriate philosophies in the first layer, we then move to the second step and that is to choose the research approaches. There are three different approaches namely, Deductive, Inductive and Abductive. If the researchers properly and clearly understand the theory they are taking, it would be easy for them to identify the type of approaches they can use, and this is why this step relies strongly on the previous step because the deductive method is related to positivism, while the inductive approach is more related to interpretivism philosophy. However, such theories are deceptive not considered to be practical in real life (Saunders et al., 2009).

Deductive

This approach is similar to a scientific research, where a researcher develops a theory and then tests it. In the deductive approach, the questions or statements developed can be answered through the research. The target would be to respond to the questions either as a yes or as a no. The questions which the researcher believes can be answered, could be in the form of informed speculations or statements. The hypothesis is developed on a theory which is pre-existing and then it is tested through the formulated research approaches. Therefore, the steps of deduction include moving from the theory to the research questions, to the collection of data, from findings to the confirmation or rejection of the research question. This leads to the theory being revised and repeated by starting the process over and over again. "The deductive approach is best suited to the positivist approach because it allows the formation of the hypothesis and the statistical testing of the results to a certain level of probability" (Snieder & Larner, 2009). Having concluded that, this approach can also be used for qualitative research but the expectations formed by the pre-existing research may vary slightly (Saunders et al, 2007).

Inductive

In this approach, the theory is formulated after the research questions are answered. The process of the inductive approach is the opposite of the deductive approach and rather than taking its focus from the existing theory, it takes its focus from the researcher's working title. In other words, the researcher moves from the research questions to the observation and description to analysis and then to the theory. Therefore, the inductive approach is the best approach for the researcher if little or no information exists on the topic or subject of research. This method is most beneficial for qualitative research because it does not contain a theory and reduces the researcher preference during the data collection (Bryman & Bell, 2011). "Interviews are conducted regarding the particular phenomenon for collecting the data and

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then the data is tested for patterns between the respondents of the interview" (Flick, 2011). However, this approach can also be used in combination with the positivist approach where the first step is to do the data analysis and then the patterns are used to find the results.

Approaches Used

The deductive approach was used to conduct this research. Since it was quite difficult to build a new theory in a limited period of time, so the pre-existing theories were studied. The approach will be both qualitative and quantitative in nature. Curran, J & Blackburn (2001) state that "a single research study may use a combination of both qualitative and quantitative techniques as well as primary and secondary data."

Research Data

There are two types of data that can be collected by the researchers for business and management researches and they are qualitative and quantitative data (Saunders et al, 2009). The type of data selected will determine the choices of the research methods which will be elaborated later in this section.

- **Quantitative Data:**Quantitative data is based on researches which rely on numbers and is used in a lot of data collection methods which include surveys, or data analysis techniques like graphs and statistics (Saunders et al, 2009).
- **Qualitative Data:**The Qualitative approach is based on the data which is non-numerical in nature and the researchers use interviews as a method to collect data and then analyze it accordingly. It represents information as pictures, videos and words (Saunders et al, 2009).

Research Data Used

The research will be based on both qualitative and quantitative data to provide more accurate and detailed results for the research.

Research Strategies

The third layer of the research onion present the research strategies and they are critical in answering the questions of the researchers as well as for data collection and data analysis. There are seven different types of strategies, out of which some belong to the deductive approach while the others clearly belong to the inductive approach. All strategies hold equal importance and the best strategy should be chosen according to the objectives and questions of the research (Saunders et al, 2009).

Survey

Surveys are used to answer questions concerning "what", "why", "how much" and "how many". The researchers are able to obtain data from large samples and enables different possibilities between the variables and the reasons for their existence. They are commonly used to collect quantitative data through questionnaires. They are commonly used in the deductive approach and helps the researcher to control the research process. Furthermore, it is simple and easy to understand (Saunders et al, 2009).

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Case Study

Case studies are used for investigation or examination of certain situations by using real life evidences from a number of sources. They are able to answer questions such as “why”, “what” and “how” and are most commonly used in exploratory or explanatory researches. The researchers who use case studies as the research strategy have to follow a technique known as “triangular Technique”. Triangular “refers to the use a combination of techniques for data collection within a study for ensuring that the data is telling you what you think it is telling you.” (Saunders et al, 2009). Case studies are basically divided into four categories which are the “holistic case study, the multiple case study, the single case study and the embedded case study”. Each type is different from each other because the number of cases, the unit of analysis and the location is different for each. Survey is a very helpful tool for researchers because it allows them to explore theories which already exist and opens doors to develop new research questions (Saunders et al, 2009).

Experiment

This strategy is basically related to natural sciences and it allows the researcher to identify the links between two different variables (Hakim, 2000). It is used for identifying “the size of change existing between two independent variables” and answers questions like “why” and “how”. Furthermore, it contains two kinds of groups known as experimental group and the control group. In the experimental group, the researcher attempts to study the particular group by manipulating or interfering factors that affect the behavior, whereas in the control group, the researcher does not use any such factors. This strategy is not commonly used in the field of education or business because it is perceived to be unfair or unethical (Saunders et al, 2009).

Ethnography

Ethnography means “to describe and explain the social world the research subjects inhabit in the way in which they would describe and explain it” (Saunders et al, 2009). It is closely related to the inductive approach and it helps the researcher to study the situation within the context of which it is appearing. In order to collect data in ethnography, participant observation is used as a technique and is used only if the researcher wishes to understand the phenomenon from the participant’s perspectives or points of view. However, it requires a lot of patience and time from the researcher as many unpredictable changes may occur (Saunders et al, 2009).

Grounded Theory

This strategy is a very helpful tool for research as it helps to forecast and analyze behavioral patterns and emphasizes its role in building theories (Goulding 2002). Grounded theory is mostly used in an Abductive approach. This strategy does not need a theoretical framework as the data is collected through different observations. According to Suddaby (2006), this theory is not perfect because it is unorganized. He also stated that “the seamless craft of a well-executed grounded theory study, however, is the product of considerable experience, hard work, and creativity and occasionally, a healthy dose of good luck”.

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Strategies Used in This Research

Since the research is based on the deductive approach, a combination of surveys and interviews will be used in this research. Surveys are used for collecting the quantitative data and is one of the most affordable and easy ways to find answers to the research questions in a short period of time. For qualitative data, the interviews will be conducted in order to reach the ultimate conclusion of the research.

Research Choices

The fourth layer of the research onion is that of the research choices and it provides the researcher with more flexibility in cases where both the quantitative and qualitative data are needed along with the secondary and primary data (Teddlie & Tashakkori, 2003).

Mono Method

In this method the researcher chooses a single procedure for collecting data and analysis instead of choosing both the quantitative or qualitative methods. This method does not allow to collect information though the combination of both the methods because of the demands or choices of the philosophy and the employed strategies. It can also be used to research an opposing view to the existing mono - method. (Saunders et al., 2009).

Multi Method

If the researcher chooses a combination of procedures and techniques for collecting data, it is referred to as the multi method. It consists of two subdivisions known as the multi-method quantitative study or a multi method qualitative study. However, it is preferred not to mix the quantitative and qualitative techniques while pursuing multi method (Saunders et al, 2009).

Mixed Methods

In this method the researcher can choose both the qualitative and the quantitative data and this can be done in two ways. The researcher can either use them together in a parallel way or separately in a sequential manner. In other words, the qualitative data can be used with the quantitative data or vice versa (Saunders et al., 2009; Feilzer, 2010)

Research Choices Used

This research will adopt the mixed method since both qualitative and quantitative data will be used as a procedure for the data collection and analysis.

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Time Horizons

This is the fifth layer of the research onion and it operates separately from the research choice and the research study itself. The time horizon is largely dependent on the research questions to determine if it will be conducted in a limited or a long time period (Saunders et al., 2009).

1. **Cross-Sectional Studies:** Cross sectional studies focus on pondering at one phenomenon at a time and due to time constraints, it is used widely in academic researches. They are often used with quantitative data and help to identify the reasons behind certain incidents. However cross-sectional studies can also be used with qualitative data because a lot of interviews can be conducted in a short period of time (Saunders et al, 2009).
2. **Longitudinal Studies:** Longitudinal studies are able to clarify the developments that have occurred over time. According to Schvaneveldt & Adams (1991), when the researchers have enough time to observe the people or events, they will have the capability to evaluate the undertaken variables in the research as long as the research itself does not affect them. However, if the researcher is properly aware that there has been a change overtime, longitudinal studies can also be carried out in a limited period of time (Bouma & Atkinson, 1995).

Time Horizon Used

This research will use the cross-sectional studies due to limited time. Moreover, since the deductive approach is used in the research, it will be more extracted better using the cross-sectional study rather than the longitudinal study.

Data Collection and Data Analysis

This is the final and the sixth layer of the research onion and is "dependent on the methodological approach used" (Bryman, 2012). At this stage, the reliability and validity of the research depends mainly on the process used for the research (Saunders et al., 2009). Regardless of the used research approach, two types of data can be collected, namely primary data and the secondary data.

Secondary Data

Secondary data is a very useful tool for research as it can help to gather information from the existing or new theories. Cowton, C.J (1998) states that secondary data provides information that is of great value and can answer a wide range of questions with the least cost. It includes literature publications, journals, articles, and other forms of archival data. The use of secondary data has significantly increased in the last ten years (Nicholson & Bennett, 2009).

Primary Data

Primary data is collected after the researcher spends a reasonable amount of time to collect the secondary data. The actions that the researcher takes to study his understanding of the primary or research data

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which was previously collected is known as primary data. It can be collected through questionnaires, survey, observations and interviews (Nicholson & Bennett, 2009).

Data Collection Technique Used

This research will use both primary and secondary data. Secondary data was collected in the literature review and the introduction, in order to find the different theories for testing, while the primary data was collected through the survey and interviews.

THE RESEARCH DESIGN

The research design depicts the processes and the description of the way the research will be completed. It determines the different factors that led to the selection of the chosen methodology, the method for selecting the respondents and the method of data analysis (Flick, 2011). There are three different types of research designs which are the explanatory, the exploratory and the descriptive.

The explanatory research design is used to explain the nature of a specific social phenomenon or population (Saunders et al., 2007). This can be quite useful for quantitative framework where one variable has an influence on the other (Kothari, 2004). The exploratory study design is used for exploring a certain phenomenon or issue which has taken place without much information known for the research process and it is usually used for collecting further information about the subject in order to conduct the research (Neuman, 2003).The descriptive research design reflects the respondents' experiences and is most closely related to the ethnographic studies but it can also use a quantitative framework (Bryman, 2012).

Figure 5 shows the research design used for this research. Two kinds of research designs were adopted, which were Qualitative and Quantitative. First, the quantitative data was collected through a survey and analyzed. Based on the findings of the survey, the qualitative data was collected through interviews. The data from the interviews was then collected and captured and then analyzed to reach the final conclusions.

Data Analysis Procedures

Survey

Survey was used as a research method for collecting the quantitative data and it aims to understand the consumer's behavior while using e-Commerce. The quantitative method helps to collect data from a large number of individuals in a short period. This method generally relies on numerical data to provide an understanding of the problem so appropriate measures can be taken to solve the problem (Cohen, 2000).

The Purpose

The purpose of the quantitative research was to develop an understanding of the consumers who use e-Commerce services in Bahrain. It provided an understanding of what are the main problems faced by the consumers, their reaction, perceptions and beliefs. In order to reach a conclusion and provide suitable recommendations to the problem, it is very important to gather important facts from the consumer's point of view and this was basically done through a quantitative research. Data collected from the question-

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naire will be used to evaluate different e-Commerce behaviors and issues and will help us to reach the ultimate solution to e-Commerce problems.

Figure 5. The research design

Data Collection

The method used to collect the quantitative data was through distributing questionnaires to the consumers of e-Commerce. Questionnaires are one of the most used research methods for quantitative research and it helps to collect specific information as a response to highly directed questions. The questionnaire was distributed electronically through social media and via emails. The response rate was much better compared to the interviews, as the respondents had to answer simple and straight forward questions which were quite basic and easy to understand.

The Questionnaire Design and Structure

The questionnaire was designed after a thorough study and research conducted in the introduction and literature review of this report. Based on the data collected in section 1 and section 2, the questions were designed in a quantitatively measurable method by using multiple choice questions, Likert scale, checkboxes and open-ended questions and it was created using survey monkey. The questionnaire had 10 questions which were direct and simple and aimed to understand the preferences and perceptions of the consumers to develop a better understanding of their behavior. The collection and data analysis of the questionnaire was done through charts and graphs created by the survey monkey website.

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Validity

The questionnaire was analyzed to check the consistency. The data was organized for statistical measurement of the sample population. The validity of the study was assured through different sources of evidence, questionnaires and interviews. The layout of the questions was based on the understanding of the ethical issues prevailing in the world of e-Commerce and the individual behaviors. The questions were direct and easily interpreted and were based on the facts and information gathered in section 1 and 2 of this report.

Reliability

To ensure the reliability of the study, the questionnaire was distributed and presented to the participants in the same manner to assure uniformity of the study.

The Interviews

The interviews were used to gather qualitative data for the research. According to Yin (2017), a qualitative research refers to the gathering of data which is not numerical in nature and it helps to provide an insight into the underlying problem, generate ideas and helps to understand the hypothesis which will later support the quantitative research method. It includes an interpretive approach and helps to study the subject within its context and understand the subjective meanings that people bring to the situation. There are many e-Commerce businesses in Bahrain. However, it was impossible to conduct interviews with most of them due to limited time and limited access. The interviews were conducted with the owner of an online Instagram shop called Mena Shoppers based in UAE and Bahrain and with the IT project manager of the e-government authority in Bahrain.

The Purpose

This study was conducted because the background and introduction of e-Commerce in Bahrain (Section 2) did not provide enough information about the e-Commerce behavior in the country. This study was conducted to explore the facts and provide reasoning for the data collected through the survey. The purpose of this study was to gather qualitative data from the products and service providers of e-Commerce in Bahrain and to understand their perceptions and ideas on the subject. The different problems encountered by the e-traders were discussed based on the results of the survey, along with the suggestions and recommendations to improve the situations concerning unethical and illegal activities of the consumers of e-Commerce and how it affects the e-Commerce business.

The Methods

The data collected for the qualitative research was through semi-structured, face to face interviews through email and telephone, with 2 service providers of e-Commerce products and services in Bahrain. The interview focused on collecting the necessary information required to investigate and study the different unethical and illegal issues in the organizations of Bahrain.

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Research Population and Sampling

A research population is known as the collection of individuals who have the same characteristics and common traits (Saunders, 2011). The questionnaire was designed to target those individuals who use e-Commerce in their day to day life. For this purpose, the questionnaire was mainly submitted to young, university students and fresh graduates because according to a survey conducted by the European Union in 2015 on ICT (Information and communication), young people between the age of 25-34 are more active e-shoppers compared to other age groups. To achieve the objectives of the study, the questionnaires were distributed to 55 consumers of e-Commerce. Since it is quite difficult to distribute the questionnaires to all the e-Commerce consumers in Bahrain, so the most convenient method was to distribute it among the most active consumers. Therefore, the sample can be used to generalize the results and make recommendations for the study, for the rest of the population.

SUMMARY

This section has explained the research approaches used in this project. After identifying the research variables and the focus area, the research onion method was selected as a tool to conduct the research. The different layers of the research onion were explained, and the most appropriate methods were selected. It also reported the research design which consisted of the interviews and questionnaires and the data analysis procedures followed by the sampling technique of the questionnaire. The next section will focus on the findings of the research methodology developed in this section.

DATA ANALYSIS

This section focuses on explaining the results and findings which were collected through the interviews and the questionnaires distributed among the consumers. It will link the responses to the literature review in order to throw light on the issues highlighted in the first section. The data analysis is divided into two parts. The first part focuses on the findings of the survey, while the second part focuses on the findings of the interviews. It will also link the responses of the interview with that of the questionnaires to reach the ultimate solutions to the problems.

Findings of the Questionnaire

The questionnaire was distributed to a sample of55 students of University of Bahrain, who used e-Commerce websites. The response was collected from 55 students in a period of three days.

Frequency of Usage

It is important to know the frequency of e-Commerce usage among the university students in order to find out how many individuals from the sample population indulge in e-Commerce most frequently. Figure 6 shows that 38.18% of the students use e-Commerce sometimes, while with a slightly lower percentage 36.36% of the consumers use it rarely. The lowest percentage was that of the students who

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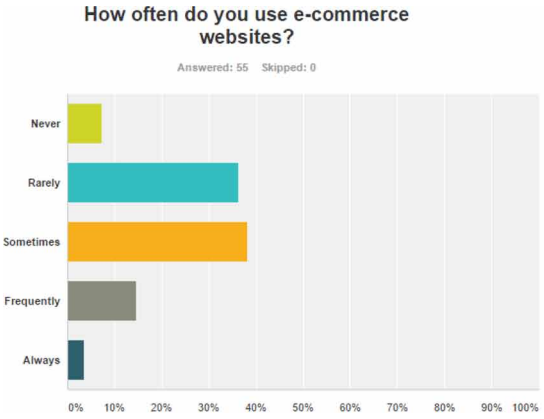
always (3.64%) or never (7.27%) use e-Commerce. However, the target of this research were the students who frequently, sometimes or always used it.

Figure 6. Frequency of usage

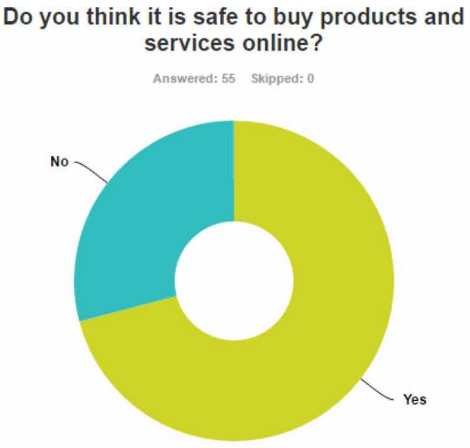


Answer Choices	Responses	
Never	7.27%	4
Rarely	36.36%	20
Sometimes	38.18%	21
Frequently	14.55%	8
Always	3.64%	2
Total		55

Safety

The next question focused on finding out the number of consumers who find it safe to order products and services online. According to Figure 7, a majority of 70.91% of the students answered that it is safe to buy products and services online. Opposing to this, 29.09% of the students do not think that is a safe method of purchasing goods and services. Even though there was a positive response from the consumers, we cannot overlook the fact that a percentage as high as 29.09 consider it unsafe to indulge in online shopping activities.

Figure 7. Safety



Answer Choices	Responses	
Yes	70.91%	39
No	29.09%	16
Total		55

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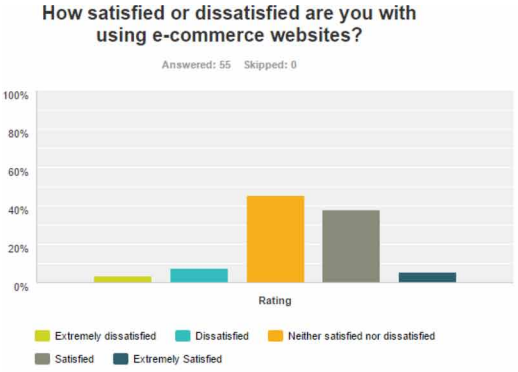
Satisfaction

From Figure 8 we can see that 45.15% of the students surveyed were neither satisfied nor dissatisfied with the online shopping experience, while 38.18% of the students were satisfied. On the other hand, 7.27% of them were dissatisfied and only 5.45% were extremely satisfied. This implies that there is a positive response as the majority of them are either neutral or satisfied with the e-Commerce websites.

Figure 8. Satisfaction



	Extremely dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Extremely Satisfied	Total	Weighted Average
Rating	3.64% 2	7.27% 4	45.45% 25	38.18% 21	5.45% 3	55	3.35

Most Used e-Commerce Platforms

The consumers of e-Commerce use a variety of applications or websites, out of which, some of the most common were listed for the consumers to choose from. We can see from Figure 9 that almost 54.55% of the students use Instagram as a source for buying products and services online. As mentioned earlier Bahrain stands at the first place with the greatest number of Instagram users as compared to other GCC countries. The survey proves the fact of the rising trend of Instapreneurs and Instagram users in Bahrain. Another widely used website known as expatriates.com provides the users with the facility of buying or selling products and services online. This website is widely used all around GCC and figure 4.4 shows that almost 38.18% of the students use the website. Talabat ranked at the third place with almost 29.09% users who order food through the application. Other famous websites like amazon, e-government and e-bay were ranked next with nearly 25% users with the minority of 18.18% using Alibaba and 14.55% using OLX.

Reasons for Using e-Commerce

It was necessary to find out the reasons why the consumers prefer to order products and services and online in order to link it to the pre-existing theories mentioned in the literature review. As shown in Figure 10, a majority of 63.64% of the users ordered products or services from websites because it is easy to place an order electronically instead of going to the physical location. Furthermore 38.18% of the consumers use it due to a large variety of products and cheaper prices. As far as cheap prices are concerned, they could also be due to unauthentic products which sometimes the consumers are unable

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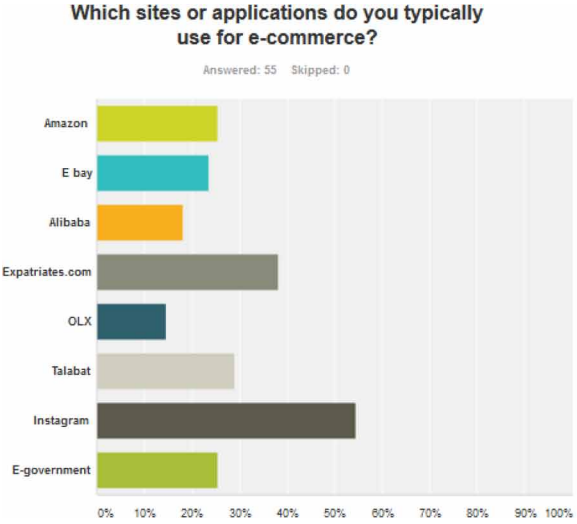
to recognize. The ease of online payment was one of the reasons as stated by 25.45% of the consumers. On the other hand, 20% of the consumers order due to fast service and delivery, 16.26% order due to detailed information about the products or service and only 10.91% order due to good customer service.

Most Concerning Factors

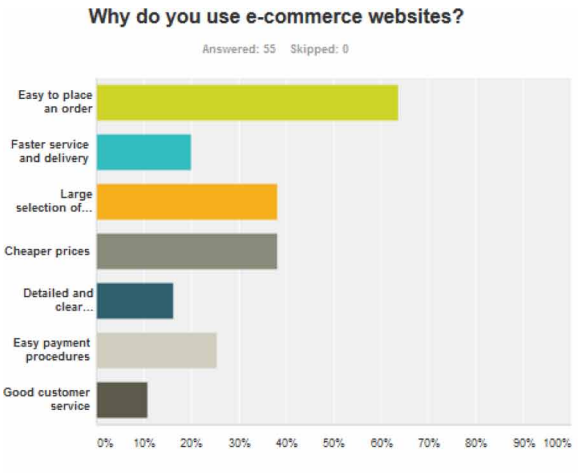
The consumers were asked to rate some of the important factors on a scale of 1 to 4, on the basis of their importance to them and the results were as follows (as shown in Figure 5):

Figure 9. Most common platforms



Answer Choices	Responses	
Amazon	25.45%	14
E bay	23.64%	13
Alibaba	18.18%	10
Expatriates.com	38.18%	21
OLX	14.55%	8
Talabat	29.09%	16
Instagram	54.55%	30
E-government	25.45%	14
Total Respondents: 55		

Figure 10. Reasons for using e-commerce



Answer Choices	Responses	
Easy to place an order	63.64%	35
Faster service and delivery	20.00%	11
Large selection of products	38.18%	21
Cheaper prices	38.18%	21
Detailed and clear information about the product and service	16.36%	9
Easy payment procedures	25.45%	14
Good customer service	10.91%	6
Total Respondents: 55		

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Information Security

A majority of 58.18% of the consumers considered the information security to be very important and 32.17% said it was important. On the other hand, 7.27% consider it to be less important and 1.82% say it is not important at all.

Privacy

According to Figure 5, a majority of 69.09% consider privacy to be a very important factor and 25.45% think it is important. While a minority of 1.82% say it is not much important and 3.64% say it is not important. This shows that while the majority is really concerned about the privacy, but there are people who do not give much importance to it.

Guarantee

The guarantee of the product or service is very important for 65.45% of the consumers whereas it is important for 27.27%. On the other hand, 5.45% consider it to be less important while 1.82% say it is not important.

Product Authenticity

Figure 5 shows that 63.64% of the consumers consider the product authenticity to be very important, whereas 30.91% think it is important. 3.64% say it is less important and 1.82% consider it as not important.

Customer Service

Good customer service plays a major role for any kind of business and it implies on e-Commerce as well. The survey results show that 43.64% of the consumers think it is very important to have a good customer service, 38.18% say it is important. A minority of 12.73% say it is less important and 5.45% do not think that it is important.

Product Quality

A majority of 72.22% of the respondents consider it to be very important for the product to be of good quality. This is higher than any other factor which were mentioned in the question. 25.93% of the respondents think it is important, whereas a 1.85% think it is less important. However, it should be noted that none of the respondents think that product quality holds no importance.

Price

As per Figure 11, 45.45% of the respondents think that the price of the product is very important or important. 7.27% said that is less important while a minority of 1.82% consider it as not important.

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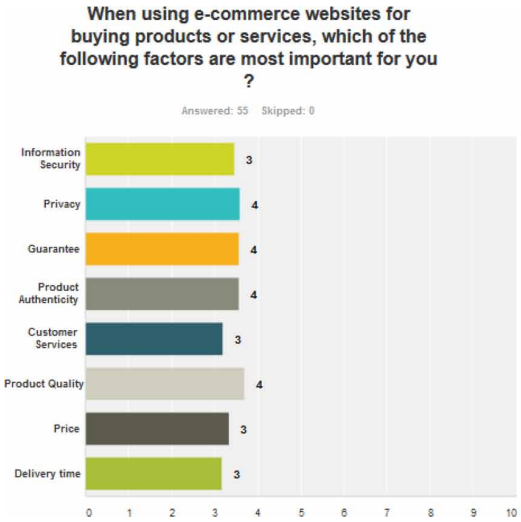
Delivery Time

A majority of 41.82% of the respondents said that the delivery time of the product is very important, 36.36% of them said that it is important, while 20% said that it is less important and 1.82% said that it is not important.

Figure 11. Most concerning factors



	Not important	less important	Important	Very important	Total	Weighted Average
Information Security	1.82% 1	7.27% 4	32.73% 18	58.18% 32	55	3.47
Privacy	3.64% 2	1.82% 1	25.45% 14	69.09% 38	55	3.60
Guarantee	1.82% 1	5.45% 3	27.27% 15	65.45% 36	55	3.56
Product Authenticity	1.82% 1	3.64% 2	30.91% 17	63.64% 35	55	3.56
Customer Services	5.45% 3	12.73% 7	38.18% 21	43.64% 24	55	3.20
Product Quality	0.00% 0	1.85% 1	25.93% 14	72.22% 39	54	3.70
Price	1.82% 1	7.27% 4	45.45% 25	45.45% 25	55	3.35
Delivery time	1.82% 1	20.00% 11	36.36% 20	41.82% 23	55	3.18

Common Issues

The respondents were asked to choose some of the most concerning issues faced by them while shopping online through a checklist which contained the most common issues discussed in the introduction. 54.55% of the respondents chose late delivery of products as the most common issue, while 43.64% said that false advertising and information is a big issue. The percentage of respondents who chose fake products was 38.18%, whereas poor customer service ranked next with 32.73%. About 27.27% chose damaged products as a commonly faced issue, while 21.82% chose fraud. Email spamming and privacy issues got an equal percentage of 20% from the respondents. On the other hand, 10.91% selected multiple payments as a common problem followed by 9.09% for hacking. Web spoofing received 7.27% while 7.27% of the respondents selected "none" as an option. Figure 12 shows the percentage and the selection of the respondents.

Reactions to the Problems

As seen in Figure 13, a majority of 44.44% of the respondents said that they contact the customer service, while 42.59% choose another website for buying the product or service. 33.33% of the respondents ask the supplier for a refund as a compensation for the issue faced by them, while 27.78% stop using e-Commerce websites and start purchasing things manually. However, only 16.67% of the respondents said that they do not take any action.

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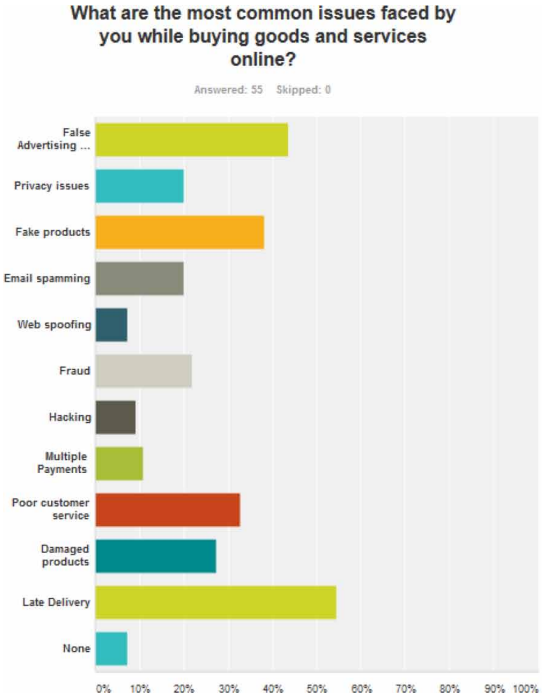
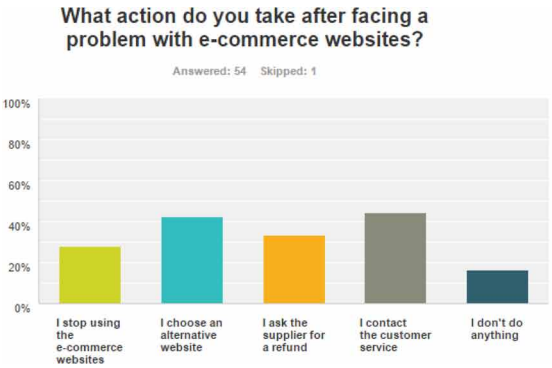
Figure 12. Common issues



Answer Choices	Responses	
False Advertising and Information	43.64%	24
Privacy issues	20.00%	11
Fake products	38.18%	21
Email spamming	20.00%	11
Web spoofing	7.27%	4
Fraud	21.82%	12
Hacking	9.09%	5
Multiple Payments	10.91%	6
Poor customer service	32.73%	18
Damaged products	27.27%	15
Late Delivery	54.55%	30
None	7.27%	4
Total Respondents: 55		

Figure 13. Reactions to the problems



Answer Choices	Responses	
I stop using the e-commerce websites	27.78%	15
I choose an alternative website	42.59%	23
I ask the supplier for a refund	33.33%	18
I contact the customer service	44.44%	24
I don't do anything	16.67%	9
Total Respondents: 54		

Online Payments

Figure 14 shows that when the respondents were asked for their opinion about online payments, 70.91% said that they found it safe, while 20% said that it was not safe. Among the people answered that online payments are unsafe, some of mentioned different reasons for their beliefs. According to one of the respondents the payment should be made on delivery and in cash terms, while another said he/she is concerned about online payments as their credit card information can be misused over the internet. Some respondents also mentioned that their main concern is privacy and they do not know if they can trust the website as their information might be at risk.

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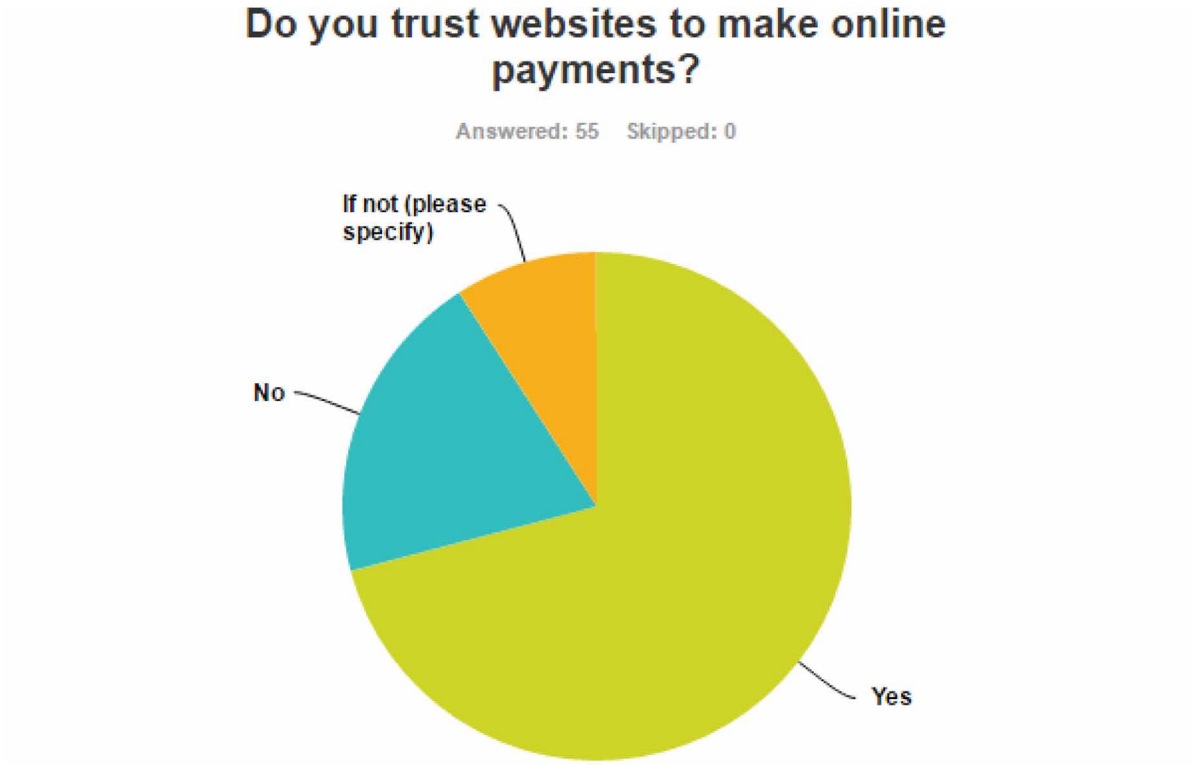
Figure 14. Safety of online payments



Answer Choices		Responses	
Yes		70.91%	39
No		20.00%	11
If not (please specify)	Responses	9.09%	5
Total			55

Suggestions for Improvement

Out of 55 respondents, only 26 of them provided some suggestions to further improve the e-Commerce transactions because it was optional to answer. According to the respondents:

- The websites should provide more variations and cheap prices because the delivery prices are high.
- More security measures should be taken, and the websites should be certified by inspection teams.
- The personal contact number of the suppliers should be provided as a safety measure.
- The delay in delivery should be reduced and the product quality should be guaranteed.
- The websites should be more user friendly, so it is easy to use.

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- The products should be guaranteed as authentic and in case they are not, it should be specified in their websites to save the time and efforts of the consumers.
- The websites should improve their payment systems.
- The websites should be designed in a way which is attractive to the customers and the orders should be tracked along with cash on delivery options.
- There should be an improved customer service, so in case of any issue they can report it directly to resolve it.
- Financial and information security measures should be taken along with faster shipping.
- The information of the product should be genuine and true because the idea of buying a product without seeing is very risky for the customers and the e-Commerce websites should also be accountable for the delivery of the product.
- The websites should have more ways to secure customers' details and information and guarantee the customer that the product being sold is authentic and approved by the brand.
- The government websites also need improvement to secure information.
- Email spamming should be reduced.

The majority of the respondents emphasized on faster delivery of products, product authenticity, information security and privacy.

Findings of the Interviews

As mentioned earlier, the interviews were conducted in order to develop an insight into the problems faced by the buyers of e-Commerce services and products. Based on the findings of the survey, the interview was conducted with one product and one service provider of e-Commerce in Bahrain.

MENA Shoppers (Products)

As mentioned earlier, the trend of instapreneurs in Bahrain is increasing day by day. The owner is a marketing student at the University of Bahrain and the owner of an online shop on Instagram called Mena shoppers which is a retail shop for the latest fashion trends and is based in Bahrain and UAE. The manufacturers are based in Dubai, so whenever there is an order for a product, it is shipped directly from UAE to customer. The owner explained that her fiancé is responsible for managing the orders in the UAE and she manages the orders in Bahrain.

Q.1: Why Did You Choose to Have an Online Shop Rather Than a Physical Store?

The owner explained that her business is not located in Bahrain, but it is based in the UAE. E-Commerce is good way to reach the customers not only in Bahrain but in the UAE as well, as a lot of people now prefer online shopping compared to the traditional shopping methods. Instagram is an upcoming trend in the Middle East, so she decided to choose it as a medium to reach the target customers. She also explained that her target customers are mainly the women as they are more into online shopping compared to men.

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Q.2: What are Some of the Ethical Issues Faced by You From the Customers Side?

Most of the customers expect on-time delivery and since the products are shipped from UAE, sometimes they get delayed from the courier company, so the owners are blamed for the delay which causes a problem. Many customers are also reluctant to provide their personal information like their house address or their contact number for the delivery of the products which creates a lot of problems in delivering the product on time. And lastly, sometimes the customers travel after placing an order which creates a problem for the owners as the product has to be returned back.

Q.3: How Can You Prevent the Issue of Late Delivery?

The owner explained that the courier agents that she dealt with before mostly delayed the delivery and due to a large number of complaints from the customers, she changed the courier agents to professional ones which are expensive, but they are really good and fast in delivering the product. But most of the late deliveries are due to the suppliers and not due to the owners.

Q.4: How Do You Convince the Customers to Provide Their Personal Information?

The wonder stated that she tries to gain the confidence of the customers by convincing them that their information will be highly confidential, and it will be used solely for the purpose of delivering the product. But on the other hand, if they do not wish to provide the information, they have the option of directly contacting the courier agents or the shipping company and explain them the address.

Q.5: Do You Face Any Technical Issues or Any Other Problems Due to the Customers Lack of Knowledge About Using the Application?

According to owner, there are usually no technical issues but sometimes the customers do not know how to place an order, so they are instructed on the procedures and payment policies which makes it easy to solve such problems.

Q.6: According to You, Does e-Commerce Create Employment or Unemployment in the Economy?

The owner explained that e-Commerce is a great platform for young students who wish to start their own business and earn as a part time worker, since it can easily be managed and is highly profitable, so it creates more employment.

Q.7: There Are A Lot of Online Shops Similar to Yours. How Do You Provide the Competitive Edge to the Customers, So They Choose to buy From You?

Compared to the competitors, Mena shoppers provides a wide range of varieties to the customers along with seasonal offers and promotions on Eid, Christmas and other festivities. The delivery charge is also comparatively less than the other competitors.

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Q.8: Do You Think the Customer Can Sometimes Lie About the Quality or Quantity of the Product? How Can This Be Solved?

The owner explained that she has never experienced any such situations, but the quality of the product is always checked before sending it to the customer to ensure that there are no such cases.

Q.9: Did You Ever Send a Wrong Order Due to Wrong Address Information?

Mena shoppers have never faced such situations because the courier agents always do a background check of the customers to ensure that the address is correct. The products are only sent after ensuring and double checking the address with the customer.

Q.10: What are Your Suggestions to Improve e-Commerce in the Future?

There should be more security measures taken by the e-Commerce sellers to ensure that the products being sold are genuine because the customers cannot see them before buying.

Q.11: Do You Provide Cash on Delivery or Online Payments?

Mena Shoppers provide cash on delivery and it is one of the reasons the customers choose them among the competitors. The payment is done after the product reaches the customer, so they can pay for what they get and if they do not like it, they can return the product. Companies like Amazon and E-bay are well-known, and the customers would not hesitate to pay online but on the other hand, they would be reluctant to make online payments for companies that are small and not well-known.

E-Government (Services)

The IT project manager at the e-government authority in Bahrain is currently working on a project which is directed towards helping the business community, particularly the individuals who wish to start online activities for their businesses in Bahrain. Any person who wants to register for an online business activity in Bahrain can do so by applying on the e-government portal and then seeking an approval to commence their online business activities. The following data was captured and collected through the interview.

Q1: Why do you think the government has taken this initiative of providing online services to the citizens?

The manager responded by saying that e-government is different from e-Commerce in the sense that it is directed towards providing online services to the customers, while e-Commerce focuses on providing products. As far as online services are concerned people use it for their ease, so they can avail the services sitting at their homes.

Q.2: Does e-Commerce create employment or unemployment in the economy?

e-Commerce creates more employment according to the manager because there are a lot of direct things in e-Commerce which include delivering the products to the customer. So, a driver has to be hired or an alliance has to be made with another company which can provide the service. When there is more demand, more people will be hired for the service. At the same time when it comes to the logistics, there

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is no need for a physical store or a salesperson and since we cannot pay cash online, credit cards have to be used so there is no need for a cashier, but more technicians and website developer are required along with online agents to provide customer services around the clock. On one hand there will be no need for employees but at the same time other employees are hired for these things which definitely creates employment.

Q.3: According to a survey, the majority of the consumers are concerned about their information security and privacy. Do you think it is safe for the customers to rely on e-Commerce websites? How can the websites ensure security?

The customers can rely on e-government services because there are certain procedures and policies that are implemented by the e-government authorities for the security of the consumers but not all e-Commerce websites can be trusted. There are a lot of websites that ensure security and the users can know if the website has been secured or not, but many websites also capture the information of the users. So, the users should be aware about which of them are safe and which are not.

Q.4: What are Some of the Ethical Issues Faced by You From the Customers Side?

The manger stated that one of the main issues faced by e-government is that the users provide wrong information which results in them receiving wrong service and this creates a lot of problems because sometimes there are some requirements which not everyone wants to provide. Whereas in e-Commerce websites, when the customer's order a product, they need to provide their credit card information, and if the website is not secured, this information can be used unethically. There are a lot of security measures which are being implemented to ensure the customers that the website does not save the credit card information and it is only used for payment purposes.

Q.5: Sometimes There are Cases of Multiple Payments. Is it Due to the Technical Reasons or Due to the Customers Lack of Knowledge in Using the Website?

The manager asserts that multiple payments are due to technical errors and cannot be avoided most of the time. When the users send their information to the gateway, sometimes due to network issues there is a delay, but the user keeps pushing which results in another request being sent to the server and so there are cases of multiple payments. Many times, during the payment process, the bank sends a notification to the user that the payment has been done and the user closes the window which makes it difficult for the provider to find the source or destination of the payment. In these cases, the payment is made but not updated in the system. For this reason, the payment gateways display messages asking the users not to close the window while the payment process is going on. The users have to read these messages and follow the instructions carefully. Another reason for this is the infrastructure or bandwidth as not all of them has the same speed. Some may be faster than the others and vice versa. But all these technical issues can be solved if the users disclaim against them and after it has been proved, the user can be refunded.

Q.6: What Steps Can be Taken to Educate People About Using e-Commerce?

The manager explained that in the Middle East, people are not well educated in dealing with online websites or e-government services and educating people takes time and effort. This can be done through television, social media and websites which should provide clear instructions and steps to the users.

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There should be a lot of campaigns and brochures to educate the people on the subject. The banks should educate people on how to use credit cards for online shopping.

Q.7: When You Update Your Website, Are the Users Still Able to Use It?

It depends on the type of update in process. If it is a normal update, they put on a notice for the people but for major updates either the website is shut down or it is running but people cannot use it for a while. But the priority is to inform people about it.

Q.8: Many Websites Provide False Information to the Customers, Which Raises Trust Issues. How Can This Be Solved?

The manger asserted that people should never believe what they see, and the customers need to be educated properly. Many people recommend websites, but it should be taken into consideration that not all can be trusted. When people use a new website, they should read about it before doing any transactions.

Q.9: Websites or Online Portals Like E-Government are More Prone to Hacking Due to Online Payment Procedures. Have You Ever Faced Any Such Issues?

The manger stated that as far as e-government is concerned, people are forced to use it because sometimes they do not have another channel for making payments. But since there are a lot of services combined in one portal, e-government is usually targeted for hacking. However, there are a lot of security measures taken so it is rarely hacked. On the other hand, the e-Commerce websites are optional, and people have another source to provide them the products, so sometimes the e-Commerce sellers compromise on the security of the customers in order to ensure fast service without losing the customer. So, they are easily hacked.

Q.10: Do You Think That Electronic Contracts Have as Much Authenticity as the Ones Made in Person?

The manager discussed that when it comes to trading, many organizations are not always in the same country and they are forced to use electronic contracts and they have to trust a person whom they have never met or never seen due to geographical boundaries. Electronic contracts are built on trust and the quality of services because in the modern era, we cannot even sometimes trust human beings when making contracts in person.

Q. 11: One of the Major Legal Problems Faced by the Government is the Taxation of e-Commerce Businesses. How Can This Be Solved?

The taxation of e-Commerce business is very easy because all the e-Commerce websites have to be licensed and registered at the Ministry of commerce in Bahrain. Once an individual obtains a CR, he is asked for the financial statements of the business from time to time, so taxation is possible. But it is difficult to tax the businesses which are being run on social media, Instagram or other personal websites and the government should monitor and inspect such websites whenever there is a complaint from the customers' side. These businesses should be shut down or controlled by the government to ensure legality.

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Q.12: What Should Be Done to Eliminate Scammers and Reduce the Risk of Fraud From Websites Like Expatriates.com and OLX?

The main thing is to educate the consumers so that they are aware of such situations. Whenever any transaction involves western union, they should know that something is fishy and avoid getting into it. The developers should read the ads on a daily basis and delete the posts which do not look authentic. If there are fewer scamming advertisements, the website can be more trustworthy for the consumers.

Q.13: Email Spamming is Also One of the Major Issues Faced by the Consumers. But at the Same Time, It is Also a Marketing Strategy Used By Most of the Businesses. How Can This be Reduced?

The manager said that sometimes the consumers give out their email to some companies to receive important notifications and offers from time to time but at the same time, the email is also passed on to other companies and they start receiving a lot of spam emails but the consumers always have an option in their email to mark these emails as spam or block them so as to get rid of such situations.

Q.14: Majority of the Customers Prefer Cash on Delivery When Buying Products and Services Online. Do You Think This is Right?

When people use a new website, they are not sure if they can trust it so it is important to have cash on delivery for the convenience of the customers, so they can see that the product is authentic and not damaged. In some cases, once the payment is done, it cannot be refunded so the consumer has to see the product and then make the payment.

Q.15: What are Some of the Major Steps Being Taken by the E-Government to Promote e-Commerce in the Country?

The manger discussed that there are many big projects coming up in the future. The main thing which helps the e-Commerce and the e-government is a good infrastructure which ensures high speed internet connections. The telecom companies are developing high speed internet services for the ease of the e-Commerce. Fiber optic networks are being introduced in the country which will boost the power and speed of the internet which will be very beneficial for the e-Commerce users.

Summary of the Findings

The findings of the research report that the majority of the consumers do trust e-Commerce websites and are neutrally satisfied with the channel. The most commonly used platform was found to be Instagram, which proves the rising trend in the country. Since applications like Instagram do not require a commercial registration and it is easy for anyone to start a business and market it, it can be prone to many ethical issues and can be one of the reasons why people confront different problems while purchasing products online. Same is the case with websites like OLX and expatriates.com where any individual can sell anything without any restriction. These factors can be the reason why the individuals are concerned about their privacy and information. They can also contribute to the rise of ethical issues like privacy invasion, fraud, late delivery of products, and so on. False information, advertising and fake products was one of the most common issue and since websites like expatriates and OLX are not monitored or

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controlled by the government, anyone can be fooled by them. It was also found out that the majority of the users try to contact the customer service in case of an issue so this highlights the importance of a good customer service. Failing to provide a good customer service might result in the user choosing an alternate website which might result in losing the customer. Online payments are considered to be safe by most of the users but some users consider it unsafe as well due to sensitive credit card information.

The findings also reported that e-Commerce tends to increase the employment rate in the country as it is easy to start and can be used as a part time job. Issues like multiple payments and late delivery of products are mostly related to the consumer's lack of knowledge and awareness about using e-Commerce websites. Education and training forms a critical part in solving this issue. The issue of late delivery can also be related to the hesitancy of the consumers to provide private information. Damaged products can be avoided by availing the cash on delivery option, so more and more traders should provide the option of cash on delivery to win the trust of the customers, until and unless it is a well-known and trusted business. But this can be a good start for new e-Commerce businesses to expand and win the customer's trust. Another factor which can help the e-businesses to expand and win the trust of the customers is by registering their businesses at the Ministry of Industry and Commerce. This will also solve the issue of taxation. Educating the people can help them to identify the difference between a secured and an unsecured website, which can reduce the number of issues faced by them.

CONCLUSION AND RECOMMENDATIONS

The research objectives, the main outcomes of the research, a comparison of the findings along with the current literature review on e-Commerce and its implications in the society have been discussed in detail in the preceding sections. There is no doubt that e-Commerce has facilitated the lives of human beings by providing products and services at the distance of a single click. The research has argued that apart from providing many advantages, e-Commerce also gives rise to a number of unethical and illegal behaviors.

The behaviors of the consumers and the sellers of e-Commerce in the Kingdom of Bahrain have been highlighted in Section four. While investigating and collecting the data from the questionnaires and interviews, it has been highlighted that consumers and sellers are aware of the different issues surrounding the e-Commerce and are looking forward to eliminating these problems. But besides this, majority of the consumers do think that e-Commerce is a safe platform and they will continue to use it in the future. The number of consumers who are dissatisfied with the e-Commerce are very less and this shows that the situation is not as fierce as it looks. The findings also highlight the trend of instapreneurs as it shows that the majority of the consumers head over to Instagram every time they want to order a product or service. But at the same time, we cannot deny that websites like expatraites.com are also highly used by the consumers and as stated by the manager such websites increase the risk for the consumers to fall a victim of scam and fraud.

One of the most common reason for using e-Commerce was found to be the ease of placing an order online with a wide variety of choices and cheap prices. Other factors which play a big role for the consumers to decide if they should use the e-Commerce websites are privacy, information security, product authenticity, quality and the delivery time. Whereas the major issues faced by the consumers, as highlighted in the findings were late delivery of products, false advertising and product information, fake products and poor customer service. These issues shape the attitudes and behaviors of consumers while making online purchases, as explained by TBP in Section two. The solutions to these problems

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were provided by the sellers through different suggestions as mentioned in Section four. On the other hand the major issues faced by the sellers include late delivery, wrong personal information and lack of customers' knowledge which can be solved by training the consumers or winning their trust. Technical issues can also be an important issue but cannot be counted as unethical or illegal. The online payment systems are not perceived to be risky by the majority of the consumers but cash on delivery is preferred when buying products and services from e-Commerce businesses which are not well-known. The consumers and sellers gave various recommendations and suggestions to improve the e-Commerce services which helped to support the research and reach the ultimate conclusions.

While the findings of this research have shown some similarities, contradictions and some difference with the pre-existing theories but at the same time we cannot question the validity of the findings of this research. Although the sample base was restricted to the consumers in Bahrain, the response rate was quite high in a short period of time. The experiences and thoughts of the consumers cannot be dismissed as any business cannot run if the customers are not satisfied. The evaluation of this research has been qualitative as well as quantitative. However, there are a few questions that still remain unanswered and many issues need more investigation. The research proves to be beneficial for a number of reasons. As mentioned above, there are a lot of issues and problems but the increase in the number of internet users and online consumers help to overcome this factor and contribute to the ever growing success of the e-Commerce world.

Recommendations

Based on the findings of the research, and the e-Commerce situation in the Kingdom of Bahrain, it requires concentrated and joint efforts from both the consumers and the manufacturers of e-Commerce to solve the most prominent issues faced by both the parties. This is important because the world of e-Commerce is expanding day by day and the consumers as well as the manufacturers should understand the future consequences and impact of unethical and illegal behaviors on their day to day e-Commerce activities. Therefore, the research recommends the following for the buyers and the sellers who indulge in e-Commerce activities:

Recommendations for the Sellers

According to the Sophos Security Threat Report in 2012, an average of 30,000 websites are hacked every day and it is likely to be increased by now. The security of the consumers greatly lies at the hand of the sellers and the way they conduct the businesses. Therefore, a number of recommendations can be provided to the sellers to save their websites from being hacked and to protect the user information and data as well as to solve the various issues faced by the consumers.

1. **Hacking:** The sellers or manufacturers must choose a secure e-Commerce platform by selecting an existing e-Commerce platform rather than building a new one. This is because there are a lot of security risks associated with building an e-Commerce solution from the scratch and it can be easily hacked. The sellers must not store unnecessary or sensitive customer data which is unessential to their business. An encrypted checkout tunnel should be used for processing credit cards which will ensure that the server does not see the customer's credit card data. The sellers must also update their e-Commerce solutions SSL/TLS to encrypt the browser communications when transmitting

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confidential information. The websites must be regularly checked for any vulnerabilities and the risky software's which jeopardize online security should be deleted.

2. **Product Authenticity**: In order to ensure the authenticity of the products bought from the supplier, the sellers should introduce a new technology which uses hard to copy symbols which are similar to QR codes and can be scanned and read by a smartphone camera. These codes will help to identify the product authenticity as a part of product labels when any of the sellers request to sell their products. In this way the consumers will also be satisfied that they are actually paying for the product they are receiving. The companies should also register their trademarks with Customs agencies in order to avoid selling counterfeit products. In case the website sells duplicate or copies of original products, they should clearly mention and inform the consumers beforehand so as to avoid wasting the time and money of the consumer.
3. **False Advertising and Information:** The sellers should stop displaying fake information and advertisements on their websites in order to win the trust of the customers because the customer's satisfaction is the key to success for any business. In order to avoid misleading information in the affiliate marketing, the sellers must monitor the traffic that they are generating. Advertisements which garner a higher click rate should be suspected. The sellers should provide clear guidelines and details of the claims which the advertisements can or cannot make. They should also establish a policy framework and take action against the affiliates who break the policies.
4. **Email Spamming:** The e-Commerce sellers must avoid passing or selling the consumer data like emails and other personal information to the third parties. This will result in the customer doubting the legitimacy of the products sold by the seller and the customers' trust will be deteriorated. At the same time, the e-commerce manufacturers must also avoid sending large number of irrelevant emails to the customers because they do not necessarily interest the consumer and they might block the email which might result in losing the customer's interest in the products or services offered by the seller. The online companies must also use programs which can track things and allow the receiver to opt-in or unsubscribe from receiving the emails whenever they want to.
5. **Cybersquatting:** In order to avoid cybersquatting, the sellers should register their domain names which includes the common misspellings and other typing errors that the users might enter while searching for website. They should also continually ensure that their trademarks are up to date all over the world.
6. **Late Delivery of Products:** In order to avoid problems with the customer regarding the late delivery of products, the sellers must allow them to track their orders. They can also provide the customers with the direct contact of the shipping company so that they are not blamed for the delay. In case the shipping company is causing an unnecessary delay and resulting in losing the customers, then it is better for the sellers to choose a better shipping company with fast delivery.
7. **Damaged Products:** All the products must be checked to ensure that they are in good quality before shipping them to the customers and in case the damage is caused through the shipment then the customers should be refunded for it or the product should be exchanged. In this way, the customer will trust the company and will not hesitate to place orders in the future.

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Recommendations for the Buyers

1. **Privacy Invasion:** More policies should be developed to balance the privacy concerns of the consumers with the information needed by the sellers. In this way the consumers will feel secured and safeguarded while purchasing online and the trust issues will be solved. The consumers should also use strong passwords for more protection of their sensitive data and in case they do not trust the online seller, they should directly contact the shipping company to provide information like address and telephone numbers. Another thing to be noted is that the customers should never provide their social security numbers while placing an order as it is not a requirement for purchasing. Moreover, the URL of the e-commerce websites must be checked to ensure that it is safe and secure to use.
2. **Web Tracking:** In order to stop web tracking, the consumers need to delete the third-party cookies from their browser. For deleting the existing cookies, users can install programs like CCleaner which will only target to clean the third-party cookies on the hard drive. Users can also delete all their existing cookies and start over if they do not wish to install such programs. Once the third-party cookies are deleted, the next step is to change the settings of the browsers in order to avoid any third-party cookies in the future. This can be done by changing the internet settings in the browsers and selecting the "block third-party cookies and site data" from the options.
3. **Product Authenticity**: The customers should research about the website before buying products from it and in case they receive counterfeit products from an e-Commerce seller which claims to sell authentic products, they should first report it to the seller because sometimes even the seller is not aware of receiving fake products from the supplier. In case the seller refuses to refund the consumers, then they should report it to the appropriate or responsible entity.
4. **False Advertising and Information:** The consumers should only buy products from a trusted e-Commerce website or source and in case they are buying the products from the seller for the first time, they should insist on paying cash on delivery so that they are satisfied with the product they are receiving and in case of online payments, the unsatisfied customers should ask for a refund. If the consumers see a lot of price difference between the original product and the product being offered by the seller, they should refrain from buying it because it is a sign of false marketing.
5. **Email Spamming:** The consumers can stop receiving emails from a particular e-Commerce website by selecting the unsubscribe option if it is available and in case they do not have this option, they can mark the email as spam, so the emails from that source will always automatically be sent to the junk folder. Anti-spam software can also be used for this purpose. If the users keep receiving emails even after unsubscribing, then they should report them at the Internet Service Provider's Association who are responsible to regulate spam. It should be noted that there are a large number of identity thieves who send emails to the users and ask them to update their credit card information, online payment information etc. The users should not click any links provided in such emails or respond to any such request for financial information.
6. **Multiple Payments:** In order to avoid multiple payments, the users should make sure that their internet connection is strong. While making online transactions, the users should not refresh the webpage or close it and wait for the webpage to respond. In case of multiple payment, it should be reported to the seller as soon as possible so the money can be refunded. After the payment is made, the consumers should print or save the receipt for future references.

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7. **Late Delivery of Products:** Before placing an order online, the users should carefully read and pay attention to the shipping policies and facts. According to the law, the company should deliver the product within the time period stated in the ads. In case of no time frame, the merchant must deliver the products within 30 days or give an "Option Notice" to the user which will allow him to cancel his order and ask for a refund.

REFERENCES

Agag, G. (2019). E-commerce Ethics and Its Impact on Buyer Repurchase Intentions and Loyalty: An Empirical Study of Small and Medium Egyptian Businesses. *Journal of Business Ethics*, *154*(2), 389–410. doi:10.100710551-017-3452-3

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In *Action control* (pp. 11–39). Berlin: Springer. doi:10.1007/978-3-642-69746-3_2

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. doi:10.1016/0749-5978(91)90020-T

Ajzen, I., Czasch, C., & Flood, M. G. (2009). From Intentions to Behavior: Implementation Intention, Commitment, and Conscientiousness 1. *Journal of Applied Social Psychology*, *39*(6), 1356–1372. doi:10.1111/j.1559-1816.2009.00485.x

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Academic Press.

Al-Alawi, A. I. (2014). Cybercrimes, Computer Forensics and their Impact in Business Climate: Bahrain Status. *Research Journal of Business Management*, *8*(3), 139–156. doi:10.3923/rjbm.2014.139.156

Al-Alawi, A. I., & Abdelgadir, M. F. (2006). An Empirical Study of Attitudes and Opinions of Computer Crimes: A Comparative Study between UK and Kingdom of Bahrain. *Journal of Computational Science*, *2*(3), 229–235. doi:10.3844/jcssp.2006.229.235

Al-Alawi, A. I., & Al-Ali, F. (2015). Factors Affecting e-Commerce Adoption in SMEs in the GCC: An Empirical study of Kuwait. *Research Journal of Information Technology*, *7*(1), 1–21. doi:10.3923/rjit.2015.1.21

Al-Alawi, A. I., & Hafedh, E. A. (2006). Auditing of Information Privacy. *Information Technology Journal*, *5*(1), 177–182. doi:10.3923/itj.2006.177.182

Al-Alawi, A. I., & Al-Bassam, S. A. (2019). Evaluation of Telecommunications Regulatory Practice in the Kingdom of Bahrain: Development and Challenges. *International Journal of Business Information Systems*, *31*(2), 282–303.

Alani, F. (2009). *Photos: Top Ten Cybersquatter Cases*. Retrieved from http://www.computerweekly.com/photostory/2240107807/Photos-Top-ten-cybersquatter-cases/1/Cybersquatting-cases-Number-10-Dell

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Babu, R. (2011). *e-Commerce Ethical and Legal Issues*. Retrieved from https://blog.qburst.com/2011/03/e-commerce-ethical-and-legal-issues/

Balasoui, A. E. (2015). Unfair competition in online commerce. *Romanian Economic Business Review*, *10*(2), 39–47.

Bart, Y., Shankar, V., Sultan, F., & Urban, G. L. (2005). Are the drivers and role of online trust the same for all web sites and consumers? A large-scale exploratory empirical study. *Journal of Marketing*, *69*(4), 133–152. doi:10.1509/jmkg.2005.69.4.133

Battacherjee, A. (2002). Individual trust in online firms: Scale development and initial trust. *Journal of Management Information Systems*, *19*(1), 211–241. doi:10.1080/07421222.2002.11045715

Boland, R. (2011). *Military Website Spoofing Is No Laughing Matter*. Retrieved from http://www.afcea.org/content/?q=military-website-spoofing-no-laughing-matter

Bouma, G. D., & Atkinson, G. B. J. (1995). A Handbook of Science Social Research. Academic Press.

Bryman, A. (2012). *Social Research Methods* (5th ed.). Oxford, UK: Oxford University Press.

Bryman, A., & Bell, E. (2011). *Business Research Methods* (3rd ed.). Oxford, UK: Oxford University Press.

Byford, K. S. (1998). Privacy in cyberspace: Constructing a model of privacy for the electronic communications environment. *Rutgers Computer & Technology Law Journal*, *24*, 1.

Cabell, D. (2001). *E-Commerce: An Introduction*. Harvard Law School. Retrieved from https://cyber.harvard.edu/ecommerce/

Cohen, S. B. (2000). *Sample Design of the 1997 Medical Expenditure Panel Survey, Household Component (No. 1)*. US Department of Health and Human Services, Public Health Service, Agency for Healthcare Research and Quality.

Cowton, C. J. (1998). The use of secondary data in business ethics research. *Journal of Business Ethics*, *17*(4), 423–434. doi:10.1023/A:1005730825103

Culnan, M. (1993). How did they get my name? An Exploratory Investigation of Consumer Attitudes toward Secondary Information Use. *Management Information Systems Quarterly*, *17*(3), 341–363. doi:10.2307/249775

Curran, J., & Blackburn, R. A. (2001). Older people and the enterprise society: Age and self-employment propensities. *Work, Employment and Society*, *15*(4), 889–902. doi:10.1177/095001701400438279

D'Andrea, A., Ferri, F., & Grifoni, P. (2014). The E-Commerce Business Model Implementation. In *Encyclopedia of Business Analytics and Optimization* (pp. 2509–2520). IGI Global. doi:10.4018/978-1-4666-5202-6.ch224

Donaldson, T. (2003). Adding Corporate Ethics to the Bottom Line, Business Ethics (12th ed.). McGraw Hill.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Dozier, B. (2013). *Ethical issues in Electronic Commerce: Focus on Privacy*. Retrieved from https://barbradozier.wordpress.com/2013/06/20/ethical-issues-in-electronic-commerce-focus-on-privacy/#__RefHeading__1_1773874387

Feilzer, M. Y. (2010). Doing Mixed Methods Research Pragmatically: Implications for the Rediscovery of Pragmatism as a Research Paradigm. *Journal of Mixed Methods Research*, *4*(1), 6–16. doi:10.1177/1558689809349691

Flick, U. (2011). *Introducing Research Methodology: A Beginner's Guide to Doing a Research Project*. London: Sage.

Galant, V. (2005). Blending E-commerce Theory and Application. *IEEE Distributed Systems Online*, *6*(1), 5. doi:10.1109/MDSO.2005.2

George, J. F. (2002). Influences on the Intent to Make Internet Purchases. *Internet Research*, *12*(2), 165–180. doi:10.1108/10662240210422521

George, J. F. (2004). The Theory of Planned Behavior and Internet Purchasing. *Internet Research*, *14*(3), 198–212. doi:10.1108/10662240410542634

Goddard, W., & Melville, S. (2004). *Research Methodology: An Introduction* (2nd ed.). Oxford, UK: Blackwell Publishing.

Goulding, C. (2002). Grounded theory: A practical guide for management, business and market researchers. *Sage (Atlanta, Ga.)*.

Goyal, S., Sergi, B. S., & Esposito, M. (2019). Literature review of emerging trends and future directions of e-commerce in global business landscape. *World Review of Entrepreneurship, Management and Sustainable Development*, *15*(1/2), 226–255. doi:10.1504/WREMSD.2019.098454

Greblikaite, J., & Pervazaite, D. (2014). Ethical Issues related to E-Commerce: Case of Discount E-Shopping Site in Lithuania. *European Integration Studies*, (8), 124-130.

Hakim, C. (2000). *Work-lifestyle choices in the 21st century: Preference theory*. OUP.

Hoffman, D. L., Novak, T. P., & Peralta, M. (1999). Building consumer trust online. *Communications of the ACM*, *42*(4), 80–85. doi:10.1145/299157.299175

Hwang, Y., & Kim, D. J. (2007). Customer self-service systems: The effects of perceived Web quality with service contents on enjoyment, anxiety, and e-trust. *Decision Support Systems*, *43*(3), 746–760. doi:10.1016/j.dss.2006.12.008

Jie, M. W. (2012). *History of E-Business*. Retrieved from http://www.ehow.com/about_5282606_history-ebusiness.html

Jones, J. M., & Vijayasarathy, L. R. (1998). Internet consumer catalog shopping: Findings from an exploratory study and directions for future research. *Internet Research*, *8*(4), 322–330. doi:10.1108/10662249810231069

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Kant, P., Kind, O. M., Kintscher, T., Lohse, T., Martini, T., Mölbitz, S., & Uwer, P. (2015). HatHor for single top-quark production: Updated predictions and uncertainty estimates for single top-quark production in hadronic collisions. *Computer Physics Communications*, *191*, 74–89. doi:10.1016/j.cpc.2015.02.001

Kavaiya, R. (2015). *Scope of E-Commerce*. Retrieved from http://www.slideshare.net/rahulkavaiya07/scope-of-ecommerce-rahulkavaiya

Kelly, M., & Williams, C. (2016). *Busn: Introduction to Business*. Boston, MA: Cengage Learning.

Korper, S., & Ellis, J. (2000). *The E-commerce Book: Building the E-empire*. Elsevier.

Kothari, C. R. (2004). *Research Methodology: Methods and Techniques*. New Delhi: New Age International.

Kracher, B., & Corritore, C. L. (2004). Is there a special e-commerce ethics? *Business Ethics Quarterly*, *14*(1), 71–94. doi:10.5840/beq20041417

Kurt, G., & Hacioglu, G. (2010). Ethics as a customer perceived value driver in the context of online retailing. *African Journal of Business Management*, *4*(5), 672–677.

Leitner, M. L., & Strauss, C. (2008, July). Exploratory case study research on web accessibility. In *International Conference on Computers for Handicapped Persons* (pp. 490-497). Springer. 10.1007/978-3-540-70540-6_70

Lightner, N. J., & Eastman, C. M. (2002). User preference for product information in remote purchase environments. *Journal of Electronic Commerce Research*, *3*(3), 174–186.

Lyu, H. S. (2012). Internet policy in Korea: A preliminary framework for assigning moral and legal responsibility to agents in internet activities. *Government Information Quarterly*, *29*(3), 394–402. doi:10.1016/j.giq.2011.12.008

Maury, M. D., & Kleiner, D. S. (2002). E-commerce, ethical commerce? *Journal of Business Ethics*, *36*(1-2), 21–31. doi:10.1023/A:1014274301815

McDonald, B. D. (2001). The uniform computer information transactions act. *Berk. Tech. LJ*, *16*, 461.

McMurrian, R. C., & Matulich, E. (2006). Building customer value and profitability with business ethics. *Journal of Business & Economics Research*, *4*(11), 11–18.

Methmali, S. (2015). *Professional & Ethical Issues in Information Systems*. Retrieved from https://www.academia.edu/13801886/Professional_and_Ethical_Issues_In_Information_Systems?auto=download

Milne, G. R., & Rohm, A. J. (2000). Consumer privacy and name removal across direct marketing channels: Exploring opt-in and opt-out alternatives. *Journal of Public Policy & Marketing*, *19*(2), 238–249. doi:10.1509/jppm.19.2.238.17136

Minoli, D., & Minoli, E. (1997). *Web commerce technology handbook*. McGraw-Hill School Education Group.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Mukherjee, A., & Nath, P. (2003). A Model of Trust in Online Relationship Banking. *International Journal of Bank Marketing*, *21*(1), 5–15. doi:10.1108/02652320310457767

Nanehkaran, Y. A. (2013). An Introduction to Electronic Commerce. *International Journal of Scientific & Technology Research*, *2*(4), 190–193.

Nardal, S., & Sahin, A. (2011). Ethical issues in e-commerce on the basis of online retailing. *Journal of Social Sciences*, *7*(2), 190–198. doi:10.3844/jssp.2011.190.198

Nasir, M. A. (2004). Legal Issues Involved in E-Commerce. *Ubiquity*, *2004*(February), 2–2. doi:10.1145/985610.985607

Nawaz, M., & Alajmi, W. (2014). A Study on Consumer Preferences for E Shopping with reference to Bahraini Consumers. *European Journal of Business and Management*, *6*(29), 187–196. Retrieved from https://www.iiste.org/Journals/index.php/EJBM/article/view/16092/16239

Nemat, R. (2011). Taking a Look at Different Types of E-Commerce. *World Applied Programming*, *1*(2), 100–104.

Neuman, W. L. (2003). *Social Research Methods: Qualitative and Quantitative Approaches*. London: Allyn & Bacon.

Nicholson, S. W., & Bennett, T. B. (2009). Transparent practices: Primary and secondary data in business ethics dissertations. *Journal of Business Ethics*, *84*(3), 417–425. doi:10.100710551-008-9717-0

Niranjanamurthy, M., & Chahar, D. (2013). The study of e-commerce security issues and solutions. *International Journal of Advanced Research in Computer and Communication Engineering*, *2*(7).

Orji, R., Reisinger, M., Busch, A., Dijkstra, A., Stibe, A., & Tscheligi, M. (Eds.). (2016). *Proceedings of the Personalization in Persuasive Technology Workshop, Persuasive Technology 2016*. Retrieved from http://ceur-ws.urg

Paddison, C., & Englefield, P. (2003, November). Applying heuristics to perform a rigorous accessibility inspection in a commercial context. In ACM SIGCAPH Computers and the Physically Handicapped (No. 73-74, pp. 126-133). ACM. doi:10.1145/957205.957228

Paganini, P. (2014). *HSBC Turkey hacked, 2.7 million credit cards exposed*. Retrieved from https://securityaffairs.co/wordpress/30256/cyber-crime/hsbc-turkey-hacked.html

Pavlou, P. A. (2002, August). What drives electronic commerce? A theory of planned behavior perspective. In Academy of management proceedings (Vol. 2002, No. 1, pp. A1-A6). Briarcliff Manor, NY: Academy of Management.

Remenyi, D., Williams, B., Money, A., & Swartz, E. (1998). Doing research in business and management: An introduction to process and method. *Sage (Atlanta, Ga.)*.

Riggins, F., & Rhee, H. (1998). Toward a Unified View of Electronic Commerce. *Communications of the ACM*, *41*(10), 88–95. doi:10.1145/286238.286252

Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research Methods for Business Students* (6th ed.). London: Pearson.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Saunders, M., Lewis, P., & Thornhill, A. (2009). Understanding research philosophies and approaches. *Research Methods for Business Students, 4*, 106-135.

Saunders, M. N. (2011). *Research Methods for Business Students* (5th ed.). Pearson Education.

Schvaneveldt, J. D., & Adams, G. (1991). *Understanding research methods*. New York: Longman.

Shivani, H. G. (2012). A Study of Ethical and Social Issues in E-Commerce. *International Journal (Toronto, Ont.)*, *2*(7), 167–174.

Smith, H. J., Milberg, S. J., & Burke, S. J. (1996). Information privacy: Measuring individuals' concerns about organizational practices. *Management Information Systems Quarterly*, *20*(2), 167–196. doi:10.2307/249477

Snieder, R., & Larner, K. (2009). *The Art of Being a Scientist: A Guide for Graduate Students and their Mentors*. Cambridge, UK: Cambridge University Press. doi:10.1017/CBO9780511816543

Spencer, K. (2002). In the online world, child porn is explicit and easy to get. *Omaha World Herald, 17*, 1-2.

Srivastava, D. K. (2018). Taxation of E-Commerce: Problems and Possible Solutions. In *Contemporary Issues in International Law* (pp. 447–457). Singapore: Springer. doi:10.1007/978-981-10-6277-3_32

Stead, B. A., & Gilbert, J. (2001). Ethical issues in electronic commerce. *Journal of Business Ethics*, *34*(2), 75–85. doi:10.1023/A:1012266020988

Suddaby, R. (2006). From the editors: What grounded theory is not. Academic Press.

Teddlie, C., & Tashakkori, A. (2003). Major issues and controveries inthe use of mixed methods in the social and behvioral sciences. Handbook of mixed methods in social & behavioral research, 3-50.

Teo, T., & Liu, J. (2007). Teo, Thompson SH, and Jing Liu. "Consumer trust in e-commerce in the United States, Singapore and China. *Omega*, *35*(1), 22–38. doi:10.1016/j.omega.2005.02.001

Tiwari, S., & Singh, P. (2011). E-commerce: Prospect or threat for environment. *International Journal of Environmental Sciences and Development*, *2*(3), 211–217. doi:10.7763/IJESD.2011.V2.126

Traver, C. G., & Laudon, K. C. (2008). *E-commerce: business, technology, society*. Pearson Prentice Hall/Pearson Education.

Treese, G. W., & Stewart, L. C. (2003). *Designing systems for Internet commerce*. Addison-Wesley Professional.

Udo, G. J. (2001). Privacy and security concerns as major barriers for e-commerce: A survey study. *Information Management & Computer Security*, *9*(4), 165–174. doi:10.1108/EUM0000000005808

Venkatesh, A. (1998). Cybermarketscapes and consumer freedoms and identities. *European Journal of Marketing*, *32*(7/8), 664–676. doi:10.1108/03090569810224065

Vladimir, Z. (1996). Electronic commerce: Structures and issues. *International Journal of Electronic Commerce*, *1*(1), 3–23. doi:10.1080/10864415.1996.11518273

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Wall, J. E. (2014). *Types of E-Commerce*. Retrieved from http://bloomidea.com/en/blog/types-e-commerce

Whysall, P. (2000). Addressing ethical issues in retailing: A stakeholder perspective. *International Review of Retail, Distribution and Consumer Research*, *10*(3), 305–318. doi:10.1080/095939600405992

Williams, J. G., & Premchaiswadi, W. (2016). On-Line Credit Card Transaction Processing and Fraud Prevention for E-Business. In Encyclopedia of E-Commerce Development, Implementation, and Management (pp. 827-846). IGI Global.

Yin, R. K. (2017). *Case study research and applications: Design and methods*. Sage publications.

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Chapter 85
Cloud Security in E-Commerce Applications

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ABSTRACT

In this chapter, the authors focus on the most fundamental barrier in the e-commerce application's adoption: security. The most significant or important aspect to explore in cloud computing is how to keep the data secure in the most efficient way with cutting-edge technologies. Cloud computing has taken its place by providing its convenient services like on-demand service, pay-per-use, rapid elasticity, resource pooling, and other lucrative facilities. In this chapter, the authors will firstly describe the introduction related to cloud computing, major characteristics, types, and a few security concerns and issues in cloud computing. Furthermore, they discuss the introduction of e-commerce applications, how it is interlinked with cloud computing, and what the possible threats are. Moreover, what the possible solutions could be are discussed, so that we can secure data on both user side as well as on the server side. The authors suggest some existing solutions at the end of the chapter.

INTRODUCTION

E-Commerce has become an essential part of the user's daily life activities. Detailed discussions on E-commerce applications are already available in previous chapters of this book. Just to show the importance of E-commerce applications once the CEO of the famous Company (Amazon.com™), Jeff Bezos said, "I should have 3 million stores on the Web if I have 3 million customers" (Schafer, Konstan, & Riedl, 2001). The understanding related to consumer trust is very much essential for the growth and develop-

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ment of e-commerce but it involves the number of technical issues and challenges including security and privacy (Ahuja, 2000; Feldman, 2000). In the Information Technology domain, cloud computing has become one of the booming technology. Due to elasticity, availability, vast infrastructure and better support for software, cloud technology attracts the developers of e-commerce applications towards it. The main advantages of cloud computing include low-cost infrastructure (Software, Hardware and their license) and some big companies like Microsoft and Google also offer cloud services for free or on very less cost. Despite all benefits, the major concern for the cloud's implementation in the e-commerce domain is the security issue. Security in the cloud includes data security and confidentiality related to privacy(Saleh, 2012). In this chapter, our main focus area is the Security of E-commerce related to the cloud. Transporting sensitive and important data to the cloud data centers and then to maintain its security is the most important concern nowadays. The cloud service provider (CSP) must ensure and responsible to secure and protect data traffic that travels between the application to the cloud data centers. CSP's signs a Service Level Agreement (SLA) with the service user of cloud to certify and ensure the level of security, privacy, and also facilities the user wants.

For a detailed overview of the topic and discussion, this chapter is further divided into different small sub-sections. Section 1 includes details on Cloud Computing, (a) its characteristics, (b) major service providers of cloud, (c) Deployment Models of cloud (d) Service Models of cloud (e) Security Concerns and Issues in Cloud Computing. Section 2 discusses, the Introduction of E-commerce Application and further subdivides into 2 sections (a) E-Commerce application and its relation with cloud and (b) include the Security Concerns in E-Commerce applications. Section 3 is the last section of the chapter that is based on the Solutions of Cloud Security in an E-commerce application.

CLOUD COMPUTING

Cloud computing model enables the network to access shared resources that can be provided on-demand and user can access it anywhere. This shared pool of resources is used by cloud service. Users can use this by signing an SLA with a CSP (Dikaiakos, Katsaros, Mehra, Pallis, & Vakali, 2009). Detailed characteristics and techniques are given below.

a. **Cloud computing characteristics**

Cloud have different characteristics related to their usage, In this section, we will summarize the most common characteristics defined by some famous researchers (Mell & Grance, 2011)

i. Scalability

As we know that the world's most famous giants in cloud services are Google, Amazon, Yahoo, and others, Millions of servers are located all around the world by the CSP's. They can easily add or remove nodes and servers with little modification to cloud server and infrastructure due to the scalable property of cloud.

ii. Virtualization and Broad Network Access

The client can access all the services by using any medium like mobiles, laptops, tablets, and workstations. Cloud has a built-in capacity to handle and virtualize all the physical resources used by the client

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iii. Self-Service On-demand
A user or consumer can easily demand any service related to cloud i-e provisioning of computing resources like storage, server time, etc. without any human intervention. You just have to sign a contract of services by any of CSP's and simply you have to pay charges mentioned in your contract to use all existing services.

iv. Shared Resource Pooling
Cloud is considered as a shared pool of infinite resources. CSPs resources related to computing are arranged/pooled to serve multiple consumers request using the multi-talented model that can be easily added or released resource according to the user's virtual and physical demand. Some example resources include storage, processing, network bandwidth, and memory.

v. Minimum Cost & Availability:
Cloud services basically reduce the manpower you need to maintain the setup and to maintain the servers, you can easily maintain a complete virtual office and you don't need to rent an office hire the staff to run your setup. All these costs are reduced by using cloud services. Cloud services are quite available anywhere at any time. You just need an active internet connection and a device that have OS and Browser. It can either be mobile, laptop, tablet or another similar device.

vi. Easy to Measure and Manage
Applications that are used to access the cloud environment are quite easy to use as compared to other related environments. At the user's end, they just need a browser on a computing device and have an active internet to connect with CSP. Cloud Systems can automatically optimize and control the resources by measuring capability related to services (e.g., processing, storage, active user accounts, and bandwidth).

b. Major Service Providers of Cloud
These days there are many companies that are providing cloud services. Below Tables 1- summarize few major stakeholders in Cloud-related services.

Table 1. Cloud Services by Amazon ("Amazon Web Services," 2019)

Name of Cloud	Services
EC2(Elastic compute cloud) by Amazon	Provide elastic computing capacity on the cloud
RDS(Rational Database Service) by Amazon	Provide tools for managing DB
Simple DB by Amazon	Provide database functionalities
Scalable DNS by Amazon	Provide secure routing server over the internet
Elastic Map Reduce by Amazon	Provide a vast amount of data on the cloud

Table 2. Cloud Service by Google ("Google Cloud,")

Name of Cloud	Services
Compute Engine by Google	An IaaS, where customer can divide workload in virtual server
App Engine by Google	A PaaS, where customer can develop an application
Cloud storage by Google	It is used for storage of any type, capacity
Cloud SQL by Google	Deal with relational DBMS
Cloud data store by Google	Deal with unstructured DB
Big query by Google	Used for a large amount of data

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Table 3. Cloud Services by Microsoft ("Microsoft Azure," 2019)

Name of cloud	Services
Infrastructure	On-demand infrastructure with full support
Media	This cloud is dedicating for all type of media
Web development	Platform to build and develop web apps
Mobile development	Platform to build and develop mobile apps
Storage	A large cloud storage

c. Deployment Models

Four Deployment Models are commonly considered for the cloud that the CSP's can provide to the user (Mell & Grance, 2011; Zissis & Lekkas, 2012), are:

i. **Private Cloud:** CSP's provide exclusive access to a single organization. The organization may comprise of multiple consumers. It may be owned, managed, and operated by a third party itself.

ii. **Public Cloud:** Infrastructure of the cloud may be provisioned for an open-access usage for the general public. It may be owned, managed and operated by an academic, business, or some kind of non-government/private or government organization, or maybe the mixture of them.

iii. **Hybrid Cloud:** Infrastructure commonly used in the cloud that is composed of two or more different cloud infrastructures (private, community or public). Hybrid cloud bonds together standardized technologies that enable application and data portability

iv. **Community Cloud:** This type of infrastructure is for exclusively used by a community of consumers from different organizations that may have bilateral concerns, For example, they may have a similar compliance consideration, security, and privacy policies. Community cloud may be operated, managed and owned by one or more than one organization.

d. Service Models of cloud

There are three main Service Models of cloud that the CSP's provide to the user (Mell & Grance, 2011; Takabi, Joshi, & Ahn, 2010; Vaquero, Rodero-Merino, Caceres, & Lindner, 2008; Zissis & Lekkas, 2012), they are:

i. Infrastructure as a Service (IaaS)

IaaS provides customer or user provision to use any resource like storage, network, processing, and other fundamental resources virtually. This is also working as a "virtual data center" in which the user can use any resource from any place virtually by just connecting with the cloud. The consumer can also deploy any arbitrary software on the cloud which may include any software application or operating system.

ii. Platform as a service (PaaS)

PaaS delivers an environment to the consumer where the consumer can organize and deploy his own created business application on cloud. These applications may be built with any programming language, tools, and libraries supported by service providers. In PaaS, consumers don't control over the operating system and other core components of cloud but they can manage or use only its own application.

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iii. Software as a service (SaaS)
SaaS offers consumers access to software that already installed on the cloud by providers. SaaS will be the most useable server of the cloud as the usage of cloud increases with the passage of time. The consumers haven't need to install software on their own machine. They just need a browser with a good internet connection to use this service. The software uses the computation power of the server. Figure 2 categorizes security architecture with respect to Cloud Services.

Table 4. Summarize the previously explained services of cloud w.r.t to Application Software & OS

Services	Application software	Operating system
IaaS	Customer	Customer
PaaS	Customer	CSP
SaaS	CSP	CSP

Table 5. Summary of the previously explained models of cloud w.r.t to Security

Models	*Owned by*	*Managed by*	*Security level*
Private	Single organization	Single organization/CSP	Very high
Public	CSP	CSP	Low
Hybrid	Organization/CSP	Organization/CSP	Medium
Community	Several organizations	Several organizations/CSP	High

e. Security Issues in Cloud Computing

If we talk about cloud computing there are some concerns and challenges also exists. (Popović & Hocenski, 2010) discuss some major concerns related to cloud security. (i) If you are using the cloud computing model the physical security related to data and information will lose immediately because you are sharing your computational resources with other companies. You have no knowledge about where data is placed on cloud and resources are running. (ii) Storage services provided by one CSP may be mismatched or incompatible with other vendor or service provider. So in future, if you want to migrate or shift your data from one to the other. It might be possible you face issues like Microsoft cloud is irreconcilable/incompatible with cloud services by Google (Mont, Pearson, & Bramhall, 2003). (iii) Who controls the keys for Encryption/Decryption? If keys go in some wrong hands then there are chances to harm or misuse of your important data. (iv) Ensuring the integrity of data is also a big challenge. For example, if you want to move, transfer, store and retrieve your data which authorized channel or standard you will use? A common standard yet doesn't exist. (v) Almost all E-commerce applications use payments gateways. In case of Payment Card Industry Data Security Standard (PCI DSS), your records and logs related to data must be provided to security managers and regulators (Salmon, 2008), which is also the big concern for a customer using cloud services. (vi) Some countries strictly restrict on their citizen's data that it can be stored for a specific period of time and some countries restrict to

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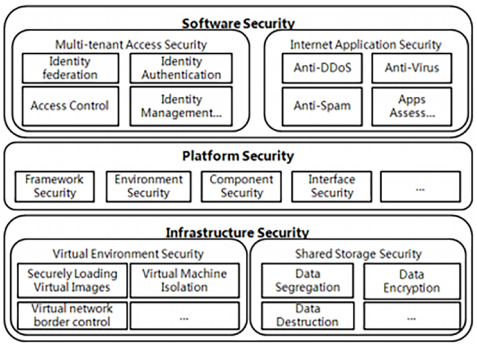
place financial data of their citizens outside so E-Commerce using cloud must manage this issue. The fluid and dynamic nature of virtual machines make it problematic to maintain core issues like security and auditability of data.

User can hold key to encrypt or decrypt data but it is less secure on user side because there is a chance that he might take this as ordinary key and might forget the key or it may be stolen or misused by someone else without the owner's information. So it is not secure at all on the user end. The popular cloud services including Mega and SpiderOak are a few cloud service providers that allow the user to use specific client service applications that include encryption function during data/file uploading and decryption while data/file downloading. But this platform allows the user to keep the keys by themselves but as mentioned earlier, It is not secure at all to keep key on the user end. According to the survey ("Top 10 Security Concerns for Cloud-Based Services," 2015), the top concerns are Data Breaches, Insider Threats, Malware Injection, Abuse of Cloud Services, Insecure APIs, Shared vulnerabilities, Denial of Service Attacks, Hijacking of Accounts, Insufficient Due Diligence, and Data Loss.

Figure 1 is categorizing the security-related issues in the cloud depends upon the services that clouds are providing to its customer's i-e Software, Platform and Infrastructure as mentioned in detail earlier

Figure 1. Security Architecture of Cloud Computing w.r.t Services (Chen & Zhao, 2012)



MAIN FOCUS OF THE CHAPTER

E-Commerce Applications- Check

E-commerce is growing and popular web application that enables the partners, employees, and customers to achieve a variety of services and purposes. E-commerce Association defines "E-commerce covers any form of administrative transaction or business or information exchange that is executed by using any Information and Communication Technology (ICT)" (Saleh, 2012), There are different types of e-commerce applications such as business-to-consumer (B2C), consumer-to-business (C2B), business-to-business (B2B), and consumer-to-consumer (C2C) There are several organizations like government agencies or academic institutions that use E-commerce to improve services or reduce expenses. (King, Chung, Lee, & Turban, 1999)

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E-Commerce Application and Cloud Computing

E-commerce applications can take benefits from the cloud in multiple ways. The most common benefits include Usage of Infrastructure, Platform, and Services. Cloud gives ease to E-commerce developers in multiple ways. For example low cost, Flexibility, Accessibility, No or minimal hardware requirement, no need to install specific software. In addition to these benefits cloud computing have some disadvantages also like Internet speed may affect overall performances of E-commerce application. If application developer takes long term subscription of cloud then subscription cost will be more than buying actual hardware by own. And the most costly disadvantage of the cloud is data security regarding applications and their Users. Cloud security issues related to E-commerce Application is discussed in detail later in this chapter

Figure 2. Compares the Benefits and Disadvantage of Using Cloud in E-Commerce Application (Kumar & Charu, 2015)

Advantages	**Disadvantages**
Shared Resources	Internet Required
Automatic Software Integration	Dependency and vendor lock-in
Cost Efficient	Non-Interoperability
Easy Access to Information	Less Reliability
Quick Deployment	Technical Issues
Almost Unlimited Storage	Security in the Cloud
Backup and Recovery	Prone to Attack
Better Hardware Management	Increased Vulnerability
Mobility	Less Control
Versatile Compatibility	No always many room

ISSUES, CONTROVERSIES, PROBLEMS

Security Issues in E-Commerce

With the increase in the usage of e-commerce applications, the concerns about users security also increase. CSPs are responsible for the security of client personal data but they always claim that their data must secure and safe on E-commerce applications. But still, cloud service worries about their personal data and information because their data is totally in the cloud service providers hands. Many customers are using the cloud services for the first time so they are not familiar with the cloud security concerns that is why they hesitate to use it because they don't want to lose the control on their private data. As the big organization is storing a large amount of their personal and business data on the cloud, this data

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further processed and then transmitted. If any problem occurs during any of the processes then there are chances that whole data might be corrupted or harmed completely. Some security-related issues are discussed below

i. Issues during data storage

These days, mostly E-commerce sites are using cloud computing services for data storage and other important purposes. In cloud computing a data center stores a large amount of data. All the private information stored on the cloud side. E-commerce companies are also concerned about how the client's personal data stored on cloud data centers. In cloud computing, users store all the private data on a virtual data center which may be located anywhere in this world. E-commerce application data can be stored on any virtual data center. The application is mostly unaware of its location of data. They are not clear about where the data is to store and in which country their data is placed by CSP's. As millions of user are using a single application at the same time and store their personal data on applications. The main concerns here are (i) Data is encrypted or not? (ii) Is the data stored on a single data center (location) or in a different position? The similar storage concerns thus lead towards the data security issue which is one of the major issues in E-commerce applications using cloud services.

ii. Data transmission issue

In the cloud computing model, the business data is transmitted to the cloud side over the internet because the E-commerce companies are also concerned about the client data. So they want to be treated as confidential and should be encrypted before transmission so that itis not misused or captured by an unauthorized person. Keep it as strictly confidential. by using some security measures. But as data is transmitted on the internet so there are chances of corruption and miss utilization of data.

iii. Data Audit issue

If an organization manages its internal data, then in order to check the accuracy of the data, the organization needs to involve a third party that ensures the correctness of the data. You can take this as an example that if the data is transmitted from user A to user B some measures need to be checked whether the correct data is transmitted to another end. In the middle of the transmission the data is changed or not? Or due to any attack, the complete data reached on other end or not? Is it completely reached on other end or not? In a cloud computing environment, it is the CSP's responsibility to ensure the correctness of the data.

iv. Viruses and hackers attack issues:

As virtualization is used on large scale in a cloud environment, a hacker can take advantage from this technology by writing a virtual machine in form of malicious software that will be more difficult for the user to detect and remove viruses from their data. As they are unaware of hackers. So in this situation, e-commerce applications data will be harmed very badly. So more security techniques should be adopted to prevent such hackers and viruses. Hackers can take access to your data by using different means, so if your data is on some remote place i-e on Cloud it has more chances to effect with system

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intrusion and social engineering attacks by hackers. They can misuse this data by taking control over the data blackmail the clients and e-commerce application owners. They can also destroy your data by taking monetary benefits from your competitor.

Table 6. Comparison of CSP's according to different parameters

Application Name	Price plan	Free storage	Max storage	Mobile Support Device	Security	SLA	API
DropBox	9.99$/ month	2GB	10GB	Android, IPad, iPhone, Blackberry	SSL, AES-256, Encryption	Yes	SDK for Major Platform
Google Drive	1.99$/ month	15GB	30TB	Android systems, iPhone, IPad	SSL	Yes	Java, Php, JS, .Net
OneDrive	25$/ year	7GB	100GB	Android,iPhone, Windows phone	SSL, No built-in, Encryption	Yes	REST API
ICloud	20$/ year	5GB	50GB	iPhone. IPad, iPod Touch	SSL	Yes	Yes

SOLUTIONS AND RECOMMENDATIONS

Solutions of Security in E-commerce Related to Cloud

As discussed earlier Security is our main concern when we talk about e-commerce. Different researchers have provided us with various solutions. Few of them are discussed here in this chapter.

(Zhang, Zhang, & Sun, 2010), worked on trust and try to solve the issues related to transaction security. A model was proposed which based on cloud model theory and the experiments in their work shows that this model is practical and valid for the merger of trust cloud. But this model was only applied to the customer to customer (C2C) E-commerce. (Pawar, Sajjad, Dimitrakos, & Chadwick, 2015) proposed a host and application-level framework that provide more security to the user's data by using resources in a cloud federated environment. It performs encryption on file level so it allows the user to monitor at the host or on the application level. (Rizvi, Ryoo, Kissell, Aiken, & Liu, 2018) proposed a framework to evaluate the security strength by necessary quantitative matrices. The core factors included in the matrix are interoperability, transparency, and portability. *(Hawedi, Talhi, & Boucheneb, 2018)* proposed a security service detection system by using intrusion for public cloud systems. In their work researchers used an algorithm that fills the gaps in an existing security system that provides more security to cloud service user which also help the CSPs to maintain security in an existing system. (Sharma, Dhote, & Potey, 2016) proposed an identity and access management system (IAMaaS). It was an on-demand portable available pay-per-use cost model. A similar Identity and Access Management architecture was also purposed by (Yang, Chen, Wang, & Cao, 2014) to achieve similar security requirements like Data Loss Prevention, Strong Authentication, and Security as a Service. The main benefit of their work was standardized architecture, comprehensive identity management, and scalable system design.

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In another work by (Samlinson & Usha, 2013) authors proposed user-centric trust identity service that was aimed to create trust among CSP's. The model proposed in their work had Authorization, Authentication, Provisioning and an Audit module along with Trust agent. When user move from one CSP to other their credentials follow in the federated environment. The trust agent in the Identity module sends trust token with the user's attribute which creates trust among CSP's. (Zissis & Lekkas, 2012) gave the concept of a unique security system that helps to eliminate the threats. They introduced a concept that the use of a trusted third party to ensure the use of Public Key Infrastructure (PKI). This solution provided security, integrity, authentication, and confidentiality of user data because of the use of public key infrastructure.

(Costa et al., 2005) Purposed a collaborative end to end approach for prevention and detection of the worms. Authors called this approach as Vigilante. Some specific software is needed to run on each host that captures information about the worm exploitation and spread or distribute a Self-Certifying Alert (SCA) to warn other hosts regarding the worm spreading. Then end host used that information in SCA to check that if the message or coming information vulnerable to worm then apply a host-based filter to protect from the worm. (Egele, Kruegel, Kirda, Yin, & Song, 2007) Proposed a spyware analysis tool that monitors the flow of important and sensitive data. The tool is proposed for the web browser and browser helps objects. This tool analyzed the suspicious behavior and then generate a report about data being sent and the location where this data was sent. (Elbadawi & Al-Shaer, 2009) Proposed to the use of Timm, that replay with log to achieve availability of few important services like FTP, HTTP, and SMTP. The traffic of every server is replayed and recorded to clone the virtual machines at some random time intervals. If some attack happened on any virtual machine it can be detected on time and then it automatically excludes the traffic under attack and high-performance reply to all virtual machines for fast recovery on their services.

Recently (Hawedi et al., 2018) purposed a security architecture that offered an elastic and efficient paradigm for security as a service for cloud tenants. The third parties could offer a purposed solution of security to their tenants or tenants could monitor their VM's. It was designed for the deployment on the top of the hybrid cloud. This also used anomaly detection and signature-based techniques. In past similar architecture also purposed by (Tupakula, Varadharajan, & Akku, 2011) that was deployed on IaaS against the cloud's attack. That monitored the traffic and ensured that neither traffic belongs to an intrusion or nor contain any malicious content.

(Juncai & Shao, 2011) suggested some basic tips related to safety and security which are, (a) the data that is stored in the cloud should be backed up frequently so in case of attack, theft or any other loss it can easily recover our data. (b) Your files on Cloud must be in Encrypted form and this encryption is also protected by a strong password. Encryption will protect your data if you want to move or shift from one cloud server r data center to another. (c) Hacker, data criminal or another person who wants to destroy your data on the cloud can enter into your network through Email. So the suggested method is to use a secure or encrypted email service for this author suggested using M Ute email or Hush mail for email related services. (d) Always use credible cloud services from a well-reputed organization and always read their privacy statement related to data security first before any kind of contract and agreement. (e) Always use Filters for data security. The author suggested taking services from companies like Web sense, vent, and VeriTest offers data monitoring and prevents sensitive data. Some other general tips were Enhance security-related awareness in clients and developers.

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FUTURE RESEARCH DIRECTIONS

For Further studies on Security Solutions presented in past you can read the mentioned work of researchers (Mather, Kumaraswamy, & Latif, 2009), (Alharkan & Martin, 2012), (Dunlap, King, Cinar, Basrai, & Chen, 2002; Garfinkel & Rosenblum, 2003),

REFERENCES

Ahuja, V. (2000). Building trust in electronic commerce. *IT Professional*, *2*(3), 61–63. doi:10.1109/6294.846215

Alharkan, T., & Martin, P. (2012). Idsaas: Intrusion detection system as a service in public clouds. *Proceedings of the 2012 12th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (ccgrid 2012)*. 10.1109/CCGrid.2012.81

Amazon Web Services. (2019). Retrieved from https://aws.amazon.com/

Chen, D., & Zhao, H. (2012). *Data security and privacy protection issues in cloud computing.* Paper presented at the 2012 International Conference on Computer Science and Electronics Engineering. 10.1109/ICCSEE.2012.193

Costa, M., Crowcroft, J., Castro, M., Rowstron, A., Zhou, L., Zhang, L., & Barham, P. (2005). *Vigilante: End-to-end containment of internet worms.* Paper presented at the ACM SIGOPS Operating Systems Review. 10.1145/1095810.1095824

Dikaiakos, M. D., Katsaros, D., Mehra, P., Pallis, G., & Vakali, A. (2009). Cloud computing: Distributed internet computing for IT and scientific research. *IEEE Internet Computing*, *13*(5), 10–13. doi:10.1109/MIC.2009.103

Dunlap, G. W., King, S. T., Cinar, S., Basrai, M. A., & Chen, P. M. (2002). ReVirt: Enabling intrusion analysis through virtual-machine logging and replay. *ACM SIGOPS Operating Systems Review, 36*(SI), 211-224.

Egele, M., Kruegel, C., Kirda, E., Yin, H., & Song, D. (2007). *Dynamic spyware analysis*. Academic Press.

Elbadawi, K., & Al-Shaer, E. (2009). TimeVM: A Framework for online intrusion mitigation and fast recovery using multi-time-lag traffic replay. *Proceedings of the 4th International Symposium on Information, Computer, and Communications Security*. 10.1145/1533057.1533077

Feldman, S. (2000). The changing face of e-commerce: Extending the boundaries of the possible. *IEEE Internet Computing*, *4*(3), 82–83. doi:10.1109/MIC.2000.845395

Garfinkel, T., & Rosenblum, M. (2003). *A Virtual Machine Introspection Based Architecture for Intrusion Detection.* Paper presented at the Ndss. Google Cloud. Retrieved from https://cloud.google.com/

Hawedi, M., Talhi, C., & Boucheneb, H. (2018). Security as a service for public cloud tenants (SaaS). *Procedia Computer Science*, *130*, 1025–1030. doi:10.1016/j.procs.2018.04.143

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Juncai, S., & Shao, Q. (2011). Based on Cloud Computing E-commerce Models and ItsSecurity. *International Journal of e-Education, e-Business, e- Management Learning*, *1*(2), 175.

King, D., Chung, H. M., Lee, J. K., & Turban, E. (1999). *Electronic commerce: A managerial perspective*. Prentice Hall PTR.

Kumar, R., & Charu, S. (2015). Comparison between cloud computing, grid computing, cluster computing and virtualization. *International Journal of Modern Computer Science and Applications*, *3*(1), 42–47.

Mather, T., Kumaraswamy, S., & Latif, S. (2009). *Cloud security and privacy: an enterprise perspective on risks and compliance*. O'Reilly Media, Inc.

Mell, P., & Grance, T. (2011). *The NIST definition of cloud computing*. Academic Press.

Microsoft Azure. (2019). Retrieved from https://azure.microsoft.com/en-us/

Mont, M. C., Pearson, S., & Bramhall, P. (2003). *Towards accountable management of identity and privacy: Sticky policies and enforceable tracing services.* Paper presented at the 14th International Workshop on Database and Expert Systems Applications. 10.1109/DEXA.2003.1232051

Pawar, P. S., Sajjad, A., Dimitrakos, T., & Chadwick, D. W. (2015). *Security-as-a-service in multi-cloud and federated cloud environments.* Paper presented at the IFIP international conference on trust management. 10.1007/978-3-319-18491-3_21

Popović, K., & Hocenski, Ž. (2010). *Cloud computing security issues and challenges.* Paper presented at the The 33rd International Convention MIPRO.

Rizvi, S., Ryoo, J., Kissell, J., Aiken, W., & Liu, Y. (2018). A security evaluation framework for cloud security auditing. *The Journal of Supercomputing*, *74*(11), 5774–5796. doi:10.100711227-017-2055-1

Saleh, A. A. E. (2012). A proposed framework based on cloud computing for enhancing e-commerce applications. *International Journal of Computers and Applications*, *59*(5).

Salmon, J. (2008). Clouded in uncertainty–the legal pitfalls of cloud computing. *Computing*, 24.

Samlinson, E., & Usha, M. (2013). *User-centric trust based identity as a service for federated cloud environment.* Paper presented at the 2013 Fourth International Conference on Computing, Communications and Networking Technologies (ICCCNT). 10.1109/ICCCNT.2013.6726636

Schafer, J. B., Konstan, J. A., & Riedl, J. (2001). E-commerce recommendation applications. *Data Mining and Knowledge Discovery*, *5*(1-2), 115–153. doi:10.1023/A:1009804230409

Sharma, D. H., Dhote, C., & Potey, M. M. (2016). Identity and access management as security-as-a-service from clouds. *Procedia Computer Science*, *79*, 170–174. doi:10.1016/j.procs.2016.03.117

Takabi, H., Joshi, J. B., & Ahn, G.-J. (2010). Security and privacy challenges in cloud computing environments. *IEEE Security and Privacy*, *8*(6), 24–31. doi:10.1109/MSP.2010.186

Top 10 Security Concerns for Cloud-Based Services. (2015). Retrieved from https://www.imperva.com/blog/top-10-cloud-security-concerns/

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Tupakula, U., Varadharajan, V., & Akku, N. (2011). *Intrusion detection techniques for infrastructure as a service cloud.* Paper presented at the 2011 IEEE Ninth International Conference on Dependable, Autonomic and Secure Computing. 10.1109/DASC.2011.128

Vaquero, L. M., Rodero-Merino, L., Caceres, J., & Lindner, M. (2008). A break in the clouds: Towards a cloud definition. *Computer Communication Review*, *39*(1), 50–55. doi:10.1145/1496091.1496100

Yang, Y., Chen, X., Wang, G., & Cao, L. (2014). *An identity and access management architecture in cloud.* Paper presented at the 2014 Seventh International Symposium on Computational Intelligence and Design. 10.1109/ISCID.2014.221

Zhang, J., Zhang, J.-A., & Sun, P. (2010). Trust evaluation model based on cloud model for C2C electronic commerce. *Comput. Syst. Appl*, *19*(11), 83–87.

Zissis, D., & Lekkas, D. (2012). Addressing cloud computing security issues. *Future Generation Computer Systems*, *28*(3), 583–592. doi:10.1016/j.future.2010.12.006

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Chapter 86
Taxing E-Commerce:
Its Challenges and Future Prospects – A Comparative Analysis

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ABSTRACT

With the advent of globalization, world governments have been under pressure to face the significant challenges of e-commerce. The vast growth of e-commerce, sale and purchase of commodities over the internet, has ruined the existing tax structure. With the smart phones and internet getting cheaper, the tax administration of every country is facing the difficulty of protecting their share of revenue in this dynamic e-market. The tussle between the developed and developing country is going to stretch as it would be an alarming signal for the reduction of the tax base for the developing economy. E-commerce challenges the current International taxation regime. In the present scenario, personal income tax is being taxed by the resident country while business income is being taxed by the source country.

INTRODUCTION

The rapid growth of e-commerce, especially the sale of goods and services over the internet, has fuelled a debate about the taxation regimes to be used. The shift from a physically oriented commercial environment to a knowledge- based electronic environment poses serious and substantial issues in relation to taxation and taxation regimes. Tax administrations throughout the world face the formidable task of protecting their revenue base without hindering either the development of new technologies or the involvement of the business community in the evolving and growing e-market place. Concerns of governments centre on the impact of e-commerce on the state and local revenue. Whereas states can impose a tax on residents' purchases from out-of-state vendors, they cannot impose an obligation on those vendors to collect the tax unless the vendor has a substantial presence, or nexus, in the state. These problems will be greater for developing countries. The shrinking of the tax base will have a disproportionate effect and further jeopardize the already fragile economy of the developing world.

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E commerce offers potential benefits in the form of enhanced participation in international value chains, increased market share at the very lower cost. Changes in the ICT landscape have enlarged the scope for businesses in developing countries to engage in the E commerce. In September 2104 the initial public offering on the New York stock exchange of Alibaba group- a Chinese commerce enterprise was the world's largest ever raising $2.5 billion. Earlier in the same year African on line Jumia which is part of African Internet Group, announced that it was expanding into Cameroon, Ghana and Uganda, complementing its existing operations in Egypt, Kenya, and Cameroon. These actions of the Alibaba and Jumia are to understand the development of E commerce in developed as well as developing countries. Indeed, the fastest growth of e- commerce is now witnessed in Asia and Africa.

Definition of Ecommerce

As per the OECD the definition of the E- commerce, "The sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders. The goods or services are ordered by those methods, but the payment and the ultimate delivery of the goods or services do not have to be conducted online. An e-commerce transaction can be between enterprises, households, individuals, governments, and other public or private organizations. To be included are orders made over the web, extranet or electronic data charge. The type is defined by the method of placing the order. To be excluded are orders made by telephone calls, facsimile or manually typed e-mail."

Types of Ecommerce

- **B2B Commerce:** Accounts for the bulk of ecommerce . It involves transactions between businesses, such as between a manufacturer and a wholesaler, or between a wholesaler and a retailer.
- **B2C Commerce:** It involves sales by "pure play" e commerce enterprise to consumers and by traditional bricks and mortar retail or manufacturing firm that's add an online sales channel. Selling directly to the consumers via ICT networks can help micro and small businesses to reach new market both domestically and internationally.
- **C2C Commerce:** It covers online auctions platforms (such as ebay or Taobao) and sales within online communities. It platforms offer possibilities for informal enterprises to engage in ecommerce
- **B2G Commerce:** These transactions are similar to B2B, except that the buyer, in this case is a government entity such as in the case of public procurement.

The Global Trends

Measuring ecommerce is challenging there is no comprehensive data for the ecommerce value of domestic or international transactions. Available resources tells us that it has developed significantly in the last decade and still progressing in the developing countries especially in Asia. In the US, B2B, total revenue from the ecommerce sector amounted to $5.4 trillion. In Canada almost 64% sales were attributed to e commerce was from B2B in Korea 91% B2b sales of all ecommerce sales. In Russia 57% was from B2B.

More and more enterprise is exploiting the opportunities created by improved connectivity and great willingness by the consumers to buy online. According o some estimates there are more than 1 million

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companies operating in Ecommerce. Largest Internet retailer companies around the world are Alibaba, Amazon, apple Otto and B2B Digital in various parts of the world

In India e-commerce market was worth about $3.9 billion in 2009, it went up to $12.6 billion in 2013. In 2013, the e-retail segment was worth US$2.3 billion. About 70% of India's e-commerce market is travel related. According to Google India, there were 35 million online shoppers in India in 2014 Q1 and is expected to cross 100 million mark by end of year 2016. CAGR vis-à-vis a global growth rate of 8–10%. Electronics and Apparel are the biggest categories in terms of sales. By 2020, India is expected to generate $100 billion online retail revenue out of which $35 billion will be through fashion e-commerce. Online apparel sales are set to grow four times in coming years. Key drivers in Indian e-commerce are:

- Large percentage of population subscribed to broadband Internet, burgeoning 3G internet users, and a recent introduction of 4G across the country.
- Explosive growth of Smartphone users, soon to be world's second largest smart phone per user base.
- Rising standards of living as result of fast decline in poverty rate.
- Availability of much wider product range (including long tail and Direct Imports) compared to what is available at brick and mortar retailers.
- Competitive prices compared to brick and mortar retail driven by disintermediation and reduced inventory and real estate costs.
- Increased usage of online classified sites, with more consumer buying and selling second-hand goods.
- Evolution of Million-Dollar startups like Jabong.com, Makemytrip, Flipkart etc.

India's retail market is estimated at $470 billion in 2011 and is expected to grow to $675 billion by 2016 and $850 billion by 2020, – estimated CAGR of 10%. According to Forrester, the e-commerce market in India saw the fastest growth within the Asia-Pacific Region at a CAGR of over 57% between 2012–13.

As per "India Goes Digital" a report by Avendus Capital, a leading Indian investment bank specializing in digital media and technology sector, the Indian e-commerce market is estimated at Rs 28,500 Crore ($6.3 billion) for the year 2011. Online travel constitutes a sizable portion (87%) of this market today. Online travel market in India is expected to grow at a rate of 22% over the next 4 years and reach Rs 54,800 crore ($12.2 billion) in size by 2015. Indian e-tailing industry is estimated at Rs 3,600 crore (US$800 million) in 2011 and estimated to grow to Rs 53,000 crore ($11.8 billion) in 2015. New sector in e-commerce is online medicine. Company like Reckwing-India, Buyonkart, Healthkart already selling complementary and alternative medicine whereas NetMed has started selling prescription medicine online after raising fund from GIC and Stead view capital citing there are no dedicated online pharmacy laws in India and it is permissible to sell prescription medicine online with a legitimate license. On line sales of luxury products like jewellery has also increased over the years. Most of the retail brands have also started entering into the market and they expect at least 20% sales through online in next 2–3 years.

Role of the Government in Developing Ecommerce

While it is generally agreed that the private sector should take the lead role in the development and use of e-commerce, the government plays an instrumental role in encouraging e-commerce growth through concrete practicable measures such as:

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1. Creating a favorable policy environment for e-commerce; and
2. Becoming a leading-edge user of e-commerce and its applications in its operations, and a provider to citizens of e-government services, to encourage its mass use.

Ecommerce Policy

Among the public policy issues in electronic commerce that governments should take heed of are:

- "Bridging the digital divide" or promoting access to inexpensive and easy access to information networks;
- Legal recognition of e-commerce transactions;
- Consumer protection from fraud;
- Protection of consumers' right to privacy;
- Legal protection against cracking (or unauthorized access to computer systems); and
- Protection of intellectual property.

Measures to address these issues must be included in any country's policy and legal framework for e-commerce. It is important that government adopt policies, laws and incentives that focus on promoting trust and confidence among e-commerce participants and developing a national framework that is compatible with international norms on e-commerce (covering for instance, contract enforcement, consumer protection, liability assignment, privacy protection, intellectual property rights, cross-border trade, and improvement of delivery infrastructure, among others).

Government Can Use E-Commerce in the Following Ways

- **E-Procurement:** Government agencies should be able to trade electronically with all suppliers using open standards-through 'agency enablement' programs, 'supplier enablement' programs, and e-procurement information systems.
- **Customs Clearance:** With the computerization of customs processes and operations (i.e., electronic submission, processing and electronic payment; and automated systems for data entry to integrate customs tables, codes and pre-assessment), one can expect more predictable and more precise information on clearing time and delivery shipments, and increased legitimate revenues.
- **Tax Administration:** This includes a system for electronic processing and transmission of tax return information, online issuances of tax clearances, permits, and licenses, and an electronic process registration of businesses and new taxpayers, among others.

More often than not, the e-commerce initiatives of government are a barometer indicating whether or not the infrastructure supports e-commerce use by private firms. This means that if government is unable to engage in e-procurement, secure records online, or have customs fees remitted electronically, then the private sector will also have difficulties in e-commerce uptake. Virtually, the benefits from e-commerce accrue to the government, as the experiences of some countries reflect.

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OECD E-COMMERCE

The OECD is a Paris-based international organization that serves as an outlet for reform efforts in a number of policy areas, including international taxation, for its thirty member countries. The Committee on Fiscal Affairs is the main OECD body that drives international tax reform efforts, including revisions to the OECD model tax treaty. In 1997, the OECD members first discussed cross-border e-commerce tax challenges at a meeting held in Turku, Finland and issued a brief report setting out an agenda to confront these challenges. In October 1998, an OECD ministerial meeting on global e-commerce was held in Ottawa, Canada, where the members reached agreement on two important documents relating to the taxation of international e-commerce. First, the Committee on Fiscal Affairs endorsed a set of principles that would guide the OECD in its reform efforts with respect to the taxation of international e-commerce.

Importantly, the so-called Ottawa Taxation Framework noted that traditional international tax principles should be applied to the new commercial environment promoted by the Internet and the increased sale of digital goods and services. As per the Report by the Committee on Fiscal Affairs, the approach does not preclude new administrative or legislative measures, or changes to existing measures, relating to electronic commerce, provided that those measures are intended to assist in the application of the existing taxation principles any adaptation of existing international taxation principles should be structured to maintain the fiscal sovereignty of countries, to achieve a fair sharing of the tax base and to avoid double taxation and unintentional non taxation.

Other guiding principles include the need for: maintaining neutral tax treatment between e-commerce and traditional commerce, low compliance costs for taxpayers and low administrative costs for tax authorities, clear and simple tax rules to promote business certainty, reducing the risk of tax evasion and tax avoidance, and flexibility to keep pace with technological and commercial developments.

Second, the OECD members and industry representatives signed onto a lesser-known document that similarly advocated the use of traditional international tax principles in the formulation of any new rules for the taxation of e-commerce. These two documents were an important step toward developing consensus on international tax principles and could prove to be useful beyond e-commerce purposes as the principles could be reformulated for guidance with respect to future international tax challenges.

After this meeting, Technical Advisory Groups (TAGs) comprised of government and industry representatives were formed by the OECD to promote discussion and analysis. In addition, the Committee on Fiscal Affairs directed its Working Parties to discuss and propose solutions with respect to discrete areas of policy concern (e.g., Working Party No. 1 reviewed whether the permanent establishment category within the OECD model tax treaty needed to be amended to take into consideration e- commerce developments). These forums provided the OECD members (and non-member countries in certain cases) with an opportunity to voice their concerns and to reach consensus on the types of reform that would be acceptable to move the reform process forward.

MODEL TREATY CHANGES

The most important OECD reform efforts have or will become entrenched in the OECD model tax treaty or its Commentary, which is used to assist with interpreting the treaty provisions. The model treaty and/or the Commentary are important because they are often recognized by courts as secondary sources of authority to assist with treaty interpretation. In addition, many countries—both OECD and non-OECD

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member states— base their own bilateral tax treaties on the OECD model tax treaty (the United States employs its own model tax treaty, but this treaty largely tracks the provisions within the OECD model). OECD member states are presented with an opportunity to deliberate these treaty changes, reach consensus and, if needed, insert observations or reservations within the Commentary to the OECD model tax treaty when an individual country does not agree with proposed changes. The importance of the model tax treaty is underscored by a recent review of the way that governments and their courts interpret the model tax treaty's permanent establishment concept for domestic tax purposes: 33 of the 37 countries scrutinized generally followed the OECD model tax treaty in this area.

Permanent Establishments

Due to the advent of the Internet, cross-border commercial transactions can be enabled by computer servers (i.e., a computer that has been networked to the Internet) instead of traditional business intermediaries such as retail stores. For example, a consumer can now download digital music from a commercial web site whereas these consumers would normally have purchased this music in the form of a CD at a retail outlet prior to the rise of the Internet and digital goods. This development led to the view that the tax treaty definition of permanent establishment, which is typically defined as a "fixed place of business through which business is conducted," should be extended to these computer servers (hereinafter "servers")(Crockfield, 2006).

As a result, the Commentary now indicates that a server will constitute a permanent establishment (a "server/PE") if: (1) the server performs integral aspects of a cross-border transactions; (2) the server is owned or leased by the non-resident firm; and (3) the server is fixed in a location for a sufficient period of time. The Commentary offers an example of a server/PE that performs functions including "the conclusion of the contract with the customer, the processing of the payment and the delivery of the product," but notes that many countries would assert that a server/PE has been created even if only some of the functions described are performed via the server. The new rules indicate that it is not necessary to have any human involvement with the server, which can be accessed and maintained from a remote location, to create a server/PE. In contrast, the view that a web site, in and of itself, could constitute a permanent establishment has been rejected. Finally, the Commentary indicates that non-residents that use foreign-based servers maintained by Internet Service Providers (ISPs) will generally not constitute permanent establishments as the non-residents would not typically exert control over the ISPs.

As subsequently discussed in Part II.A., the responses by national tax authorities to the server/PE issue form a continuum of approaches: some tax authorities maintain that servers should never constitute permanent establishments, others agree with the OECD position, and finally certain countries take the view that web sites in and of themselves can constitute permanent establishments.

Income Characterization

Tax rules under domestic laws as well as treaties impose different tax treatment on different types of cross-border income. For example, business profits are generally sourced to the country where the income-producing business is based and taxed on a net basis. Royalty income, on the other hand, is generally sourced to the country where the intellectual property was used (e.g., the country where the consumer of the intellectual property is resident) and may be subject to gross withholding taxes.

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The digital world raises a number of problems with respect to income characterization issues. Cross-border transactions involving the transmission of digital goods or services often make it difficult to determine whether a transfer of a product has occurred, whether services have been performed, or whether an intangible product has been licensed. The problem is that transactions involving digital goods and services often blur the lines among different categories of income.

As a result of these difficulties, the OECD promoted reform efforts to guide national tax authorities with respect to the tax treaty characterization of income produced by the sale of e-commerce goods and services. For e-commerce transactions involving software, the OECD amended its Commentary to the OECD model tax treaty to distinguish between the underlying copyright in the program and software which incorporates a copy of the copyrighted program. The Commentary now makes it clear that e-commerce transfers of all digital products should attract the same treatment as software payments, and that the technological method of transfer (whether a purchase of a program on a disk or an e-commerce online transfer) is not relevant.

A report sponsored by the OECD looked to twenty-eight categories involving potential e-commerce transactions to assist tax authorities and taxpayers in determining the appropriate income characterization for international e-commerce transactions. The findings of the report were subsequently adopted into the Commentary of the OECD model tax treaty. Generally speaking, the cross-border transmission of digital goods and services will result in the generation of business profits because "the payment is essentially for the acquisition of data transmitted in the form of a digital signal and therefore does not constitute royalties"(Cockfield, 2006) Royalties, however, may result when digital goods are downloaded to commercially exploit the copyright relating to the digital goods. The new rules strive to treat substantively similar economic activity the same way. For example, the cross-border shipment of a music CD to a foreign consumer or the Internet transmission of an MP3 file (a compressed digital music file) to another foreign consumer will both be taxed as business profits and not as royalty income under the new OECD rules.

Place of Effective Management

The United Sates and many other countries enact tax the world-wide income of their residents (so-called residence-based taxation). In the context of taxing e-commerce earnings, a residence-based system raises a number of concerns. Under the 'place-of-incorporation' test, a corporation is considered a resident in the country where it has been incorporated while corporations incorporated outside of the country are considered to be non-residents. Moreover, the place-of-incorporation test does not require a business to maintain an economic presence within the country: the simple act of filing articles of incorporation will suffice to fulfill the residency requirement. As such, residency can change by simply changing the country of incorporation. In recent years, there has reportedly been a rise in the number of Internet businesses that have chosen to incorporate their companies in tax haven jurisdictions. Incorporating an online company in a tax heaven may be motivated by tax reasons, but may also be influenced by permissive laws with respect to commercial activities such as gambling or pornography.

Countries also employ a 'place of central management and control' test to determine whether or not a company is a resident This test generally involves looking to where a company's head office is located or where the board of directors meets on a regular basis. Traditionally, directors had to hold face-to-face meetings to make business decisions. Internet technologies that promote video conferencing and email exchanges may pose a challenge to the place of central management and control test. The need for a

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physical head office may be eliminated as senior managers and directors can attend meetings without leaving their desks. These managers and directors could maintain residences in different jurisdictions (including tax havens), making it harder for high tax countries to assert that corporations are residents of their jurisdictions.

An OECD Technical Advisory Group has proposed changes to the treatment of corporate residence issues within the OECD model tax treaty, in part as a way to alleviate the concerns noted above. The proposal involves the inclusion of a hierarchical tie-breaker rule similar to the one used for individuals. Proposed Article 4(3)(b) of the OECD model tax treaty reads: "if the State in which its place of effective management is situated cannot be determined or if its place of effective management is in neither State, it shall be deemed to be a resident only of the State [Option A: with which its economic relations are closer] [Option B: in which its business activities are primarily carried on] [Option C: in which its senior executive decisions are primarily taken]."(Cockfield, 2014)

The OECD TAG indicates that, under Option A, the corporation would be resident in the state in which it is making greater use of economic resources as well as legal, financial, physical and social infrastructures.

This could involve an analysis of factors including the location of most of the firm's employees and assets, revenues, senior management functions, headquarters, etc. Under Option B, residency would be determined by a functional analysis of the activities performed in the two countries. Finally, under Option C, a corporation would be a resident of the country in which the clear majority of senior executive decisions are taken and where the corporate headquarters are located. By emphasizing the need for substantive economic activities prior to a determination of residency, the new tests may make it harder to manipulate corporate residency in the context of e-commerce operations.

Services and Permanent Establishments

As part of its review of e-commerce tax reform issues, the OECD Business Profits TAG has proposed in a draft discussion that rules governing the taxation of cross-border service income be altered within the OECD model tax treaty. Under the proposed changes, source countries would be able to tax income from services if a non-resident firm or its representatives is present in the source country for a period of time. The proposal would replace the current permanent establishment requirement with a physical presence test that is similar to the one in the United Nations model tax treaty The rationale for the proposal is, in part, that service providers are very mobile and can generate significant income in foreign countries without the need to set up a physical facility or use a fixed base of operations.

The Information Technology Association of America has argued that the proposed changes would increase compliance costs for technology firms along with greater business uncertainty surrounding whether a foreign government can impose its income taxes on service providers. Under this view, e-commerce companies may be exposed to tax liability in multiple jurisdictions even though these companies normally remotely provide services only through the Internet along with occasional maintenance or service visits to the foreign countries where they conduct business. The proposal, however, would appear to be consistent with recent changes to the OECD model tax treaty commentary on permanent establishments that indicate a permanent establishment will be created if, in the course of providing consulting or other services to a client, the foreign taxpayer or its employees use the client's premises for a long extended period of time.

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OECD VAT REFORM EFFORTS

As mentioned, the OECD traditionally promotes reform efforts in the international income arena primarily via its model tax treaty and the Commentary to this treaty. All OECD members (other than the United States) employ federal consumption taxes alternatively referred to as Value- Added Taxes or Goods and Services Taxes (collectively referred to as VATs). Yet there are generally no model treaties or bilateral international agreements that cover VATs. As a result, there is no apparent mandate for the OECD to promote reform efforts for VATs and, prior to the rise of e- commerce, the organization had never pursued any meaningful reform efforts in this area.

In 1998, however, the OECD members agreed through the Ottawa Taxation Framework to consider VAT reform efforts in the context of global e-commerce. Importantly, the Ottawa Taxation Framework resolved an ongoing debate among OECD member states surrounding the appropriate tax jurisdiction for cross-border VAT purposes: the OECD countries agreed that for business-to-consumer (B2B) supplies the place of consumption should be the jurisdiction in which the recipient has his or her usual residence and for business-to-business (B2B) supplies tax should apply in the jurisdiction in which the recipient has located its business presence. This development helped to legitimize the European Union efforts, discussed subsequently, to impose collection and remittance obligations on non-European Union consumers who have engaged in B2C transactions with European businesses.

After 1998, the OECD developed guidelines for tax collection mechanisms for cross-border VAT purchases and began to publish a 'Consumption Tax Guidance Series' to promote consensus on the application of VATs with respect to international transactions. More specifically, an effort has been undertaken to promote consensus on reform efforts to: verify the jurisdiction and status of customers; contemplate registration thresholds whereby companies with below-threshold sales would not need to register for VAT purposes; deploy technology-based collection mechanisms; develop international administrative cooperation; and review simplification options and initiatives. Importantly, the views of business representatives and non-OECD governments were taken into consideration with respect to potential cross-border VAT reform efforts.

Problems and Solutions by Many Countries

This part of the chapter produces the responses by individual countries to challenges presented by international e-commerce. This portion discusses reform efforts in seventeen different countries where, for the most part, the responses have been tepid, often confined to agreeing or disagreeing with positions taken by the OECD. More specifically, it has been uncovered: seventeen administrative pronouncements by national tax authorities; five cases; and two tax laws (including a European Union directive on value-added taxes) passed to address international e-commerce matters. The part of the chapter concludes by discussing possible explanations for the lack of reaction at the national level, apart from OECD influence, including the absence of evidence of source country income tax base erosion resulting from international e- commerce transactions.

India

India is likely the most active non-OECD member with respect to developing positions on the taxation of international e-commerce. In 2001, a report prepared by the Indian Revenue Department's Foreign

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Tax Division advised the abandonment of the traditional permanent establishment concept in light of e-commerce developments:

The Committee is of the view that applying the existing principles and rules to e-commerce does not ensure certainty of tax burden and maintenance of the existing equilibrium in sharing of tax revenues between countries of residence and source. The Committee is also firmly of the view that there is no possible liberal interpretation of the existing rules, which can take care of these issues, as suggested by some countries. The Committee, therefore, supports the view that the concept of PE [permanent establishment] should be abandoned and a serious attempt should be made within OECD or the UN to find an alternative to the concept of PE.

In addition, the report disagreed with the OECD's view on withholding taxes, in particular the tax authorities maintained that software downloads should generally fall within definition of royalties found within Indian tax treaties and should be subject to withholding. The report noted that the Indian tax rules that classify cross-border income coincided with only 15 of the 28 categories set out within the OECD's income characterization paper.

In 2002, the Indian government announced in its annual budget that it would not immediately implement the Foreign Tax Division's recommendations due to the ongoing international discussions of e-commerce taxation issues.

In one case, Indian tax authorities assessed taxes on the profits attributable to an Indian-based server owned by VISA (a U.S.-based multinational firm). VISA requested a resolution by U.S. and Indian tax authorities under the competent authorities' provision of the U.S.-India tax treaty. The settlement remains confidential although it has been reported that the U.S. and Indian competent authorities agreed the server will constitute a permanent establishment (the amount of profits attributable to this server remains unclear).

There are additional reports that India assessed withholding taxes on foreign e-commerce firms. However, India's Income Tax Appellate Tribunal (ITAT) reportedly declined to assess withholding taxes on payments for periodic subscription fees paid by an Indian company to a U.S. company for electronic access to published materials. The materials were maintained on a database within a server located outside of India and the payments were held to be payments for business profits rather than royalties and thus not liable to tax in India in the absence of a permanent establishment. The ITAT found that the payment to the non-resident company was for the use of copyrighted material and not for the transfer of the copyright itself. Moreover, the ITAT indicated that payment for access to an electronic database cannot be said to be consideration "for use of information concerning industrial, commercial or scientific experience" (tax.network)so as to fall under the definition of royalty under article 12(3)(a) of the India- U.S. tax treaty. The ITAT's ruling appears to be consistent with the OECD's views, noted previously, on the characterization of royalty and business income with respect to cross-border e-commerce subscription payments.

In 2004, Indian tax authorities issued a Circular that sets out how foreign businesses (Business Process Outsourcing Units or BPOs) are to be taxed when they outsource aspects of their operations to individuals and businesses residing within India. When foreign companies outsource activities to Indian-based technology centers (which constitute a permanent establishment) and these activities enable the foreign firms to carry on core business activities abroad, the Circular maintained that India should be entitled to tax profits attributable to sales generated abroad (provided that the Indian permanent establishment has been charged an arm's length fee by its foreign parent). According to the Circular, "a considerable

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portion" of the profits derived by non-residents from international sales would be taxable by India. (Rashmin Sanghvi & Associates)

This Circular led to a controversy where it was alleged that India was being overly aggressive with respect to the taxation of non-resident firms. As a result, the Circular was withdrawn and replaced with another Circular. The new Circular simply restates the provisions of profit attribution and transfer pricing found within Indian tax treaties. Indian tax authorities appear to be suggesting that traditional tax rules will determine the appropriate tax treatment: "In determining the profits attributable to an IT enabled BPO unit constituting a Permanent Establishment, it will be necessary to determine the price of the services rendered by the Permanent Establishment to the Head Office … on the basis of "arm's length principle."" The arm's length price in turn is determined by reference to Indian domestic tax law. The key area of contention appears to be the appropriate quantum of profit attribution to Indian-based BPOs.

Canada

In 2002, Canadian tax authorities issued an Interpretation Bulletin to assist with the enforcement of its VAT (called the Goods and Services Tax) on international e-commerce transactions. The Canadian changes generally maintain the *status quo* with respect to collection obligations for non-resident firms and rejected the more aggressive views set out in the European Union e-commerce VAT directive. For example, the Canadian approach advocates a multi-factoral test (e.g., the place of contracting and the place where assets are located should be taken into consideration) to determine whether the non-resident business should register for GST purposes while the EU approach mandates collection obligations for all non-EU firms with online sales to consumers residing within the European Union (see below).

In 1998, Revenue Canada (as it was then) refused to take a position when a U.S. company asked about the tax implications of storing proprietary information on a Canadian-based server. At this writing, the Canada Revenue Agency has prepared draft Interpretation Bulletins that discuss the OECD positions on server/PEs and income characterization.

Under domestic Canadian law, a withholding tax of 15% applies on payments for services performed by a non-resident in Canada. When these services are provided by a computer software hotline service, the Canadian tax authorities have taken the position that withholding is not required because the service provider was physically located outside of Canada. This position could be analogized with the provision of other cross-border electronic communications.

Austria

With respect to the server/permanent establishment issue, the Austrian tax authorities will follow the OECD model tax treaty Commentary. In 2000, the Austrian Constitutional Court held that a special withholding tax on e-commerce transactions may be constitutionally acceptable as long as the tax, among other things, is restricted to electronically performed activities and it is applied only to firms and not individual consumers

Germany

Germany's tax authorities have issued regulations on the taxation of permanent establishments, but have not provided guidance with respect to the computer server issue. A directive issued by the Karlsruhe

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Regional Tax Office in 1998 indicates that servers can be considered to be fixed places of business but should generally not constitute permanent establishments because they normally perform activities of a preparatory or auxiliary character.

The first German tax court to address the issue of server/PE status held that a server based in Switzerland and owned by a German corporation would constitute a permanent establishment in Switzerland under the Germany-Switzerland tax treaty. The German company transferred information content to the Swiss-based server, where it was accessed by Swiss customers who paid a fee via their televisions. The sums paid were collected by Swiss Telecom and forwarded to the German company, less a collection fee. The German company did not maintain any individuals in Switzerland to service or program the server. The German company deducted a fee for its services then forwarded the remaining amounts to a corporate affiliate that produced the content.

The German court held that Switzerland was entitled to tax profits attributable to the Swiss-based server although the quantum of these profits was not discussed. While an English translation of this case does not appear to be available, one report notes that the court would permit the Swiss tax authorities "to attribute a substantial amount of income" to the server (Cockfield, 2006). The court based its decision in part on earlier precedents that held that underground oil pipelines could constitute permanent establishments even without the presence of personnel. Moreover, the court cited the OECD changes to the commentary of the OECD model tax treaty (then in draft form) as support for its position that the court should scrutinize on a "case-by-case" basis whether the server is performing auxiliary or preparatory activities. At this writing, the decision was under appeal to the Federal Tax Court.

France

French tax authorities have gone on record with respect to the server/PE issue and have developed a slightly different version of server/PEs when compared to the approach adopted into the Commentary to the OECD model tax treaty. In 2001, the then-Finance Minister confirmed that as general rule servers alone will not constitute a permanent establishment without human activity associated with the server's operation. However, in narrow circumstances where the business transaction within France involves the "complete and autonomous cycle of business transactions" then a permanent establishment may be formed (Cockfield, 2006).

According to an observer, the difference between the French and OECD positions is that the OECD approach emphasizes that as a general rule a server alone *can* constitute a permanent establishment unless its functions are purely preparatory or auxiliary while the French position envisions a more restrictive test where the server needs to perform virtually all aspects of a business transaction before a permanent establishment is constituted.

Hong Kong (China)

In 2001, the Hong Kong tax authorities issued a Departmental Interpretation and Practice Note (DIPN) that indicates that Hong Kong tax authorities will apply neutral tax rules to e-commerce so that no particular business will have a tax advantage over another. A DIPN is not binding authority and can be overturned by a court or administrative board of review.

The DIPN rejects the OECD's view that servers alone can constitute permanent establishments in certain circumstances: "The Department will generally accept that the mere presence of a server does not

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constitute a PE)(UN, 2011)"This view is based on the fact that the definition of permanent establishment within Hong Kong's domestic tax law implies the need for a physical place as well as personnel. With respect to determining profits attributable to a server based in Hong Kong (along with personnel), the "proper approach is to focus more on what and where the underlying physical operations were carried out by the taxpayer to earn the profits in question than on what had been done electronically (Alice,2001)"This view departs to a certain extent from the OECD view that would scrutinize the functions performed by the server to determine profits attributable to the computer equipment.

With respect to cross-border income characterization issues, Hong Kong's views comport with the recent changes to the Commentary to the OECD model tax treaty in that they emphasize scrutinizing the substance of the electronic transfer to see if payment should be subject to withholding taxes: "If the payment is in truth a payment for a product or service, it will not be subject to withholding. On the other hand, if it is a payment for the use of, or the right to use, copyrighted material, it is deemed to be subject to withholding as a royalty payment."(Cockfield 2006) Under this view, e-commerce transactions such as cross-border sales to consumers of shrink-wrapped software will generate business and not royalty income, which would be subject to withholding.

Greece

Greece, like Portugal and Spain, has inserted an observation into the OECD model tax treaty Commentary that it may not follow the OECD's recent Commentary changes to create a server/PE category.

Ireland

The Irish tax authorities have indicated that the mere presence of a server will not constitute a permanent establishment.

Mexico

Mexico is an OECD member and supported the recent changes to the OECD model tax treaty. In addition, Mexican income tax regulations specify that this model tax treaty should be used in interpreting Mexico's income tax treaty obligations; hence the model treaty changes surrounding, *inter alia*, the characterization of cross-border income and the server/PE rule have been expressly adopted into Mexican tax law.

At times, however, Mexico bases its negotiation position on the United Nations model tax treaty. For these reasons, the U.S.-Mexico tax treaty contains a so-called restricted force of attraction provision that permits the source country to tax activities that do not emanate from the permanent establishment in some circumstances, which actually serves to inhibit revenue losses in the context of remote e-commerce sales. Under the restricted force of attraction rule, the source country is permitted to tax the business profits derived from the sale by a non-resident firm of goods or merchandise of the same or similar kind as those normally sold through the permanent establishment. This clause is typically requested by developing countries to prevent avoidance of tax through the use of a home office in the foreign country to conduct business normally done at the permanent establishment. The clause, however, will not apply if the foreign enterprise demonstrates that the sales were not made from the home office to avoid the tax on profits attributable to a permanent establishment.

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As a result of this tax treaty rule, sales from a U.S.-based online company can be taxed by Mexico as long as similar sales are sold via an affiliate that maintains a traditional permanent establishment located somewhere in Mexico. For example, assume that Books Inc. is a large U.S.-based book retailer. Books Inc. owns retail outlets within Mexico (that constitute permanent establishments) and also maintains and operates exclusively from the United States a commercial web site that sells books. If a Mexican consumer orders online from Books Inc.'s web site then Mexico is entitled to tax the profits attributable to this sale because the company already maintains a permanent establishment within Mexico that sells the same or similar merchandise (unless Books Inc. demonstrates that its online sales do not have a tax avoidance purpose).

Netherland Antilles

The Netherland Antilles government passed a National Ordinance of Electronic Agreements along with special tax legislation for international Internet companies that base operations within the country. Under the tax legislation, effective March 2001, Internet companies based in part in the Netherland Antilles will fall under a special tax regime with a corporate income tax rate of 2%.

New Zealand

New Zealand has provided non-binding guidance to taxpayers with respect to Internet taxation issues, including cross-border income and GST matters. The government, however, does not appear to have passed any special e-commerce tax legislation although an informal administrative pronouncement offers examples of the potential income tax and goods and services tax (GST) implications of cross-border e-commerce transactions conducted by Australians in New Zealand. The pronouncement additionally notes that: Where relevant, current tax laws and interpretations will be applied to e-commerce transactions.

Portugal

Portugal has inserted an observation in the OECD model tax treaty Commentary that it may not follow the OECD's recent changes to create a server/PE category.

Spain

Spain's tax authorities maintain that, regardless of an actual physical presence, a permanent establishment exists wherever a company regularly conducts e-commerce transactions. These transactions are deemed to take place where the purchaser of the goods and services is resident. As a result, the Spanish government inserted a reservation in the recent server/PE changes to the Commentary to article 5 of the OECD model tax treaty, like Portugal, by asserting that the country may not follow the changes "until the OECD has come to a final conclusion." Moreover, the Spanish tax authorities take a broader view of the types of e-commerce transactions that could be subject to withholding, maintaining that downloads of shrink- wrapped software could attract withholding.

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Switzerland

The Swiss tax authorities (federal tax administrators or FTA) have reportedly passed VAT guidelines on the taxation of telecom transactions, including comments on the tax treatment of electronic commerce.

Singapore

Under Singapore's tax laws, software payments are classified as royalties, potentially subject to withholding taxes. In 2001, the tax authorities provided a ministerial order that maintains that payments for shrink-wrap software and certain other electronic transfers by non-resident consumers would be exempt from withholding taxes."Shrink-wrap" software, site licences, downloadable software, or software bundled with computer hardware will generally be exempt from withholding taxes.

Of interest, the exemption for payments for shrink-wrap software will only apply if the end user is only granted limited rights of use (e.g., no right to make copies for commercial purposes), which is the approach adopted by the income characterization changes to the Commentary to the OECD model tax treaty But payments for site licenses, downloadable software or software bundled with computer hardware are not subject to similar limitations and will not attract withholding, which is contrary to the approach adopted by the OECD The ministerial order would seem to impose non-neutral tax treatment between, for example, software sold in compact discs for commercial purposes (e.g., for copying and resale) which will be subject to withholding and the same software sold online to Singaporean resident for downloading which will not be subject to withholding.

In addition, Singaporean tax authorities have published a guide on the income tax treatment of e-commerce. The guide discusses the income tax treatment of cross-border tangible and intangible goods. The guide also confirms that a server alone will not constitute a permanent establishment under Singapore's domestic tax law.

United Kingdom

In 2000, the United Kingdom's Inland Revenue issued a press release indicated that servers will never, in and of themselves, be considered to be a permanent establishment of a foreign company. Inland Revenue maintained this position even after taking into consideration the development of a new server/PE category within the Commentary to the OECD model tax treaty.

In 2000, Inland Revenue issued a technical note that proposed to use the OECD definition of royalties. The note also discussed proposals to create new rules for bundled payments where payment is provided for partly for intellectual property and partly for other items, which has implications for cross-border e-commerce transfers.

Finally, the Inland Revenue has ongoing consultation processes through the Electronic Commerce Consultation Forum (ECCF), which is comprised of members drawn from the tax authorities and industry participants. The ECCF is additionally broken into sub-groups that focus on specific e-commerce issues such as VAT, cross-border business profits, characterization, and tax administration and compliance.

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United States

While Internet developments have led to a number of policy developments in the area of U.S. state and local sales and use taxes (briefly discussed in Part II.C.), very little action has taken place at the federal level with respect to international e-commerce developments. After the 1996

Treasury discussion paper on international taxation of e-commerce, the U.S. government entered into joint electronic commerce agreements with a number of other countries (including Australia, Chile, Columbia, the Netherlands, Ireland, Japan, Jordan and the United Kingdom) that included a tax provision which, like the one in the European Union-United States agreement, maintains "taxes on electronic commerce should be clear, consistent, neutral and non discriminatory."

As discussed above under the heading 'India', the U.S. tax authorities have entered into an undisclosed settlement agreement with Indian tax authorities whereby both parties accept that a U.S. taxpayer's server within India constitutes a permanent establishment. The interpretation appears to be consistent with the OECD's new server/PE rule.

United States has pursued reform efforts that deal with the tax treatment of software and intangible assets, which may ultimately assist with the determination of the appropriate tax treatment for cross-border e-commerce transactions.

European Union

Effective July 2003, the European Union's directive on electronic communications (the "E-commerce VAT Directive") requires all non-EU companies selling digital goods and services online to consumers within the EU to register with an EU tax authority and charge, collect and remit VAT. Non-resident businesses can register under an interim "special scheme" arrangement with one EU member state, which will operate a form of clearinghouse to ensure that each EU member state receives its appropriate amount of VAT due to it. After remittance, the member state will redistribute the VAT to the appropriate EU countries in which the digital goods and services were sold.

The E-commerce VAT Directive is designed in part to address problems associated with online business-to-consumer (B2C) sales, which are thought to present the greatest challenge to VAT schemes as consumer rarely comply with self-assessment obligations. There is less fear that business-to-business (B2B) sales over the Internet will create compliance problems because vendors engaged in these transactions have an incentive to assess, charge and collect VAT in order to receive input tax credits to offset the VAT payments. The main impetus for the E-commerce VAT Directive appears to be the EU business lobby, which was concerned that, in absence of a rule that strived to force foreign suppliers to assess VAT, an uneven competitive playing field would persist because intra-EU supplies of goods and services would attract VAT (and corresponding higher prices) while supplies from non-EU countries could be sold to EU consumers on a VAT-free basis.

The new e-commerce VAT Directive has created concerns that it will impose costly collection obligations on non-EU firms.An OECD TAG notes that different approaches to VATs and e-commerce may inhibit commercial activities and increase the risk of international double taxation. As previously discussed, in order to counter perceived problems with respect to emerging cross-border VAT and GST issues, the OECD's Committee on Fiscal Affairs has promoted a non-binding "Consumption Tax Guidance Series" for e-commerce and other issues.

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Moreover, as mentioned, there are generally no general international treaties that govern cross-border consumption tax issues (unlike tax treaties, which are mainly directed at income taxes). In absence of such a treaty, it is unclear how the European Union plans to enforce its directive. Certain non- EU firms with online sales such as Amazon.com have voluntarily agreed to comply with the E-commerce VAT Directive while others such as AOL/Time Warner have announced that they will set up operations in European Union countries to assist with compliance.

An additional VAT issue surrounds compliance obligations and cross-border e-commerce sales. Under general VAT laws, countries may impose collection obligations on foreign companies if these companies maintain "permanent establishments" within their jurisdictions. Like the income tax treaty concept of permanent establishment, this is a defined term in VAT statutes and usually has a similar meaning where fixed places of businesses can constitute permanent establishments. The European Court of Justice has held that machinery alone cannot constitute a permanent establishment for VAT purposes so that the presence of a server alone within an EU country will not likely constitute a permanent establishment. This position can be contrasted with other consumption tax laws such as the Canadian one where the presence of a server can constitute a permanent establishment for Goods and Services Tax purposes (and hence trigger foreign company collection and remittance obligations) even without the presence of a human being.

The various national responses to e-commerce tax challenges reveals that governments have chosen to approach these challenges with caution. A number of reasons could explain the lack of legislative and administrative action thus far.

First, governments may now be less concerned that e-commerce developments threaten their tax bases. Revenue losses associated with international e-commerce transactions are difficult to estimate as there are currently no empirical studies that attempt to measure these losses. In addition, there are few studies that demonstrate that e-commerce developments provide planning opportunities that would lead to base erosion in relatively high tax jurisdictions like the United States. One empirical study, however, does show that e-commerce developments may be facilitating international tax planning for U.S. multinationals although, again, revenue losses associated with this planning remain uncertain.

Tax authorities have noted the rise of certain 'grey market' business activity such as gambling and pornographic web sites located in offshore tax havens that may be leading to revenue losses, but they do not have firm estimates of these losses. An OECD report issued in 2003 notes, "Contrary to early predictions, there does not seem to be actual evidence that the communications efficiencies of the internet have caused any significant decrease to the tax revenues of capital importing countries."

The lack of empirical evidence concerning revenue losses at the international level can be contrasted with the situation in the U.S. sub national context where several studies have shown that U.S. state and local governments are suffering revenue losses in the billions of dollars as a result of increased remote consumer sales attributable to mail order and Internet transactions involving tangible goods. Moreover, there is at least anecdotal evidence that aggressive tax planning such as entity isolation strategies has contributed to these revenue losses. This evidence has in part encouraged U.S. state tax authorities to form the Streamlined Sales Tax Project whereby state governments are contemplating the radical tax base harmonization of their sales and use tax systems to encourage voluntary compliance by firms with out-of-state sales. Without similar evidence at the international level, tax authorities and legislative bodies may be understandably reluctant to focus their attention on an area that may not be contributing to significant revenue losses.

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Second, the area where e-commerce presents the greatest tax challenges—cross-border business-to-consumer (B2C) sales—likely does not present significant problems at the present time. Cross-border business- to-business (B2B) e-commerce sales continue to dominate overall e- commerce and businesses, unlike consumers, have incentives to report incoming sales to, for example, justify the expensing of inputs for tax purposes or to receive credit for these inputs against other VAT liabilities. Moreover, some observers maintain that source country base erosion will not take place because concerns surrounding the withdrawal of traditional physical presences (e.g., a retail outlet) and the replacement by virtual presences (like a retail website) have been overstated. The transition of many global e-commerce companies from pure "dot-coms" to so-called "clicks and mortars" (businesses that have both a virtual and traditional physical presence) has arguably inhibited revenue losses because these businesses will continue to maintain physical presences in foreign markets that may constitute permanent establishments and attract source country income taxation.

Moreover, the move by large e-tailers like Amazon.com and online auctions such as Ebay.com to create local foreign subsidiaries (like Amazon.co.uk and Ebay.co.uk in the United Kingdom) may have reduced concerns surrounding B2C revenue losses, at least with respect to sales of tangible goods. Online B2C transactions often remain confined within countries through the use of these local subsidiaries, belying to a certain extent earlier predictions of a borderless commercial world for regulatory purposes. Finally, in certain cases large Web-based multinational firms have voluntarily agreed to abide by foreign tax laws, which reduced the necessity for legislative steps to set out the scope and obligations of these firms. As discussed previously, for example, Amazon.com and AOL/Time Warner have agreed to strive to comply with the European Union's VAT directive that strives to place VAT compliance obligations on foreign businesses for B2C transactions. As discussed, the OECD is also assisting with the development of new practices and technologies to encourage compliance with cross-border VAT rules for e-commerce.

Third, certain countries have tax laws that clarify the tax treatment of software programs and intangible assets, which may provide a framework by analogy to resolve e-commerce tax issues. For instance, the U.S. Treasury Department first proposed draft regulations in 1996 on the classification of computer program transactions. These regulations clarified that, for purposes of determining whether royalty income is generated, taxpayers should determine what type of copyright has been transferred; the transaction will generally be treated as a sale of goods (and not a copyright license that would generate royalties) as long as the purchaser does not receive the right to reproduce the software for distribution to the public. Like the OECD income classification rules discussed previously, the U.S. regulations strive to treat functionally equivalent transactions the same way. U.S. taxpayers may be able to use these rules to determine the appropriate tax treatment for cross-border digital transfers of goods and services.

In addition, the United States has proposed new regulations to govern the tax treatment of non-arm's length transactions in cross-border services, including transactions involving intangible property. Proposed rules strive to inhibit disguised transfers of intangibles without adequate compensation where the transaction is characterized by the taxpayer as a transfer of services only. For bundled transactions that involve a services transaction and a transfer of an intangible, taxpayers must choose valuation methods that take into account each component of the transaction. Intellectual property laws of the relevant jurisdiction will determine legal ownership of the intangible or, if this approach is unworkable, ownership will be determined by looking to which controlled party controls the intangible. Rules also assist in valuing intangibles that have been enhanced or developed by another controlled taxpayer.

These tax rules could be applied to many e-commerce transactions that involve the cross-border transfer of digital goods and services. The rules seem sensible as they can be imposed in a neutral manner

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between e- commerce and traditional transactions and thus comport with the OECD's guidelines in this area that are espoused by the Ottawa Taxation Framework. In addition, this approach does not involve any significant departure from traditional international tax rules or principles and, again, appears to be consistent with the Ottawa Taxation Framework conditions.

Fourth, it may be too soon to gauge the national reaction to e- commerce tax challenges as governments and their tax authorities may be in the midst of preparing legislation or administrative guidance. Also, my survey within this Part may have inadvertently missed efforts by governments to address global e-commerce tax concerns, possibly understating the extent of this reaction.

This part of the chapter strives to promote a better understanding of the reasons that underlie the general success of the OECD's e-commerce tax reform efforts along with lessons that can be learned from these efforts. The first section argues that the OECD's 'informal' e-commerce reform process, which included the promotion of guiding principles, consultation, deliberation, and the use of non-binding mechanisms, amounted to unprecedented global tax cooperation and was generally successful in confronting international e- commerce tax policy challenges. The second section argues that the OECD's success in the e-commerce arena demonstrates that calls for a formal World Tax Organization, which could bind national tax rules of participating nations, may be misplaced. To operate as a truly informal *world* tax authority, the last section discusses the need to formalize the OECD's outreach efforts to non-OECD member states to promote a more inclusive forum for consultation and deliberation.

The previous part of the chapter reviewed how the OECD took a leadership role in the development of international e-commerce tax reform principles, which were accepted by the OECD member states. This part of the chapter discusses how the OECD's use of 'soft institutions', enhanced voice, and increased outreach to non-OECD member states assisted with reform efforts.

Soft Institutions

As discussed earlier, the OECD's e-commerce tax reform process did not involve any institutions that can bind the tax policy of its member countries in any way. The Working Groups and other expert groups serve as fore to explore different policy alternatives, but cannot enact any changes without broad support and consensus by OECD members. The OECD model tax treaty or its Commentary are not binding, and members are permitted to insert reservations and observations that set out dissenting views.

To a certain extent, the OECD approach of encouraging discussion, study, and non-binding reform efforts resembles the phenomenon of 'soft institutions.' Soft institutions are said be more informal processes employed to achieve consensus by providing a forum for actors to negotiate non-binding rules, such as principles, instead of binding conventions: "Soft institution building can provide more flexibility to actors, including the private sector, to implement the consensus." The OECD approach is consistent with emerging views in international relations theory that "government networks" (e.g., relatively informal arrangements among government officials in the same agencies) may be best at addressing global challenges. Informally coordinated and networked action by governments, it is thought, may lead to a new form of international law- and policy-making that addresses these challenges without imposing undue restrictions on national sovereignty.

Similarly, the use of non-binding institutions promotes the interests of the OECD members by reducing tax obstacles to international trade and investment (thus encouraging national economic growth) while protecting tax sovereignty to the greatest extent possible. As subsequently discussed in Part III.B., the preservation of tax sovereignty is likely a necessary prerequisite for the development of widely-accepted

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tax rules. The OECD process more closely resembles customary international law, which is perhaps best understood as a set of normative expectations developed through observation of the actions of states.

As is the case in other areas of customary international law, peer pressure and the need to promote business certainty (again to promote national economic welfare) encourages the OECD member states to follow the consensus views once they have been adopted into the OECD model tax treaty. In contrast, conventional international law typically involves the use of treaties that, once entered into, create continuing obligations, unlike the OECD model tax treaty. Through the use of informal mechanisms, the OECD mediates and manages the expectations of its member states in an attempt to generate politically acceptable (and hopefully effective) international tax policy.

Enhanced Voice

With respect to the OECD's e-commerce tax reform efforts, Duncan Bentley notes, "It was one of the first occasions when new policy initiatives were developed at an international level before at least the OECD jurisdictions had first developed domestic policy positions. It was also the first time that public consultation both within and outside the OECD had taken place to that extent in developing new policies on international taxation.(Arthur,2006)"

The OECD e-commerce tax reform efforts arguably generated a series of 'firsts' that amounted to unprecedented international tax cooperation:

1. It was the first time that countries engaged in multilateral discussions that led to agreement on principles—the Ottawa Taxation Framework—that would guide the subsequent formulation of international tax rules;
2. It was the first time that the OECD joined with members of industry to agree to a framework—the Joint Declaration of Business and Government Representatives—to guide the development of new rules;
3. It was the first time that the OECD analyzed policy options in an extensive way through the publication of multiple discussion drafts of reports (that sometimes included both majority and minority viewpoints) from Technical Advisory Groups and Working Parties consisting of tax experts drawn from national tax authorities, industry and academics;
4. It was the first time that non-OECD countries were permitted to be part of ongoing deliberations along with the development of policy options through the appointment of representatives from non-OECD governments to Technical Advisory Groups;and
5. It was the first time that OECD member states engaged in extensive discussions with respect to cross-border Value-Added Tax (VAT) issues, and attempted to promote consensus-driven reform efforts in this area.

The use of Working Parties and TAGs provided a forum for tax experts to deliberate in an extensive manner prior to the attainment of consensus. In particular, the decision to extend TAG membership to representatives from industry and non-OECD member states likely played a strong role in encouraging participants to 'buy in' to the recommended changes as they had a chance to voice their concerns from the outset. The survey in Part II supports this view as the OECD member states have not generally developed tax laws or administrative positions that are contrary to the OECD view (with, as subsequently discussed, the exception of the server/PE issue): it serves as evidence that the OECD countries made

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good on their promise, by signing onto the Ottawa Taxation Framework conditions, to abide by the consensus view. Interestingly, it was technology change, and not traditional policy concerns, that provoked this unprecedented global tax cooperation.

The OECD e-commerce tax reform process encouraged cooperative efforts by providing significant opportunities for input without imposing any intrusive restrictions on the tax policy of the member countries. The *work* in order to realise the full potential of the new technologies."[my italics]. Moreover, the inherently conservative view in the Ottawa Taxation Framework and the Joint Declaration of Business and Government Representatives to use traditional international tax principles in the development of tax rules for e-commerce seems, in hindsight, the most effective reform path.

In order to address possible source base erosion resulting from cross-border e- commerce sales, commentators proposed reform efforts including: (a) low, medium or high withholding tax rates for e-commerce payments; (b) qualitative economic presence tests (i.e., facts and circumstances tests) to enable source countries to tax e-commerce payments despite the absence of a traditional physical presence within the source country; (c) quantitative economic presence tests (e.g., permit source countries to tax above threshold sales such as $1 million in sales); or (d) global formulary apportionment with destination sales as one of the factors to encourage source country taxation. The lack of evidence surrounding source state base erosion resulting from e-commerce sales, however, suggests that the OECD's more conservative reform path and insistence on applying traditional principles as well as the same tax rules to e-commerce and conventional commerce was likely the better approach. As previously noted, in the longer term an increase in international e-commerce— particularly in the sensitive tax area of cross-border B2C digital sales—may call for a re-evaluation of traditional rules and principles.

The OECD members have a lengthy history with respect to negotiating tax treaties based on the OECD model treaty, which in turn was based on earlier model treaties. Moreover, the fact that the OECD member states cooperated effectively together on e-commerce reform may lead to enhanced loyalty that could encourage viable solutions in other areas of policy concern.

Because of the history of cooperation along with more recent efforts, it may be the case that the OECD member states have learned to trust the OECD process to the point where they are increasingly prepared to accept the OECD's leadership in resolving other areas of international tax policy concern, including binding multilateral mechanisms in limited areas such as transfer pricing arbitration. At a minimum, the trust encourages more modest efforts, such as enhanced multilateral information exchange, consistent transfer pricing documentation requirements and advanced pricing agreement (APA) procedures.

Tax Organizations

This part of the chapter builds on the analysis from the previous section by situating the OECD's e-commerce tax reform process within the ongoing debate on the need for a formal World Tax Organization that could impose binding tax rules on participating nations to limit adverse outcomes caused by, *inter alia*, international tax competition.

Observers have noted that international tax policy analysis suffers from a certain degree of arbitrariness because analysts and tax authorities generally cannot come to agreement on the ways that accepted general principles such as the need for inter-nation fairness should guide actual reform efforts. The problem in part is that a particular nation's international tax interests may vary depending on its economic circumstances. For example, capital exporting nations tend to support residence-based taxation under the principle of capital export neutrality, which is achieved if a taxpayer's choice between investing at home or in a for-

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eign country is not affected by taxes. Capital importing nations tend to support source-based taxation under the principle of capital import neutrality, which maintains that companies operating abroad should be placed in the same tax position as their local competitors. Many developing nations and transitional economies prefer the rules within the United Nations model tax treaty, which strengthen source-based taxation. Other nations may be both a capital exporting nation and a net e-commerce importing nation, which complicates matters and may lead to different preferred tax approaches for different industries.

This process can be distinguished from the different tax policy positions adopted by states or provinces within federal countries: if necessary, the highest court in the land can be resorted to provide one rule for all taxpayers to clarify how tax laws will interact among the different jurisdictions. For example, the U.S. Supreme Court has developed a bright- line physical presence test in the context of U.S. state and local sales and use taxation to ensure that inter-state commerce is not unduly inhibited by overly aggressive state laws. Moreover, federal countries have legislative bodies that can pass legislation that comports with widely-accepted tax policy views (such as the passage by Congress of the *Tax Reform Act of 1986*, which reduced tax rates and broadened the income tax base, in manner that was consistent with many policy perspectives).

Similarly, within tightly integrated economic regions such as the European Union, the European Court of Justice plays an important (and increasing) role in developing a unified tax policy for the European Union countries. For example, in the 'Lankhorst-Hohorst' decision, the European Court of Justice ruled that thin capitalization rules cannot impose unequal treatment between resident and non-resident European Union companies, leading many European Union countries to re-design these rules. The European Commission also plays an important role in shaping international tax policy for the European Union countries. For example, beginning in

2001 the European Commission announced that it would begin to emphasize, as part of a longer term strategy, the 'consolidation' of corporate income tax bases, while permitting the member countries to impose their own tax rates. Moreover, the Commission has achieved success in the past with, for example, value-added tax (VAT) harmonization and unified rules for the tax treatment of cross-border interest payments.

In contrast to the situation that exists for subfederal countries or for highly integrated regional economic unions, there is no international court or organization that has the authority to impose binding tax rules on national governments. Without such an organization, there is no body to encourage or mandate agreement on principles such as the need for inter- nation equity in the sharing of the cross-border income tax base. The lack of agreement on guiding principles would frustrate the ability of a global tax institution to impose rules that would attract widespread acceptance by national governments. This situation leads to a catch-22: the lack of agreement serves as a barrier to the formation of a world tax authority and the absence of a world tax authority frustrates the development of widely- accepted guiding principles for policy purposes.

Despite the inability to secure agreement on the application of international tax principles, there have been calls for the development of an international tax body other than the OECD. An extensive literature has debated the merits of an (upper case) World Tax Organization, which would bind participating countries at the supranational level to inhibit perceived problems such as harmful international income tax competition. This section provides an overview of some of the main points within this literature, while the next section explores how the informal and flexible nature of the OECD's tax reform process serves to better address international tax policy concerns.

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Arguments in favor of a World Tax Organization include the view that: (1) it would restrict income tax competition that could lead to a 'race to the bottom' as nations compete for mobile capital by reducing their corporate income tax burdens, possibly leading to revenue shortfalls and the inability to fund needed government programs; (2) as countries reduce income tax burdens on capital, they tend to increase burdens on less mobile factors of production such as labor leading to regressive tax policy; (3) binding international tax rules might inhibit tax evasion or aggressive tax arbitrage strategies that deplete national revenues; (4) uniform income tax rules among nations could potentially lower compliance costs for multinational firms as they would have expend fewer resources to deal with different national tax laws (this is the motivation behind the EU Commission's base consolidation proposals touched on previously); and (5) binding international agreements would inhibit countries from creating special tax incentives to attract mobile resources, which is thought to reduce international capital productivity as firms allocate resources to countries for tax reasons and not out of any real economic rationales.

Arguments against a formal World Tax Organization along with possible harmonization of tax bases and/or rates include the view that: (1) competition tames the so-called Leviathan tendencies of government to fund inefficient public services; (2) maintaining different income tax regimes promotes policy experimentation and innovation that could lead to future efficiency gains; (3) different income tax regimes can better address the distinct needs of different economies that, for instance, may prefer to subsidize certain business activities deemed crucial for national economic success; (4) centralized global institutions can be bureaucratic and could impose tax solutions that would create burdensome compliance costs for firms with cross-border activities; and (5) a World Tax Organization would unduly inhibit national sovereignty (this last item is taken up in the next section).

An 'all or nothing' approach identified above clearly oversimplifies the array of policy options provided to tax authorities. In fact, there exist more nuanced options that can be placed along a spectrum from the least tax sovereignty comprimising to the most, including: (a) no cooperation whatsoever; (b) bilateral coordination via tax treaties; (c) multilateral informal cooperation and coordination (e.g., via the OECD model tax treaty); (d) multilateral coordination with limited binding rules such as binding arbitration for transfer pricing purposes; (e) more formal multilateral cooperation such as global formulary apportionment where participants would need to agree on a binding formula with specified factors to divvy up the international income tax pie; (f) multilateral agreement to harmonize national rates and/or bases; (g) formal World Tax Organization with authority to issue binding rules to participating nations after multilateral negotiations take place; and (h) a World Tax Organization with legislative, executive and judicial branch for governance over international tax matters.

The OECD's e-commerce tax reform efforts fall within the spectrum under paragraphs (b) and (c) by encouraging multilateral cooperation on tax solutions that are ultimately reflected in the OECD model tax treaty, which filters down into bilateral tax treaty negotiation and coordination. These reform processes take an intermediate position by permitting OECD nations to maintain a high degree of flexibility with their tax policies (hence preserving sovereignty) while agreeing to adopt coordination measures into their treaty network to ensure a consistent application of tax rules on cross- border transactions.

While there remains an ongoing debate surrounding the need for binding global tax institutions, observers generally note that movement in this direction remains unlikely for the foreseeable future. Most nations continue to view their tax systems as an important component in pursuing socio-economic policies and wish to maintain laws and policies tailored to their national interest without interference from a formal World Tax Organization or other overly intrusive binding measures: tax sovereignty concerns remain one of the prime drivers of international tax policy.

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Viewed through the lens of international relations theory, the development of international tax policy can be understood as an ongoing political process designed to accommodate the needs of important economic actors (e.g., multinational firms) by reducing tax barriers to cross-border trade and investment while, at the same time, meeting and respecting the political needs of nation states. A better understanding of the political processes that shape international tax laws could lead to more informed policy analysis.

From this perspective, the OECD appears to be a good fit as it accommodates the interests of the most advanced industrial economies and their taxpayers without imposing any rules that would bind the tax policy of its member countries. The lack of authority to enact binding rules does not necessarily mean that the OECD is "toothless" as can be seen by returning to the vexing dilemma of international tax competition.

Since 1997, the OECD has taken the international lead in disentangling "fair" tax competition from "harmful" competition. OECD member states have agreed to reduce their own "harmful preferential tax regimes" in the context of mobile financial and other services. For example, the OECD asserted that the use of foreign sales corporation provisions in the United States constituted a harmful tax practice. In addition, OECD members have agreed that they may retaliate against uncooperative tax havens who have not agreed to eliminate their harmful tax practices by December 31, 2005.

According to the OECD, by 2004 only two of the forty-seven harmful tax regimes maintained by OECD members remained.

Moreover, thirty-three tax havens had agreed to reform their tax laws to enhance information exchange and encourage transparency: only five countries remained on the list of uncooperative tax havens. While its ultimate outcome remains uncertain, the OECD's harmful tax competition project can be portrayed as another significant step forward in international tax cooperation as it encourages multilateral coordination efforts to combat the use of tax havens to avoid or evade income taxes and limited tax base harmonization among OECD member states (by prohibiting the use of certain tax measures).

The potential success of the OECD's harmful tax competition project shows that global tax institutions may be able to address policy challenges without the need to resort to binding agreements or the traditional "sticks" of international law (such as threatened trade retaliation). Similarly, the success of the OECD e-commerce reform process, where it arguably acted for the first time as a (lower case) world tax organization, serves as evidence that heightened multilateral cooperation and coordination through informal institutions can provide opportunities for the development of widely-accepted tax policy and rules.

FUTURE PROSPECTS

The fact that the OECD currently only needs to develop consensus for its thirty member states likely helps to find tax solutions. For the most part, these OECD members control the bulk of the world's capital, and have similar interests as mature industrialized nations with service and technology-oriented economies. The ability to reach consensus on reform options is likely assisted by the fact that the OECD is constituted by only thirty countries so that reform does not become bogged down in a process where broader multilateral interests come into play. The OECD members include all of the most advanced economies of the world, and many have similar national interests so that they are, in the OECD's own words, "like- minded," which facilitates the attainment of consensus.

But the fact that the OECD generally remains a "rich countries' club" is also a drawback for the development of effective international reform. Countries such as India have viewed the OECD reform

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efforts with suspicion because of the understandable perspective that the organization is designed to protect the interests of its member countries. For example, the OECD model tax treaty eliminates withholding taxes on royalties, which supports the interests of net technology exporting countries. By merely tinkering with the permanent establishment concept through the new server/PE rule, for instance, Indian tax authorities have argued that the OECD is protecting the interests of capital exporting nations at the expense of the interests of capital importing nations. Disagreements between OECD member countries and non-member countries are to be avoided as they reduce tax certainty and increase the risk of international double taxation, which in turns inhibits international trade and investment (and harms the interests of OECD countries and their multinational firms).

One obvious way to create more inclusive reform efforts is to extend OECD membership to more countries. Mexico, for example, historically refused to enter into any tax treaties with developed nations but changed its policy and entered into its first treaty based largely on the OECD model with Canada in 1992 after Mexico was considered and later granted OECD membership in 1994 (the burgeoning Mexican tax treaty network was also influenced by Mexico's decision to enter NAFTA and the World Trade Organization). It is unlikely, however, that the OECD will significantly increase membership in the near future, although the organization is considering membership extension to certain countries.In any event, many countries may not wish to become an OECD member if it they are forced to change tax policy (such as the extension of tax holidays to non- resident firms) or other aspects of domestic policy (such as privacy or criminal laws) in accordance with the OECD mandate to encourage democracy, the rule of law, and individual human rights.

In fact, in recent years the OECD has taken several significant steps to take into consideration the views from non-member countries. In 1997, the OECD began to add the positions of certain non-member countries to the OECD model tax treaty in recognition of [the] growing influence of the Model Convention in non-member countries. In 2002, the OECD, International Monetary Fund, and World Bank announced efforts to form the International Tax Dialogue to provide a forum for input from developing countries and other international organizations on tax measures to improve co-ordination of technical assistance, share good practices and pursue common objectives in improving the administration of national tax systems.

In addition, the OECD has sponsored multilateral tax centers in Austria, Hungary, Turkey, Mexico and Korea to hold meetings with representatives from non-OECD countries. Moreover, the OECD operates tax centers in Russia, China, Malaysia and India and assists with the development of regional programs in Latin America and Africa. The OECD also provides a Global Forum on tax matters whereby non-member countries are provided some opportunities for input and design of tax reform options. Finally, as discussed, the OECD developed outreach programs for its e-commerce tax reform efforts (such as membership in TAGs) to ensure that non-member states participated in the dialogue that led to changes within the OECD model tax treaty.

A more effective solution may be to combine and formalize the different outreach programs developed by the OECD. The e-commerce example demonstrates that outreach heightens the chance for effective reform when non-member countries can participate in the deliberation and formulation of changes to international tax rules and principles. The formal structure could be designed in such a way to extend permanent membership to non-member countries to provide opportunities for them to voice their concerns and assist with the design of reform efforts. By creating a permanent structure, the OECD reform efforts could promote legitimacy with these non-members, further encouraging them to 'buy-in' to reform efforts.

Two-tiered membership could be extended to participating countries. The first tier would include all OECD member countries— consensus among these members would continue to be needed to enact

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major policy changes, such as amendments to the OECD model tax treaty. The second tier would include non-member countries who wished to be granted permanent membership within this tier. Countries from both tiers would be invited to deliberate policy changes through the Committee on Fiscal Affairs and its committees, but only tier one countries could ultimately make these changes (this approach is similar to the OECD's e- commerce tax reform efforts).

Tier two status would be likely problematic for non-member countries but, given current political realities, it may be the best that they can hope for. Permanent membership at least would provide non-member countries with more opportunities to access OECD resources and to provide input. It would also help to allay concerns that the OECD has been 'captured' by multinational firms based in OECD countries; the perceived influence of these firms may be reducing the legitimacy and effectiveness of OECD reform efforts.

The proposal would not change the *status quo* by any significant degree and hence might attract the necessary support from OECD members. The OECD's outreach program has already been formalized to a certain extent through the Board for Co-operation with Non-OECD Economies (a subsidiary body of the Committee on Fiscal Affairs) and the Advisory Group on Co-operation with Non-OECD Economies, which administers the outreach programs and advises the Board.

In addition, the Committee on Fiscal Affairs already permits certain non-OECD member countries to participate in committee work as Observers. In 2004, China and South Africa joined Russia and Argentina as Observers in the CFA: this seems to be a positive step in that it would be consistent with the view, noted earlier, that the OECD is effective at informally accommodating the changing global economic environment. The OECD could further legitimize its reform efforts and become a truly global tax organization by extending permanent membership to non-member countries to give them more opportunities to provide input into prospective reform efforts.

CONCLUSION

The main purpose of this chapter is to determine the challenges of taxing EC The first challenge highlighted was the creation of tax laws for the conventional mode of commerce and in an era 'that could not have foreseen the technological advances of the present' (Li, 2000). Applying the current tax laws to tax EC challenges the tax principles of neutrality, efficiency, certainty, fairness and simplicity. The other challenges highlighted by other researchers were categorised into the three main categories of challenges namely, Enforcement, Application and Principles.

The principles of taxation are challenged in online trading. The difficulty in applying the tax definitions to the online environment has shaped legal dilemmas (Ahmadu, 2004). However this can be overcome. The important issues require legal resolution. The 'emergence of international and global tax dimensions have been subject to continuous negotiations throughout their history in response to changing forms and functions of society'.

According to a recent report by the Associated Chambers of Commerce and Industry, the Indian e-commerce industry is expected to touch the US$38 billion mark by 2016. This growth will be driven by increasing internet and mobile penetration, discounts, convenience and value added services, which have grown multifold, from US$3.8 billion in 2009 to US$23 billion in 2015.

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However, despite the recent e-commerce guidelines and other reforms bringing clarity on the regulatory front, there are still challenges related to tax that are leading to litigation. These issues, if not addressed well in time, may hinder the growth of the sector as a whole.

1. New e-commerce guidelines liberalize foreign direct investment regulations- The Government has brought about a lot of relaxations in the sector by releasing the much-awaited guidelines on investments by non-residents. The new guidelines permit 100% foreign direct investment (FDI) the marketplace model through the automatic route, subject to certain conditions. Companies operating on a marketplace model only provide buyers and sellers a platform to transact, and not directly engage in selling activities.The Government has also been conscious of providing a level playing field for offline stores, resulting in measures such as control on discounts offered by e-commerce companies and capping of total sales from a group company or an individual vendor, much to the disappointment of the consumers.
2. Tax regime for e-commerce and the key challenges

The income of Indian residents running e-commerce operations is taxed in India at the applicable tax rates; therefore, there is no requirement for specific provisions for them. However, there has always been a dispute on the taxability aspect of non-residents carrying out such transactions in India.The basis for the dispute is that India has traditionally adopted a source-based taxation regime for non-residents in the country, depending on physical presence in the form of a fixed place of business or a dependent agent in the source country, i.e., India. However, with e-commerce the need for a physical presence virtually ceases, which creates problems in the enforcement of tax laws. Therefore, in 2001, the Central Board of Direct Taxes constituted a High Powered Committee (HPC) to contemplate the need of a separate tax regime for e-commerce transactions. The report submitted by the HPC took into consideration the principles laid down by the Organisation for Economic Co-operation and Development (OECD) for taxation of e-commerce transactions. It maintained that the existing laws are sufficient to tax e-commerce transactions and that no separate regime is required. Accordingly, the taxation of e-commerce transactions is still governed by the extant provisions of Income-tax Act, 1961.

Direct Tax

1. While non-residents employ several business models and mediums to carry out their e-commerce business in the country, issues around the taxability of income and the corresponding litigation are primarily on account of the following reasons:

Characterization of Income in the Hands of the Non-Resident

Certain types of income such as royalty and fees for technical services deemed to accrue or arise in India are taxable in India, but business profits in the absence of a permanent establishment (PE) are not. Litigation arises when tax authorities treat payments as royalty, fees for technical services, etc. instead of business income as contented by non-residents.

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Issues Surrounding PE

On the PE front, there have been issues around whether a website in India constitutes a PE for a non-resident and whether certain activities performed by an agent in India constitute a dependent agent PE.

Applicable Withholding Tax Rates on Payments Made to Resident E-Commerce/Internet Companies

There has been litigation on the applicable withholding tax rates on payments to resident e-commerce companies for activities such as e-cataloging, warehousing, logistics and payment gateways. – Sec 194C which provides for 2% rate vs Sec 194J which provides for a 10% rate.

In the recently concluded Budget, the finance minister proposed an equalization levy of 6% on payments exceeding INR 1 lakh a year made to foreign e-commerce companies as consideration for online advertisement. Through this move, the Government aims to tap the income accruing to foreign e-commerce companies in India.

Indirect Tax

The indirect tax laws in India have been more of a hindrance than a driver for growth for the e-commerce sector, mainly because of the following issues:

In the case of internet-based transactions, determining the jurisdiction of VAT becomes an issue in the absence of information regarding the physical presence of entities/goods.

There is tax leakage on account of service tax paid on listing fees by vendors to portal owners, which is non creditable against VAT payable on sales made by vendors.

The classic sale vs. service controversy is afflicting e-tailers, who end up with VAT/ CST demands in various states involved in the supply chain.

The unique and varied business models in this sector make it difficult to define a broad base for tax positions —for example, the implications on prepaid sale could be different from those on COD sale.

E-tailers are also seeing increasing litigation on account of entry tax and octroi being demanded/ collected on the movement of goods.

Various states are amending their respective VAT laws to provide for taxing of e-commerce transactions. For instance, the Karnataka Value Added Tax (KVAT) authority is contemplating charging local VAT on transactions on e-commerce websites by treating them as “dealers” according to the provisions of the Karnataka Value Added Tax Act, 2003 (KVAT Act).

The goods and services Tax (GST), which is expected to be implemented soon, would replace the current indirect tax regime and is expected to rid the e-commerce sector of the issues plaguing it. If the state of consumption gets the tax, it will eliminate all issues being raised by origination states. However, the state demanding or getting full tax earlier will lose its revenue as the consuming states will earn all the tax revenues.

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REFERENCES

Ahmadu, M. L. (2006). The Legal Aspects of Electronic Government in Pacific Island Countries: A Reflection. *Journal of South Pacific Law, 10*(1). Retrieved from 3. http://www.paclii.org/journals/fJSPL/vol10/1.html

Alice, Y. (2001). *Profit Tax, Treatment of Electronic Commerce*. Hong Kong: Inland Revenue Department. Retrieved from http://www.ird.gov.hk/eng/pdf/e_dipn39.pdf

Cockfeild, A. J. (2006). The Rise of the OECD as informal ' World Tax Organization' through the shaping of National Response to E- Commerce Tax Challenges, *Yale*. *The Journal of Law and Technology*, *2*(1), 1–54. Retrieved from http://www.americantaxpolicyinstitute.org/wp-content/uploads/2017/02/National-and-International-Responses-to-Ecommerce6-_2_.pdf

Cockfeild, A. J. (2014), The Rise of the OECD as Informal; World Tax Organization; Through National Responses to E-commerce Tax Challenges. *tax.network*. Retrieved from https://tax.network/ajcockfield/rise-oecd-informal-world-tax-organization-national-responses-e-commerce-tax-challenges

Hanefah, H. M. M., Hassan, H., & Othman, Z. (2008). E-commerce implications: Potential problems and challenges in Malaysia. *International Business Research*, *1*(1), 43–57.

Hardy, M., & Horner, F. (1999). Billabongs, dugongs, Internet and tax. *The OECD Observer. Organisation for Economic Co-Operation and Development*, 15–19.

OECD. (1998). *Electronic Commerce: Taxation Framework Conditions*. Retrieved from https://www.oecd.org/ctp/consumption/1923256.pdf

OECD. (2001). *Taxation and Electronic Commerce: Implementing the Ottawa Taxation Framework Conditions*. Retrieved from https://www.oecd.org/tax/consumption/Taxation%20and%20eCommerce%202001.pdf

OECD. (2003). *Annual Report*. Retrieved from https://www.oecd.org/about/2506789.pdf

Saunders, M., Lewis, P., & Thornbill, A. (2003). *Research Methods for Business Students* (3rd ed.). Pearson Education Ltd.

UN. (2011). *Model Double Taxation Convention between Developed and Developing Countries*. Retrieved from http://www.un.org/esa/ffd/documents/UN_Model_2011_Update.pdf

UNCTAD. (1996). *Incentives and foreign direct investment*. UNCTAD/DTCI/28, Current Studies, Series A, No 30.

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Chapter 87
Electronic Commerce and Actual Problems of Taxation:
The Key Underlying Issues

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ABSTRACT

This chapter examines the problems related to the international taxation of electronic commerce and identifies the alternative solutions that have been adopted in the current fiscal framework. The results obtained demonstrate the proposed models of e-commerce taxation based on existing international legislation, notably origin-based taxation, tax withheld at source and technology based solutions. This study argues that any legislative change should be implemented by a number of countries or through international efforts to harmonize practices, and sets out the future directions in the taxation of e-commerce. This chapter contributes to the scientific knowledge to accounting and tax research on the taxation of e-commerce.

INTRODUCTION

Economic growth and the globalization of international markets have driven the development of the new technologies sector. The development of new information technologies, more specifically the internet, led to the emergence of new forms of commerce. Of these, electronic commerce stands out in particular; not only has it registered steady growth, but it has completely changed the way commerce takes place and had a great impact in various areas. As a result, new markets and new products have been created and relationships have become virtual without any physical contact between buyer and seller, in contrast to what happens in traditional commerce. This change in the way commerce takes place has raised a

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number of accounting and tax issues, notably that of identifying the best method for dealing with the accounting and taxation of this kind of transaction (Yang & Aquilino, 2016).

In recent years, the internet has ceased to be used simply for communication and information search purposes and has increasingly become a commercial network. As such, it offers multiple advantages as it allows companies to do business all over the world at low cost without the need for a physical establishment. It is usual for these companies to make their products or services available through their sites, often transcending the economic rules that govern the trade of the destination countries, and even international rules (Gamage & Heckman, 2011).

The national tax systems as well as trade and customs barriers are therefore easily by passed. Previous studies report that countries have not yet prepared legislation and methods to tax this kind of transaction (Azam, 2012; Cockfield, 2005; Ligthart, 2004; McLure, 2001, 2003). The advances in e-commerce allow sophisticated information systems to be developed, giving rise to the urgent need for various international organizations to work together on advancing common tax systems.

This chapter examines the problems related to the taxation of electronic commerce and identifies the alternative solutions that have been adopted in the current fiscal framework. The research does not intend to study all the difficulties that the taxation of this kind of commerce involves, but to analyze some of these issues, more specifically in direct international taxation.

The results obtained demonstrate the proposed models of e-commerce taxation based on international legislation, notably origin-based taxation, tax withheld at source and technology based solutions. This study argues that any legislative change should be implemented by a number of countries or through international efforts to harmonize practices. The biggest mistake that could be made would be to try to find an individual or regional solution to the problems of internet and e-commerce, without taking the international context into account. After all, e-commerce is not an issue of merely local scope but has global implications given the breaking down of borders afforded by the internet.

This chapter contributes to accounting and tax research on the taxation of e-commerce given that, according to the studies and articles published to date, governments have not yet approved any law or significant guidelines on the taxation of international e-commerce.

The chapter is structured as follows. Following a brief introduction, the next section presents the background to the internet as it is the means used for this kind of purchase, describes the characteristics of e-commerce and sets out the international institutional framework. An analysis is then made of the taxation difficulties in e-commerce, making reference to the following factors: characteristics of e-commerce, the permanent establishment, tax havens and the application of criteria for the assignment of profit. Section four develops the proposed models of taxation of e-commerce. The work concludes by outlining the main aspects of the current problems and future challenges of e-commerce.

ELECTRONIC COMMERCE

Definitions, Typologies and Characteristics

The increasing use of the internet worldwide is proof of the rapid revolution in the new information and communication technologies. The communication process has become renowned thanks to the internet and is present in various social segments. In short, the internet is a communication system that links

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millions of computers/users around the world and allows them to have an interpersonal relationship in real time on a global scale.

Nobody owns the internet. Nobody can sell or assume ownership of it in order to turn it into a monopoly. Hence, no central authority regulates its use or publishes standards for the behavior of users. Although there are management committees in the United States and elsewhere that coordinate services, they are always subject to the technical limitations imposed by the evolution of technology.

The internet originated in the 1970s when the US military decided to link the computers of the main North American universities involved in a research project of great importance to the defense of the United States. In order to safeguard the data in the computers of Stanford Research Institute, University of California Los Angeles, University of California in Santa Barbara and the University of Utah the Advanced Research Project Agency developed a communication network that was designated Advanced Research Project Agency net (ARPAnet). The purpose of ARPAnet was to allow the information available to be accessed by any of the existing computers in the event of a nuclear attack on where they were installed (Guimarães, 2001). Parallel to ARPAnet, the US Department of Defense created another network named MILnet for the dissemination, access and storage of less qualified information.

Subsequently, another US government agency called the National Science Foundation developed a network of five super computers in the late 1970s named NSFnet with the aim of connecting all the universities and research centers in the United Stated so that researchers could share information and exchange messages. At the end of the decade, the protocol suite known as Transmission Control Protocol (TCP) and Internet Protocol (IP) was created; this permitted intercommunication between computers by including communication between the programs and protocols for the transport, transmission and control of data reception. ARPAnet became redundant due to the success of the NSFnet initiative and was closed in 1990.

In 1989 Tim Berners-Lee of CERN invented a new system to access information that was designated the World Wide Web (WWW)[1]. The World Wide Web is the most recent information system that uses the internet as the means of transmission. According to Berners-Lee, its success is due to the construction of an open internet with three critical factors:

1. Unlimited connections from any one part of the site to any other part.
2. Opening of technical standards as the basis for the continued growth of applications and innovations.
3. The separation of network layers, permitting innovation irrespective of network transport and information requests.

Driven by the constant technological advances that the world has seen over the years, the internet made it possible for consumers to buy almost anything from any vendor in any part of the world (Ligthart, 2004).

There are a number of definitions of electronic commerce. Some define it as a form of Electronic Data Interchange, in other words, an exchange of data by computers and other electronic devices without the production of any paper document. Others define it as the sale of any product or service by means of the internet.

According to the Internet Tax Freedom Act (1998), the concept of electronic commerce can be described as "any transaction made by means of the internet. which encompasses operations such as sales, locations, licences, goods, services, the supply or delivery of goods". Meanwhile, the OECD (2000)

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defines the concept of electronic commerce as "business that takes place in a network, using contracts without property and established through an open process without much regulation". On the other hand, ANACOM (2004) describes it as "any kind of commercial transaction in which the parties involved interact electronically and not through physical exchanges or contacts".

The Eurostat (2013) defines electronic commerce as "the exchange of goods and services by means of computer networks such as the internet. This kind of commerce can be divided into e-commerce sales and purchases depending on whether the company sells or buys. Essentially, e-commerce is part of a company's business model that complements its conventional selling and purchasing activities and therefore improves its performance". According to Courinha (2001), electronic commerce is "a set of commercial transactions of goods and services, conducted by means of computers linked to the internet between various individuals, which may or may not take place within the same jurisdiction." In short, we understand electronic commerce as quite simply a mode of distant purchase in which information is received and transmitted by electronic means.

In addition to electronic transactions, electronic commerce also includes:

1. The electronic presentation of goods and services.
2. Receiving orders on the internet and invoicing.
3. Automation of orders.
4. Payments by internet and the management of transactions.
5. Automated supply chain.

On the other hand, by using electronic commerce solutions, companies can glean the following benefits: an increase in their profit margin by using the online channel, cutting of costs associated to paper processes, and providing clients with a quicker service and establishing the brand.

Electronic commerce can be classified in line with various criteria depending on the type of product or service transacted, the sector of activity, or the type of party involved in the process. Due to the numerous ways of classifying electronic commerce, the classification in accordance with the type of party involved in the electronic transaction is set out below, recognizing the following types of electronic commerce:

1. Business-to-business.
2. Business-to-consumer.
3. Business-to-administration.
4. Consumer-to-administration.

Business-to-business commerce involves transactions from one company to another and is divided into three broad areas: e-Marketplace, e-Procurement, and e-Distribution. E-Marketplaces are electronic platforms in which the companies involved adopt the position of buyer or seller with the aim of establishing a trading relationship with each other. There are two kinds of e-marketplace: one in which only companies in a specific industry participate and another which involves companies from various sectors of activity. E-Procurements are digital platforms developed to support the supply of materials to organizations; they permit the optimization of the supply chain in terms of time and costs by means of automating the processes of suppliers' interactions with the purchase base. E-Distributions consist of

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electronic platforms that bring companies in contact with the distributors, representatives and subsidiaries and allow a range of tasks to be performed, such as issuing invoices and the reception of products.

The business-to-business model has led to increasing innovative forms of business cooperation and has helped companies face the new challenges of globalization, thus boosting their competitiveness.

Business-to-consumer commerce is achieved through establishing electronic commercial relations between the companies and the end consumers of their goods or services. This kind of commerce is typical of the retail sector; although it is characterized by being easier and more dynamic, it is also more random.

Great progress has been made in this kind of commerce due to the development of the internet and its websites, where products ranging from books, mobile phones, fashion accessories, DIY and food products are all commercialized.

Business-to-administration commerce involves all transactions between companies and the public administration undertaken via the internet. It covers a very diverse set of services, notably in the tax, social security, notary, registry and employment sectors. This kind of commerce is in rapid development, due in particular to the government's promotion and investments in the area.

Consumer-to-administration commerce encompasses all electronic transactions made between citizens and the public administration. It is applied in sectors for which the state is responsible for services, such as social security (disclosure of information, making payments), health (payments for health services, making appointments), education (disclosure of information, training with digital support), and tax (completion and delivery of tax declarations and payments). These Business-to-Administration and Consumer-to-Administration models used in the public administration are associated to the modernization process underway and improvements to the quality of public services.

Electronic commerce is a new of doing business that moves away from the traditional means familiar to us as it sets new parameters for trading due to the appearance of new technologies and everything that encompasses.

The key characteristics of electronic commerce are: dematerialization, anonymity, extreme mobility and disintermediation. Dematerialization is an essential aspect of electronic commerce. It results from the digitalization and intangible nature of the entire electronic commerce process, as well as the reduced need for physical presence. Digitalization is the conversion of text, sound, images, videos and other content into binary computer language, grouping and storing data as a set of bits and bytes, thereby allowing the integrated transmission of data by electronic means, which in turn permits electronic transaction. Digitalization is responsible for the intangible nature of electronic commerce in that nothing that happens in the technological world is like the physical and palpable.

Due to the intangible nature of electronic commerce and the fact that no physical presence is required at the place of transaction, it is understood that there is no need for the parties involved to know each other or for the parties to meet physically, as happens with traditional intermediaries, in order to complete the transaction between the producer and end consumer. There may be no intermediaries in electronic commerce, and if there are, they may not know who is who, hence the anonymity. The impossibility of controlling the internet in its entirety, which is aided by the phenomenon of encryption, a data codification technique, means that the identity and the content transmitted is only known if a person has an electronic key created specifically for each individual case, also giving rise to anonymity.

With electronic commerce, trading is immediate, unlimited in time and space and accessible to everybody regardless of where they are in the world as long as there is access to the internet. This gives rise to infinite possibilities of selling and buying anything anywhere in the world, making its great mobility a key characteristic of electronic commerce. Electronic commerce permits the relocation of

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activities, of parties, of goods and services. As a result, it accelerates and diffuses the changes that are already in progress with an extraordinary propagation effect; it triggers an enormous increase in the interactivity of the economy and generates a new temporality that speeds up the production cycle and the satisfaction of consumers' needs. The characteristics of electronic commerce are inextricably linked with the characteristics and functions of the internet but are in stark contrast with the characteristics of traditional commerce.

The intangibility of electronic commerce is a fundamental pillar and physical presence has become irrelevant to the completion of a commercial operation, which means there is a "disintermediation" process of the traditional intermediaries. Electronic commerce permits direct contact between the sources of goods and services and their recipients, which has led to the disappearance of many intermediaries that played an important role in the traditional commercial chain with the aim of cutting costs.

Due precisely to its technological nature and new way of working, electronic commerce has generated a new phenomenon, namely the reformulation of the role of some traditional intermediaries and the appearance of other new ones: the cybermediaries. The latter may be assigned an important role of trust and action in the market; this is key to both producers and consumers. This is underpinned by the need to reformulate their action, by boosting them and adapting themselves to the new technologies and digital needs.

The advantages arising from this reformulation are based on the fact that the intermediaries are able to soothe tensions when there are conflicts of interests between the producer and consumer; moreover, the new functions of the intermediaries bring benefits for producers through the creation and dissemination of information and the product and service and this can influence purchases, promote information for the client, create space that brings the product or service into the spotlight, reduce the producer's and consumer's risk of exposure, as well as reduce distribution costs through economies of scale.

One example of the reformulation of traditional intermediaries is in the institutions responsible for the payment systems that support electronic commerce. The facility and security of electronic payment systems is a fundamental pillar of the development of electronic commerce due to the strengthened role of the financial entities that intervene and guarantee the financial transfers in the electronic transactions. This has brought new life to the traditional financial institutions; and spaces have emerged for the proliferation of new entities that are specialized in the sector both to increase the supply of services available and guarantee the safety and confidentiality of the financial data involved in the e-commerce transaction.

The major development for intermediaries in electronic commerce is that of the technological intermediaries. Telephone companies, internet providers, including cases of website hosting and website storage and even certification authorities, as well as the new professions associated to the internet universe like web page designers or experts in internet security, have emerged as new entities that mediate communication between the trader and the buyer; indeed, the internet is the communication channel between them and, as a universe with its own life, this has physical and virtual foundations necessary for the implementation and existence of the virtual communication channel.

The need for less human intermediation is a characteristic of the virtual universe, and this gives rise to increased difficulties in developing close cooperation between intermediaries and the Tax and Customs Authority. But ultimately there should be a human hand that controls the electronic arm so that a communication platform and a collaboration base can be achieved.

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Institutional Framework

Due to the global character of e-commerce, a number of international and state bodies have been working towards outlining directives for this kind of trade and digital signatures. The some of these bodies include the United Nations Commission on International Trade Law, the World Trade Organization, Organization for Economic Cooperation and Development, Global Information Infrastructure Commission, Consumers International, European Union, Asia-Pacific Economic Cooperation Forum, and Asian.

The United Nations Commission on International Trade Law (Uncitral) has been expressing its concern about electronic communications since the 1970s, and the current Model Law was preceded by several other initiatives. The Uncitral Model Law on e-commerce of 1996 is one of the main pillars on which legislation regarding this subject has been based all over the world.

It should be noted that the Uncitral Model Law only serves as a model for countries associated to the United Nations. It is merely suggested that member countries use this model as a basis when preparing laws. Nevertheless, the analysis of the Model Law is important, not only because it was the first but also because it served as inspiration for the few pieces of legislation related to e-commerce.

The Uncitral Model Law defines the main concepts of e-commerce, including electronic messaging; it addresses the regulation of legal formalities for electronic messages, and regulates communications via electronic messages. We believe that most important contribution made by the Uncitral Model Law on e-commerce is to consumer rights.

At the time of the Uruguay Round, which resulted in the creation of the World Trade Organization (WTO), the subject of electronic commerce was only just emerging and far too new to be on the agenda in multilateral trade negotiations. It was at the first WTO Ministerial Conference in Singapore in 1996 that matters directly related to e-commerce were addressed for the first time. This was when the Ministerial Declaration on Trade in Information Technology Products was adopted; also known as the Information Technology Agreement, it stipulated that electronic commerce would be liberalized in some countries by 2000.

The WTO acknowledged the global importance of e-commerce on 20th May 1998 when it drew up the Ministerial Declaration on e-commerce in Geneva, Switzerland. This Declaration established a work program that would examine any matters involving e-commerce, taking into account the economic and financial needs of developing countries. The WTO understands e-commerce as any production, distribution, dissemination, sale or delivery of any goods and services via electronic means. The WTO program also takes into account any matters related to developing infrastructures that broaden the reach of electronic commerce.

The Organization for Economic Cooperation and Development (OECD) is an intra-governmental organization which includes thirty member countries and represents the world's developed countries.

The OECD provides governments with a forum to discuss economic and social policies. The exchange of different points of view among the OECD member countries leads to practical recommendations that they also discuss among themselves and which usually become national laws.

Due to the importance of e-commerce worldwide, in April 1998 the OECD issued a Guideline aimed at protecting consumers purchasing goods and/or assets on the internet. The OECD acknowledges the need and encourages each country to individually analyze and review the Guidelines before adopting its own legislation on e-commerce. The OECD Guidelines are straightforward and cover primarily the following relevant points: traders using e-commerce should take consumers' interests into consideration and act accordingly in terms of commerce, advertising and marketing, and any information provided

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must be clear, visible and precise; companies supplying products and/or services on the internet must not use abusive contract terms; any advertising and marketing should be clearly recognizable as such by consumers.

The Guidelines include several recommendations on how to resolve e-commerce disputes as this is recognized as being the major challenge for e-commerce.

The Global Information Infrastructure Commission (GIIC), a body that describes itself as independent and non-governmental involving leaders from developed and industrialized countries, has been studying the impact of technology on society for some years. In 1997, the GIIC had already published its recommendations on e-commerce. These included the need to regulate and/or define the following points: (i) how e-commerce should be taxed; (ii) the development of electronic payment systems; (iii) the development of a Global Code for e-commerce; (iv) brands and privacy. Note that all the points raised in 1997 are still relevant to the full development of e-commerce today.

Consumers International (CI) is an international organization of national consumer groups. With its head office in London, it has a regional office for Latin America located in Santiago do Chile. CI helped prepare the OECD Guidelines on consumer protection in e-commerce, albeit defending that their positions are not the same.

One of the first community references to e-commerce was a communication to the European Parliament, the Council, the Economic and Social Committee, and the Committee of the Regions in 1997 entitled "A European initiative in e-commerce", with the aim of fostering an increase in e-commerce across Europe.

The discussions within the scope of the European Union follow along the same lines as those of the OECD, focusing on analyzing indirect taxation, seeking to establish a definition for the legislation on Value Added Tax (VAT) charged on the transaction of services sold via the internet.

On 7th June 2000, following the Lisbon European Council (which took place on 23rd and 24th March, 2000), the Commission presented a proposal for a Directive on e-commerce taxation. This proposal took into account the principles for the online supply of digital goods adopted when the European Union first established its position on e-commerce taxation at the ECOFIN Council in July 1998.

The European Union's objective is to promote e-commerce by removing any existing legal obstacles, with emphasis on the following points: (i) the location of the establishment of the information society service provider; (ii) commercial communication (advertising, direct marketing, etc.); (iii) the conclusion of contracts via electronic means, in compliance with requirements regarding the manner and place where they are signed (iv) the responsibility of the online service providers for the transmission and storage of information belonging to third parties; and (v) the application of regulations (preparation of community codes of conduct, the obligation to set up a swift and efficient legal system adapted to the online environment).

The following principles on this matter were adopted by the European Union in 1998:

1. No new taxes should be created for e-commerce. The existing tax regimes should be adopted, namely VAT, so as to be applied to e-commerce;
2. The delivery of goods by electronic means should be considered as services rendered for the purposes of VAT;
3. Only the services rendered for goods consumed in Europe should be taxed in Europe.

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Based on these principles, the proposal for a Directive foresaw the alteration of the current framework on the taxation of the provision of services as laid down in the Sixth Directive provisions. More specifically, an alteration was suggested in relation to the provision of services by electronic means. The provision of services by suppliers established in the European Union is taxed as a matter of course in the location where the purchaser has its head office, a permanent establishment, domicile or usual residence; however, the location rule of the supplier's Member State is maintained in cases where the services are provided to private persons established in another Member State.

With regard to the provision of electronic services provided by companies established outside the European Union to buyers established therein, the solution depends on whether the latter are companies or private individuals. Services purchased by companies established within the EU are responsible for paying VAT applying the reverse charge mechanism. When the buyer is a private individual residing in the EU, suppliers located in other countries will have to register and comply with the tax obligations in any Member State if the annual volume of business is over 100,000 euros. If this limit is not exceeded, these operations would not be taxed or subject to any obligation.

In order to mitigate the regulation problem, the European Union drew up a legal framework for information society services and, more specifically, for e-commerce. Some of these documents relevant to e-commerce is set out below.

As mentioned above, the European Commission Communication "A European initiative in e-commerce" marked the beginning of concerns about new technologies. A set of proposals was presented for the development of e-commerce in Europe. These proposals covered access to the world market, legal and regulatory matters, and the fostering of a favorable commercial environment.

The European Commission Communication "E-commerce and Indirect Taxation" was aimed at preparing the Contribution of the EU and Member States on indirect taxation matters for discussion at the Ottawa Conference.

The Council and European Parliament Directive 1999/93/EC, of 13th December, regarding electronic signatures within the legal community framework; this sought to facilitate the use of electronic signatures and contribute towards their legal recognition by establishing a legal community framework for electronic signatures and certification services so as to ensure that the internal market functions appropriately.

Directive 2000/31/EC, Directive on electronic commerce, of the European Parliament and of the Council, of 8th June 2000, regarding certain legal aspects of information society services, particularly e-commerce; this aimed to contribute towards the correct functioning of the internal market by ensuring the free circulation of information society services between the Member States.

Directive 2000/46/EC of the European Parliament and of the Council, of 18th September 2000, on the taking up, pursuit of and prudential supervision of the business of electronic money institutions. Directive 2001/115/EC, of the Council, of 20th December 2001, regarding certain aspects of electronic invoicing. Directive 2002/38/EC, of the Council, of 7th May 2002, making definitive and temporary amendments to Directive 77/388/EEC as regard the value-added tax applicable to radio and television broadcasting services and certain services provided electronically.

In November 1998, the Asia-Pacific Economic Cooperation forum announced that they intended to look into e-commerce more closely and published the Blueprint for Action on Electronic Commerce, acknowledging that national regulation is necessary in some cases.

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The other body, Asian, was founded in 1967 to foster regional cooperation among its member countries: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam. Asian is the first regional organization to adopt the harmonized legal framework for electronic commerce. Its aim was to develop consistent national legislation.

PROBLEMS AND CHALLENGES OF ELECTRONIC COMMERCE

The Problems of E-Commerce Taxation

The scope of electronic operations is such that it warrants due attention from the international political community and a suitable legal framework. Electronic commerce came into the modern economy along with new technologies. This kind of trade is part of many of the new commercial models adopted by organizations, which is why it is essential to give an appropriate response to its growing use. From the outset, the application of measures regulating e-commerce raised a range of problems. In most cases, regulating this new form of trade did not create entirely new problems but added to the many debates already on the table.

Various experts have argued that e-commerce generates a taxation problem for which an efficient and effective solution must be found rapidly (Gamage & Heckman, 2001; Ligthart, 2004; Seitz, 2005). Gamage and Heckman (2011) believe that the sudden development of internet and e-commerce in the last couple of decades contributed to a dramatic rise in the number of transactions, depriving Member States of important revenue, particularly following the economic recession and crisis.

According to Ligthart (2004), digital payments, for example downloading software and paying for it with digital money, raise complications when applying tax because the origin and destination of the transactions are not clear. Gamage and Heckman (2011) argued that the rapid increase in e-commerce has undermined the Member States by depriving them of much-needed revenue due to the non-application of taxes. According to Seitz (2005), the problems of taxing e-commerce arise from the moment the traditional taxation principle is required. This principle dictates that companies must exist physically and geographically.

Following on to this reference to the problem of taxation, it is important to clarify the main difficulties for e-commerce taxation. At the start of 1996, the US tax authorities issued a number of reports including the "Select Tax Policy Implications"; they looked into whether the development of e-commerce would make governments deal with losses in tax revenue or with the increasing use of tax havens.

Tax experts also noted that fiscal laws and principles needed to be reviewed to take into account the new commercial setting (Cockfield, 2005). While governments had taken some steps towards addressing these challenges by December 2005, many had not yet prepared a law or administrative procedure to tax international e-commerce.

This inaction on a national level was influenced by the leading role played by the Organization for Cooperation and Economic Development in establishing the basic principles and taxation rules so that governments could then deal with the international e-commerce transactions (Cockfield, 2005).

Nowadays it is broadly acknowledged that the main factors behind the difficulty in taxing e-commerce are linked to its characteristics, the complexity of defining a physical establishment, the increase in the number of tax havens, difficulties in applying the criteria on assigning profit, and double taxation.

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E-Commerce and Taxation Characteristics

Taxing e-commerce is difficult precisely because of its characteristics, notably dematerialization, disintermediation, anonymity, and mobility. Dematerialization poses a major threat for the Tax and Customs Authority thanks to factors such as digitalization, the intangible nature of the commercial process, and the limited need for a physical presence, which makes it more difficult for the Tax Authority to perceive facts and control activity. Moreover, to date, in most cases taxation depends on the existence of a physical establishment and its supervision in situ.

In digital transactions, there is little or no physical support for the operations or contact with clients, and the invisibility resulting from the lack of physical presence raises several serious problems that can only hinder the work of the Tax and Customs Authority. E-commerce is associated to multiple locations which complicates the division and allocation of fiscal powers.

There has also been a steady decline in the relevance of geographical factors due to dematerialization and this has made it more difficult to determine where fiscal powers lie as well as how to make such a decision.

The disintermediation of traditional intermediaries, another e-commerce characteristic, has generated taxation discrepancies as information about a tax situation has become harder to access and tax collectors face heightened difficulties; indeed, the Tax and Customs Authority has always depended on the support of these traditional intermediary bodies for mandatory information and to effectively collect any tax due.

It must be stressed that the disappearance of most traditional intermediaries in the e-commerce setting has unsettled the deep-rooted fiscal situation. The direct digital relationship established between the source and the consumer, together with the virtual cooperation between companies, mean that the Tax and Customs Authority can no longer rely on intermediaries to report information; this leads to a lack of data, which in turn reduces the knowledge and anonymity of e-commerce agents and transactions.

While on one hand e-commerce has led to a reformulation of the role of traditional intermediaries due to their importance in ensuring a safe and easy-to-use electronic payment system, on the other, new intermediaries have emerged: the technological intermediaries. The third parties involved in electronic transactions have not entirely disappeared and others are now appearing who can cooperate with the Tax and Customs Authority both with their knowledge of mandatory data and in the effective collection of tax due. This poses an important challenge for the Tax and Customs Authority, namely its capacity to renew and reenergize the way in which it relates with new and old intermediaries, keeping up to date with new developments, encouraging modernization, requalification and restructuring of the Tax and Customs Authority.

Anonymity is another e-commerce characteristic with major implications for the Tax and Customs Authority. It precludes knowledge of the parties involved and thus makes it impossible to identify either the taxable person or the operations which have taken place. Without any knowledge of the who or what, it is impossible to deploy the legal-fiscal relationship and difficult to collect tax revenue.

The problems raised by the lack of a physical and tangible relationship in online or direct e-commerce are a cause of concern because control becomes even more complex when only electronic support is available. Indeed, the inability to pinpoint and determine tangibility results in anonymity, which brings the risk of there being no fiscal identification and natural tax evasion; it also increases the extreme mobility of those agents, enabling a more favorable choice of jurisdiction by manipulating computer information data.

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The ease of the electronic payment systems fuels this possibility for anonymity even further as transactions are not immediately identified; only the amounts are provided. Another inconvenience is the use of digital money. Both make it extremely difficult to access information and pose complex obstacles for the control of tax by authorities.

The extreme mobility of e-commerce means that the above-mentioned factors assume even greater proportions, as it allows the taxable person, goods and services, fraud and tax evasion to be relocated, creating jurisdiction problems and loss in revenue for the Tax and Customs Authority.

Mobility not only brings major threats but it is also a challenge for the Tax and Customs Office. It results in greater dynamics and engagement with other Tax Authorities, raises the value given to the exchange of information among Tax Authorities and highlights the urgent need to develop inter-support networks. Ultimately, a global strategy among the different Tax and Customs Authorities is a must.

Permanent Establishment, Tax Havens, Application of Criteria on the Allocation of Profit and Taxation

Any fixed establishment where an activity of a commercial, industrial or agricultural nature takes place is considered a permanent establishment. In Europe, and according of the OECD Model Tax Convention on Income and on in Capital (2014), a permanent establishment is "a fixed place of business through which the an enterprise wholly or partially conducts its activity", or it can also be considered "the use of facilities solely for the purpose of storage, display or delivery of goods or merchandise, for the maintenance of a fixed business establishment solely for the purposes of conducting activities of a preparatory or auxiliary nature".

Following the growth and expansion of e-commerce, international commercial transactions started taking place via computer servers. For example, a consumer can now download music from a website, whereas the normal thing to do would have been to go to a shop to buy the music on a CD or DVD.

As a result of these commercial developments, there is now a new definition of permanent establishment that includes servers. According to OECD legislation, a server is considered a permanent establishment in the following circumstances: (i) if a server conducts complete international transactions; (ii) if the body responsible for the server is an enterprise or non-resident person; (iii) if a server is established in a certain location for a certain period of time.

Under these rules, no human involvement with the server is required to create a permanent establishment, as the establishment is being used and maintained remotely.

Creating and maintaining a website is not considered a fixed or permanent establishment. Lastly, the OECD states that non-residents using foreign servers maintained through Internet Service Providers are not generally permanent establishments, if the non-residents do not have control over the server (Cockfield, 2005).

According to Silva (2012), a tax haven can be defined "as a country or territory where individuals or companies can obtain tax advantages by avoiding being taxed in their country of origin or by benefiting from a more favorable tax system, especially as regards income tax". The possibility of transferring operations and income from businesses to countries where taxation is lower acts as an incentive to use tax havens (Avi-Yonah, 2001).

While many tax havens are small island nations, some EU and OECD members also provide preferential tax systems for certain activities (McLure, 2001). Ireland, for example, charges a 10% rate on the income of foreign taxpayers; and Belgium and Holland has a special tax regime for coordination centers to attract the headquarters of multinational companies (McLure, 2002).

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The EU, as well as the OECD, are looking into measures to limit the use of tax havens. If such efforts prove successful, it means that there will be a decrease in the use of off-shores, tax havens and member countries with similar tax systems (McLure, 2003).

E-commerce is characterized as being decentralized. The location of participants in a product's value-added chain is no longer important. The costs of reproducing intangible assets are very low and a company can create them anywhere in the world and make them available to their clients, users and other branches of its company through the internet. This phenomenon takes place because the state can only tax the profit made in the country where the company has its permanent establishment. The question is: how much of the net profit is related to the company's head office in its country of residence, and how much remains in the country from which the profit originates (Seitz, 2005).

The international tax system, which was developed in the 1920s, acknowledges two bases for taxation purposes: the first is based on taxation at source, whereby the country can tax only the income which has originated within its territory; the second is taxation based on residency, whereby the country can tax residents within its territory. Determining residency for tax purposes in this system is critical; it is normally based on the activity performed and the economic ties.

Occasionally, these two taxation bases can lead to double taxation. The classic example of double taxation is when a resident in a certain country produces income in another country. This person can be taxed by their country of origin and by the country where they are residing, resulting in double taxation (Azam, 2012).

Thus, in terms of e-commerce, partnerships and international agreements are required on how the taxation system should be implemented so that different countries do not adopt strategies that become incoherent, resulting in a double taxation problem (McLure, 2003).

PROPOSALS FOR THE TAXATION OF ELECTRONIC COMMERCE

Institutional Developments

The OECD, European Commission, and other organizations and experts in the field of taxation have presented contributions to the community, formulated systems and defined principles with a view to the drawing up of legislation on electronic commerce.

Given the world-scale impact of e-commerce, the OECD proposed a model at its ministerial conference in Ottawa, Canada, in October 1998, which was accepted by the majority of countries and consisted of the application of the already existing tax principles to e-commerce. It was decided at this conference that the tax principles applied to e-commerce should be the same as those of traditional commerce. The OECD believes that electronic commerce does not require new legislative or administrative measures or amendments to be made to what already exists and that there should be no discriminatory treatment of electronic transactions; it also noted that any agreements necessary for the application of these principles should be structured so as to maintain the fiscal sovereignty of countries, ensuring that the tax base is distributed fairly between the countries and avoiding both double taxation and non taxation.

The Ottawa meeting established the following general principles of taxation: neutrality, efficiency, effectiveness and equity, flexibility, and certainty and simplicity. In accordance with the principle of neutrality, any transaction made electronically should be taxed in the same way as transactions made in the traditional manner, and there can be no discriminatory treatment or exceptions. However, as we

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are dealing with a global market, legislation must be adopted that is based on international cooperation, avoiding situations of double taxation and tax evasion.

Under the efficiency principle, the cost of taxation and collection should be kept to a minimum. Thus, the administrative costs involved in the monitoring, collection and imposition of taxes arising from online operations should be as low as possible so as to avoid an unnecessary rise in company costs so as to comply with tax legislation.

On the other hand, the principle of certainty and simplicity implies that tax rules should be sufficiently clear and easy to understand so that taxpayers can foresee the tax implications of a transaction; they should be aware of the situations which are subject to tax as well as the time and way in which the tax is applied.

According to the principle of flexibility, tax systems should be sufficiently flexible and dynamic to keep pace with technical developments and commercial transactions; that is, they must be flexible and open to evolving market rules and technological progress, fulfilling their extra fiscal role of favoring new businesses.

According to Courinha (2001), it is the understanding of various scholars on this matter that maintaining the current rules of international taxation is the best way to guarantee compliance; only as an alternative and where the adaptation of these rules has failed completely would it be legitimate to alter the actual structure of the system.

In short, the OECD Committee on Fiscal Affairs declares that neutrality and equality are fundamental principles in the international taxation policy for e-commerce. A tax must be neutral and strive not to change the behavior of taxpayers, and equal so that the tax burden is distributed fairly, thus showing the close link of these principles.

Taxation at Source

Ryan and Miethkle (1998) and Wagner and Anderson (1999) proposed taxing e-commerce at source, that is, the place where the goods come from. This is in line with the traditional model whereby tax is charged by the seller who is responsible for collecting and remitting the tax to the fiscal authority of their own country.

This has the advantage of administrative simplicity and the reduction of costs as the sellers would only deal directly with the local tax authorities.

The disadvantages of this proposal is that it distorts the flow of trade as this method encourages fiscal competition between and within countries and between the various states or regions. The online vendors would therefore be located in the countries or regions with the lowest taxes. (Ligthart, 2004).

Tax Withheld at Source by Financial Intermediaries

McLure (2000) and the OECD (2001), suggest processing the taxation of digital products through financial intermediary, when the sale takes place, depending on the location of the purchaser and the tax to be applied in that place.

The proposal included a system that required the financial institution to keep a database of the tax rates of each state, country or region. The vendor would have to submit information about the sales and about both parties involved, such as the account numbers of the seller and buyer, the sales value, the amount of tax due, and the buyer's address where the collection was made.

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The disadvantages found in this system are above all associated to the involvement of the financial institutions in the collection of taxes on consumption, which raises the issue of anonymity (Ligthart, 2004). A further disadvantage would be the increased use of digital money as another method of making payments and of evading the control of the financial institutions.

Online shops could also avoid taxation by fixing their address in countries or states where the tax rates are lower and using a PO box or a friend's address for this purpose (Ligthart, 2004). Nevertheless, this system may be appropriate to implement as it would improve the conditions of the financial institutions through investments in suitable technology and offering compensations for their costs (Ligthart, 2004).

Technology Based Solutions

Using technological means would be the simplest way to lower the costs of taxation for both sellers and the tax authorities. The best way would be to have a software that applies the tax rate of the destination country at the time of purchase, calculates the amount due, charges the client's credit card and transfers the amount due to the account of the tax authority where the goods will be consumed (Ligthart, 2004).

The software would be easy and simple to install. The computer system would be developed and made available and open to everyone so that nobody could earn money or any other kind of compensation. The program would be installed in the seller's site, which would automatically keep track of the products sold, enabling the government to receive the correct amount of tax.

After the client paid the amount of tax due for the product, that tax amount would be calculated and automatically transferred to the government bank account by electronic means of payment. The program would be codified in such a way that the price per item would vary for each client depending on which country the client is in and the specific tax rate (Ligthart, 2004). The issue raised by the proposal is that it would be necessary to create an administrative body to supervise all operations and deal with any problems that arose. Some authors are of the opinion that this should be the responsibility of the World Trade Organization, while others believe that a new body should be formed to ensure the integrity of the system.

Bit Tax

The taxation of e-commerce has motivated wide ranging debates and studies. It is a complex topic given the difficulty of harmonizing the current system with the new technological trends. The growing interest from international doctrine in finding a method by which e-commerce could be taxed in the 1990s led to Cordell and Ide (1994) and Cordell (1995) proposing a taxation on information flow: the Bit Tax.

Cordell and Ide (1994), proposed a tax that was characterized by a small fee charged in line with the number of bits transmitted by the internet. The telecommunications operators, satellites and connection systems would collect and remit the tax payment to their state.

The authors advocate the need for a tax like the Bit Tax to tax a new privileged form of producing wealth through the new information technologies. They argue that the shift to an economy of intangible goods has made it almost impossible to measure transactions and has eroded the taxable base; new instruments are therefore required that can deal with the economic changes underway and address the challenge of taxing electronic transactions.

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The challenge is to define a tax base compatible with the growing presence of e-commerce. According to the authors, the new tax base is the myriad of transactions, image, voice, text and data made through the global telecommunication networks by cable and satellite.

The Bit Tax would be applied to the added value generated by the interactivity of digital transactions; it is noted that all digital communication would be subject to tax because the productivity and added value would be generated in the new economy through the interactivity existing in the new information technologies.

The taxation of bits has not received the expected consensus or international approval due to a number of discriminatory instruments, the most important of which is that it completely fails to stimulate a predominant global interest, namely, the progress and increasing use of e-commerce worldwide.

The proposal of the Bit Tax was not accepted by either the OECD or the EU. The latter's response came in the Commission's Communication entitled "A European initiative for e-commerce", in which the adoption of the Bit Tax was rejected on the grounds that the matter would be resolved by VAT; it was only necessary to analyze the impact of e-commerce on the current rules of indirect taxation and to decide on how they should be adapted. Meanwhile the OECD has totally rejected the Bit Tax, which it sees as a revolutionary and undesirable invention that could undermine the development of e-commerce.

CONCLUSION

In this chapter, we examine the problems related to the direct international taxation of electronic commerce and identifies the alternative solutions that have been adopted in the current fiscal framework. With the development of new technologies, namely the internet, new forms of commerce began to appear; of these, e-commerce stands out for its steady and constant growth.

The development of this new kind of commerce toppled international barriers and frontiers and has made cooperation between the world's states indispensable so as to facilitate its development and resolve any problems arising from it. As e-commerce is a new method of conducting commercial transactions, a taxation system must be developed that provides justice, equity and equality.

The most feasible of the systems proposed by authors is that of tax being withheld at source by financial intermediaries. This method of taxation entails the financial institutions' collaboration with the different states. These institutions would have to keep an up-to-date database with the tax rates of each country to be applied in the different operations.

An alternative proposal is based on technological solutions. This system defends having software that, at the time of purchase, would apply the appropriate rate of tax depending on the destination country. This method would give the tax authorities the ability to detect and tax operations in a timely manner.

In Europe and internationally, the European Commission and the OECD have proved to be the most dynamic organizations and have made the greatest contribution to advances in legislation that allow the tax due to be applied to e-commerce operations. The meetings of these two organizations, namely "Dismantling the Barriers to Global Electronic Commerce" in Turku, Finland in 1997 and the Ottawa Conference in 1998 entitled "A Borderless World", were the first steps and demonstrated the desire to join forces to find a way to enforce the collection of tax by governments.

In the research conducted for the purposes of this chapter, we found that the tax systems in the European Union vary from one country to another. This problem arises in part because the European Union has many member states and not all of them enjoy the same economic, social and cultural conditions.

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The EU is a space in which people, goods and service circulate freely between countries, and therefore companies can benefit from the competitive advantage of being located in countries with lower tax rates.

With regards taxation on income, the connecting factor of residence comes to a crisis point when faced with the parameters of e-commerce. It is extremely difficulty to adapt the immaterial nature of e-commerce to the criterion of effective management as a means of putting the residence principle of taxation into practice. The legislative change should be implemented by a number of countries or through international efforts to harmonize practices, and sets out the future directions in the taxation of e-commerce.

In this chapter, we have stressed that the European Union should further their efforts towards bringing about greater global and fiscal harmonization between countries, so that the loopholes that persist for e-commerce are eliminated. More research needs to be done however to get a clear picture of the actual tax revenue losses/redistributions due to the rise of e-commerce.

REFERENCES

Anacom. (2004). O comércio eletrónico em Portugal_O Quadro Legal e o Negócio. Retrieved from https://www.anacom.pt/render.jsp?contentId=718378

Avi-Yonah, R. S. (2001). Tax Competition and E-Commerce. *Tax Notes International*, *12*, 1395–1400.

Azam, R. (2012). Global Taxation of Cross Border E-Commerce Income. *Virginia Tax Review*, *31*(4), 639–693.

Cockfield, A. J. (2005). Rise of the OECD as Informal World Tax Organization through National Responses to E-Commerce Tax Challenges, The. *Yale JL & Tech.*, *8*, 136.

Cordell, A. J. (1995), New Taxes for a New Economy, *Government Information in Canada*, 2 (4.2). Retrieved from http://library2.usask.ca/gic/v2n4/cordell/cordell.html

Cordell, A. J., & Ide, T. R. 1994. The New Wealth of Nations: Distributing Prosperity. *Proceedings of the Annual Meeting of the Club of Rome*, Buenos Aires.

Courinha, G. L. (2001). *A tributação direta das pessoas coletivas no comércio eletrónico – Questões de residência e fonte, Fiscalidade, nº6*. Edição do Instituto Superior de Gestão.

European Union. (2003). VAT on Electronic Services Regulation. Retrieved from http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:264:0001:0011:EN:PDF

European Union, (2006). VAT Directive. Retrieved from http://eur lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2006L0112:20110101:EN:PDF

Eurostat. (2002). E-commerce in Europe: Results of the pilots surveys carried out in 2001. European Commission. Eurostat. Luxembourg. Retrieved from http://www.observatory.gr/files/meletes/lr-e-comm-in-eur-2001.pdf

Gamage, D., & Heckman, D. J. (2011). A Better Way Forward for State Taxation of E-Commerce.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

International Tax Freedom Act (ITFA). (1998). Retrieved from http://www.opencongress.org/bill/110-h3678/show

Ligthart, J. E. (2004). Consumption Taxation in a Digital World: A Primer.

McLure, C. E. (2000). *The Taxation of Electronic Commerce: Background and Proposal. In Public Policy and the Internet: Privacy, Taxes and Contract* (pp. 49–114). Stanford: Hoover Press.

McLure, C. E. Jr. (2002). EU and US Sales Taxes in the Digital Age: A Comparative Analysis. *Bulletin for International Fiscal Documentation*, *56*(4), 135–145.

McLure, C. E. Jr. (2003). Tax Competition in a DigitalWorld. *Bulletin for International Fiscal Documentation*, *57*(3), 146–159.

Organisation for Economic Cooperation and Development (OECD). (2000). Department of Fiscal Affairs. (2000). Report by the Technology Technical Advisory Group (TAG). December Retrieved from http://www. oecd.org/pdf/M000015000/M00015516.pdf

Organisation for Economic Cooperation and Development (OECD). (2001). Electronic Commerce: Taxation Framework Conditions. In Taxation and Electronic Commerce: Implementing the Ottawa Framework Conditions (pp. 227–235).

Organisation for Economic Cooperation and Development (OECD). (2002). *Measuring the Information Economy*.

Organisation for Economic Cooperation and Development (OECD). (2014). Model Tax Convention on Income and on in Capital. Retrieved from http://www.oecd.org/tax/treaties/model-tax-convention-on-income-and-on-capital-2015-full-version-9789264239081-en.htm

Ryan, T., & Miethke, E. (1998). The Seller-State Option: Solving the Electronic Commerce Dilemma. *State Tax Notes*, *15*, 881–892.

Seitz, G. (2005). International Income Taxation of Cross-Border Electronic Commerce Transactions- A United States-German-New Zealand Case Study.

Silva, H. L. (2007). As leis do comércio eletrónico tentativa de desconstrução de um complexo puzzle. *Compilações doutrinais verbo jurídico*. Retrieved from http://www.verbojuridico.com/doutrina/tecnologia/ce_leiscomercioelectronico.pdf)

Wagner, A., & Anderson, W. (1999). Origin-Based Taxation of Electronic Commerce. *State Tax Notes*, *17*, 187–192.

Yang, J. G., & Aquilino, F. J. (2016). State income tax on economic nexus of internet commerce. *Journal of Internet Law*, *20*(4), 12–21.

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ADDITIONAL READING

Azam, R. (2012). Global taxation of cross-border ecommerce income. *Virginia tax review*, *31*(4), 639-693.

Choudhary, V. (2011). Electronic Commerce and Principle of Permanent Establishment Under the International Taxation Law. *International Tax Journal*, *37*(4), 33–57.

Clegg, J. E., & Rainerman, M. P. (2000). International taxation of electronic commerce. *Corporate Business Taxation Monthly*, *1*(5), 4–9.

Gamage, D., & Heckman, D. J. (2012). A better way forward for state taxation of e-commerce. *Boston University Law Review. Boston University. School of Law*, *92*(2), 483–534.

Jones, R., & Basu, S. (2002). Taxation of Electronic Commerce: A Developing Problem. *International Review of Law Computers & Technology*, *16*(1), 35–51. doi:10.1080/13600860220136093

Meharia, P. (2012). E-Commerce and Taxation: Past, Present and Future. *IUP Journal of Accounting Research & Audit Practices*, *11*(4), 25–33.

Pinto, D. (2012). The theoretical foundations and continued rationale for source-based taxation in an electronic commerce environment, *Australian Tax Forum*, *27*(3), 443-466.

Yang, J. G. (2013). Emerging Issues in E-Commerce Taxation. *Journal of State Taxation*, *31*(4), 15–44.

Yang, J. G. S., & Aquilino, F. J. (2016). The updated status of internet commerce tax law. *Journal of Internet Law*, *20*(2), 3–13.

KEY TERMS AND DEFINITIONS

Electronic Commerce: Business that takes place in a network, using contracts without property and established through an open process without much regulation. Any kind of commercial transaction in which the parties involved interact electronically and not through physical exchanges or contacts.

Internet: Is the global system of interconnected computer networks that use the internet protocol suite to link devices worldwide. It is a network of networks that consists of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies.

Permanent Establishment: Is a fixed place of business through which an enterprise wholly or partially conducts its activity.

Taxation: Taxation refers to compulsory or coercive money collection by a levying authority, usually a government. The term "taxation" applies to all types of involuntary levies, from income to capital gains to estate tax.

Taxation at Source: This is in line with the traditional model whereby tax is charged by the seller who is responsible for collecting and remitting the tax to the fiscal authority of their own country.

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ENDNOTE

[1] World Wide Web, also known as the Web or world network, is part of the internet and one of its most important resources.

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Chapter 88
Construction Basis of C2C E-commerce Credit Evaluation Index

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ABSTRACT

C2C e-commerce rapidly develops, which is an important economic pillar. With the deepening of the network life, more and more people join the C2C e-commerce transactions. However, the credit problem of C2C e-commerce has serious hidden security problems. So, the paper analyzes the present situation of C2C e-commerce credit problem and points out the existing problems. Scientifically, systematically, validity, feasibility and comparability are taken as principles to establish the first level indicators that including commodity property, business services, and logistics services and to establish the secondary indicators that reasonable price, timely delivery and so on. Using AHP, the weight of each level indicator can be calculated. C2C e-commerce evaluation model is established. Then the model is improved on transaction amount and evaluation time, so it can provide a theoretical basis for C2C e-commerce credit evaluation system.

INTRODUCTION

With the improvement of life informatization level, e-commerce has become an important part of national economy. Especially for young people, "Taobao" is the main way of shopping (Schilling et al., 2016). However, under the background of rising prosperity, credit crisis has great hidden security problems (Kang et al., 2016). In the process of C2C e-commerce transactions, consumers can't see the material object, or even ensure the quality of the goods. The index of judging the quality of goods is business creditworthiness and the former customers' evaluation. However, due to the lack of legal norms, there are huge false information that cheats customers in the current e-commerce market, such as the exaggeration of the commodity quality, even fake commodities and so on (Sang et al., 2017; Acampora et al., 2016). So the trust between sellers and buyers is weak, and the volume of e-commerce transaction is affected.

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In the transactions among strangers, credit is important, the credit status of sellers can be evaluated by a third-party certification or be permitted by law (Weng et al., 2016; Francesch, 2015). E-commerce transaction is an online transaction based on stranger's transaction, and credit system is an effective method to improve this kind of trade (Kwon et al., 2017). This is because the first step of online shopping is browsing goods, the second step is checking the credit records of sellers. So, the historical records will directly impact on consumers' purchase behavior (Chang & Chen, 2014).

Although the present big websites design the evaluation system, the system is relatively simple, and the security is not strong. There are some phenomena such as false transactions and credit hype. So, the construction of C2C e-commerce credit evaluation system is necessary. So, in this paper, scientifically, rationality and behavior principle are taken as the principles and the relevant evaluation index is established to standardize the C2C e-commerce market and achieve good faith transactions.

THE PRESENT SITUATION OF C2C E-COMMERCE CREDIT EVALUATION

According to incomplete statistics, in the process of e-commerce transaction, the most important problems attracting consumers are the delivery service and the quality of the goods. The problem that attracts the most attention is that the consistency between the actual goods and introduced goods is weak. The second problem is that goods delivery service cannot meet the requirements of consumers. And there is credit problem that can't be ignored in C2C e-commerce.

The e-Commerce Credit Status

The Goods Quality

Usually, in the process of C2C e-commerce, advertising information of products from sellers is the main way for buyers to get product information. In promotional information, sellers take the low price as the attractive point, and as much as possible describe advantages of goods even exaggerate the advantages of the goods. Therefore, the buyers cannot truly distinguish the quality of the goods, and credit problem will seriously affect the buyer's passion for C2C electronic shopping.

After-Sales Service

C2C e-commerce refers to transactions between individual and individual. Sellers can't issue formal invoice of sold goods, so there are some problems such as after-sales service, return of goods and complaints for merchants. With the vigorous development of e-commerce, there are various disputes in e-commerce. Supervisors of each C2C e-commerce websites is insufficient, so the inspection of sellers cannot be well supervised. It is difficult to implement the after-sales service (Yan & Yuan, 2012).

The Fraud Problem

If buyers choose goods, they usually choose the sellers with high credibility. But the quality level of sellers is different. The illegal sellers take advantage of credit publicity to increase their credibility. They

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even provide false information and accept payment, but they cheat the buyers by not offering the goods. These behaviors seriously disrupt the stability of the e-commerce market.

From the perspective of trust mechanism and economic theory, online credit evaluation and feedback mechanism, the evaluation of the third-party trust company and credit card guarantee are three kinds of effective mechanisms. The researchers find effective credit mechanism should be mandatory, such as legal constraints, flexibility and adjustment of market (Arvanitou et al., 2017).

The Present Situation and Characteristics of Evaluation Model

Traditional markets transactions have been real and legal constraints. But e-commerce lacks this constraint, especially C2C trading patterns (Rouibah et al., 2016).

The Present Situation of e-Commerce Evaluation Model

Before the deal, sellers deal is credit record. However, the present credit evaluation process is simple (as shown in Figure 1), the credit evaluation model is single.

The Cumulative Credit Model

Cumulative credit model is relatively common in C2C e-commerce credit evaluation model. Its theory is that the credibility of sellers is simply accumulated. The mathematical representation is

$$B_N = B_{N\text{-}1} + b_N, b_N \in \{\text{-}1, 0, 1\} \tag{1}$$

B_N is the present credibility value of sellers.
$B_{N\text{-}1}$ is the recent credibility value of sellers.
r_N is the Nth credit evaluation scores of sellers.

The Average Credit Model

The average credit model is that all the credit scores of sellers are added, and then the average value is obtained. The result is the credibility of sellers. The mathematical representation is

$$B_N = \frac{B_{N\text{-}1} \times (n\text{ - }1) + b_N}{n}, b_N \in \{\text{-}1, 0, 1\} \tag{2}$$

B_N is the present credibility value of sellers.
$B_{N\text{-}1}$ is the recent credibility value of sellers.
r_N is the Nth credit evaluation scores of sellers.

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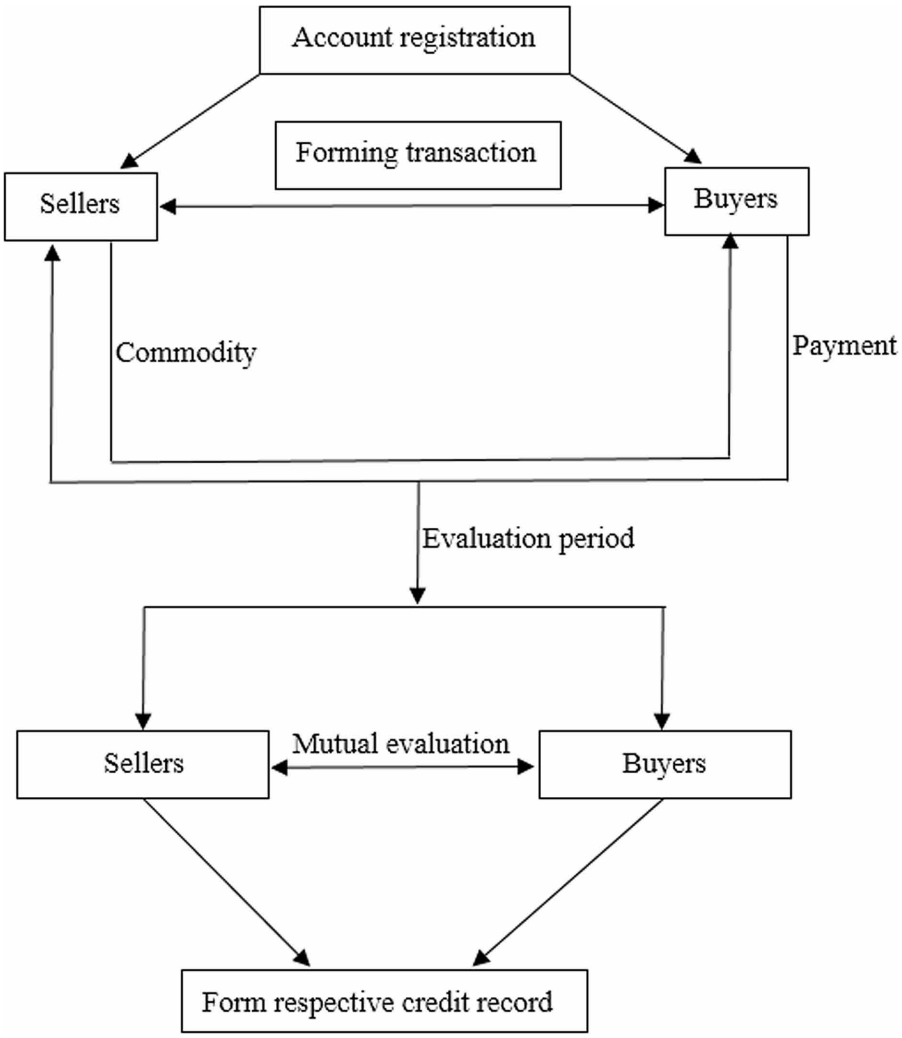
Figure 1. C2C electronic trading evaluation process



The Present Problems

The present C2C e-commerce evaluation model is simple, the evaluation index is disorder, and the layer is weak. Firstly, in the evaluation process, the subjectivity of each index is strong, it is difficult to distinguish that the evaluation is for sellers or goods. Secondly, the business credit records cannot reflect the obvious distinction; "Good, general, bad" three kinds cannot accurately feedback the quality of the goods.

The Characteristics of C2C e-Commerce Evaluation

Compared with the offline credit evaluation, e-commerce evaluation is obviously different, which is mainly reflected in the evaluation subject, the performance of the evaluation results, the reference population of the evaluation results and evaluation index (Chang et al., 2017).

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The Evaluation Subject

In the process of offline business transactions, the evaluation of the credit problem should be carried out by the professional credit rating agencies (third party). In the evaluation process of C2C E-commerce, evaluation can be carried out by professional credit rating agencies. But its evaluation results are not fully recognized, and the consumer's evaluation in the latter part of the transaction is more credible (Efferin & Hopper, 2007).

The Performance of Evaluation Results

In the process of offline business transactions, the evaluation results of the credit problems are usually reported in the form of a written report to the consumer. In the evaluation process of C2C E-commerce, virtual trading platform and anonymous shopping situation will not lead to the emergence of a written report. Therefore, the electronic credit report has become the main method of the evaluation results.

The Reference Population of Evaluation Results

Due to the physical nature of the offline transactions, in the course of its transaction, consumers' attention to credit rating is not high; investors are more concerned about the credit rating report. In the evaluation process of C2C E-commerce, credit evaluation results are a strong reference whether a transaction can be continued.

Evaluation Indicator

In the process of the offline transactions, enterprise business scope, financial status, profit space and development prospects and other issues will be used as evaluation indicators. In the evaluation process of C2C E-commerce, both sides of the transaction are independent natural individuals, so consumers are more concerned about the consistency of the product description, the historical credit records of sellers and business services attitude and other issues.

THE ESTABLISHMENT OF INDEX SYSTEM OF CREDIT EVALUATION

The index system of credit evaluation should be based on the principle of scientific, systematic, legal, feasibility and comparability, as much as possible to reflect the business of credit information. The following is to build the index system of credit evaluation based on the AHP theory.

Evaluation Indicator

The Commodity Property

Commodity nature mainly refers to the consistency of the commodity physical and the figure description of trading platform, the reasonable price of goods and the coincidence degree of goods quantity and the order quantity.

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Sellers' Service

Seller's services mainly refer to the customer service attitude, the sending after the completion order and delivery timeliness, and seller's service after the receipt. Among these factors, customers are more concerned about the service attitude, the online answer timely, good communication attitude.

Logistics Service

Logistics service mainly refers that whether the goods are completed in the given time, and whether goods in the distributing process are damage.

The Establishment of Evaluation Index Weight

AHP can solve the more complex and vaguer decision problems. There are four steps to use this method (Garg & Bawa, 2017):

1. To establish a program with hierarchical structure
2. To establish a judgment matrix
3. To order each level and the examination of consistency
4. The total order of levels and the examination of consistency

Hierarchical Structure

The problems solved by AHP need hierarchy, organization and logicality. Only in this way can we construct a hierarchical scheme. For elements of tedious problem, the attribute, the degree of membership and the relationship are formed multiple progressive layers. The elements on the upper layer have a dominant effect. Generally, these levels are divided into three categories (Yoo et al., 2016)

1. The first layer.
    a. This layer contains only one factor, it is the ultimate goal. This layer is also called the goal layer.
2. The middle layer.
    a. This layer exists in the middle process to achieve the objectives. It may contain many layers. It is called principle layer.
3. The bottom layer.
    a. In this layer, there are various ways to achieve the goal, which can be used. It can also be called a measure layer or a solution layer.

The number of layers in the hierarchical structure is related to the complexity of the research problems and the detailed requirements of the analysis. Usually the number of layers will not be restricted; the elements in each layer are usually not more than 9.

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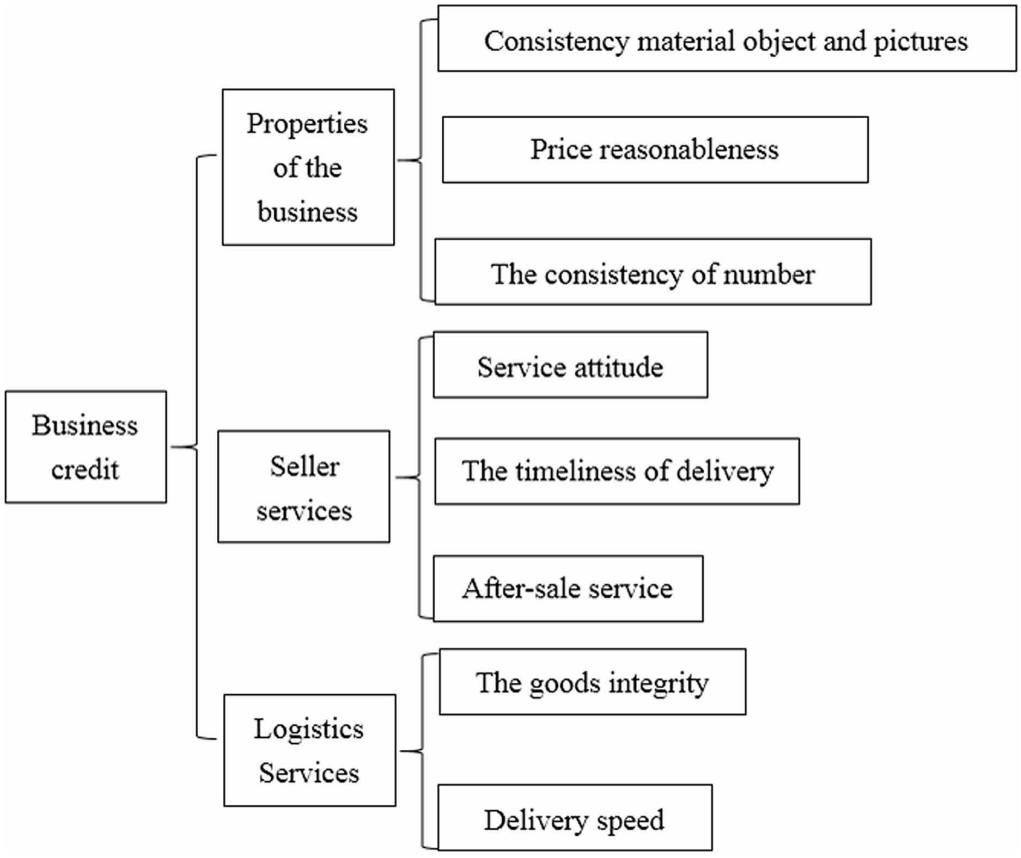
In Figure 2, the nature of goods, sellers' services and logistics services are the first level indicators. The reasonable commodity price is the second level indicators. Bi represents the first level indicators; Ci represents the second level indicators. These indexes are investigated by questionnaire. The results of the survey will be used to construct the judgment matrix.

Compared with the country that C2C e-commerce developed earlier, the establishment of the credit evaluation system of C2C e-commerce in China lags behind the mode operation of C2C e-commerce.

So, the corresponding evaluation indexes should be established to meet the reasonable credit evaluation of the C2C e-commerce market. From the Figure 2, we can find that no matter what the first level indicators or two indicators are, they are different from the conventional evaluation indicators. This is because C2C e-commerce transactions are not the individual enterprises, and they are pure natural persons. General evaluation index is not enough to reflect the sellers' credit.

Figure 2. Credit evaluation index hierarchy chart



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The Establishment of Judgment Matrix

The structure between each layer can indicate the relationship among factors. But the proportion that the various factors in the middle layer accounts for the evaluation system will not be completely the same. In the minds of the reviewers, each factor has a certain proportion.

When determining the proportion of each factor, the influence of n factors $X=\{x_1,\ldots,x_n\}$ on factor Z is ensured. Saaty and other scholars proposed pair wise contrast, and then the comparison matrix was built. In other words, two factors x_i and x_j are selected for each time. a_{ij} represents the proportion of the influence that x_i and x_j affect Z. Matrix $A=(a_{ij})_{n\times n}$ represents all the comparison results. A is Z-X judgment matrix. What can be seen from the matrix, if the proportion of the influence that x_i and x_j affect Z is a_{ij} so $a_{ji}=1/a_{ij}$.

According to the theoretical knowledge of linear algebra, if matrix $A=(a_{ij})_{n\times n}$ meet $a_{ij}>0$, and $a_{ji}=1/a_{ij}$ $(i, j=1, 2, \ldots, n)$, so matrix A is positive reciprocal matrix.

The value of a_{ij} can be ensured by the scale value table in Table 1.

Table 1. Scale value table

Scale	Meaning
1	The two elements are of the same importance.
3	For two comparisons of the elements, the former is a little more important than the latter
5	For two comparisons of the elements, the former is more important than the latter.
7	For two comparisons of the elements, the former is much more important than the latter
9	For two comparisons of the elements, the former is more extremely important than the latter
2, 4, 6, 8	In the middle of the above judgment
reciprocal	The ratio of importance of i and j is a_{ij}, $a_{ji}=\dfrac{1}{a_{ij}}$

Examination of Consistency

$\lambda_{\max}$ is the maximum value of eigenvalue of matrix A, W is eigenvector. By normalizing and ordering, the weight of the comparison importance of the corresponding elements of the same layer and a factor in the upper layer, this process is called hierarchical single ranking. Although this process can reduce the interference of other factors, the comprehensive comparison of the results will inevitably appear inconsistent. If the comparison results are consistent, so factors in matrix A also meet:

$$a_{ij}a_{jk}=a_{ik},\forall i,j,k=1,2,\cdots,n \tag{3}$$

The positive reciprocal matrix is known as the uniform matrix. In order to ensure that if A can be accepted, the inconsistency of A must be checked to know whether the inconsistency is serious or not.

If A is a consistent matrix, so

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1. A must be Positive reciprocal matrix.
2. Transpose matrix A^T is a consistent matrix.
3. Any two lines of matrix A is proportional, and the factor is bigger than 0. So rank (A)=1, columns are the same as this.
4. In matrix A, $\lambda_{max}=n$, n is the matrix order.
5. Eigenvector of λ_{max} is $W=(w_1, \ldots, w_n)^T$, so $a_{ij}=\frac{w_i}{w_j}, \forall\ i,j=1,2,\ldots,n$

$$A=\begin{bmatrix} \frac{w_1}{w_1} & \frac{w_1}{w_2} & \cdots & \frac{w_1}{w_n} \\ \frac{w_2}{w_1} & \frac{w_2}{w_2} & \cdots & \frac{w_2}{w_n} \\ \vdots & \vdots & \cdots & \vdots \\ \frac{w_n}{w_1} & \frac{w_n}{w_2} & \cdots & \frac{w_n}{w_n} \end{bmatrix} \tag{4}$$

A is positive reciprocal matrix with n order. When it is consistent matrix, only if $\lambda_{max}=n$ and A is inconsistent matrix, so $\lambda_{max}=n$. Accordingly, by checking the relationship of λ_{max} and n, we can know whether matrix A is consistent matrix or not.

The step of checking consistency for A.

Computing Consistent Target CI

$$CI=\frac{\lambda_{max}-n}{n-1} \tag{5}$$

Finding the corresponding average random consistency index RI

The value of *RI* is researched by Saaty, as follows in Table 2.

Table 2. The value of RI

n	1	2	3	4	5	6	7	8	9
RI	0	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45

The *RI* value is obtained by the method of randomly constructing 500 sample matrices. Randomly selecting figures from the 1-9 and the reciprocal, the positive reciprocal matrix is built, the biggest eigenvalue of average λ_{max} is obtained, and the definition is

$$RI=\frac{\lambda'_{max}-n}{n-1} \tag{6}$$

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Consistency Ratio CR

$$CR = \frac{CI}{RI} \tag{7}$$

When $CR < 0.10$, the consistency of matrix A is acceptable. Conversely, it needs to adjust.

Weight Calculation

Randomly select 200 from users in the online shopping, for Internet users in C2C E-commerce, a questionnaire survey is conducted to investigate the nature of the goods, the sellers' services and logistics services. The number of valid questionnaires is 169; the recovery rate is 84.5%. Survey result shows that the concern degree of B_1, B_2, B_3 is 62.9%,13.6%,23.5%. Hence sellers' credit judgment matrix is as follows:

$$A = \begin{bmatrix} 1 & 5 & 3 \\ \frac{1}{5} & 1 & \frac{1}{4} \\ \frac{1}{3} & 4 & 1 \end{bmatrix}$$

In the same way, judgment matrix of each level index is

$$B_1 = \begin{bmatrix} 1 & \frac{1}{3} & 2 \\ 3 & 1 & 4 \\ \frac{1}{2} & \frac{1}{4} & 1 \end{bmatrix}$$

$$B_2 = \begin{bmatrix} 1 & \frac{1}{6} & \frac{1}{5} \\ 6 & 1 & 3 \\ 5 & \frac{1}{3} & 1 \end{bmatrix}$$

$$B_3 = \begin{bmatrix} 1 & 2 \\ \frac{1}{2} & 1 \end{bmatrix}$$

Using Matlab software to make AHP program, weight coefficients of all levels of factors are calculated. After consistency check, the layer weigh is ordered.

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Consistency Check

$$A\lambda_{\max} = 3.1226, CI = \frac{3.0926-3}{3-1} = 0.0613, CR = \frac{0.07565}{0.58} = 0.0798 < 0.1$$

$$B_1\lambda_{\max} = 3.0952, CI = \frac{3.0952-3}{3-1} = 0.0476, CR = \frac{0.0476}{0.58} = 0.0821 < 0.1$$

$$B_2\lambda_{\max} = 3.0624, CI = \frac{3.0624-3}{3-1} = 0.0312, CR = \frac{0.0312}{0.58} = 0.0538 < 0.1$$

As the logistics service only contains two the second level indicators, consistency is acceptable. In summary, consistency test can be passed. The general sort of hierarchy weights is shown in Table 3.

Table 3. The general sort of hierarchy weights

	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8
	(0.314)	**(0.518)**	**(0.168)**	**(0.108)**	**(0.597)**	**(0.295)**	**(0.683)**	**(0.317)**
B_1 (0.6254)	0.1964	0.3240	0.1051	--	--	--	--	--
B_2 (0.1264)	--	--	--	0.014	0.0755	0.0373	--	--
B_3 (0.2462)	--	--	--	--	--	--	0.1682	0.0780

IMPROVEMENT SCHEME OF CREDIT EVALUATION MODEL

The target of C2C e-commerce credit evaluation model is scientifically reflected credit information so as to provide better reference value for customers. So, the specific implementation measures include credit evaluation grading, weight classification and management evaluation and so on.

Credit Rating Division

The credit rating is divided into five grades by three grades. The five grades are good, better, medium, worse and poor. The scoring standard need to make the corresponding change, (+2) (+1) (0) (-1) (-2). The rating division can reduce the customer's cognitive bias, and can objectively show the credibility of the sellers.

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Weight Score

In the traditional evaluation model, the credibility of the sellers is only related to the evaluation of the number; it does not consider the transaction price, evaluation date and other factors. In the improved model, the weight of these factors should be properly distinguished.

Transaction Price Weighted

Reputation is just obtained by the product adding of each score in accordance with the proportion of the weight. It cannot guarantee the fairness of credit evaluation. This is because many sellers use frequent small transactions to enhance the credibility. The key to solve this problem is to increase the proportion of large transactions in the score (Single credit evaluation=buyer's evaluation × the weight of transaction amount), to reduce the damage caused by the deliberate increase in reputation. The weight of the transaction amount is shown in Table 4.

Table 4. The weight distribution of the transaction

Transaction amount(yuan)	Weight ratio
< 1/5 (Highest commodity price + Minimum commodity price)	0.1
< 1/4 (Highest commodity price + Minimum commodity price)	0.3
< 1/2 (Highest commodity price + Minimum commodity price)	0.5
< 3/4 (Highest commodity price + Minimum commodity price)	0.8
< (Highest commodity price + Minimum commodity price)	1

Evaluation Time Weighting

The increase of reputation is changing with time; it is not only the accumulation of time point evaluation. Especially for C2C E-commerce, there will be a big difference in reputation in different periods. Therefore, the recent credit evaluation can better reflect the credibility of the sellers. In the evaluation model, weighted time formula is comprehensive credit evaluation = single evaluation × evaluation time weight. The time weights are evaluated as shown in Table 5.

THE APPLICATION OF MODEL

Randomly select a Taobao network clothing store, please use the new model of three buyers to evaluate the Taobao network shop. Evaluation process for sellers' promotion information-Customer browsing information-Customers select merchants-Communication between the two sides-Transaction Completion-Evaluation completed. The evaluation process is carried out in accordance with the five level evaluations and the analytic hierarchy process. Take a buyer's evaluation process as an example to illustrate.

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Table 5. Time weight distribution table

Score time	Weight ratio
A recent week	1
A recent month	0.95
Two recent months	0.9
Four recent months	0.8
Six recent months	0.7
Half year ago	0.6
A year ago	0.4

The Evaluation Score of the Secondary Index

According to the corresponding weight value calculation, the paper finds the shop's credit rating is 1.5013 points from the buyer. The transaction amount is 184 yuan < 1/4(highest commodity price + lowest commodity price). The transaction took place in the last two months, so the final credit score is 0.428 points.

Table 6. The evaluation score of the secondary index

Index	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8
score	1	2	2	0	2	1	2	-1

Advantages of Improved Model

The one is the improved model which has relatively reasonable data to improve the effectiveness of the evaluation results. It can provide buyers with more valuable credit records. The other one is the improved model which is relatively simple and easy to use, the calculation method is more scientific and it has a wide range of application value.

The experimental results show that the algorithm has a satisfactory performance compared with the traditional trust algorithm in the influence of transaction behavior on trust degree.

CONCLUSION

In this paper, the current credit status of C2C e-commerce is analyzed. On this basis, the index factors in the evaluation model are established using AHP to analyze weight, and the evaluation system is established. The credit evaluation model is improved from two aspects of the transaction amount and the evaluation time. At present, in addition to a reasonable credit evaluation system of C2C e-commerce platform, relevant credit legislation and credit management departments should also introduce a series of management measures.

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Credit Consciousness and the Normalization and Standardization of Credit

Credit awareness is not strong in our country. Especially for sellers, it is necessary to guide the good faith awareness. Relevant departments should make full use of the network platform, the actual life of the window publicity column and other areas to guide the public to properly and actively carry out the relevant activities of credit awareness. For the credit standard management of C2C electronic commerce website, it should also follow the principle of unity, mobilize the enthusiasm of e-commerce sites to provide suggestions about the standard of evaluation system, so as to establish a unified credit evaluation system, facilitate the rational choice of consumers and prevent unscrupulous sellers' fraud behaviors.

The Establishment of Credit Management Rules and Regulations

Sound regulations and regulations are the constraints of integrity management. E-commerce transactions are different from traditional transactions in its lack of supervision of the actual operation. Therefore, the relevant departments should be based on the nature of the e-commerce business to develop easy to control, easy to implement, easy to discipline regulations and regulations. It forms an orderly operation and orderly management of a good e-commerce market atmosphere. For sellers who do not abide by the regulations, laws and regulations should be strict formulated. And fraud and illegal behavior in the e-commerce market should be cracked down on, so as to realize the electronic commerce credit market.

REFERENCES

Acampora, G., Alghazzawi, D., Hagras, H., & Vitiello, A. (2016). An interval type-2 fuzzy logic based framework for reputation management in peer-to-peer e-commerce. *Information Sciences*, *333*(C), 88–107. doi:10.1016/j.ins.2015.11.015

Arvanitou, E. M., Ampatzoglou, A., Chatzigeorgiou, A., Galster, M., & Avgeriou, P. (2017). A mapping study on design-time quality attributes and metrics. *Journal of Systems and Software*, *127*, 52–77. doi:10.1016/j.jss.2017.01.026

Chang, C., Fuh, C. D., & Kao, C. L. M. (2017). Reading between the ratings: Modeling residual credit risk and yield overlap. *Journal of Banking & Finance*, *81*, 114–135. doi:10.1016/j.jbankfin.2017.04.011

Chang, L., & Chen, J. V. (2014). Aligning principal and agents incentives: A principal-agent perspective of social networking sites. *Expert Systems with Applications*, *41*(6), 3091–3104. doi:10.1016/j.eswa.2013.10.040

Efferin, S., & Hopper, T. (2007). Management control, culture and ethnicity in a Chinese Indonesian company. *Accounting, Organizations and Society*, *32*(3), 223–262. doi:10.1016/j.aos.2006.03.009

Francesch-Huidobro, M. (2015). Collaborative governance and environmental authority for adaptive flood risk: recreating sustainable coastal cities: theme 3: pathways towards urban modes that support regenerative sustainability. *Journal of Cleaner Production*, *107*, 568–580. doi:10.1016/j.jclepro.2015.05.045

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Garg, N., & Bawa, S. (2017). Rits-mht: Relative indexed and time stamped merkle hash tree based data auditing protocol for cloud computing. *Journal of Network and Computer Applications*, *84*, 1–13. doi:10.1016/j.jnca.2017.02.005

Kang, D., Jang, W., & Park, Y. (2016). *Evaluation of e-commerce websites using fuzzy hierarchical TOPSIS based on E-S-QUAL.* Elsevier Science Publishers B. V. doi:10.1016/j.asoc.2016.01.017

Kwon, S., Ha, S., & Kowal, C. (2017). How online self-customization creates identification: Antecedents and consequences of consumer-customized product identification and the role of product involvement. *Computers in Human Behavior*, *75*, 1–13. doi:10.1016/j.chb.2017.04.051

MingYan, & Yuan, Y.MingYan. (2012). A multi-attribute reverse auction decision making model based on linear programming. *Systems Engineering Procedia*, *4*, 372–378. doi:10.1016/j.sepro.2011.11.089

Rouibah, K., Lowry, P. B., & Hwang, Y. (2016). The effects of perceived enjoyment and perceived risks on trust formation and intentions to use online payment systems: New perspectives from an arab country. *Electronic Commerce Research and Applications*, *19*(C), 33–43. doi:10.1016/j.elerap.2016.07.001

Sang, A., Ismail, R., & Boyd, C. (2007). A survey of trust and reputation systems for online service provision. *Decision Support Systems, 43*(2), 618-644. doi:.dss.2005.05.019 doi:10.1016/j

Schilling, O., Leitner, K., Schulze, K. D., & Umbach, F. (2016). End of life and acceleration modelling for power diodes under high temperature reverse bias stress. *Microelectronics and Reliability*, *64*, 458–463. doi:10.1016/j.microrel.2016.07.137

Weng, P. S., & Chen, W. Y. (2016). Doing good or choosing well? corporate reputation, ceo reputation, and corporate financial performance. *The North American Journal of Economics and Finance*. doi:10.1016/j.najef.2016.10.008

Yoo, W., Choi, D. H., & Park, K. (2016). The effects of sns communication: How expressing and receiving information predict MERS-preventive behavioral intentions in South Korea. *Computers in Human Behavior*, *62*, 34–43. doi:10.1016/j.chb.2016.03.058

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Chapter 89
Uncertainty Avoidance and Consumer Cognitive Innovativeness in E-Commerce

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ABSTRACT

This article describes how despite the extensive academic interest in e-commerce, an investigation of consumer cognitive innovativeness towards new product purchase intention has been neglected. Based on the stimulus–organism–response (S–O–R) model, this study investigates the consumer cognitive innovativeness and the moderating role of the individual consumer-level uncertainty avoidance cultural value towards new product purchase intention in business-to-consumer (B2C) e-commerce. Structural equation modelling, such as partial least squares (PLS) path modelling was used to test the model, using a sample of 255 participants in Australia who have had prior online shopping experience. The findings show that the online store web atmosphere influences consumers' cognitive innovativeness to purchase new products in countries with diverse degrees of uncertainty avoidance such as Australia. The results provide some guidance for a B2C website design based on how individual's uncertainty avoidance and cognitive innovativeness can aid the online consumer purchasing decision-making process.

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INTRODUCTION

The primary way a business-to-consumer (B2C) e-commerce firm communicates with its consumers is through their website. According to the Australian Nielsen Connected Consumers Report (2016), a large number of consumers go to manufacturers' and retailers' website directly, with 65% of consumers visiting the retailer's website and 36% visiting the manufacturer's website for online purchase (Zrim, 2016). Therefore, it is necessary to evaluate the effectiveness of websites' components to understand whether online stores are providing the interaction desired by the consumers. E-retailers should provide important stimuli and ensure that their website offers unique benefits and values to encourage consumers to buy products online. If e-retailers intends to turn first-time consumers into repeat online consumers, the e-retail experience has to deliver unique value regarding the consumer's interaction with the website. In the area of B2C e-commerce, the web cognitive landscape refers to whether consumers believe that the information presented on the website makes it easy for them to purchase products. E-commerce web design is vital because businesses can lose 50% of the potential consumer due to consumer unable to find the product what they want (van der Merwe & Bekker, 2003). This means that the structural assurance of the website provided by the e-retailer should demonstrate a clear understanding of the reasons why consumers cognitively believe that they should shop at one specific website rather than at other ones (Li, Yen, Liu, & Chang, 2013).

Countries vary significantly on innovativeness as measured by consumer reluctance (Tellis, Yin, & Bell, 2009). The concept of consumer innovativeness denotes "inter-individual differences that characterize people's responses to new things" (Goldsmith & Foxall, 2003). The success of e-commerce also depends on a consumer's culture (Sohaib and Kang, 2015a) as culture influences consumer innovativeness. Often country is used as a proxy for culture at a group level; however, it is more appropriate to measure culture at the individual level because online purchasing is an individually oriented one-person action (Sohaib and Kang 2015b). The innovative consumer plays a vital role in the adoption of new products. There are at least three approaches to the conceptualisation of innovativeness: behavioural, global traits and domain-specific activity (Goldsmith & Foxall, 2003). Behavioural refers to whether consumers are innovators or non-innovators in their attitude to adopting new products, global traits are personality traits, while domain-specific activity denotes a consumer's innovativeness within specific product categories. The most significant aspect of behaviour is its connection to cognition. Behaviour results from some form of cognition (Faiola & Matei, 2006). Our concern is with the behavioural perspective of consumers' innovativeness, which identifies consumers as innovators or non-innovators depending on their purchase of a new product. A person's perceptions may change their attitudes to new products and ideas and their level of innovativeness (Rogers, 1995).

In the context of e-commerce, how consumers react to innovation, specifically whether consumers adopt new products or not, depends on their purchasing decision-making process and a variety of internal and external influences. The measurement of cognitive innovativeness is important to this process. Consumer perception of information is directly related to cognition (Ha, John, & Chung, 2016). In addition to this, cultural experiences influence cognitive processes (Faiola & Matei, 2006), for example, online transactions can provoke a high level of uncertainty (Sabiote, Frías, & Castañeda, 2012). The cultural value of uncertainty avoidance is significantly connected to innovativeness (Dobre, Dragomir, & Preda, 2009). Therefore, consumer innovativeness plays an important role in encouraging consumers to shop online.

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The first objective of this study is to investigate the influencing factors of consumer cognitive innovativeness regarding new product purchase intention. This study extends the work of Sohaib and Kang (2015b) by including the role of cognitive innovativeness towards new product purchase intention and using the moderating role of individual consumer level uncertainty avoidance (UA) cultural value. The second objective of this study is to investigate whether high UA and low UA consumers have different cognitive innovativeness towards purchasing intentions. The research questions of this study are as follows:

Research Question 1: Do web design factors affect consumer cognitive innovativeness towards purchase intention of new products in B2C e-commerce?

Research Question 2 and 3: Does the consumers' level of UA play an important moderating role between factors that affect new product purchase intention in B2C e-commerce? Moreover, what are the difference between high UA and low UA consumers?

For this study, 'new product purchase' refers to any product not purchased online in the past. To the best of the authors' knowledge, this is the first research study that investigates the role of consumer cognitive innovativeness and different levels of uncertainty avoidance cultural value in e-commerce. As such, it contributes to the understanding of online vendors' perception of innovative approaches to B2C websites.

This paper is structured as follows. We first critically analyse the literature on the consumer cognitive innovativeness, web cognitive landscape, and the cultural value of uncertainty avoidance. We then discuss the theoretical background from which we developed our research model and hypotheses. Following that, we describe our research methodology and present the results of this study. Finally, we discuss the practical and theoretical implications of the study and conclude with the limitations and future direction for research.

THEORETICAL BACKGROUND

Consumer Cognitive Innovativeness

This research defines 'consumer cognitive innovativeness' as a consumer's rational thinking, problem-solving and decision-making tendencies as related to new product purchase in a B2C e-commerce website. Scholars have enriched consumer innovativeness by measuring its various dimensions. Venkatraman and Price (1990) distinguish cognitive from sensory innovativeness, with cognitive innovativeness referring to cognitive qualities that influence individuals to seek stimulation of the mind while sensory innovativeness refers to the cognitive qualities that influence individuals to seek sensory stimulation. Consumer innovativeness refers to consumers' proneness to adopt new products (Tellis et al., 2009).

Manning, Bearden and Madden (1995) characterise two aspects of consumer innovativeness: consumer independent judgment-making and consumer novelty-seeking. Consumer independent judgment-making refers to the degree to which an individual makes innovation decisions independently, while consumers' novelty-seeking denotes the desire to look for new product information. According to Blake, Neuendorf and Valdiserri (2003), innovativeness is the relative willingness of an individual to try a new product. In the context of B2C e-commerce, this means the tendency to buy new products soon after they appear online. Consumers are categorised as innovators or non-innovators depending on their purchase of a

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new product (Goldsmith & Foxall, 2003). According to Lim et al. (2004), the cognitive cues of a B2C website form a basis of consumer trust in an online store that does not have an established reputation. Kim (2005) notes that cognition-based trust is associated with consumers' observations and perceptions regarding the features and characteristics of an e-commerce website.

The value with the most proximate impact on an individual's cognitive interpretations is personal innovativeness (Lu, 2014). According to Venkatraman and Price (1990), individuals who have a high need for cognition are more likely to analyse information than those with a low need for cognition because they have a need to structure situations in meaningful ways. In particular, consumers with high cognitive innovativeness are more likely to adopt a technology (Venkatraman and Price, 1990). In addition to this, online consumers with high cognitive innovativeness put more emphasis on usefulness and aesthetic design (T.-L. Huang & Liao, 2014). However, "consumers with low cognitive innovativeness lack ability, knowledge, and involvement with regard to new technology; they are insensitive to the effect of the new technology in accomplishing a task" (T.-L. Huang & Liao, 2014). Considering B2C e-commerce websites, various web cognitive factors may stimulate a positive relationship with consumers with different levels of cognitive innovativeness.

Website Accessibility/Ease of Use

Website accessibility increases when a website has a high ease of use. Ease of use includes accessibility factors such as navigation, website content structure and search facilities (Lodorfos, Trosterud, & Whitworth, 2006). When a consumer visits a website for the first time, their trust is primarily based on initial perceptions of the trust-related attributes of the website, such as the cognition-based aspects which are formed from quick cognitive cues or first impressions (McKnight, Cummings, & Chervany, 1998). For example, the visual design of a website consists of graphical and structural factors from which consumers develop their first impression (Karimov, Brengman, & Hove, 2011). In the context of e-commerce, usefulness is how effective shopping on the Internet is in helping consumers to accomplish their task, and ease of use is the consumer's perception regarding how easy the Internet is to use as a shopping medium and how free the process is of effort in leading the consumer to achieve their final task (Monsuwe, Dellaert, & Ruyter, 2004). Brick-and-mortar stores are not designed to improve efficiency but to enhance persuasion opportunities. The same principle applies in the e-commerce environment, such as in designing web usability to maximise persuasion interaction (Schaffer, 2009). Website design factors such as information design and navigation design should be used in e-commerce websites to build consumer trust and subsequently enhance purchase intention (Dianne Cyr, 2013; Ganguly, Dash, & Cyr, 2010).

Therefore, the website accessibility concept adopted here considers the ease of use and usefulness aspects together with various design features that contribute to the overall website usability such as navigational design, information content and design.

Colour and Product Images

Once consumers interact with an e-commerce website, initial perceptions concerning website aesthetics often persuade the consumer to stay on the website for a longer duration (Alhammad & Gulliver, 2013). The aesthetic elements of a website such as colour and graphics usage are the most effective trust attributes of B2C websites (Tan, Tung, & Xu, 2009). The colour appeal of a B2C website is the degree to which the colours used, for example the background and font colour, are perceived as pleasing, ap-

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pealing and appropriate. Product images are interactive image features, such as 3D virtual models, that consumers can operate to view product information by zooming in on product features, rotating a product to different angles and changing product colours. Visual design cues such as colour and product images can provide information about the Internet vendor as well as have an impact on consumers' emotional responses (Eroglu, Machleit, & Davis, 2003).

Social Networking Services

Social networking services are defined as a set of actors (people/organisations) and the set of connections among the actors representing some relationship (friendship/affiliation/information exchange) (Grabner-Kräuter, 2009). These include web communities and communication media. Web communities are online social networking sites, blogs, newsletters, forums and online product reviewing/ratings. Communication media include instant messaging, online help emails and chat. Social influence is a vital factor that determines user behaviours on social networking sites (Cheung, Lee, & Chan, 2015). Persuasive interaction ensures the perception of an acceptable level of social interaction via the use of social networking services (Alhammad & Gulliver, 2013). Consumers' trust is formed through permeating the mode of communication with a high social presence in a B2C e-commerce website. Gefen and Straub (2004) found a significant influence of social presence on consumer trust in B2C e-commerce, such as ability, integrity, predictability and benevolence. The opinions of others can impact consumers' purchasing intention (Lee, Shi, Cheung, Lim, & Sia, 2011). A model proposed by Brengman and Karimov (2012) investigated whether integrating social media cues (such as Facebook and blogs) as stimulus into an online store's website may provide a signal regarding the cognitive trust (organism) of an online vendor. The results show that social media cues have a significant effect on consumers' cognitive-based trust towards purchase intentions (response). In addition to this, Facebook advertising has a significant positive influence on consumer attitude towards the intention to purchase (Duffett, 2015). Guo, Wang, and Leskovec's (2011) study shows that information processing and trust positively influence consumer choice.

Uncertainty Avoidance

Geert Hofstede (1980) refers to the uncertainty avoidance cultural as having a certain degree of uncertainty. Australia is a practical society regarding uncertainty avoidance, with an index score of 51, and has a high degree of acceptance for new ideas, technology and business practices. For a B2C e-commerce to be successful, it is essential to note the cultural themes of targeted consumers. In particular, the uncertainty avoidance (UA) cultural value is closely associated with innovativeness in e-commerce (Dobre et al., 2009). Due to the high level of uncertainty of the virtual world, individual trust is affected (Al-Debei, Akroush, & Ashouri, 2015). As noted by Karahanna, Williams, Polites, Liu, and Seligman (2013), "Online purchasing is a decision-making process that involves inherent uncertainty". Uncertainty is an important moderator in online purchasing (Zhu, Chang, & Chang, 2015). Individuals with high uncertainty avoidance tend to desire outcomes by following the right direction for action (Duffett, 2015). Existing studies have applied Hofstede's (1980) cultural dimensions to examine the effect of cultural values on online purchasing decisions. However, in these studies, national cultural differences were observed at the country level. This is an issue as the assumption of homogeneity in any nation is

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not suitable, in particular, if the national cultural concepts are to be integrated into information systems models that reflect individual behaviour (McCoy, Galletta, & King, 2005).

Culture is a significant influence on consumers' purchasing decisions (Constantinides, 2004; Ha & Janda, 2014), producing a range of emotional effects to a given stimulus (G. Hofstede, 2001). Srite and Karahanna (2006) argue that national culture is a macro-level phenomenon, whereas online purchasing is a one-person action; therefore, measuring culture at the individual consumer level is the most appropriate way to look at the effect of technology acceptance (Sohaib & Kang, 2015a). In addition, consumers with dissimilar cultures might have different expectations of what makes an online store trustworthy (Ganguly et al., 2010; Kim, 2005; Kim & Park, 2013; Sia, Lim, Leung, Lee, & Huang, 2009), which affects the establishment of trust.

Researchers (Hwang & Lee, 2012a; McCoy et al., 2005; Srite & Karahanna, 2006; Yoon, 2009) found Hofstede's cultural scales at the individual level acceptable in information systems research (more specifically, in e-commerce research). As B2C e-commerce continues to grow across cultures, it becomes critical to understand the cognitive influences between the consumer and the Internet vendor and the nature of cultural differences at the individual consumer level (Hwang & Lee, 2012a). Furthermore, cultural experiences influence cognitive processes that influence website design and its use (Faiola & Matei, 2006).

RESEARCH MODEL AND HYPOTHESES DEVELOPMENT

The stimulus–organism–response (S–O–R) model identifies cognitive aspects to determine the cognitive innovativeness towards purchasing intention. The S-O-R paradigm was first proposed by Mehrabian and Russell (1974) in the context of environmental psychology. The paradigm suggests that stimuli from the environment influence an individual's cognitive reactions, which in turn lead to a response. This paradigm was later extended and has been extensively applied to online shopping outcomes (Sohaib & Kang, 2015b).

The stimulus (S) is defined as "the total sum of all the cues that are visible and audible to the online shopper"; for example, "cognitive states are related to a consumer's information processing, retention, and retrieval ability" (Sheng & Joginapelly, 2012). The organism (O) represents the consumer's intermediary states of cognitive innovativeness. These internal states affect the consumer's approach, such as new product purchase intention, which is the response (R). Additionally, we also suggest the uncertainty avoidance cultural orientation moderates the effects of cognitive influences and cognitive innovativeness towards new product purchase intention. Research has shown that the uncertainty avoidance cultural value is significantly connected to innovativeness (Dobre et al., 2009). Figure 1 shows the proposed research model.

Hypothesis Development

Website Accessibility/Ease of Use

The navigation, page layout consistency and ease of access to an e-commerce website have to be designed with a complete understanding of a consumer group's culture (Cyr, 2008). According to Huang and Liao (2014), the perceived ease of use means that the consumer does not need to employ excessive cognitive

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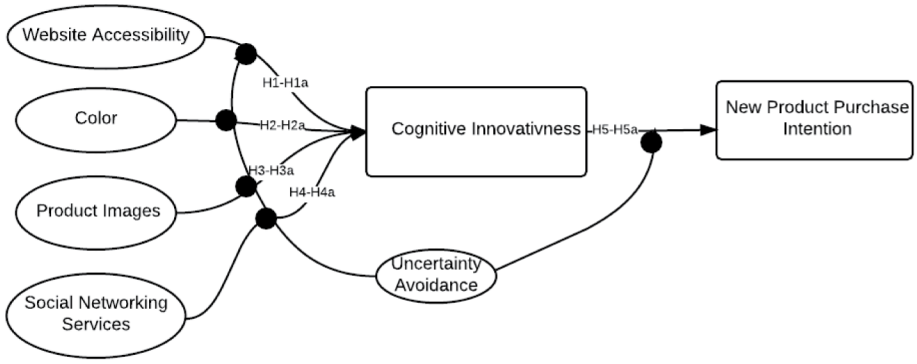
resources when using technology. Singh, Kumar and Baack (2005) state that online consumers from high uncertainty avoidance (UA) societies need better e-commerce website accessibility so that they do not leave the website. D. Cyr (2008) also finds that consumers who are high on the UA scale give a high value to web navigational design about to their purchasing intention. Therefore, we hypothesise:

H1: Individual level UA will moderate the relationship between website accessibility and consumer cognitive innovativeness such that the relationship is stronger for consumers in Australia.
H1a: The relationship between website accessibility and consumer cognitive innovativeness is stronger for high UA individuals than low UA individuals.

Figure 1. Research model



Colour and Product Images

The complexity of a B2C website, which includes the richness of factors such as colour scheme and use of product images, impacts online consumers with high cognitive innovativeness (T.-L. Huang & Liao, 2014). Additionally, S. Lee and Rao (2010) argue that in B2C e-commerce, aesthetic design produces differential responses in individuals. These visual appearances (colour and images) are more important to high UA consumers than low UA consumers (Ganguly et al., 2010). Therefore, we hypothesise:

H2: Individual level UA will moderate the relationship between colour and consumer cognitive innovativeness such that the relationship is stronger for consumers in Australia.
H2a: The relationship between colour and consumer cognitive innovativeness is stronger for high UA individuals than low UA individuals.
H3: Individual-level UA will moderate the relationship between product images and consumer high cognitive innovativeness such that the relationship is stronger for consumers in Australia.
H3a: The relationship between product images and consumer cognitive innovativeness is stronger for high UA individuals than low UA individuals.

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Social Networking Services

Online consumers with high cognitive innovativeness tend to make decisions on their own (T.-L. Huang & Liao, 2014). The integration of virtual communities like social network sites has a positive influence on cognitive-based trust towards purchasing intentions (Brengman & Karimov, 2012). In addition to this, social influence can build consumer trust in online shopping more effectively in high UA cultures than in low UA cultures (M. K. O. Lee et al., 2011). For example, people in high UA cultures such as South Korea, which has a UA index score of 85, are likely to obtain opinions of a website's reputation from friend and family recommendations, whereas those from low UA cultures such as Australia are more likely to make independent decisions. This means consumers who are from low UA cultures avoid getting into groups and instead perform online purchasing on their own without asking anybody for any help. Therefore, we hypothesise:

H4: Individual level UA will moderate the relationship between social networking services and consumer cognitive innovativeness such that the relationship is stronger for consumers in Australia.

H4a: The relationship between social networking services and consumer cognitive innovativeness is stronger for high UA individuals than low UA individuals.

Cognitive Innovativeness and New Product Purchase Intention

According to Thakur and Srivastava (2014), innovativeness affects purchasing intentions. High cognitive innovative consumers not only enjoy thinking for its sake but also tend to apply a great deal of mental energy to solve problems they encounter (Huang & Liao, 2014). Additionally, as noted by Lim, Leung, Sia and Lee (2004), online shopping naturally involves more uncertainties than buying from a brick-and-mortar business. Therefore, the adoption rates of online shopping are higher for high UA cultures than for low UA cultures (Lim et al., 2004). Yoon (2009) also highlights that high UA cultures are usually more willing to rely on online purchasing than low UA cultures. Therefore, we hypothesise:

H5: Individual level UA will moderate the relationship between cognitive innovativeness and new product purchase intention such that the relationship is stronger for consumers in Australia.

H5a: The relationship between cognitive innovativeness and new product purchase intention is stronger for high UA individuals than low UA individuals.

RESEARCH METHODOLOGY

To validate the research model, we carried out an empirical survey. This study used an online survey methodology where participants were asked to choose a localised online vendor. A localised retailer website is considered to be appropriate to the culture and the most workable option for research (Dianne Cyr, 2013). The survey was announced through university webmail and social network pages. For the validation and testing of the hypotheses, data were collected from online shoppers in Australia. Criteria for selecting participants were to have a minimum of six months online shopping experience and is an Australian citizen by birth. To determine the participant's culture, it is important to ensure that each

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participant had lived in Australia for most of their lives and spoke the native language (English) as their primary language (Dianne Cyr, 2013).

After visiting the chosen website e-commerce website, respondents were required to fill out a closed-ended questionnaire on a seven-point Likert scale, with responses ranging from (1) strongly disagree to (7) strongly agree. Multi-scale items using at least three observable indicators measured all constructs. Previously validated survey instruments were modified to ensure the adequate reliability and validity of the measurement scales. Table 5 in the Appendix shows all items used in the study.

DATA ANALYSIS

A total of 260 responses were collected. After removing incomplete responses, a total of 255 samples were used to test the proposed model. 53% of respondents were males, and 47% were females, 95% respondents had seven or more years of Internet experience, 65% respondents had online purchasing experience of between one to three years, and 35% had more than three years.

To test the research model, a variance-based structural equation modelling (SEM) statistical technique, partial least squares (PLS) path modelling using SmartPLS version 3 (Ringle, Wende, & Becker, 2015), was used. The partial least squares (PLS-SEM) approach is a preferred analysis technique in information systems and business research because it offers several flexibilities. For example, this approach is well suited for prediction-oriented research, does not require a large sample size, does not require normality and subsequently works without distributional assumptions and with nominal, ordinal and interval-scaled variables (Haenlein & Kaplan, 2004; F. Hair, Marko, Lucas, & Volker, 2014). PLS is considered suitable as it allows investigators to evaluate measurement model parameters and structural path coefficients at the same time. It also allows both formative and reflective factors to be tested together (Chin, Marcolin, & Newsted, 2003).

In our research model, website accessibility, colour and product images, cognitive innovativeness and new product purchase intention were modelled as reflective indicators because they were viewed as effects of latent constructs (Hwang & Lee, 2012b; D. J. Kim, 2005). This is because reflective indicators are interchangeable. For example, different indicators reflect website accessibility, such as easy to learn, understandable and easy to use, to which these indicators are highly correlated. This means that an increase in website accessibility is reflected by increases in all indicators. Social networking service (SNS) is formative because it is a multidimensional factor (Sohaib & Kang, 2015b) that covers various referent groups such as social networking sites, friends and family, online help, reviews and rankings. Formative constructs are not interchangeable, which means a change in one indicator does not necessarily denote a change in other indicators. For example, an increase in influence from family would influence individuals to purchase online even if there were no influence from other sources. Additionally, the moderating effects of culture (UA) were performed using the product indicator approach. The product indicator approach by Chin (2003) refers to the products of each indicator of the independent latent variable with each indicator of the moderator variable.

To investigate the moderating influences of individuals' cultural orientation, we used the multi-group PLS analysis method to determine whether the individual uncertainty avoidance (UA) differs for high versus low uncertainty avoidance (UA) subgroups of participants, which is considered appropriate for this study (Sia et al., 2009). Multi-group PLS analysis allows for the comparisons of structural model differences between groups (Chin, 2004). The analysis was conducted by taking the standard errors of

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the structural models' paths by comparing equivalent paths across two groups (high UA and low UA) by performing t-tests on their path coefficients.

Although Hofstede's (1980) cultural values are significant at the societal level, his cultural dimensions also tend to differ widely over individual members within societies (Tsai & Bagozzi, 2014). Yoon (2009) found Hofstede's national cultural values at the individual level impact consumers' acceptance of e-commerce. We use a median split to separate the sample according to the participants' composite score of high versus low on two UA items: (1) "I prefer to avoid making changes while online shopping because things could get worse"; and (2) "The rules and regulations of the online stores are important to me because they inform buyers what the online store does."

Reliability and Validity Assessment

The reliability and validity of the measurement model in PLS were assessed by examining internal consistency, convergent validity and discriminant validity. Convergent and discriminant validity were assessed by applying two criteria: (1) that the square root of the average variance extracted (AVE) by a construct from its indicators was at least 0.70 and was greater than that construct's correlation with other constructs; and (2) item loadings were at least 0.70 and are more strongly on their assigned construct rather than on the other constructs. Table 5 in the Appendix shows all item loadings the social networking service (SNS) factor weights. Table 1 shows the Cronbach's reliability, composite reliability and the AVE of all constructs values exceed the recommended value of 0.70. An SNS is a formative construct that cannot be analysed in this procedure. For formative indicators (social networking services), the validity of variables using outer weights was significant (p-value < 0.05). In addition to this, to determine the reliability for formative indicators, the variance inflation factor (VIF) value was less than 5, which means there is no multi-collinearity.

Cross-sectional design surveys are susceptible to common method bias, particularly if the data collection method is only perceptually anchored (Sharma, Yetton, & Crawford, 2009). However, the PLS method requires practically no bias when estimating data from a composite model population, regardless of whether the measurement model is reflective or formative (Sarstedt, Hair, Ringle, Thiele, & Gudergan, 2016). However, according to Kock (2015), if all factor level VIFs resulting from a full collinearity test are equal to or lower than 3.3, the model can be considered free of common method bias. In our research model, all factor level VIFs are lower than 3.3, indicating no bias data.

Table 1. Cronbach's reliability, composite reliability and the AVE

	AVE	CR	C-Alpha	CInn	COL	IMG	SNS	WA	UA	NPINT
CInn	0.81	0.91	0.88	**0.90**						
COL	0.75	0.87	0.81	-0.18	**0.86**					
IMG	0.73	0.84	0.73	0.10	0.10	**0.84**				
SNS	NA	NA	NA	0.14	0.07	-0.08	**1**			
WA	0.88	0.89	0.91	0.21	0.10	0.05	0.07	**0.93**		
UA	0.84	0.88	0.82	0.09	0.05	0.13	-0.1	-0.02	**0.85**	
NPINT	0.88	0.90	0.87	0.47	0.01	-0.02	0.1	0.05	0.14	**0.93**

Notes: CR: composite reliability, C-Aplha: Cronbach's alpha, CInn: cognitive innovativeness; COL: colour; IMG, image; SNS: social networking services; WA: website accessibility; NPINT: new product purchase intention; UA: uncertainty avoidance

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Concerning goodness-of-fit (GoF) indices for partial least squares path modelling, Jörg Henseler and Sarstedt (2013) show that the GoF and the relative GoF index are not appropriate for model validation. However, the model fit was assessed by examining the model fit of the PLS path models; namely, the standardised root mean square residual (SRMR). The SRMR 0.07 is lower than the recommended value of 0.08, which indicates a good fit.

Structural Model Testing

The structural models and hypotheses were tested by examining the significance of the path coefficients and the R^2 variance for the dependent variable. The significance of the paths was determined using the t-statistical test calculated with the bootstrapping technique. A 5% significance level was employed. SmartPLS 3 can perform bootstrapping (a nonparametric procedure that can be applied to test whether coefficients such as outer weights, outer loadings and path coefficients are significant by estimating standard errors for the estimates) (Ringle et al., 2015) for both the inner and outer model to specify the t-value for significance. In order to get approximate t-values for the significance test, we used a large subsample (5,000) from the original sample to draw a standard error and the number of cases were equal to the number of observations in the original sample (F. Hair et al., 2014; J. F. Hair, Ringle, & Sarstedt, 2011). We examined the coefficients of the causal relationships between constructs in our model in order to approve or disprove the hypotheses. The coefficients and their t-value on the structural model are shown in Table 2 and 3 and the coefficients of determination (R^2) for the dependent constructs are shown in Figure 2.

The Stone-Geisser criterion Q^2 is also measured using the blindfolding method to compute the construct cross-validated redundancy for assessing the predictive relevance (Jorg Henseler, Ringle, & Sinkovics, 2009). In our analysis, all Q^2 value range of the 'new product purchase intention' endogenous construct (i.e., 0.315) is above the threshold value of zero, thus indicating a strong predictive relevance.

As Table 2 shows, all hypotheses are supported except H2, which suggests there is an insignificant relationship between the individual level UA moderation between colour and consumer cognitive innovativeness. This indicates website colour perception is not shaped by the consumer's uncertainty avoidance. However, previous research (such as Cyr et al., 2010) indicated that colour is an influencing factor in e-commerce across national cultures. Variance in consumers' cognitive innovativeness ($R^2 = 0.55$) and new product purchase intention for Australia sample ($R^2 = 0.42$) is significant, which shows that the Australian sample indicates a 42% variance in consumers' new product purchase intention.

Table 2. Hypothesis testing

	Path	Path Mean	StDev	t-Value	P Value	Supported?
H1	WA * UA -> CInn	0.25	0.03	1.98	0.003*	Yes
H2	COL* UA -> CInn	0.14	0.03	1.20	0.336	No
H3	IMG * UA -> CInn	0.31	0.03	3.61	0.000***	Yes
H4	SNS * UA -> CInn	0.42	0.05	4.79	0.000****	Yes
H5	CInn* UA -> NPINT	0.24	0.03	1.99	0.002*	Yes

Notes: CInn: cognitive innovativeness; COL: colour; IMG, image; SNS: social networking services; WA: website accessibility; NPINT: new product purchase intention; UA: uncertainty avoidance; * Significant at 0.05 level; ** Significant at 0.01 level; *** Significant at 0.001 level

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Furthermore, to meet the second objective of the study we compared the differences in coefficients of the corresponding structural paths of the high UA and low UA subsamples. As shown in Table 3, colour still does not affect consumers' cognitive innovativeness, so H2a is not supported. However, the paths from website accessibility, product images and social networking services to cognitive innovativeness is significant.

Table 3. Hypothesis testing

	Path	High UA (Subsample 140)		Low UA (Subsample 115)		Mean Difference	t-Value	p-Value	Supported?
		Mean	SD	Mean	SD				
H1a	WA -> CInn	0.20	0.04	0.15	0.04	0.05	1.957	0.049**	Yes
H2a	COL -> CInn	0.17	0.04	0.10	0.03	0.07	0.159	0.77	No
H3a	IMG -> CInn	0.23	0.05	0.19	0.04	0.04	1.960	0.048**	Yes
H4a	SNS -> CInn	0.33	0.05	0.24	0.03	0.10	3.247	0.001*	Yes
H5a	CInn -> NPINT	0.28	0.05	0.25	0.04	0.03	3.176	0.001*	Yes

Notes: CInn: cognitive innovativeness; COL: colour; IMG: image; SNS: social networking services; WA: website accessibility; NPINT: new product purchase intention; UA: uncertainty avoidance; * Significant at 0.05 level; ** Significant at 0.01 level; *** Significant at 0.001 level

Importance-Performance Map Analysis

We also performed importance-performance map analysis (IPMA) for two groups (low UA and high UA) to produce additional findings and conclusions for managerial actions (Christian and Sarstedt, 2016). Performing an IPMA requires determining a targeting construct, such as 'new product purchase intention,' in our PLS path model.

The performance of each factor was measured on a scale from 0 to 100. The closer the value is to 100, the higher the performance of the factor. All total effects (importance) larger than 0.10 are significant at the $p \leq 0.05$ level. Table 4 and Figure 3 show the IPMA result of the all the predecessors of the selected target construct (new product purchase intention).

Figure 2. Path testing

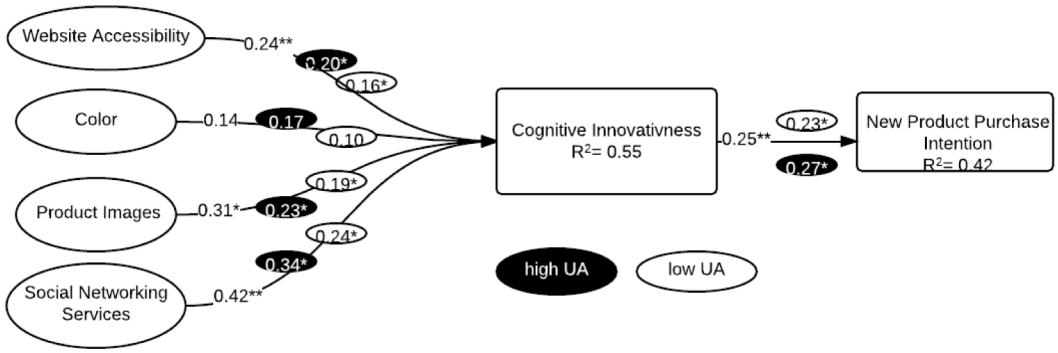

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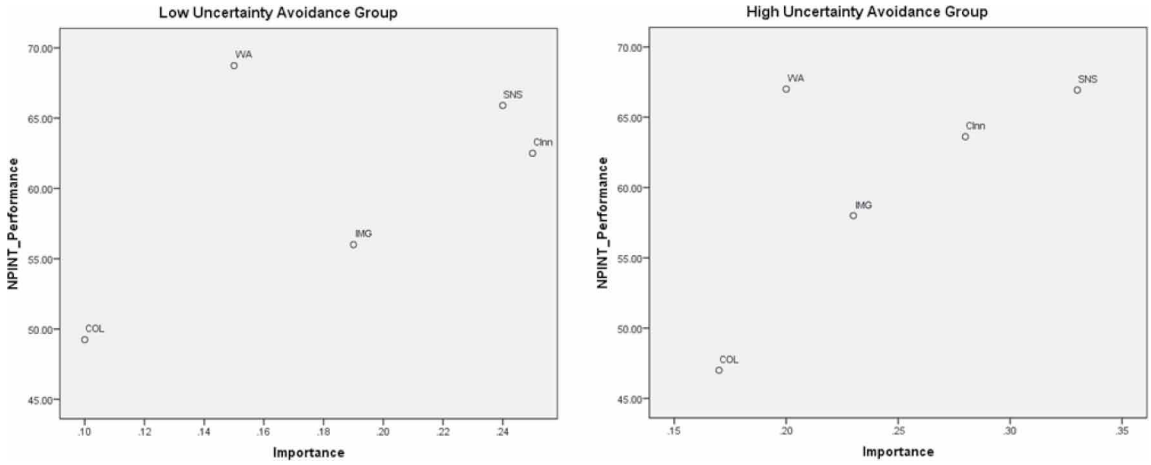
Table 4. IPMA result of new product purchase intention

Criterion: New Product Purchase Intention	Low UA		High UA	
	Importance	Performance	Importance	Performance
WA	0.15	68.73	0.20	66.93
COL	0.10	49.24	0.17	47.01
IMG	0.19	56.10	0.23	58.13
SNS	0.24	65.90	0.33	66.64
CInn	0.25	62.50	0.28	63.61
NPINT	0.23	69.96	0.27	72.78

UA: Uncertainty avoidance; CInn: cognitive innovativeness; COL: colour; IMG: image;
SNS: social networking services, WA: website accessibility; NPINT: new product purchase intention

Figure 3. IPMA of the target construct (new product purchase intention)



Regarding the new product purchase intention, as presented in Table 4 and Figure 3 the highest performance construct is 'web accessibility' followed by 'social networking services.' This means an increase in web accessibility performance would increase the performance of the target construct 'new product purchase intention' by the size of the total effect. However, the direct consequence of the 'cognitive innovativeness' construct is higher in the high UA group than in the low UA group. This means an increase in cognitive innovativeness performance would increase the performance of the target construct new product purchase intention by the size of the total effect 0.28 in the high UA group more than the 0.23 total effects in the low UA group.

DISCUSSION AND CONCLUSION

This study highlights the effects of web cognitive landscape on consumer cognitive innovativeness towards new product purchase intention. In addition to this, it examined how the individual consumer level

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uncertainty avoidance cultural value moderated the relationship between B2C web cognitive landscape and consumer cognitive innovativeness towards new product purchase intention.

The findings of this study are as follows. First, cognitive innovativeness regarding the B2C website accessibility, colour and product images, and social networking services significantly influence consumers' new product purchase intentions. This argument is consistent with the findings of T.-L. Huang and Liao (2014), who have reported that cognitive innovativeness influences consumer behaviour towards using technology. Second, consumer cognitive innovativeness has a significant positive relationship with online purchase behaviour. This is in line with Y.-A. Huang (2003). Consumers with high cognitive innovativeness are more likely to accept an innovation (Venkatraman, 1991) such as a new product purchase. Third, cognitive innovative consumers usually trust other reliable information sources to ease the uncertainties inherent in a B2C website. For example, the findings of this study indicate that website accessibility, colour and product image, and social networking services positively affect consumer cognitive innovativeness towards new product purchase intention at the individual level. This view is consistent with Tellis et al. (2009). Fourth, consumers' level of the uncertainty avoidance cultural value is significantly connected to cognition and innovativeness in e-commerce. Consumers with low uncertainty avoidance are characterised by a higher cognitive innovativeness than high uncertainty avoidance consumers, who analyse information in a meaningful way. This is consistent with Dobre et al. (2009). Fifth, in cultures with a low degree of uncertainty avoidance (such as Australia), consumers are tolerant of uncertain situations and with innovations. We found that consumers in Australia tend to be as being highly innovative overall. Additionally, consumers' intention for purchasing new products differs considerably depending on their uncertainty avoidance. This is consistent with Tellis et al. (2009).

In conclusion, the web design factors (stimulus) of a B2C website towards which a reaction is made provides a signal regarding the consumer cognitive innovativeness (organism) influence new product purchase intention (response). Therefore, B2C websites should be designed according to consumers' level of cognitive innovativeness depending on the consumer's individual cultural orientations.

Theoretical Implications

Several theoretical implications resulting from this study. Firstly, the main theoretical contribution of the study is the development of a research model that can be used in further studies. Secondly, this study extended prior research on the effects of web cognition on innovativeness towards online purchasing intentions and provided necessary results. Additionally, this research addresses the shortcomings in the existing literature by applying individual cultural values (UA) as moderators to a proposed model to uncover new and improved methods for consumer uncertainty in a B2C website. Thirdly, this study provided an understanding of the new drivers of online consumer purchase intention. Specifically, a consumer's cognitive innovativeness towards the key components on in a B2C e-commerce website, such as web design (website accessibility, visual appearance, and social networking services), which are viewed as the vital aspects of consumer trust in an online store. Fourth, this study examined how online consumer responses towards a B2C online store differ across two different cultural value systems (high uncertainty avoidance and low uncertainty avoidance). This is the first research that has investigated this phenomenon within the Australian context. Finally, the various hypotheses supported in this study all add to the literature for developing hypotheses for future studies. Additionally, this study contributes to validating the survey instrument of the various factors used in a proposed model. Researchers can now use the survey instrument with increased confidence in an e-commerce context.

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Practical Implications

The findings provide some practical implications and guidelines for online vendors to include innovative approaches to B2C websites. The results of this study may help online shopping managers who could use the insights of this research to modify their web strategies, not only for considering a country's culture but also for culturally diverse countries such as Australia. Developers and website designers can use these results to increase desirable outcomes by focusing on the relationship between web cognitive evaluations and consumer innovativeness to increase the chances that an online business will succeed in countries with diverse degrees of uncertainty avoidance. The practical implications extend to business firms to make changes to their market strategies to improve their online sales across cultures; for example, e-businesses should specifically consider introducing new products first in highly innovative countries.

Limitations and Recommendations for Future Research

Like most survey research, this study has some limitations. Firstly, data were collected from Australia only. Therefore, caution is advised in making generalisations from the study findings. Secondly, a larger sample size would have been more useful for evaluating the constancy and dependability of the findings. Thirdly, although the sound judgment was used in the selection of factors for the research model, the study did not consider all possible factors that could impact cognitive influences towards purchase intention that have been used in prior studies. While the results of this study clearly indicate there are individual-based differences in online purchasing behaviour, it will be interesting to see if there is some evidence that consumer innovativeness could be a link between country level and individual level cultural analyses. More practical support at the individual consumer level cultural values using this study's research model could be included in future studies of e-commerce, such as including Hofstede's (1980) other cultural dimensions such as power distance index (PDI), masculinity versus femininity (MAS), long-term orientation versus short-term normative orientation (LTO) and indulgence versus restraint (IND). Finally, this research did not provide a complete view of all aspects of the web cognitive landscape and new product purchase intentions, such as privacy, security, brand, advertising, and price.

REFERENCES

Al-Debei, M. M., Akroush, M. N., & Ashouri, M. I. (2015). Consumer attitudes towards online shopping. *Internet Research*, *25*(5), 707–733. doi:10.1108/IntR-05-2014-0146

Alhammad, M. M., & Gulliver, S. R. (2013). Context Relevant Persuasive Interaction and Design: Consideration of Human Factors Influencing B2C Persuasive Interaction. *Paper presented at the 35th Int. Conf. on Information Technology Interfaces*, Cavtat, Croatia.

Blake, B. F., Neuendorf, K. A., & Valdiserri, C. M. (2003). Innovativeness and variety of Internet shopping. *Internet Research*, *13*(3), 156–169. doi:10.1108/10662240310478187

Brengman, M., & Karimov, F. P. (2012). The effect of web communities on consumers' initial trust in B2C e-commerce websites. *Management Research Review*, *35*(9), 791–817. doi:10.1108/01409171211256569

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Casaló, L. V., Flavián, C., & Guinalíu, M. (2011). The Generation of Trust in the online service and product distribution. the case of spanish electronic commerce. *Journal of Electronic Commerce Research*, *12*(3), 199–213.

Chen, J., & Dibb, S. (2010). Consumer trust in the online retail context: Exploring the antecedents and consequences. *Psychology and Marketing*, *27*(4), 323–346. doi:10.1002/mar.20334

Chen, Y.-H., & Barnes, S. (2007). Initial trust and online buyer behaviour. *Industrial Management & Data Systems*, *107*(1), 21–36. doi:10.1108/02635570710719034

Cheung, C., Lee, Z. W. Y., & Chan, T. K. H. (2015). Self-disclosure in social networking sites. *Internet Research*, *25*(2), 279–299. doi:10.1108/IntR-09-2013-0192

Chin, W. W. (2004). Multi-Group analysis with PLS.

Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A Partial Least Squares Latent Variable Modeling Approach for Measuring Interaction Effects: Results from a Monte Carlo Simulation Study and an Electronic-Mail Emotion/Adoption Study. *Information Systems Research*, *14*(2), 189–217. doi:10.1287/isre.14.2.189.16018

Constantinides, E. (2004). Influencing the online consumer's behavior: The web experience. *Internet Research*, *14*(2), 111–126. doi:10.1108/10662240410530835

Cyr, D. (2008). Modeling Web Site Design Across Cultures: Relationships to Trust, Satisfaction, and E-Loyalty. *Journal of Management Information Systems*, *24*(4), 47–72. doi:10.2753/MIS0742-1222240402

Cyr, D. (2013). Website design, trust and culture: An eight country investigation. *Electronic Commerce Research and Applications*.

Cyr, D., Head, M., & Larios, H. (2010). Colour appeal in website design within and across cultures: A multi-method evaluation. *International Journal of Human-Computer Studies*, *68*(1–2), 1–21. doi:10.1016/j.ijhcs.2009.08.005

Dobre, C., Dragomir, A., & Preda, G. (2009). Consumer Innovativeness: A Marketing Approach. *Management & Marketing*, *4*(2), 19–34.

Duffett, R. G. (2015). Facebook advertising's influence on intention-to-purchase and purchase amongst Millennials. *Internet Research*, *25*(4), 498–526. doi:10.1108/IntR-01-2014-0020

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2003). Empirical Testing of a Model of Online Store Atmospherics and Shopper Responses. *Psychology and Marketing*, *20*(2), 139–150. doi:10.1002/mar.10064

Faiola, A., & Matei, S. A. (2006). Cultural Cognitive Style and Web Design: Beyond a Behavioral Inquiry into Computer-Mediated Communication. *Journal of Computer-Mediated Communication*, *11*(1), 375–394. doi:10.1111/j.1083-6101.2006.tb00318.x

Ganguly, B., Dash, S. B., Cyr, D., & Head, M. (2010). The effects of website design on purchase intention in online shopping: The mediating role of trust and the moderating role of culture. *International Journal of Electronic Business*, *8*(4/5), 302–329. doi:10.1504/IJEB.2010.035289

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in Online Shopping: An Integrated Model. *Management Information Systems Quarterly*, *27*(1), 51–90. doi:10.2307/30036519

Gefen, D., & Straub, D. W. (2004). Consumer trust in B2C e-Commerce and the importance of social presence: Experiments in e-Products and e-Services. *Omega*, *32*(6), 407–424. doi:10.1016/j.omega.2004.01.006

Goldsmith, R. E., & Foxall, G. R. (2003). The Measurement of Innovativeness. In L. V. Shavinina (Ed.), *The International Handbook on Innovation* (Vol. 5, pp. 321–330). Elsevier Science Ltd. doi:10.1016/B978-008044198-6/50022-X

Grabner-Kräuter, S. (2009). Web 2.0 Social Networks: The Role of Trust. *Journal of Business Ethics*, *90*(4), 505–522. doi:10.100710551-010-0603-1

Guo, S., Wang, M., & Leskovec, J. (2011). The role of social networks in online shopping: information passing, price of trust, and consumer choice. *Paper presented at the Proceedings of the 12th ACM conference on Electronic commerce*, San Jose, CA. 10.1145/1993574.1993598

Ha, H.-Y., & Janda, S. (2014). The effect of customized information on online purchase intentions. *Internet Research*, *24*(4), 496–519. doi:10.1108/IntR-06-2013-0107

Ha, H.-Y., John, J., & Chung, Y.-K. (2016). Temporal effects of information from social networks on online behavior. *Internet Research*, *26*(1), 213–235. doi:10.1108/IntR-03-2014-0084

Haenlein, M., & Kaplan, A. M. (2004). A Beginner's Guide to Partial Least Squares Analysis. *Understanding Statistics*, *3*(4), 283–297. doi:10.120715328031us0304_4

Hair, F., Marko, J. S., Lucas, H., & Volker, G. K. (2014). Partial least squares structural equation modeling (PLS-SEM) An emerging tool in business research. *European Business Review*, *26*(2), 106–121. doi:10.1108/EBR-10-2013-0128

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139–151. doi:10.2753/MTP1069-6679190202

Hasslinger, A., Hodzic, S., & Opazo, C. (2007). *Online consumer behavior in online shopping*. Kristianstad university.

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. *New Challenges to International Marketing*, *20*, 277–319.

Henseler, J., & Sarstedt, M. (2013). Goodness-of-fit indices for partial least squares path modeling. *Computational Statistics*, *28*(2), 565–580. doi:10.100700180-012-0317-1

Hofstede, G. (1980). *Culture's Consequences: International Differences in Work-related Values. CA*. Beverly Hills: Sage.

Hofstede, G. (2001). *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations* (Vol. 2). CA: SAGE Publications, Inc.

Huang, T.-L., & Liao, S. (2014). A model of acceptance of augmented-reality interactive technology: The moderating role of cognitive innovativeness. *Electronic Commerce Research*. doi:10.100710660-014-9163-2

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Huang, Y.-A. (2003). Consumer Innovativeness and Consumer Expectations for New IT Products: Implications for Purchase Behavior. *Asia Pacific Management Review*, *3*(2), 113–134.

Huynh, P. T., & Andrade, A. D. (2012). Effects of Web 2.0 Experience on Consumers' Online Purchase Intention: The Social Networking and Interaction Orientation Factors. *Paper presented at the International Conference on Information Resources Management*.

Hwang, Y., & Lee, K. C. (2012a). Investigating the moderating role of uncertainty avoidance cultural values on multidimensional online trust. *Information & Management*, *49*(3-4), 171–176. doi:10.1016/j.im.2012.02.003

Hwang, Y., & Lee, K. C. (2012b). Investigating the moderating role of uncertainty avoidance cultural values on multidimensional online trust. *Information & Management*, *49*(3–4), 171–176. doi:10.1016/j.im.2012.02.003

Karahanna, E., Williams, C. K., Polites, G. L., Liu, B., & Seligman, L. (2013). Uncertainty Avoidance and Consumer Perceptions of Global e-Commerce Sites: A Multi-Level Model. *Drake Management Review*, *3*(1), 12–47.

Karimov, F. P., Brengman, M., & Hove, L. V. (2011). The Effect of Website Design Dimensions on Initial Trust: A Synthesis of the Empirical Literature. *Journal of Electronic Commerce Research*, *12*(4), 272–301.

Kim, D. J. (2005). Cognition-based versus affect-based trust determinants in e-commerce: A cross-cultural comparison study. *Paper presented at the Twenty-Sixth International Conference on Information Systems (ICIS)*.

Kim, J., & Forsythe, S. (2007). Hedonic usage of product virtualization technologies in online apparel shopping. *International Journal of Retail & Distribution Management*, *35*(6), 502–514. doi:10.1108/09590550710750368

Kim, S., & Park, H. (2013). Effects of various characteristics of social commerce (s-commerce) on consumers' trust and trust performance. *International Journal of Information Management*, *33*(2), 318–232. doi:10.1016/j.ijinfomgt.2012.11.006

Kock, N. (2015). Common Method Bias in PLS-SEM: A Full Collinearity Assessment Approach. *International Journal of e-Collaboration*, *11*(4). doi:10.4018/ijec.2015100101

Lee, M. K. O., Shi, N., Cheung, C. M. K., Lim, K. H., & Sia, C. L. (2011). Consumer's decision to shop online: The moderating role of positive informational social influence. *Information & Management*, *48*(6), 185–191. doi:10.1016/j.im.2010.08.005

Lee, S., & Rao, V. S. (2010). Color and store choice in electronic commerce: The explanatory role of trust. *Journal of Electronic Commerce Research*, *11*(2), 110–126.

Li, E. Y., Yen, H. R., Liu, C.-C., & Chang, L. F. K. (2013). From Structural Assurances to Trusting Beliefs: Validating Persuasion Principles in the Context of Online Shopping. *Paper presented at the PACIS 2013 Proceedings*.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Lim, K., Leung, K., Sia, C. L., & Lee, M. K. (2004). Is Ecommerce Boundary-Less? Effects of Individualism–Collectivism and Uncertainty Avoidance on Internet Shopping. *Journal of International Business Studies*, *35*(6), 545–559. doi:10.1057/palgrave.jibs.8400104

Lodorfos, G. N., Trosterud, T. A., & Whitworth, C. (2006). E-Consumers' attitude and behaviour in the online commodities market. *Innovative Marketing*, *2*(3), 77–96.

Lu, J. (2014). Are personal innovativeness and social influence critical to continue with mobile commerce? *Internet Research*, *24*(2), 134–159. doi:10.1108/IntR-05-2012-0100

Manning, K. C., & William, O. (1995). Consumer Innovativeness and the Adoption Process. *Journal of Consumer Psychology*, *4*(4), 329–345. doi:10.120715327663jcp0404_02

McCoy, S., Galletta, D. F., & King, W. R. (2005). Integrating National Culture into IS Research: The Need for Current Individual Level Measures. *Communications of the Association for Information Systems*, *15*, 211–223.

McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). The impact of initial consumer trust on intentions to transact with a web site: A trust building model. *The Journal of Strategic Information Systems*, *11*(3-4), 297–323. doi:10.1016/S0963-8687(02)00020-3

McKnight, D. H., Cummings, L. L., & Chervany, N. L. (1998). Initial trust formation in new organizational relationships. *Academy of Management Review*, *23*(3), 473–490.

Mehrabian, A., & Russell, J. A. (1974). *An Approach to Environmental Psychology*. Cambridge, MA: MIT.

Monsuwe, T. P. y., Dellaert, B. G. C., & Ruyter, K. (2004). What drives consumers to shop online? A literature review. *International Journal of Service Industry Management*, *15*(1), 102–121. doi:10.1108/09564230410523358

Ringle, C. M., Wende, S., & Becker, J.-M. (2015). Smartpls 3. Hamburg: SmartPLS. Retrieved from http://www.smartpls.com

Rogers, E. M. (1995). *Diffusion of Innovations*. New York: The Free Press.

Sabiote, C. M., Frías, D. M., & Castañeda, J. A. (2012). The moderating effect of uncertainty-avoidance on overall perceived value of a service purchased online. *Internet Research*, *22*(2), 180–198. doi:10.1108/10662241211214557

Sarstedt, M., Hair, J. F., Ringle, C. M., Thiele, K. O., & Gudergan, S. P. (2016). Estimation issues with PLS and CBSEM: Where the bias lies! *Journal of Business Research*, *69*(10), 3998–4010. doi:10.1016/j.jbusres.2016.06.007

Schaffer, E. (2009). Beyond Usability: Designing Web Sites for Persuasion, Emotion, and Trust. *UXmatters*. Retrieved from http://www.uxmatters.com/mt/archives/2009/01/beyond-usability-designing-web-sites-for-persuasion-emotion-and-trust.php#sthash.12RABAUa.dpuf

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Sharma, R., Yetton, P., & Crawford, J. (2009). Estimating the effect of common method variance: The method--method pair technique with an illustration TAM research. *Management Information Systems Quarterly*, *33*(3), 473–A413. doi:10.2307/20650305

Sheng, H., & Joginapelly, T. (2012). Effects of Web Atmospheric Cues on Users' Emotional Responses in E-Commerce. *Transactions on Human-Computer Interaction*, *4*(1), 1–24. doi:10.17705/1thci.00036

Sia, C. L., Lim, K. H., Leung, K., Lee, M. K. O., Huang, W. W., & Benbasat. (2009). Web strategies to promote internet shopping: Is cultural customization needed? *Management Information Systems Quarterly*, *33*(3), 491–512. doi:10.2307/20650306

Singh, N., Kumar, V., & Baack, D. (2005). Adaptation of cultural content: Evidence from B2C e-commerce firms. *European Journal of Marketing*, *39*(1/2), 71–86. doi:10.1108/03090560510572025

Sohaib, O., & Kang, K. (2015a). Individual Level Culture Effects on Multi-Perspective iTrust in B2C E-commerce. *Paper presented at the 26th Australasian Conference on Information Systems*, Adeliade.

Sohaib, O., & Kang, K. (2015b). Individual level culture influence on online consumer iTrust aspects towards purchase intention across cultures: A S-O-R Model. *International Journal of Electronic Business*, *12*(2), 142–161. doi:10.1504/IJEB.2015.069104

Srite, M., & Karahanna, E. (2006). The Role of Espoused National Cultural Values in Technology Acceptance. *Management Information Systems Quarterly*, *30*(3), 679–704. doi:10.2307/25148745

Tan, F. B., Tung, L.-L., & Xu, Y. (2009). A study of web designer criteria for effective business to-consumer websites using repertory grid technique. *Journal of Electronic Commerce Research*, *10*(3), 155–177.

Tellis, G. J., Yin, E., & Bell, S. (2009). Global Consumer Innovativeness: Cross-Country Differences and Demographic Commonalities. *Journal of International Marketing*, *17*(2). doi:10.1509/jimk.17.2.1

Thakur, R., & Srivastava, M. (2014). Adoption readiness, personal innovativeness, perceived risk and usage intention across customer groups for mobile payment services in India. *Internet Research*, *24*(3), 369–392. doi:10.1108/IntR-12-2012-0244

Tsai, H.-T., & Bagozzi, R. P. (2014). Contribution behavior in virtual communities: Cognitive, emotional, and social influences. *Management Information Systems Quarterly*, *38*(1), 143–164. doi:10.25300/MISQ/2014/38.1.07

van der Merwe, R., & Bekker, J. (2003). A framework and methodology for evaluating e-commerce web sites. *Internet Research*, *13*(5), 330–341. doi:10.1108/10662240310501612

Venkatraman, M. P. (1991). The impact of innovativeness and innovation type on adoption. *Journal of Retailing*, *67*(1), 51–67.

Venkatraman, M. P., & Price, L. L. (1990). Differentiating between cognitive and sensory innovativeness: Concept, measurement, and implications. *Journal of Business Research*, *20*(4), 293–315. doi:10.1016/0148-2963(90)90008-2

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Yoon, C. (2009). The effects of national culture values on consumer acceptance of e-commerce: Online shoppers in China. *Information & Management*, *46*(5), 294–301. doi:10.1016/j.im.2009.06.001

Zhu, D. H., Chang, Y. P., & Chang, A. (2015). Effects of free gifts with purchase on online purchase satisfaction. *Internet Research*, *25*(5), 690–706. doi:10.1108/IntR-12-2013-0257

Zrim, L. (2016). Information is crucial for online Australian shoppers. *Australian Nielsen Connected Consumers Report, 2016.* Retrieved from http://www.nielsen.com/au/en/insights/news/2016/information-is-crucial-for-online-australian-shoppers.html

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APPENDIX

Table 5. Questionnaire items

Measures			Loadings	p-Value
Website Accessibility (Casaló, Flavián, & Guinalíu, 2011; Chen & Dibb, 2010; Chen & Barnes, 2007; Gefen, Karahanna, & Straub, 2003; Yoon, 2009)	WA1	The structure of this website is easy to understand.	0.89	0.00***
	WA2	Learning to operate this website is easy.	0.90	0.00***
	WA3	When I am navigating this website, I feel that I am in control of what I can do.	0.86	0.00***
	WA4	This website responds quickly.	0.93	0.00***
	WA5	This website helps me correct the errors I made.	0.87	0.00***
	WA6	My interaction with the website is understandable.	0.89	0.00***
Color (Chen & Dibb, 2010; Cyr, Head, & Larios 2010)	COL1	The colours used on the website are emotionally appealing.	0.73	0.00***
	COL2	The colour use on this website is attractive overall.	0.70	0.01*
	COL3	The brightness of pages on this website is adequate.	0.95	0.00***
Images (Chen & Dibb, 2010; Dianne Cyr, 2013; Kim & Forsythe, 2007)	IMG1	This website has eye-catching images on the home page.	0.87	0.00***
	IMG2	Zooming and 3D images are helpful in buying what I want through this website.	0.73	0.00**
	IMG3	Overall, the screen design (i.e. images, layout etc.) is attractive.	0.87	0.00**
Social Networking Services (Hasslinger, Hodzic, & Opazo, 2007; Huynh & Andrade, 2012; McKnight, Choudhury, & Kacmar, 2002)	SNS1	This website clearly shows how I can contact the company.	0.74 (Weight)	0.00***
	SNS2	I believe using social networks services (YouTube/Facebook/ twitter/Google+) would help me in decision making to purchase online.	0.17 (Weight)	0.005*
	SNS3	I believe using the other support services (such as, FAQs, ranking, online help, and contact details) would help me to buy a product I really want.	0.52 (Weight)	0.00***
	SNS4	My friends or family tell me about the new products.	0.62 (Weight)	0.00**
Cognitive Innovativeness (Manning et al., 1995; Venkatraman & Price, 1990; Manning et al., 1995; Tellis et al., 2009)	CInn1	I am usually among the first to buy a new product.	0.88	0.00***
	CInn2	I am continually seeking new product experiences online.	0.93	0.00***
	CInn3	I usually find out the meaning of words I don't know.	0.92	0.00***
	CInn4	I am among the last in my circle of friends to buy a new product when it appears online.	0.74	0.01**
	CInn5	When I go shopping online, I find myself spending very little time checking out new products.	0.82	0.002**
	CInn6	Purchasing new products online takes too much time and effort.	0.92	0.005**
New Purchase Intention (Tellis et al., 2009; Yoon, 2009)	NPINT1	I am likely to purchase the new product(s) from this retailer website.	0.87	0.00***
	NPINT2	I frequently look for new products online.	0.84	0.00***
	NPINT3	I am eager to buy new products as soon as they come out online.	0.88	0.00***
Uncertainty Avoidance (Hwang & Lee, 2012a; Srite & Karahanna, 2006; Yoon, 2009)	UA1	I prefer to avoid making changes during online shopping because things could get worse.	0.92	0.00***
	UA2	Rules and regulations of the online stores are important to me because they inform buyers what the online store does.	0.87	0.00***
	UA3	Standard operating procedures for an online store are helpful to me for the purchase decisions.	0.91	0.00***

*Significant at 0.05 level; ** Significant at 0.01 level; *** Significant at 0.001 level

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Chapter 90
Domestic vs. International E-Shopping:
An Empirical Perceptions Analysis

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ABSTRACT

Contemporary commerce is completely different as regards features some years ago. Nowadays, a considerable number of individuals and firms take advantage of the information and communication technologies and conduct transactions online. In particular, the mobile industry along with the broad use of social networks and improvements in the internet bandwidth worldwide has created a completely different business environment. Consequently, the technology incited many consumers to cross-border e-shopping, allowing access to a wider variety of products and services, and in numerous circumstances, access to cheaper goods. The purpose of this chapter is to investigate the perceptions internet users have towards e-shops focusing on Greece. More precisely, it aims to find out whether there are contingent differences on customers' perceptions regarding domestic vs. international e-shops, since a gradually augmented number of people have been expressing their preference on non-domestic e-stores for their purchases. Additionally, the chapter intends to shed light on the difficulty in understanding vital aspects of e-consumer behaviour.

INTRODUCTION

Online shopping is a fact. In reality, a large number of consumers do prefer to shop online than visiting a traditional brick-and-mortal store[1]. This 'phenomenon' is greatly based on Internet's wide utilization and bandwidth improvements, along with the continuous advancement of Information and Communication Technology (ICT). Furthermore, the mobile technology industry and social networking have also played a vital role, enticing even more individuals to e-purchases. The digital buyer penetration percentage is expected to reach 65.2% at the end of 2021 compared to 60.2% in 2017 (Statista, 2017). Thus, Internet users are will be purchasing online. Additionally, not only does the number of adopters grow, but also the

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volume of their purchases is proportionally increased (Monsuwe et al., 2004). According to E-Commerce Europe (2015) and E-Commerce Foundation (2017), European e-commerce sales were expected to reach €477 billion in 2015, €530 billion in 2016 and €602 billion in 2017.

In Greece, business-to-customer (B2C) online shopping has been emerged quite late compared to developed countries worldwide. Based on the latest national survey, 31% of Greek Internet users have conducted online transactions and spent 4.5 – 5 billion euros annually, however, about 20% of them made their first purchase in 2017 (Eltrun, 2017)! These results are also confirmed by Eurostat, which mentioned that 32% of Greek internet users shop online (Eurostat, 2017). Thus, despite the continuous and noteworthy annual growth -25% in 2015, 29% in 2016 and 32% in 2017-, Greek B2C e-commerce is far away from the 57% of the European-28 average (E-Commerce Europe, 2015; Eltrun, 2017; Eurostat, 2017).

Online shopping can significantly help both customers and enterprises involved. Extended literature review has revealed a considerable number of benefits to both entities. For example, consumers state that convenience, lower prices, time saving, improved customer service and ease of shopping comparison are some vital reasons that positively impact them to purchase online (Ahmad et al., 2010; E-Commerce Europe, 2015; Eltrun, 2015, 2017). On the other hand, firms mention that e-purchases help them reduce administrative costs and extend their business activities well beyond their brick-and-mortal stores.

One key characteristic of online shopping is its limitless feature. Every potential customer can hypothetically buy from any enterprise worldwide and every enterprise can attract customers beyond its geographic boundaries; from any location in the world. Therefore, online shopping gives access to a global market that expands well beyond the geographically limited borders of brick-and-mortal stores (Ahmad et al., 2010) and has greatly stimulated the process of cross-border e-shopping. The purpose of this chapter is to investigate Internet users' e-shops perceptions focused on Greek reality. Specifically, it aims to examine potential differences on their perceptions regarding domestic versus international e-shops, as a growing number of individuals choose non-domestic online stores to buy from. Characteristically, recent studies revealed that Greek e-shoppers prefer to purchase abroad (Eltrun, 2014, 2015); 60% and 65% of them bought from Greek e-stores in 2013 and 2014 in correspondence, whereas the 80%-90% of European adopters prefer to purchase from national e-stores (Eltrun, 2014, 2015). Hence, this study intends to shed light on shed light vital aspects of e-shopping behaviour and interpret this situation.

The rest of the chapter is organized as follows. The literature review in consumers' online buying behavior and the factors that encourage or hinder online shopping are presented in the next section, which is then followed by study's the methodology and results. The last section concludes the chapter by reflecting on the implications of the study, its limitations and future research directions.

LITERATURE REVIEW

Online shopping catholic acceptance has forced many researchers to investigate e-consumer behavior. Hence, numerous studies have been taken place in e-commerce area from diverse perspectives trying to gain an improved insight of e-consumer behavior (Dennis et al., 2004). According to Dennis et al. (2009), there are two basic research streams that approach it. The first investigates technical specifications of an e-store; including interface, design and navigation (e.g. Hasan, 2016; Zhang & Von Dran, 2002), payment (e.g. Liao & Cheung, 2002; Yang et al., 2015), information (e.g. Mallagrada et al., 2016; McKinney et al., 2002), intention to use (e.g. Chakraborty et al., 2016; Chen & Hitt, 2002) and

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ease of use (e.g. Cho & Sagynov, 2015; Stern & Stafford, 2006). On the other hand, the second stream deals with the consumer-oriented approach of e-behavior. Demographics (e.g. Chahal, 2015; Hashim et al., 2009; Teo, 2006), shopping motivation (e.g. Al-Debei et al., 2015; Johnson et al., 2007), shopping orientation (e.g. Chang & Cheng, 2015; Jayawardhena et al., 2007), perceptions of benefits and risks -advantages and problems- (e.g. Saprikis et al., 2010; Teo, 2006; Thakur & Srivastava, 2015), and issues of psychological characteristics (e.g. Bilgihan, 2016; Wolfinbarger & Gilly, 2002) are examined.

Regarding the factors that positively or negatively impact on e-shopping and are investigated on this chapter, several researches have been conducted. For example, Antoniadis et al. (2014) proved that lower prices in e-stores compared to brick-and-mortal stores, wider variety of product options, convenience and less time spent are the most crucial factors that positively influence e-shopping adoption. Clemes et al. (2014) also confirmed the importance of product variety and convenience to online shopping adoption. Ernst & Young (2000) pointed out that Internet users buy online because of good product selection, competitive prices, and ease of use; but are concerned about lack of opportunity to prior examining the products, shipping costs, as well as the confidentiality of credit card and personal information. Similarly, Poon (2008) investigated consumers' concerns about payment security issues and their impact on customers' online shopping attitude. Furthermore, trust has been widely investigated and many researchers revealed its vital role in online shopping (Al-Debei et al., 2015; Antoniadis et al., 2014; Teo, 2006). The more experienced the e-shopper is, the more trustful the e-purchases tend to be (Oxford Internet Institute, 2005). A collection of the literature review regarding the factors that drive consumers to online shopping is provided by Monsuwe et al. (2004).

With reference to demographics and the perceived problems, numerous studies have already investigated e-shopping behavior. For example, Mahmood et al. (2004) pointed out that demographic and lifestyle characteristics do play a vital role in e-consumer behavior. Hashim et al. (2009) concluded that demographic variables, such as gender, age, salary, job description and marital status impact on e-shopping behavior. On the other hand, Clemes et al. (2014) confirmed that perceived risk negatively influence e-shopping adoption and Teo (2006) mentioned that non-adopters perceive e-shopping risk to a greater extent than e-consumers. Saprikis et al. (2010) proved that after-sales problems are perceived higher to traditional consumers than adopters of e-shopping. Antoniadis et al. (2014) claimed that the combination of the online and physical presence provides more opportunities to capture business than the pure online ones. Finally, Eurostat (2017) and Saprikis (2013) confirmed that perceptions related to security and privacy issues, as well as their desire to physically examine the product prevent many customers from buying online.

As a step forward, this chapter takes advantage of the relevant literature review and investigates Greek Internet users' e-shop perceptions. In Greece, about the 30% of Internet users buy online compared to the 57% in Europe-28 (Eltrun, 2017; Eurostat, 2017; Seybert, 2011). Despite the steady annual growth in Greece the last years the country still lags behind compared to the European average (Eltrun, 2014, 2017). Characteristically, a typical Greek e-adopter spends about 1500€ annually and buys online mostly travel and hotel e-booking services, computer equipment and clothes. On the contrary, in developed European countries, such as Austria, Norway and UK; this annual amount ranges between 2140€ and 2466€ (E-Commerce Europe, 2013; Eltrun, 2014, 2017). Thus, this chapter targets on revealing potential discrepancies on individuals' perceptions concerning domestic versus international e-shops because Greek e-adopters prefer to purchase abroad, whereas the vast majority of European e-shoppers prefer national e-business ventures (Eltrun, 2014, 2015). The analysis applied categorizes them in two groups; adopters and non-adopters of online shopping. As far as it is concerned there is a significant gap on this

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side of e-consumer behavior research, therefore, this study is expected to help in filling this gap and provide tangible results to both academicians and practitioners. Regarding the managerial standpoint, the industry is about to get vital information that helps various firms pursue strategies aimed to take full advantage of the consumers' online buying habits and intentions. Thus, the study is expected to draw lessons for professionals and assist their e-business venture to a great extent.

METHODOLOGY AND RESULTS

To examine Greek Internet users' perceptions regarding domestic versus international e-shops, an electronic questionnaire was developed aimed at gathering the required data. Data was collected from October to December 2012 via e-mailing lists. The sample selected was a representative subgroup of the population as has been in accordance with data from the 'Observatory for Digital Greece' and the 'Hellenic Statistical Authority'. However, it is to be emphasized the unusual situation of many unemployed respondents; despite they have been highly educated, because of the serious economic crisis of the country.

Concerning survey's data analysis, this empirical research is descriptive in nature. Therefore, apart from descriptive statistics, only simple statistics, namely chi-square[2] and t-tests[3], were applied to analyse respondents' perceptions. With the exception of demographic-related questions, five-point Likert scale was applied to the measurement items. All of them were designed on the basis of a comprehensive literature review and prior surveys approved for their validity and reliability. Therefore, prior to e-questionnaire's distribution, they were pretested from two academicians and two practitioners to ascertain the precision of the instructions and the content validity. Furthermore, a pilot test using a sample of twenty university students helped to identify possible problems in terms of clarity and accuracy; and a number of amendments took place to improve their presentation, based on comments and feedback. Table 1 provides the literature review in which the aforementioned issues were based on and Figure 1 presents the flow of the survey design.

Table 1. Literature review of the study

Basic Categories of the Research	Source
Reasons for using online shopping (adopters only)	Ahmad et al., 2010; Chen, 2009; Ernst & Young, 2000; Kim et al., 2009; Osman et al., 2010
Reasons for not using online shopping (non-adopters only)	Ahmad et al., 2010; Chen, 2009; Ernst & Young, 2000; Osman et al., 2010; Poon, 2008
Consumers' perceptions of online stores	Ahmad et al., 2010; Poon 2008
Problems in online stores	Ahmad et al., 2010; Chen, 2009; Osman et al., 2010; Poon, 2008

Demographic Characteristics

Table 2 depicts the demographic characteristics of the sample. In this survey, a total of 624 respondents comprised its sample. Following previous surveys (e.g., Haque et al., 2007), adopters are mainly males and use e-shopping to a greater extent than female adopters. Furthermore, the vast majority of e-consumers

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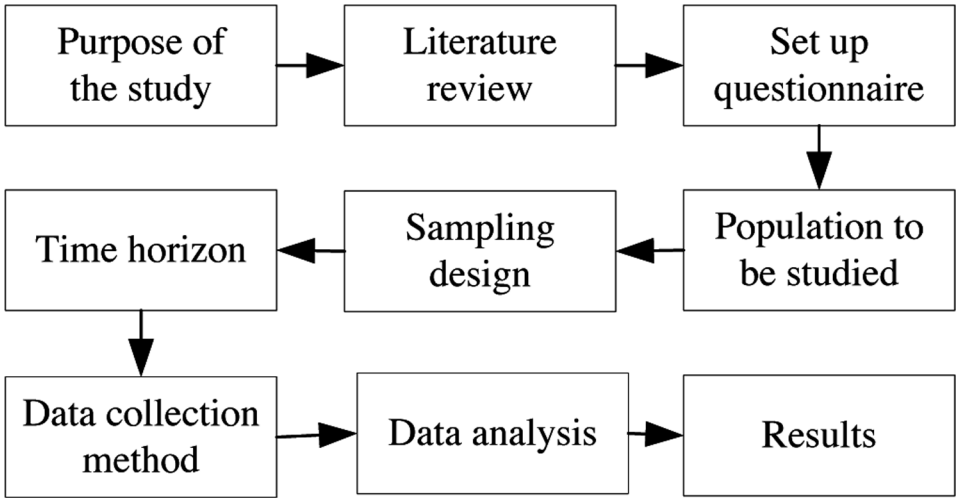
respondents have strong educational skills as the 86.3% of them have at least/ or attend a University degree/ program. Regarding their Internet activity, adopters are more experienced than non-adopters and they spend much more time on the Internet. These results can explain in a way that their greater familiarity with the new technologies make them more receptive to alternative methods of non-traditional shopping. However, they conduct quite a few online purchases (~8 every year). This may happen because of the serious economic situation in Greece. However, they are willing to buy online more in the near future. On the contrary, non-adopters are still sceptical about e-shopping and only the 16.5% referred that they will attempt to purchase online in the next year. Regarding chi-square statistics, a significant association is observed in all examined tests between adopters/ non-adopters and demographic characteristics.

Figure 1. Survey design



Reasons for Buying (Adopters) or Not Buying Online (Non-Adopters)

Types of Purchased/ Interested Products and Services

Adopters mentioned that the main reasons for using the online stores are the lower prices compared to brick-and-mortal stores, the easiness of online buying procedures (convenience), the less time spent and the wider variety of available products (Table 3). Respondents' outcome is in full accordance with previous studies conducted from other researchers (e.g., Ahmad et al., 2010; Antoniadis et al., 2014; Clemes et al., 2014). Concerning their e-preferences, travel tickets/ e-booking services, computer hardware & software and consumer electronics top the list (Table 4) (Eltrun, 2014, 2017). However, it should be highlighted that e-banking services, along with clothing & accessories and e-tickets for shows, such as cinema and theatre, also scored quite high (Eltrun 2014, 2017).

On the contrary, non-adopters' expressed that the main reasons not to purchase online are their need to physically examine the product, their preference to purchase from traditional stores and security and privacy concerns (Table 4). The results are in full accordance with a contemporary study conducted in Greece (Eurostat, 2017). The non-use of credit card is a situation that takes place in the country. Thus,

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the vast majority of Greek e-stores do accept the cash on delivery option to overcome it (Eltrun, 2104). Finally, just like Eltrun (2017), a considerable number of non-adopters stated that they visit or search e-stores only to get information about a product/ service (e.g., characteristics, pricing, etc.); and expressed their positive intention to e-purchases in the near future (Table 5), which is a promising sign for sure. The results are of great interest and positive responses were recorded in the majority of the provided categories of products.

Table 2. Demographic characteristics of the sample

	Adopters		Non adopters		
Demographic profile	**No**	**%**	**No**	**%**	**Chi - Square**
Gender					
Male	234	53.5%	73	39%	df = 1
Female	203	46.5%	114	61%	chi-sq = 11.031 p ≈0.001
Occupation					
Private employee	91	20.8%	31	16.6%	df = 4
Public Servant	67	15.3%	18	9.6%	chi-sq = 28.253 p ≈0.000
Freelancer	67	15.3%	9	4.8%	
Unemployed	180	41.3%	116	62%	
Other	32	7.3%	13	7%	
Education					
Elementary school	2	0.5%	1	0.5%	df = 3
High school	58	13.2%	32	17.1%	chi-sq = 10.805 p ≈0.000
University/ Technological College	262	60%	127	67.9%	
Master/ PhD	115	26.3%	27	14.5%	
Salary (in Euros/ month)					
<900€	188	43%	61	32.6%	df = 4
900€-1500€		19.5%	26	13.9%	chi-sq = 26.291 p ≈0.000
1501€-2400€	85	8%	8	4.3%	
>2400€	35	3.7%	5	2.7%	
I don't answer	16113	25.8%	87	46.5%	
Daily usage of the Internet					
1 hour and below	22	5%	21	11.2%	df = 4
1-3 hours	131	30%	69	36.9%	chi-sq = 26.491 p ≈0.000
3.1-5 hours	109	24.9%	58	31%	
5.1-7 hours	100	22.9%	27	14.5%	
7 hours and above	75	17.2%	12	6.4%	
Frequency of online purchases					
1-3 purchases annually	202	46.2%			

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Table 2. Continued

	Adopters		Non adopters		
Demographic profile	**No**	**%**	**No**	**%**	**Chi - Square**
4-8 purchases annually	136	31.1%			
9-20 purchases annually	68	15.6%			
21 purchases and above annually	31	7.1%			
Intend to buy online in the next 12 months					
Absolutely No	2	0.5%	22	11.8%	df = 4
Probably No	12	2.7%	45	24.1%	chi-sq = 242.977 p ≈0.000
I do not know yet	80	18.3%	89	47.6%	
Probably Yes	160	36.6%	29	15.5%	
Absolutely Yes	183	41.9%	2	1%	

Table 3. Reasons for buying (adopters) or not buying online (non-adopters)

Reasons for Buying Online	**Adopters**		**Reasons for Not Buying Online**	**Non-Adopters**	
Lower prices	376	86%	**Need to physically examine the product**	105	56.1%
Easiness of online buying procedures (convenience)	218	49.9%	**Do not use a credit card**	61	32.6%
Wider variety of products	176	40.3%	**Prefer to buy from brick-and-mortal stores**	59	31.6%
Less time spent	176	40.3%	**Security and privacy reasons**	56	29.9%
High quality of products	57	13%	**I don't trust online purchases**	34	18.2%
Various payment options	57	13%	**Are unaware of the buying procedure through the Internet**	23	12.3%
Other reasons	15	3.4%	**Unaffordable transportation fees**	12	6.4%
			Shipping delays	9	4.8%
			Other reasons	3	1.6%

Users' Perceptions Regarding Online Shopping

In order to investigate respondents' perceptions, two groups of them are revealed; a) general perceptions on e-shopping and b) perceptions on e-privacy policy (Tables 5 and 6). As it was expected, in the majority of them adopters scored higher compared to non-adopters. The former have already transacted online and have an empirical point of view of these types of shopping; therefore, they can easily understand the pros and cons of e-purchases. On the contrary, the latter are much more doubtful and clearly expressed their concerns. Therefore, the high mean scores of e-risks perceptions are not a surprise; followed similar results of previous researchers (e.g., Clemes et al., 2014; Poon, 2008; Teo, 2006).

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Table 4. Types of products/ services: adopters

	Adopters				Non-Adopters			
Types of products/ services	**Intend to buy:**		**Bought in the future:**		**Searched information for:**		**Intend to buy in the future:**	
Computer hardware & software	227	51.9%	153	35%	77	41.2%	52	27.8%
Travel	278	63.6%	199	45.5%	76	40.6%	73	39%
Consumer electronics	194	44.4%	166	38%	78	41.7%	43	23%
CDs & DVDs	54	12.4%	61	14%	75	40.1%	32	17.1%
Books	130	29.7%	135	30.9%	98	52.4%	49	26.2%
Clothing & accessories	168	38.4%	148	33.9%	78	41.7%	74	39.6%
Health & beauty	85	19.5%	81	18.5%	52	27.8%	30	16%
Jewellery & watches	62	14.2%	79	18.1%	57	30.5%	26	13.9%
Hotel e-booking	225	51.5%	162	37.1%	76	40.6%	61	32.6%
e-tickets (cinema, theatre and other events)	162	37.1%	147	33.6%	65	34.8%	48	25.7%
e-Banking	184	42.1%	121	27.7%	46	24.6%	29	15.5%
e-Gambling	59	13.5%	39	8.9%	30	16%	14	7.5%
Food & drink	23	5.3%	41	9.4%	38	20.3%	17	9.1%
Others	88	20.1%	62	14.2%	31	16.6%	14	7.5%

Table 5. Adopters' perceptions regarding online stores

General Perceptions	**Greek e-shops Mean (SD[d])**	**International e-shops Mean (SD)**	**t-test value**
Online stores provide sufficient information about available products	3.34 (0.92)	3.98 (0.79)	-11.38[a]
Online stores provide adequate payment options	3.56 (1.02)	3.71 (0.99)	-2.44[d]
Online stores provide simple and user-friendly procedures to cancel or return an order	3.13 (1.00)	3.52 (0.97)	-6.47[a]
Online stores offer sufficient number of value added e-services	3.42 (0.86)	4.00 (0.77)	-10.75[a]
Online stores provide contact options, like phone numbers and form to their customers	3.92 (0.89)	3.86 (0.92)	1.09
Online stores have a good reputation	3.44 (0.83)	3.83 (0.75)	-7.43[a]
Perceptions on privacy policy			
Online stores use sufficient security mechanisms to ensure the privacy of consumers' data	3.23 (0.86)	3.53 (0.83)	-5.81[a]
Online stores use consumers' data for statistic issues without consent	3.29 (0.98)	3.18 (0.96)	2.13[d]
Online stores ask for consumers' permission in order to send advertisements to their e-mail accounts	3.53 (1.21)	3.64 (1.05)	-1.86
Online stores forward consumers' information to marketing companies	3.35 (0.99)	3.18 (0.92)	3.53[a]
Online stores use sufficient mechanisms to ensure the security of consumers' transactions	3.34 (0.87)	3.66 (0.84)	-6.72[a]

[a]$p<0.001$ [b] $p<0.005$ [c] $p<0.01$ [d] $p<0.05$

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To be more specific, regarding respondents' general perceptions on domestic versus international e-shops, the survey results do reveal significant differences. Specifically, respondents expressed that international e-business ventures provide much more than domestic e-ventures in the vast majority of the examined inquires. Thus, these discrepancies are so great that almost all t-test values reveal statistically significant differences to both respondents' groups (Tables 5 and 6). Thus, based on these dissimilarities, it comes as no surprise that numerous Greek e-shoppers prefer cross-border shopping. As a result, domestic e-stores should definitely try to improve their business models. For example, they should follow international trends and try to imitate the best practices. The Internet is a great power to customers and can help them being informed about any piece of information. Thus, it can make them much more demanding. E-ventures that are not able to follow the international trend will have serious problems to obtain a market share. Globalization along with the wide spread of the Internet may lead to catastrophic results; not only for their income, but also for their e-existence.

Regarding the privacy and security issues, it goes without saying that both are at the top of the most important factors in all types of e-purchases (e.g., Monsuwe et al., 2004; Poon, 2008). Customers should feel safe and secure, thus, domestic e-shops should have as a first priority the privacy and security policies; no matter how much they need to invest on. Firms that lose their reputation are forced to fight for their future e-survival, especially on this impersonal way of contemporary e-shopping.

Table 6. Non-adopters' perceptions regarding online stores

General Perceptions	Greek e-shops Mean (SD)	International e-shops Mean (SD)	t-test value
Online stores provide sufficient information about available products	3.09 (0.97)	3.61 (0.89)	-6.25[a]
Online stores provide adequate payment options	3.17 (0.95)	3.46 (0.92)	-3.58[a]
Online stores provide simple and user-friendly procedures to cancel or return an order	2.94 (0.94)	3.31 (0.89)	-4.94[a]
Online stores offer sufficient number of value added e-services	3.20 (0.81)	3.60 (0.81)	-5.45[a]
Online stores provide contact options, like phone numbers and form to their customers	3.68 (0.99)	3.59 (0.94)	1.11
Online stores have a good reputation	3.04 (0.82)	3.40 (0.85)	-3.88[a]
Perceptions on Privacy Policy			
Online stores use sufficient security mechanisms to ensure the privacy of consumers' data	2.88 (0.84)	3.22 (0.88)	-4.73[a]
Online stores use consumers' data for statistic issues without consent	3.16 (0.97)	3.07 (0.95)	1.06
Online stores ask for consumers' permission in order to send advertisements to their e-mail accounts	2.99 (1.30)	3.16 (1.10)	-1.91
Online stores forward consumers' information to marketing companies	3.20 (0.98)	3.20 (0.90)	0.00
Online stores use sufficient mechanisms to ensure the security of consumers' transactions	2.90 (0.82)	3.38 (0.86)	-6.36[a]

[a]p<0.001 [b] p<0.005 [c] p<0.01 [d] p<0.05

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Perceived Problems in Online Shopping

In order to investigate respondents' perceived problems in online shopping, two groups of them are revealed; a) general problems and b) after-sales problems. As it was expected, statistically significant discrepancies between examined samples were revealed (Tables 7 and 8). To be more specific, adopters personal experience in e-purchases makes them realize that the anticipated problems are not such a deterrent for them compared to non-adopters.

Concerning their perceptions, both groups of respondents expressed their concerns about e-shops, especially the domestic ones. Their opinion is also clearly depicted in the vast majority of the examined questions; and the statistically significant differences revealed are high in both adopters and non-adopters answers. With reference to no statistically significant different questions, all of them came as no surprise; as the term 'distance' has been the common issue. 'Distance' is a vital characteristic of business transactions and more or less can affect everyone; even if he/ she currently purchases online or not. Therefore, the fact that there is no significant difference to these questions between examined groups is fairly normal.

Table 7. Adopters' perceived problems in online shopping

Problems Relating to Online Stores in General	Greek e-shops Mean (SD)	International e-shops Mean (SD)	t-test value
Online stores promise more than they can practically offer	3.14 (0.94)	2.77 (0.83)	6.77[a]
Consumers can not completely trust them	3.23 (0.98)	3.03 (0.96)	3.57[a]
Online stores are not always official representatives of their offered products	3.28 (0.90)	2.99 (0.85)	5.48[a]
Consumers find it difficult to confirm the reliability of the provided products	3.36 (0.94)	3.17 (1.02)	3.29[b]
It is possible to have your credit card data intercepted	3.10 (0.98)	2.99 (1.01)	2.26[d]
It is possible to buy a product that it would not value as much as you pay for it	3.54 (0.95)	3.31 (0.99)	4.41[a]
After-sales Problems			
It is difficult to return a product and get your money back	3.14 (1.07)	2.77 (1.11)	2.74[c]
Online stores can keep customers' money and do not send the agreed product	3.23 (0.97)	3.03 (1.07)	-2.02[d]
It is difficult to change a defective product with a new one	3.28 (1.04)	2.99 (1.06)	1.44
It s difficult to have after-sales services	3.36 (1.00)	3.17 (1.02)	3.25[b]
Product's guarantee is not assured	3.10 (1.06)	2.99 (1.04)	0.96
The delivery of the purchased product is time-consuming	3.54 (1.10)	3.31 (1.14)	-5.89[a]

$p<0.001$ [b] $p<0.005$ [c] $p<0.01$ [d] $p<0.05$

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Table 8. Non-adopters' perceived problems in online shopping

Problems Relating to Online Stores in General	Greek e-shops Mean (SD)	International e-shops Mean (SD)	t-test value
Online stores promise more than they can practically offer	3.38 (0.87)	3.16 (0.85)	2.94[b]
Consumers can not completely trust them	3.65 (0.91)	3.42 (0.94)	2.99[b]
Online stores are not always official representatives of their offered products	3.40 (0.83)	3.13 (0.91)	3.62[a]
Consumers find it difficult to confirm the reliability of the provided products	3.65 (0.92)	3.56 (0.93)	1.27
It is possible to have your credit card data intercepted	3.48 (0.93)	3.32 (0.93)	2.69[c]
It is possible to buy a product that it would not value as much as you pay for it	3.87 (0.91)	3.67 (0.91)	3.07[b]
After-Sales Problems			
It is difficult to return a product and get your money back	3.65 (0.98)	3.35 (0.97)	3.53[b]
Online stores can keep customers' money and do not send the agreed product	2.91 (1.09)	3.00 (1.03)	-1.10
It is difficult to change a defective product with a new one	3.40 (0.98)	3.21 (1.03)	2.32[d]
It s difficult to have after-sales services	3.43 (0.89)	3.20 (0.98)	2.96[b]
Product's guarantee is not assured	3.37 (0.99)	3.27 (0.96)	1.32
The delivery of the purchased product is time-consuming	3.21 (0.99)	3.36 (1.03)	-1.99[d]

[a]$p<0.001$ [b] $p<0.005$ [c] $p<0.01$ [d] $p<0.05$

CONCLUSION

The aim of this chapter is to examine an unconventional case that takes place in Greek e-shopping reality; adopters prefer buying from an online store abroad to a national one. The survey conducted helps the main reasons of this situation be revealed providing a thorough analysis of adopters and non-adopters perceptions towards e-shopping features and problems, the reasons why the former buy and the latter do not purchase online, as well as the types of products and services that they buy, search or intent to e-purchase in the near future. Thus, this study intends to provide tangible results in an underexplored area of online shopping and shed light on the difficulty of understanding vital aspects of online commerce behavior. The findings are believed to provide interesting insights into Greek Internet users' perceptions towards online shopping. Adopters prefer to purchase online because of lower prices, wider variety of products and convenience compared to brick-and-mortal stores. The results are in accordance with those of previous researchers (e.g. Ahmad et al., 2010; Antoniadis et al., 2014; Clemes et al., 2014). E-tickets, computer hardware/ software and consumer electronics top the list of their preferences (e.g. Eltrun, 2017). On the other hand, non-adopters tend to physically examine the products and express serious concerns about security and privacy issues; however, they visit online stores to get informed about products and compare prices. Eurostat (2017) and Eltrun (2017) concluded to the same results as well. Furthermore, the survey reveals significant differences between national and international e-shops. Characteristically,

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respondents expressed their concerns about reliability and trustworthiness of national e-stores. They mentioned that Greek e-ventures have more privacy and security problems compared to international e-stores. Greek e-stores provide fewer value added e-services, which are not as user friendly as the international ones. Additionally, they offer a lower variety and availability of products.

Based on the aforementioned, it is believed that this research can give important implications to both academia and practicing managers. The theoretical and managerial implications, as well as survey's limitations and future research directions are described below.

THEORETICAL AND MANAGERIAL IMPLICATIONS

Numerous researches have been conducted in e-commerce scientific field from different perspectives with the aim to understand better e-consumer behavior (e.g. Antoniadis et al., 2014; Clemes et al., 2014; Dennis et al., 2004). As a step forward, this chapter presents a significant number of recent studies examining the consumer-oriented approach of e-shopping behaviour and brings them into the academic community. Moreover, it provides a thorough empirical study in Greece where users' perceptions on domestic versus international e-shopping ventures are investigated. The importance of the results is also high if we take into consideration that a lot of differences have been revealed among the two examined categories of e-shops. Therefore, it is believed that the survey has set the groundwork for further scientific research and improvement, providing new inferences and insights on Internet users' perceptions towards cross-country e-shopping. It is expected that an analogous situation takes place in other countries worldwide as well.

On the other hand, practitioners are believed to be benefited from the results presented in this chapter as well. More specifically, the study's outcome can be of great assistance to them by making them evaluate their e-commerce ventures and follow specific strategies in order to adjust their e-shop structures with the aim to satisfy not only the existing customer base, but potential buyers as well. Especially in Greek reality where e-stores are considered lagged behind compared to similar international e-ventures. Alternatively, Greek practicing managers who are willing to invest in an e-shop business model could use the survey's results as a valuable guide to build an attractive e-store. For example, issues such as provided value added e-services, user friendly procedures, information about products and security concerns must be definitely taken into consideration.

Hence, online companies could use them as a consulting tool while organizing their work and implementing their e-business ideas. Additionally, the findings of this study could help e-ventures better understand Internet users' particular needs; and as a consequence, analogous marketing policies could be applied. To sum up, this chapter is believed to add value to both academia and the industry, as it provides meaningful information and a holistic approach concerning online consumers' behavior towards domestic and international e-stores.

LIMITATIONS AND FUTURE WORK

The survey has two basic limitations that need to be recognized. First, only simple statistics, namely t-tests and chi-square, have been applied. Therefore, the utilization of more advanced statistical methodologies helping to the development of a proposed model or framework would certainly offer a more holistic view and may provide additional important insights into academia and managers. Secondly, causal analysis that

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could study which factors are more important for e-commerce decisions has not been applied. Regarding further research, similar studies could be conducted in other countries, taking into consideration though the different cultural notions in order to get comparative data for a cross-cultural study or a meta-analysis of existing studies. Such a comparison could be beneficial for the better understanding of cross-country e-shopping perceptions and attitude.

DISCUSION QUESTIONS

1. Taking into consideration the cross-border e-commerce situation that takes place in Greece, can you mention some actions domestic e-stores should follow in order to attract these customers?
2. Supposing you are a manager in a Greek brick-and-mortal bookstore, what would you do in order to start business online?
3. How could Greek public authorities help domestic e-shops attract cross-border e-shoppers?

REFERENCES

Ahmad, N., Omar, A., & Ramayah, T. (2010). Consumer Lifestyles and Online shopping continuance intention. *Business Strategy Series*, *11*(4), 227–243. doi:10.1108/17515631011063767

Al-Debei, M. M., Mamoun, N., Akroush, N. M., & Ashouri, I. M. (2015). Consumer attitudes towards online shopping: The effects of trust, perceived benefits, and perceived web quality. *Internet Research*, *25*(5), 707–733. doi:10.1108/IntR-05-2014-0146

Antoniadis, I., Saprikis, V., & Politis, K. (2014). Investigating internet users' perceptions towards online shoping: An empirical study on Greek university students. *2nd International Conference on Contemporary Marketing Issues*, 66-71.

Bilgihan, A. (2016). Gen Y customer loyalty in online shopping: An integrated model of trust, user experience and branding. *Computers in Human Behavior*, *61*, 103–113. doi:10.1016/j.chb.2016.03.014

Chahal, P. (2015). A study on the role of consumers gender and age on online shopping. *International Journal in Comerce, IT &. Social Sciences*, *2*(7), 33–41.

Chakraborty, R., Lee, J., Bagchi-Sen, S., Upadhyaya, S., & Rao, R. (2016). Online shopping intention in the context of data breach in online retail stores: An examination of older and younger adults. *Decision Support Systems*, *83*, 47–56. doi:10.1016/j.dss.2015.12.007

Chang, C.-T., & Cheng, Z.-H. (2015). Tugging on heartstrings: Shopping orientation, mindset, and consumer responses to cause-related marketing. *Journal of Business Ethics*, *127*(2), 337–350. doi:10.100710551-014-2048-4

Chen, C. A. (2009). Information-oriented Online Shopping Behavior in Electronic Commerce Environment. *Journal of Software*, *4*(4), 307–314. doi:10.4304/jsw.4.4.307-314

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Chen, P., & Hitt, L. (2002). Measuring switching costs and the determinants of customer retention in internet enabled businesses: A study of online brokerage industry. *Information Systems Research*, *13*(3), 255–274. doi:10.1287/isre.13.3.255.78

Cho, Y. C., & Sagynov, E. (2015). Exploring factors that affect usefulness, ease of use, trust, and purchase intention in the online environment. *International Journal of Management & Information Systems*, *19*(1), 21–36.

Clemes, D.-M., Gan, C., & Zhang, J. (2014). An empirical analysis of online shopping adoption in Beijing, China. *Journal of Retailing and Consumer Services*, *21*(3), 364–375. doi:10.1016/j.jretconser.2013.08.003

Dennis, C., Fenech, T., & Merrilees, B. (2004). *E-retailing*. Abingdon, UK: Routledge.

Dennis, C., Merrilees, B., Jayawardhena, C., & Wright, L. T. (2009). E-consumer behaviour. *European Journal of Marketing*, *43*(9), 1121–1139. doi:10.1108/03090560910976393

E-Commerce Europe. (2013). *Europe B2C E-Commerce Report 2013*. Retrieved February 1, 2014, from http://www.paymentscardsandmobile.com/wp-content/uploads/2013/08/Europe-B2C-Ecommerce-Report-2013.pdf

E-Commerce Europe. (2015). *Europe B2C E-Commerce Report 2015*. Retrieved January 15, 2016, from http://www.ecommerce-europe.eu/press/2015/european-e-commerce-turnover-grew-by-14.3-to-reach-423.8bn-in-2014

E-Commerce Foundation. (2017). *European E-Commerce Report*. Retrieved January 18, 2018, from https://ecommercenews.eu/ecommerce-europe-e602-billion-2017/

Eltrun. (2014). *Anuual e-Commerce survey in Greece*. Retrieved February 1, 2014, from http://www.eltrun.gr/wp-content/uploads/2013/12/ELTRUN_ecommerce_survey_20131.pdf (in Greek).

Eltrun. (2015). *Anuual e-Commerce survey in Greece*. Retrieved January 15, 2016, from http://www.eltrun.gr/wp-content/uploads/2015/12/%CE%97%CE%BB%CE%95%CE%BC%CF%80%CE%BF%CF%81%CE%B9%CE%BF2015-1.pdf (in Greek).

Eltrun. (2017). *Anuual e-Commerce survey in Greece*. Retrieved January 15, 2018, from http://www.greekecommerce.gr/gr/resources/ereynes-gia-ellada/etisia-ereuna-ecommerce-b2c-2017-2018/

Ernst and Young. (2000). *Global Online Retailing*. Retrieved January 27, 2003, from http://www.ey.com

Eurostat. (2017). *E-commerce statistics for individuals*. Retrieved January 20, 2018, from http://ec.europa.eu/eurostat/statistics-explained/index.php/E-commerce_statistics_for_individuals

Haque, H., Tarofder, A. K., Mahmud, S. A., & Ismail, A. Z. (2007). Internet advertisement in Malaysia: A study on attitudinal differences. *The Electronic Journal on Information Systems in Developing Countries*, *31*(9), 1–15. doi:10.1002/j.1681-4835.2007.tb00218.x

Hasan, B. (2016). Perceived irritation in online shopping: The impact of website designcharacteristics. *Computers in Human Behavior*, *54*, 224–230. doi:10.1016/j.chb.2015.07.056

Hashim, A., Ghani, E. K., & Said, J. (2009). Does consumers' demographic profile influence online shopping? *Canadian Social Science*, *5*(5), 19–31.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Jayawardhena, C., Wright, L. T., & Dennis, C. (2007). Consumers online: Intentions, orientations and segmentation. *International Journal of Retail & Distribution Management*, *35*(6), 515–526. doi:10.1108/09590550710750377

Johnson, E. J., Moe, W. W., Fader, P. S., Bellman, S., & Lohse, G. L. (2007). On the depth and dynamics of online search behaviour. *Management Science*, *50*(3), 299–309. doi:10.1287/mnsc.1040.0194

Kim, J. H., Kim, M., & Kandampully, J. (2009). Buying environment characteristics in the context of e-service. *European Journal of Marketing*, *43*(9/10), 1188–1204. doi:10.1108/03090560910976438

Liao, Z., & Cheung, M. T. (2002). Internet-based e-banking and consumer attitudes: An empirical study. *Information & Management*, *39*(4), 287–301. doi:10.1016/S0378-7206(01)00097-0

Mahmood, M. A., Bagchi, K., & Ford, T. C. (2004). On-line shopping behavior: Cross-country empirical research. *International Journal of Electronic Commerce*, *9*(1), 9–30.

Mallapragada, G., Chandukala, R. S., & Liu, G. (2016). Exploring the Effects of "What" (Product) and "Where" (Website) Characteristics on Online Shopping Behavior. *Journal of Marketing*, *80*(2), 21–38. doi:10.1509/jm.15.0138

McKinney, V., Yoon, K., & Zahedi, F. (2002). The measurement of web-customer satisfaction: An expectation and disconfirmation approach. *Information Systems Research*, *13*(3), 296–315. doi:10.1287/isre.13.3.296.76

Monsuwe, T. P., Dellaert, B., & Ruyter, K. (2004). What drives consumers to shop online A literature review. *International Journal of Service Industry Management*, *15*(1), 102–121. doi:10.1108/09564230410523358

Osman, S., Yin-Fah, B. C., & Hooi-Choo, B. (2010). Undergraduates and Online Purchasing Behavior. *Asian Social Science*, *6*(10), 133–146. doi:10.5539/ass.v6n10p133

Oxford Internet Institute. (2005). *Oxford Internet Survey: Results of a Nationwide Survey of Britons aged 14 and Older*. Oxford, UK: Oxford Internet Institute.

Poon, W. C. (2008). Users' adoption of e-banking services: The Malaysian perspective. *Journal of Business and Industrial Marketing*, *23*(1), 59–69. doi:10.1108/08858620810841498

Saprikis, V. (2013). Consumers' perceptions towards e-shopping advertisements and promotional actions in social networking sites. *International Journal of Electronic Adoption*, *5*(4), 36–47. doi:10.4018/ijea.2013100103

Saprikis, V., Chouliara, A., & Vlachopoulou, M. (2010). Perceptions Towards Online Shopping: Analyzing the Greek University Students' Attitude. Communications of the IBIMA, Article ID 854516.

Seybert, H. (2011). *Internet use in the households and by individuals in 2011*. Eurostat - Statistics in focus 66/2011. Retrieved 24 July 24, 2012, http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-11-066/EN/KS-SF-11-066-EN.PDF

Statista. (2017). *Digital buyer penetration worldwide from 2016 to 2021*. Retrieved January 15, 2018, from https://www.statista.com/statistics/261676/digital-buyer-penetration-worldwide/

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Stern, B. B., & Stafford, M. R. (2006). Individual and social determinants of winning bids in online auctions. *Journal of Consumer Behaviour*, *5*(1), 43–55. doi:10.1002/cb.47

Teo, T. (2006). To buy or not to buy online: Adopters and non-adopters of online shopping in Singapore. *Behaviour & Information Technology*, *25*(6), 497–509. doi:10.1080/01449290500256155

Thakur, R., & Srivastava, M. (2015). A study on the impact of consumer risk perception and innovativeness on online shopping in India. *International Journal of Retail & Distribution Management*, *43*(2), 148–166. doi:10.1108/IJRDM-06-2013-0128

Wolfinbarger, M., & Gilly, M. C. (2002). *Q.com: dimensionalizing, measuring and predicting quality of the e-tail experience*. Working Paper No. 02-100, Marketing Science Institute, Cambridge, MA.

Yang, Q., Pang, C., Liu, L., Yen, C. D., & Tarn, M. (2015). Exploring consumer perceived risk and trust for online payments: An empirical study in China's younger generation. *Computers in Human Behavior*, *50*, 9–24. doi:10.1016/j.chb.2015.03.058

Zhang, P., & Von Dran, G. M. (2002). User expectations and rankings of quality factors in different web site domains. *International Journal of Electronic Commerce*, *6*(2), 9–33.

ENDNOTES

1. Brick-and-mortal store: company that has a physical presence and offer face-to-face customer experiences.
2. Chi-square is used to determine whether there is a significant difference between the expected frequencies and the observed frequencies in one or more categories examined.
3. T-test can be used to determine if two sets of data are significantly different from each other, and is most commonly applied when the test statistic would follow a normal distribution if the value of a scaling term in the test statistic were known.
4. SD: Standard Deviation is a measure that is used to quantify the amount of variation or dispersion of a set of data values. A standard deviation close to 0 indicates that the data points tend to be very close to the mean (also called the expected value) of the set, while a high standard deviation indicates that the data points are spread out over a wider range of values.

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Chapter 91
Influence of Perceived Benefits on Consumers' Online Purchase Behaviour: An Empirical Study

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ABSTRACT

This article describes how e-retailing has become one of the most important uses of technology relating to the internet. The activity of online shopping is considered to be one of the important features of e-retailing. The enormous advantages offered by online shopping stimulate corporate managers, marketing departments and retailers to offer their products through the websites to attract the largest number of shoppers, not only to local markets but also global markets. The change in consumer behavior along with the availability of cheaper and reliable technology for secure transactions has led to a significant growth in online sales around the world. The present article focuses on identifying the key factors influencing the consumers' perceived benefits while shopping online. The article further focuses on the influence of demographic factors on consumers' perceived benefits. The findings of the article would help e-retailers to have a better understanding and to develop strategies for making the online shopping experience more effective and trustworthy to the target consumers.

INTRODUCTION

Online shopping provides the right solution to get the desired goods and services with a touch on the computer/mobile screen. Consumers are more connected than ever before and have more information and choices at their fingertips today due to expanding connectivity of internet all over the world. Online

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consumers always seek new products, new attractiveness and the most important thing being price compatibility with their budget. If e-marketers know and understand the factors affecting consumer behaviour, they can further sharpen their marketing strategies to attract and retain customers. It is becoming a serious competitor to the conventional store based distribution system. As every marketing organization aims to develop loyal customer base by delivering value that satisfies the customers, it is imminent to know the factors contributing for the consumer intentions to design their marketing programs effectively (Katta & Patro, 2016).

Perceived benefits are beliefs about the positive outcomes related to a behavior in response to real or perceived threat. Kim, Ferrin, & Rao (2008) stated that perceived benefit is a consumers' belief about the extent to which he or she will become better off from the online transaction with a certain online shopping. Perceived benefits of shopping online were the consumer's subjective perception of gain from shopping online. Perceived benefits are the consumers' needs or wants and the sum of online shopping advantages or satisfactions (Forsythe, Liu, Shannon, & Gardner, 2006). Fei and Liat (2015) described perceived convenience, financial benefits, and easy interface were all the important factors besides perceived benefits and perceived ease of use and customer satisfaction as the core motivation of consumers' online shopping decision.

Perceived benefits consider the advantages associated with online shopping experience including convenience, price comparison, time saving, return policy, ease of shopping, enjoyment and enhanced customer-retailer relationship (Elwalda, Lü, & Ali, 2016). Hsu and Bayarsaikhan (2012) identified that the four dimensions of perceived benefits of online shopping were shopping convenience, product selection, comfort of shopping, and hedonic/enjoyment. San Lim, Heng, Ng, & Cheah (2016) suggested that a well-designed website provides useful information and extra benefits to customers and in turn enhances sales volume as well the reputation of the company. Recommendation from family and friends is also considered to be influential on factor on consumers' purchase intention.

Hirst and Ashwin (2009) stated that consumers' perceived quality of information for products and services provide on the website is one of the most crucial factors influencing their purchase intentions. The benefits associated with complete and relevant information results in purchasing better quality products/ services and this may improve satisfaction and increase repeat purchasing intention by reducing the risks of dissatisfaction and anxiety in further purchase (Park and Kim, 2003). According to Jadhav and Khanna (2016), online shopping benefits and customers' attitudes and decisions toward online shopping have a strong relationship. Those shoppers who place a higher level of importance on the aesthetics aspects of websites and the specific benefits of e-shopping would likely purchase more frequently than infrequent shoppers. Customers use the Internet for their shopping due to the benefits they get, due to the concept that internet shopping is more convenient and offers competitive prices. Therefore, convenience is considered as one of most important factors that motivate customers to shop online in addition to the other benefits.

REVIEW OF LITERATURE

The study provides the review of select literature in the area of consumers' perceived benefits while making an online purchase to have a thorough understanding of the conceptual constructs and empirical research. Rasool, Gupta, Slathia, & Mahajan (2017) revealed that the factors perceived credibility, perceived usefulness, perceived ease of use and computer self-efficacy is significantly dependent on

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customer attitude. Putro and Haryanto (2015) identified that the variables ease of use, usefulness, and perceived risk have significant positive influence on consumer attitudes, and towards intention to buy in the services of fashion online products. Saravanan and Devi (2015) found that, Amazon is the most preferred online shopping website whereas Snapdeal and Filpkart has got the second and third rank consecutively. The study also revealed that electronic products are the most preferred products followed by cosmetic, jewelry and food items. Katta and Patro (2017) found that convenience is the most influencing factor followed by the factors such as price advantage, delivery, reliability, website design and responsiveness and are significantly influencing the consumer's perception on e-shopping.

Nayak and Debashish (2017) found that the factors influencing the consumers' decision of online shopping are convenience, security & privacy on website, time and cost efficiency, online product information availability and website interface. Jadhav and Khanna (2016) identified that the main influencing factors for online shopping were availability, low price, promotions, comparison, perceived ease of use, attitude, time consciousness, trust, variety seeking, and customer service. Chakraborty (2016) stated that the reasonable cost of the product at the doorstep is the most important factor affecting the consumer purchase decision at the time of online shopping. The other most important factors such as products are available 24/7, saves time, and ease in cancellation or return are also influencing the consumers' intentions to shop online (Rao and Patro, 2017). Nazir, Tayyab, Sajid, Rashid, & Javed (2012) identified price to be the most fascinating and affecting factor for the majority of students and the general public following trust, convenience and recommendations as other important factors. Mee and Huei (2015) study revealed that Internet shoppers respond positively towards the motivational and attitude aspects of online shopping compared to the non-internet shoppers. The internet shoppers seek more convenience than non-internet shoppers, followed by innovativeness, impulsiveness, variety seeking, attitude towards online shopping, and attitude towards online advertising. The other factors which had a moderate influence on consumers' attitude are security, sale service, and discounted deals (Patro, 2017).

Jiradilok, Malisuwan, Madan, & Sivaraks (2014) explored that those who have ever purchased online mainly depend on assurance, empathy, appropriate pricing, and website information quality, while those who have never purchased online consider empathy, assurance, responsibility and reliability while shopping online. Sharma and Khattri (2013) found that the prominent factors affecting the buying decision are impulse buying, information availability and customer review. It also identified that higher the level of trust on the website more the number of times coupons have been bought by consumers. Shergill and Chen (2005) found that website design, website reliability/fulfillment, website customer service and website security/privacy are the four dominant factors which influence consumer perceptions of online purchasing. Heijden and Verhagen (2004) found that the components of online store image have predictive value for attitude towards purchasing at that particular store. Trustworthiness, settlement performance, usefulness and enjoyment are direct determinants of attitude, whereas familiarity, ease of use, and style are indirect determinants of attitude (Patro, 2016). Lee and Joshi (2007) identified that the factors delivery performance, time saving, website functional properties, internet familiarity, and price have relative importance in online service encounters for customer satisfaction.

Devaraj, Fan, & Kohli (2006) study indicated that personalization, time responsiveness, security, and reliability are significantly linked to consumer satisfaction. Website design has no significant effect to online consumer's satisfaction. Har Lee, Cyril Eze, & Oly Ndubisi (2011) indicated trust as the most significantly influencing variable for the consumers' intention to repurchase online. The other influencing factors are privacy, functionality, firms' reputation, perceived usefulness, perceived value, reliability and lastly perceived ease of use. Yi and Gong (2008) found that the outcome quality is the most important

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predictor of overall quality, whereas environment quality is the least important predictor of overall quality, particularly when self-efficacy is high. Ranganathan and Ganapathy (2002) study emerged security as the best predictor of online purchase intent. Privacy and Design dimensions emerged as the second and third best predictors, whereas information content is a basic necessity of any website and key factor that differentiates competing ones. Wolfinbarger and Gilly (2003) found that the four factors website design, fulfilment/reliability, privacy/security and customer service are strongly predictive of customer judgments of quality and satisfaction, customer loyalty and attitudes toward the website. Atchariyachanvanich, Okada, & Sonehara (2008) study pointed out that the basic factors of confirmation, satisfaction, perceived usefulness, perceived incentives, and customer loyalty are significantly influencing the online customers' intention to repeat purchase through the Internet. Lee and Lin (2005) study show that the dimensions of website design, reliability, responsiveness, and trust affect overall service quality and customer satisfaction. However, the personalization dimension is not significantly related to overall service quality and customer satisfaction.

OBJECTIVES OF THE STUDY

The specific research objectives of the study are to identify the factors influencing perceived benefits of online consumers and also study the influence of demographic variables on online consumers' perceived benefits.

RESEARCH FRAMEWORK AND HYPOTHESES

Based on the findings of the earlier studies by the researcher the following factors are identified as perceived benefits in the present study as shown in Figure 1. The factors are: Website Functionality, Product Variety, Innovativeness, Personalization, Convenience, Reliability, Financial Advantage, Security & Privacy and Delivery.

The study formulated the following null hypotheses to test relation between the demographic factors (gender, age, educational qualifications, and occupation), and the perceived benefit factors to know its influence on online consumers' purchase behaviour with reference to the top three e-retailers (Amazon, Flipkart and Snapdeal).

1. Influence of Demographic factors on Consumers' Perceived Benefits:

H_0: The demographic factors (gender, age, education, and occupation) do not have significant influence on consumers' perceived benefits (website functionality, product variety, innovativeness, personalization, convenience, reliability, financial advantage, security & privacy and delivery).

2. Perceived Benefits:

H_{01}: Website Functionality is not significantly considered as perceived benefit.
H_{02}: Product Variety is not significantly considered as perceived benefit.
H_{03}: Innovativeness is not significantly considered as perceived benefit.
H_{04}: Personalization is not significantly considered as perceived benefit.
H_{05}: Convenience is not significantly considered as perceived benefit.
H_{06}: Reliability is not significantly considered as perceived benefit.

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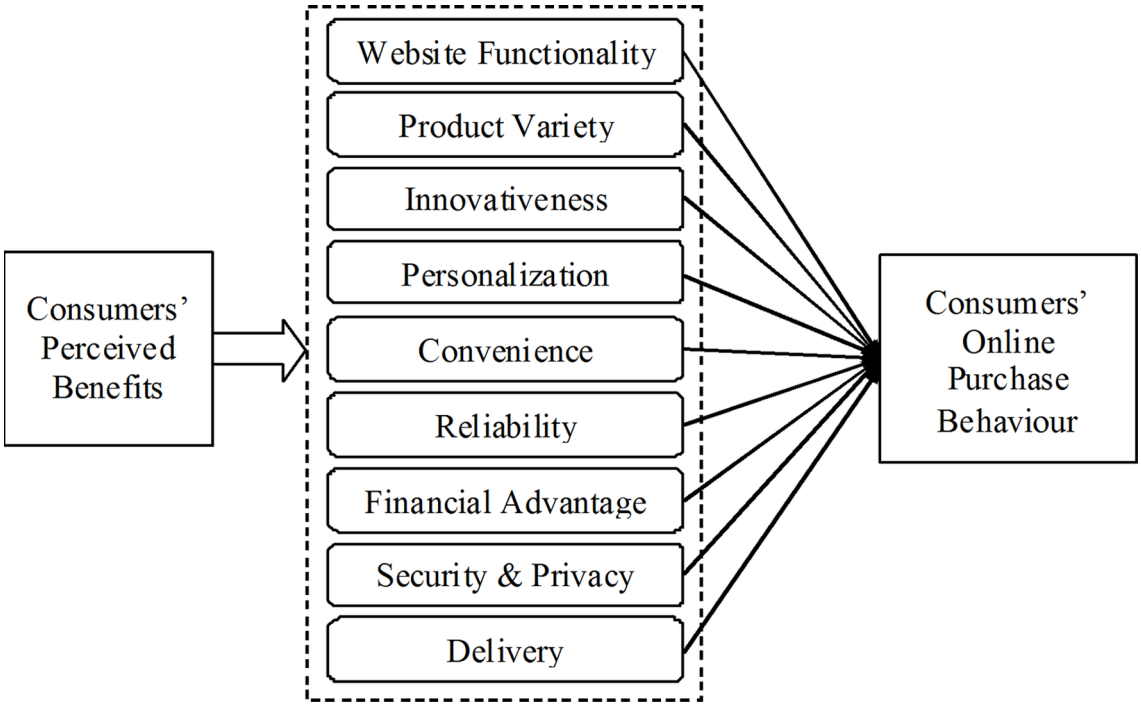
H_{07}: Financial Advantage is not significantly considered as perceived benefit.
H_{08}: Security & Privacy is not significantly considered as perceived benefit.
H_{09}: Delivery is not significantly considered as perceived benefit.

Figure 1. Research framework



RESEARCH METHODOLOGY

The paper discusses the various perceived benefit factors influencing on the consumers behaviour towards online shopping. To pursue the objectives of the study, the data from primary sources were collected and analyzed. The study covers the online consumers in India. For the purpose of the study three online vending companies such as Amazon, Flipkart and Snapdeal are selected based on turnover of the companies in 2015. The opinions are collected online and to ensure the matured responses, the respondents below the age of 18 years are excluded from the study. The sample size is based on the Krejcie and Morgan (1970) table, which reveals that for a population of more than 100000, a sample size of 384 is sufficient. Since the universe is very large and the responses are expected online, the researcher set a time frame to register the responses. As such the valid responses received in three months period starting from September to November 2016 are considered. The sample size of the study thus was 1200. The opinion of sample population has been ascertained on Likert scale. Cronbach's Alpha reliability test has been conducted and the value of 0.977 indicating the high degree of internal consistency of the sample. To analyze the collected data descriptive statistics frequency, percentages, mean, and regression analysis were used. IBM SPSS software version 22.0 is used for the statistical analysis.

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DEMOGRAPHIC PROFILE OF THE RESPONDENTS

The demographic profile of the respondents namely; gender of the respondents, age wise classification, education background, and occupation are shown in Table 1.

Table 1. Demographic profile of the respondents (n = 1200)

Demographic Factor	Frequency (n)	Percent (%)
Gender		
Male	648	54.00
Female	552	46.00
Age of the respondents		
18 - 25 years	403	33.58
26 - 35 years	306	25.50
36 - 45 years	242	20.17
46 - 55 years	149	12.42
56 - 65 years	86	7.17
Above 65 years	14	1.17
Education Background		
SSC	25	2.10
Inter/12th	47	3.90
Diploma	71	5.90
Under Graduate	424	35.3
Post Graduate	497	41.4
M.Phil.	17	1.40
Ph.D.	95	7.90
Professional Course	24	2.00
Occupation		
Student	452	37.71
Employee	642	53.47
Business	45	3.80
Professional	24	1.98
House Wife	37	3.05

Source: Primary data

The analysis shows that out of the total respondents, 54 per cent are males and 46 per cent are females. The age wise classification shows that, 33.58 per cent of the respondents are in the age group of 18-25 years. As many as 25.5 per cent of the respondents are in the age group of 26-35 years and there are 20.17 per cent of the respondents who are in the age group of 36-55 years. The majority of respondents representing 59.08 per cent are in the age group of 18-35 years. The average age of the respondents is 33 years. The details of respondents' education show that, out of the total 41.40 per cent are post gradu-

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ates and 35.30 per cent are graduates. There are 7.90 per cent who are of Ph.D. holders, 5.90 per cent Diploma holders, 3.90 per cent passed Intermediate, and 2.10 per cent passed SSC. The majority of the respondents representing 76.70 per cent are either graduates or post graduates. Regarding the occupation, 37.71 per cent of the online shopping participants are students and 53.47 per cent of online shoppers are employees. There are 3.80 per cent of the respondents who belong to business category, 3.05 per cent are House Wives, and only 1.98 participants are professionals. Thus, employees constitute the majority followed by students in the case of online shopping.

STATISTICAL ANALYSIS AND RESULTS

The nine factors identified as the perceived benefits influencing the consumers' online purchase behaviour are analyzed in the study. The analysis shows the mean values of all the factors for all the three websites Amazon, Flipkart and Snapdeal. The analysis also projects the f-statistic and coefficient values for the three websites in relation to the perceived benefit factors and demographic factors (gender, age, education and occupation) that influence online shoppers' purchase intentions.

Table 2. Website functionality - descriptive statistics (Mean Values) n = 1200

S.No.	Variables	Amazon	Flipkart	Snapdeal	Total
1	The website has user-friendly interface facilitating easy navigation	4.10	4.00	4.04	4.05
2	The website has visually attracting and harmonious appearance	4.05	3.96	3.89	3.98
3	The website layout facilitates quick search for products	3.97	3.97	3.83	3.94
4	Current trends are reflected in the website	4.00	3.75	3.74	3.85
5	The website provides high quality content and interactive features	4.01	3.73	3.71	3.84
6	The website loads all the text and graphic speed	3.82	3.86	3.83	3.84
7	Updates the website continuously with latest information	3.83	3.85	3.60	3.79
8	Well connected to customers with appropriate social media	3.80	3.68	3.67	3.73
9	Provides related links that makes shopping experience more fun and less frustrating	3.70	3.75	3.56	3.69
10	Live support is provided for enhancing shopping experience	3.63	3.59	3.67	3.62
Total		**3.89**	**3.81**	**3.75**	**3.83**

Source: Primary Data

The descriptive statistics (Table 2) indicates that the website Amazon has the highest mean value of 3.89 followed by Flipkart ($\mu = 3.81$), and Snapdeal ($\mu = 3.75$). Among the ten variables 'the website has user friendly interface facilitating easy navigation' secured highest rating ($\mu = 4.05$) followed by variables 'the website has visually attracting and harmonious appearance ($\mu = 3.98$)' and 'the website

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layout facilitates quick search for products (μ = 3.94)'. The highly rated variable is the same in the case of all the three websites of select companies. It is pertinent to note that the total mean value of all the ten variables is 3.83 which indicate that the functionality of the website has positive influence on the consumers purchase behaviour.

Table 3. Website functionality - ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
Amazon	Regression	3.328	4	.832	1.564	.030[b]
	Residual	210.159	395	.532		
	Total	213.488	399			
Flipkart	Regression	4.221	4	1.055	2.593	.036[b]
	Residual	185.591	456	.407		
	Total	189.811	460			
Snapdeal	Regression	4.089	4	1.022	1.808	.028[b]
	Residual	141.345	250	.565		
	Total	145.435	254			

a. Dependent Variable: Website Functionality
b. Predictors: (Constant), Occupation, Age, Education, Gender

The results of the ANOVA test (Table 3) for the websites Amazon (F = 1.564, p = 0.30<0.05), Flipkart (F = 2.593, p = 0.36<0.05) and Snapdeal (F = 1.808, p = 0.028<0.05) indicate that the website functionality show a significant relation with the predictors occupation, age, education, and gender on the consumer purchase behaviour.

The coefficients (Table 4) reveals that, for Amazon the independent variables education (β = 0.089, p = 0.049) and age (β = 0.017, p = 0.009) show positive significant beta coefficients with the dependent variable website functionality. However, gender (β = -0.079, p = 0.045) and occupation (β = -1.101, p = 0.031) show negative significant beta coefficients with website functionality. In the case of Flipkart and Snapdeal, gender (β = 0.009, p = 0.050; β = 0.021, p = 0.047), age (β = 0.019, p = 0.048; β = 0.026, p = 0.038) and education (β = 0.128, p = 0.007; β = 0.123, p = 0.010) shows a positive significant effect on website functionality. The independent variable, occupation (β = -0.091, p = 0.043; β = -0.008, p = 0.005) show negative significant beta coefficients with the website functionality. Thus, the results provide a strong support for the rejection of the null hypothesis relating to the relationships between independent variables gender, age, education and occupation with the dependent variable website functionality in case of all the three websites. Therefore, it could be concluded that the website functionality strongly depends on the demographic factors.

The analysis of Product Variety in Table 5 indicate that the website Amazon has the highest mean value of 3.98 followed by Snapdeal (μ = 3.83), and Flipkart (μ = 3.73). Among the ten variables 'comparison of wide range of product features is possible' got highest rating (μ = 4.18) followed by variables 'larger choice of products/ services are available (μ = 4.09)' and 'facilitates selection of brands & products from different sellers at one place (μ = 3.98)'. The highly rated variable in case of all the three e-retailing websites is 'comparison of wide range of product features is possible.' It is significant to note that the

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total mean value of all the ten variables is 3.85 which indicate that the product variety has a positive influence on the consumers' online purchase intentions.

Table 4. Website functionality - coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta (β)		
Amazon	(Constant)	4.325	.147		29.406	.000
	Gender	-.116	.069	-.079	1.674	.045
	Age	.009	.025	.017	.374	.009
	Education	.049	.025	.089	1.953	.049
	Occupation	-.076	.035	-.101	-2.166	.031
Flipkart	(Constant)	3.615	.146		24.821	.000
	Gender	.012	.062	.009	.187	.050
	Age	.005	.024	.019	.192	.048
	Education	.068	.025	.128	2.722	.007
	Occupation	-.076	.039	-.091	-1.939	.043
Snapdeal	(Constant)	4.213	.229		18.387	.000
	Gender	.031	.096	.021	.323	.047
	Age	.013	.032	.026	.415	.038
	Education	.102	.039	.163	2.593	.010
	Occupation	-.008	.066	-.008	-.119	.005

Dependent Variable: Website Functionality; All the p values are significant at 0.05 level

Table 5. Product variety - descriptive statistics (mean values) n = 1200

S.No.	Variables	Amazon	Flipkart	Snapdeal	Total
1	Comparison of wide range of product features is possible	4.35	4.07	4.04	4.18
2	Larger choice of products/ services are available	4.23	4.02	3.93	4.09
3	Facilitates selection of brands & products from different sellers at one place	4.06	3.87	4.03	3.98
4	The website provides useful customer reviews on products	4.03	3.95	3.87	3.96
5	Offer wide variations in colors, size and quality of products	4.06	3.82	3.98	3.95
6	Provides access to products that are not available offline	3.90	3.66	3.74	3.78
7	Accurate information on product is available	3.75	3.75	3.67	3.74
8	Provision to place orders for out of stock items & shipment when becomes available	3.80	3.34	3.83	3.63
9	Shop from retailers in other parts of the world	3.89	3.37	3.58	3.63
10	Often updates on international trends and new products	3.73	3.44	3.59	3.59
Total		**3.98**	**3.77**	**3.83**	**3.85**

Source: Primary Data

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The ANOVA test results as shown in Table 6 for all the three websites Amazon ($F = 5.068$, $p = 0.001<0.05$), Flipkart ($F = 4.50$, $p = 0.001<0.05$) and Snapdeal ($F = 2.115$, $p = 0.049<0.05$) reveals that the dependent variable product variety show a positive significant influence on the independent variables (gender, age, education level and occupation) with reference to consumer purchase behaviour.

Table 6. Product variety - ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
Amazon	Regression	8.256	4	2.064	5.068	.001[b]
	Residual	199.946	491	.407		
	Total	208.202	495			
Flipkart	Regression	7.326	4	1.831	4.500	.001[b]
	Residual	185.577	456	.407		
	Total	192.903	460			
Snapdeal	Regression	6.260	4	1.565	2.115	.049[b]
	Residual	185.019	250	.740		
	Total	191.279	254			

a. Dependent Variable: Product Variety

b. Predictors: (Constant), Occupation, Age, Education, Gender

The coefficients (Table 7) reveals that, in the case of Amazon and Snapdeal the independent variables gender ($\beta = 0.105$, $p = 0.026$; $\beta = 0.027$, $p = 0.048$) and age ($\beta = 0.040$, $p = 0.049$; $\beta = 0.026$, $p = 0.043$) show positive significant beta coefficients with the dependent variable product variety. However, education ($\beta = -0.127$, $p = 0.005$; $\beta = -0.166$, $p = 0.009$) and occupation ($\beta = -0.121$, $p = 0.009$; $\beta = -0.061$, $p = 0.031$) show negative significant beta coefficients with the dependent variable product variety. In the case of Flipkart, the independent variables gender ($\beta = 0.106$, $p = 0.023$), age ($\beta = 0.051$, $p = 0.022$) and education ($\beta = 0.028$, $p = 0.047$) shows a positive significant effect on product variety. The independent variable, occupation ($\beta = -0.168$, $p = 0.000$) show negative significant beta coefficients with the dependent variable product variety. Thus, the analysis show a strong support for the rejection of the null hypothesis relating to the relationships between independent variables gender, age, education and occupation with the dependent variable product variety in the case of all the three websites. Hence, it could be concluded that the product variety strongly depends on the demographic factors of the consumers.

The descriptive statistics of Innovativeness (Table 8) indicates that the website Amazon has the highest mean value of 3.68 followed by Snapdeal ($\mu = 3.60$), and Flipkart ($\mu = 3.54$). Among the fifteen variables 'attracts customers with attention drawing programmes like flash sales' has the highest rating ($\mu = 3.83$) followed by the variables 'innovative methods of sales promotion strategies are followed by online stores ($\mu = 3.82$)', and 'provides super-fast and innovative delivery systems ($\mu = 3.77$)'. The highly rated variable in case of Amazon and Snapdeal is 'attracts customers with attention drawing programmes like flash sales ($\mu = 3.85$ and 3.80)'. In case of Flipkart the variable 'innovative methods of sales promotion strategies are followed by online stores ($\mu = 3.87$)' got highest rating. It is important to note that the total mean value of all the fifteen variables is 3.61 which indicate that factor Innovativeness has a positive influence on the consumers' online purchase behaviour.

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Table 7. Product variety - coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Amazon	(Constant)	4.511	.129		35.098	.000
	Gender	.136	.061	.105	2.236	.026
	Age	.020	.022	.040	.899	.049
	Education	-.062	.022	-.127	-2.810	.005
	Occupation	-.081	.031	-.121	-2.631	.009
Flipkart	(Constant)	4.080	.146		28.017	.000
	Gender	.142	.062	.106	2.282	.023
	Age	.026	.024	.051	1.100	.022
	Education	.015	.025	.028	.593	.044
	Occupation	-.142	.039	-.168	-3.606	.000
Snapdeal	(Constant)	4.431	.262		16.902	.000
	Gender	.047	.110	.027	.430	.048
	Age	.015	.037	.026	.409	.043
	Education	-.119	.045	-.166	-2.645	.009
	Occupation	-.073	.075	-.061	-.973	.031

Dependent Variable: Product Variety; All the p values are significant at 0.05 level

Table 8. Innovativeness - descriptive statistics (mean values) n = 1200

S.No.	Variables	Amazon	Flipkart	Snapdeal	Total
1	Attracts customers with attention drawing programmes like flash sales	3.85	3.83	3.80	3.83
2	Innovative methods of sales promotion strategies are followed by online stores	3.84	3.87	3.66	3.82
3	Provides super fast and innovative delivery systems	3.83	3.76	3.65	3.77
4	The online store provides dynamic features to the customers	3.76	3.77	3.71	3.75
5	Makes continuous improvements in web design	3.75	3.77	3.72	3.75
6	The Procurement feature of the online store is good	3.76	3.65	3.78	3.73
7	Makes timely product mix and product line improvements	3.74	3.72	3.67	3.72
8	Provides information related to changes in product variety and offers	3.81	3.62	3.73	3.72
9	The recovery system of the online store is acceptable	3.67	3.53	3.65	3.61
10	Customization of products is available	3.74	3.36	3.69	3.59
11	Selling based on mobile location (Geo location)	3.68	3.39	3.53	3.53
12	Offers membership to purchase items at lower price	3.52	3.38	3.45	3.45
13	Provides Geographically targeted discounts and offers	3.39	3.33	3.29	3.35
14	Connect users to local stores to experience real time shopping	3.37	3.24	3.45	3.33
15	The online store provides Trail of products before purchasing	3.50	3.12	3.23	3.23
Total		**3.68**	**3.54**	**3.60**	**3.61**

Source: Primary Data

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The ANOVA test (Table 9) results of dependent variable Innovativeness with the predictors occupation, age, education level and gender for all the three websites Amazon ($F = 4.513$, $p = 0.001<0.05$), Flipkart ($F = 2.806$, $p = 0.025<0.05$), and Snapdeal ($F = 3.63$, $p = 0.007<0.05$) show a positive significant influence on the consumer purchase intentions.

Table 9. Innovativeness - ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
Amazon	Regression	6.530	4	1.633	4.513	.001[b]
	Residual	177.628	491	.362		
	Total	184.158	495			
Flipkart	Regression	4.653	4	1.163	2.806	.025[b]
	Residual	189.045	456	.415		
	Total	193.698	460			
Snapdeal	Regression	9.914	4	2.478	3.630	.007[b]
	Residual	170.713	250	.683		
	Total	180.626	254			

a. Dependent Variable: Innovativeness

b. Predictors: (Constant), Occupation, Age, Education, Gender

The calculation of coefficient (Table 10) reveals that for all the three websites Amazon, Flipkart and Snapdeal, the independent variables gender ($\beta = 0.907$, $p = 0.038$; $\beta = 0.029$, $p = 0.033$; $\beta = 0.051$, $p = 0.019$) and age ($\beta = 0.002$, $p = 0.040$; $\beta = 0.014$, $p = 0.296$; $\beta = 0.027$, $p = 0.037$) show positive significant beta coefficients with the dependent variable innovativeness. However, education ($\beta = -0.088$, $p = 0.043$; $\beta = -0.041$, $p = 0.037$; $\beta = -0.195$, $p = 0.002$) and occupation ($\beta = -0.162$, $p = 0.000$; $\beta = -0.145$, $p = 0.002$; $\beta = -0.112$, $p = 0.034$) show negative significant beta coefficients with the dependent variable website functionality. Thus, the analysis show a strong support for the rejection of the null hypothesis relating to the relationships between independent variables gender, age, education and occupation with the dependent variable innovativeness in the case of all the three websites. Therefore, it could be concluded that innovativeness of the website strongly depends on the demographic factors.

The descriptive statistics of the factor Personalization (Table 11) indicate that Amazon has the highest mean value of 3.69 followed by Flipkart ($\mu = 3.60$) and Snapdeal ($\mu = 3.58$). Among the nine variables 'the online store provides mobile app based shopping' secured highest rating ($\mu = 3.97$) followed by variables 'provide Help/ FAQ support to the customers ($\mu = 3.86$)' and 'remind about the items in shopping cart ($\mu = 3.85$)'. The highly rated variable is the same in the case of all the three websites of select companies with the mean values of 4.03, 3.94, and 3.92 for Amazon, Flipkart and Snapdeal respectively. Therefore, the total mean value for all the nine variables is 3.63 which indicate that factor personalization has a positive influence on the consumers' online purchase intentions.

The results of the ANOVA test (Table 12) for all the three websites Amazon ($F = 8.180$, $p = 0.000<0.05$), Flipkart ($F = 2.786$, $p = 0.026<0.05$), and Snapdeal ($F = 2.808$, $p = 0.026<0.05$) show a positive significant influence on the consumer purchase intention with the predicators occupation, age, education level and gender.

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Table 10. Innovativeness - coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Amazon	(Constant)	4.099	.121		33.835	.000
	Gender	.119	.057	.097	2.078	.038
	Age	.001	.021	.002	.037	.040
	Education	-.040	.021	-.088	-1.936	.043
	Occupation	-.101	.029	-.162	-3.505	.000
Flipkart	(Constant)	3.877	.147		26.376	.000
	Gender	.039	.063	.029	.625	.033
	Age	.007	.024	.014	.296	.048
	Education	-.022	.025	-.041	-.865	.037
	Occupation	-.122	.040	-.145	-3.076	.002
Snapdeal	(Constant)	4.359	.252		17.312	.000
	Gender	.085	.106	.051	.809	.019
	Age	.016	.036	.027	.444	.037
	Education	-.136	.043	-.195	-3.144	.002
	Occupation	-.129	.072	-.112	-1.792	.034

Dependent Variable: Innovativeness; All the p values are significant are 0.05 level

Table 11. Personalization -descriptive statistics (mean values) n = 1200

S.No.	Variables	Amazon	Flipkart	Snapdeal	Total
1	The online store provides mobile app based shopping	4.03	3.94	3.92	3.97
2	Provide Help/ FAQ support to the customers	3.91	3.82	3.82	3.86
3	Remind about the items in shopping cart	3.90	3.83	3.81	3.85
4	Serve suggestive messages based on customer's past purchase behavior	3.80	3.52	3.65	3.66
5	Guides with a banner or popover about search related products	3.71	3.58	3.58	3.63
6	Provides interaction with sales person to resolve all uncertainties and doubts	3.57	3.44	3.23	3.45
7	Provides welcome message and include discount coupon for new customers	3.48	3.39	3.45	3.44
8	Present the language options suitable to customers	3.39	3.43	3.44	3.41
9	Provides customers with a personal homepage	3.42	3.41	3.33	3.40
Total		**3.69**	**3.60**	**3.58**	**3.63**

Source: Primary Data

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Table 12. Personalization - ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
Amazon	Regression	13.023	4	3.256	8.180	.000[b]
	Residual	195.427	491	.398		
	Total	208.450	495			
Flipkart	Regression	4.735	4	1.184	2.786	.026[b]
	Residual	193.769	456	.425		
	Total	198.503	460			
Snapdeal	Regression	9.830	4	2.458	2.808	.026[b]
	Residual	218.810	250	.875		
	Total	228.641	254			

[a]Dependent Variable: Personalization

[b]Predictors: (Constant), Occupation, Age, Education, Gender

The calculation of coefficient (Table 13) reveals that for all three websites Amazon, Flipkart and Snapdeal, the independent variables education ($\beta = -0.096$, $p = 0.033$; $\beta = -0.077$, $p = 0.005$; $\beta = -0.159$, $p = 0.011$) and occupation ($\beta = -0.242$, $p = 0.000$; $\beta = -0.106$, $p = 0.025$; $\beta = -0.117$, $p = 0.043$) show negative significant beta coefficients with the dependent variable personalization. However, gender ($\beta = -0.083$, $p = 0.072$; $\beta = -0.075$, $p = 0.110$; $\beta = -0.028$, $p = 0.663$) and age ($\beta = -0.001$, $p = 0.997$; $\beta = -0.009$, $p = 0.850$; $\beta = -0.045$, $p = 0.473$) show negative insignificant beta coefficients with the dependent variable personalization for all the three websites. Thus, the results provide a strong support for the rejection of the null hypothesis relating to the relationships between independent variables (education and occupation) and the dependent variable personalization in the case of all the three websites while null hypothesis is accepted in case of the independent variables (age and gender) and personalization. Therefore, it could be concluded that personalization depends on the demographic factors.

The analysis of the factor Convenience as shown in Table 14 indicate that the website Amazon has the highest mean value of 4.05 followed by Snapdeal with a mean value of 3.95, and Flipkart with a mean value of 3.91. Among the twelve variables 'purchasing online is more convenient, as it has 24/7 access' secured highest score ($\mu = 4.16$) followed by variables 'purchasing online enables to complete shopping effortlessly ($\mu = 4.08$)', 'no transportation is required for online shopping ($\mu = 4.08$)' and 'provides the facility to purchase products from anywhere ($\mu = 4.06$)'. In case of Amazon and Flipkart the highly rated variable 'purchasing online is more convenient, as it has 24/7 access ($\mu = 4.25$ and 4.13)', and Snapdeal, the highly rated variable is 'provides the facility to purchase products from anywhere ($\mu = 4.13$)'. It is significant to note that the total mean value of all the twelve variables is 3.97 which indicate that the convenience to access the website has a positive influence on the online consumers' purchase intentions.

The ANOVA test (Table 15) indicate that in case of all the three websites Amazon ($F = 2.159$, $p = 0.043 < 0.05$), Flipkart ($F = 2.232$, $p = 0.045 < 0.05$) and Snapdeal ($F = 2.552$, $p = 0.042 < 0.05$) the factor convenience show a positive significant influence with the predictors occupation, age, education and gender of the consumer purchase intentions.

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Table 13. Personalization - coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Amazon	(Constant)	4.240	.127		33.368	.000
	Gender	-.108	.060	-.083	-1.802	.072
	Age	-8.361	.022	-.001	-.004	.997
	Education	-.047	.022	-.096	-2.140	.033
	Occupation	-.161	.030	-.242	-5.322	.000
Flipkart	(Constant)	4.034	.149		27.112	.000
	Gender	-.102	.064	-.075	-1.603	.110
	Age	-.005	.024	-.009	-.189	.850
	Education	-.042	.026	-.077	-1.625	.005
	Occupation	-.091	.040	-.106	-2.254	.025
Snapdeal	(Constant)	4.312	.285		15.125	.000
	Gender	-.052	.120	-.028	-.437	.663
	Age	-.029	.040	-.045	-.718	.473
	Education	-.125	.049	-.159	-2.552	.011
	Occupation	-.152	.082	-.117	-1.868	.043

Dependent Variable: Personalization; p values less than 0.05 are significant

Table 14. Convenience - descriptive statistics (mean values) n = 1200

S.No.	Variables	Amazon	Flipkart	Snapdeal	Total
1	Purchasing online is more convenient, as it has 24/7 access	4.25	4.13	4.02	4.16
2	Purchasing online enables to complete shopping effortlessly	4.13	4.08	4.00	4.08
3	No transportation is required for online shopping	4.09	4.09	4.03	4.08
4	Provides the facility to purchase products from anywhere	4.06	4.03	4.13	4.06
5	Provision of multiple payment channels make shopping online easy	4.04	3.97	4.04	4.01
6	Online shopping is easy and reduces stress	4.01	3.93	4.06	3.99
7	Products comparison among few retailers is possible without physical strain	4.02	3.97	3.93	3.98
8	Purchasing online takes less time (saves time)	4.05	3.82	3.98	3.95
9	Product categorization helps to make online shopping comfortably	4.14	3.62	3.83	3.88
10	Participation of all family members/friends/relatives is possible without any cost	3.89	3.83	3.95	3.88
11	Detailed product information and reviews support purchase decision	3.97	3.74	3.75	3.83
12	The website provides timely notification of required products	3.95	3.68	3.65	3.78
Total		**4.05**	**3.91**	**3.95**	**3.97**

Source: Primary Data

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Table 15. Convenience - ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
Amazon	Regression	3.594	4	.898	2.159	.043[b]
	Residual	204.327	491	.416		
	Total	207.920	495			
Flipkart	Regression	4.411	4	1.103	2.232	.045[b]
	Residual	225.329	456	.494		
	Total	229.740	460			
Snapdeal	Regression	5.723	4	1.431	2.522	.042[b]
	Residual	141.846	250	.567		
	Total	147.569	254			

a. Dependent Variable: Convenience

b. Predictors: (Constant), Occupation, Age, Education, Gender

The calculation of coefficient (Table 16) reveals that in the case of all three websites Amazon, Flipkart and Snapdeal, the independent variables education ($\beta = 0.016$, $p = 0.032$; $\beta = 0.080$, $p = 0.041$; $\beta = 0.191$, $p = 0.003$) and occupation ($\beta = 0.105$, $p = 0.024$; $\beta = 0.100$, $p = 0.035$; $\beta = 0.008$, $p = 0.038$) show positive significant beta coefficients with the dependent variable convenience. However, gender ($\beta = 0.100$, $p = 0.055$; $\beta = 0.079$, $p = 0.093$; $\beta = 0.008$, $p = 0.898$) and age ($\beta = 0.033$, $p = 0.470$; $\beta = 0.037$, $p = 0.426$; $\beta = 0.043$, $p = 0.489$) show positive insignificant beta coefficients with the dependent variable convenience for all the three websites. Thus, the analysis provide a strong support for the rejection of the null hypothesis relating to the relationships between independent variables (education and occupation) and the dependent variable convenience in the case of all the three websites while null hypothesis is accepted in case of the independent variables (age and gender) and convenience. Therefore, it could be concluded that convenience depends on the demographic factors.

The descriptive statistics of the factor Reliability (Table 17) indicate that Amazon has the highest mean value of 3.83 followed by Snapdeal ($\mu = 3.68$) and Flipkart ($\mu = 3.46$). Among the twelve variables 'the online store provides timely delivery of products' secured highest rating ($\mu = 3.87$) followed by variables 'the supply mechanism of the online store is effective ($\mu = 3.83$)' and 'the pricing strategy followed by the online store is consistent ($\mu = 3.79$)'. In case of Amazon, the highly rated variable is 'the online store provides timely delivery of products ($\mu = 4.12$)'. For the website, Flipkart the variable 'the pricing strategy followed by the online store is consistent ($\mu = 3.69$)' got highest rating. In case of Snapdeal, the top-rated variable is 'the supply mechanism of the online store is effective'. It is significant to note that the total mean value for all the referred variables is 3.66 which indicate that factor reliability has a positive influence on the consumers online purchase behavior.

The ANOVA test (Table 18) results for the dependent variable reliability in case of all the three websites Amazon ($F = 1.014$, $p = 0.040<0.05$), Flipkart ($F = 2.996$, $p = 0.018<0.05$) and Snapdeal ($F = 2.576$, $p = 0.038<0.05$) show a positive significant influence on consumer purchase intentions with the predicators occupation, age, education level, and gender.

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Table 16. Convenience - coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Amazon	(Constant)	4.309	.130		33.163	.000
	Gender	.130	.061	.100	2.116	.055
	Age	.016	.022	.033	.723	.470
	Education	.008	.022	.016	.343	.032
	Occupation	.070	.031	.105	2.264	.024
Flipkart	(Constant)	3.984	.160		24.829	.000
	Gender	.115	.069	.079	1.685	.093
	Age	.021	.026	.037	.798	.426
	Education	.047	.028	.080	1.694	.041
	Occupation	.092	.043	.100	2.113	.035
Snapdeal	(Constant)	4.531	.230		19.740	.000
	Gender	.012	.096	.008	.129	.898
	Age	.023	.033	.043	.693	.489
	Education	.120	.039	.191	3.052	.003
	Occupation	.008	.066	.008	.128	.038

Dependent Variable: Convenience; p values less than 0.05 are significant

Table 17. Reliability - descriptive statistics (mean values) n = 1200

S.No.	Variables	Amazon	Flipkart	Snapdeal	Total
1	The online store provides timely delivery of products	4.12	3.61	3.86	3.87
2	The supply mechanism of the online store is effective	3.98	3.63	3.88	3.83
3	The pricing strategy followed by the online store is consistent	3.88	3.69	3.79	3.79
4	Provides error-free & maintains quality in transactions	3.89	3.64	3.82	3.78
5	The online store offers return facility for dissatisfied products	3.89	3.67	3.73	3.77
6	The online store has dependable suppliers with quality products	3.70	3.64	3.88	3.72
7	Provides Unbiased service/ product recommendations	3.81	3.35	3.67	3.61
8	There is no frequent website break down or crash	3.82	3.34	3.56	3.59
9	Convey consistently quality information of products	3.79	3.39	3.51	3.58
10	The online stores value the customer sentiments	3.87	3.25	3.53	3.56
11	The customers grievance are resolved fairly	3.73	3.30	3.45	3.50
12	There is no Technical failure in online transaction	3.55	3.05	3.43	3.33
Total		**3.83**	**3.46**	**3.68**	**3.66**

Source: Primary Data

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Table 18. Reliability - ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
Amazon	Regression	1.519	4	.380	1.014	.040[b]
	Residual	183.889	491	.375		
	Total	185.409	495			
Flipkart	Regression	6.217	4	1.554	2.996	.018[b]
	Residual	236.529	456	.519		
	Total	242.746	460			
Snapdeal	Regression	6.254	4	1.563	2.576	.038[b]
	Residual	151.753	250	.607		
	Total	158.006	254			

a. Dependent Variable: Reliability

b. Predictors: (Constant), Occupation, Age, Education Level, Gender

The coefficient (Table 19) relationship between the reliability of the website and independent variables gender, age, education and occupation reveals that for all the three websites Amazon, Flipkart and Snapdeal, the independent variables gender ($\beta = 0.024$, $p = 0.013$; $\beta = 0.041$, $p = 0.038$; $\beta = 0.031$, $p = 0.021$), age ($\beta = 0.073$, $p = 0.008$; $\beta = 0.076$, $p = 0.004$; $\beta = 0.009$, $p = 0.009$) and education ($\beta = 0.001$, $p = 0.045$; $\beta = 0.095$, $p = 0.045$; $\beta = 0.197$, $p = 0.002$) show positive significant beta coefficients with the dependent variable reliability. However, occupation ($\beta = -0.057$, $p = 0.020$; $\beta = -0.099$, $p = 0.035$; $\beta = -0.017$, $p = 0.042$) shows negative significant beta coefficients with the dependent variable reliability. Thus, the regression analysis shows a strong support for the rejection of the null hypothesis relating to the relationships between independent variables gender, age, education and occupation with the dependent variable reliability in the case of all the three websites. Therefore, it could be concluded that reliability of the website strongly depends on the demographic factors.

The descriptive statistics of financial advantage (Table 20) indicate that the website Amazon has the highest mean value of 3.75 followed by Snapdeal ($\mu = 3.55$), and Flipkart ($\mu = 3.52$). Among the ten variables 'payment after delivery is a valuable facility' got highest rating ($\mu = 3.99$) followed by variables 'provides consumers with different payment options ($\mu = 3.81$)', and 'products are available relatively at a lower price ($\mu = 3.67$)'. The highly rated variable in case of all the three online marketers is 'payment after delivery is a valuable facility'. It is pertinent to note that the total mean value of all the twelve variables is 3.62 which indicate that the factor financial advantage has a positive influence on the consumers online purchase behaviour.

The ANOVA test (Table 21) reveals that all the three websites Amazon ($F = 1.049$, $p = 0.031 < 0.05$), Flipkart ($F = 4.923$, $p = 0.001 < 0.05$) and Snapdeal ($F = 3.321$, $p = 0.011 < 0.05$) shows that financial advantage has a positive significant influence on the independent variables (occupation, age, education, and gender) of consumer purchase intentions.

The coefficients (Table 22) reveals that, in the case of all the three websites Amazon, Flipkart and Snapdeal, all the independent variables gender ($\beta = 0.006$, $p = 0.046$; $\beta = 0.096$, $p = 0.038$; $\beta = 0.129$, $p = 0.041$), age ($\beta = 0.058$, $p = 0.002$; $\beta = 0.016$, $p = 0.031$; $\beta = 0.016$, $p = 0.037$), education ($\beta = 0.037$, $p = 0.018$; $\beta = 0.110$, $p = 0.019$; $\beta = 0.197$, $p = 0.002$) and occupation ($\beta = 0.062$, $p = 0.015$; $\beta = 0.131$, $p = 0.005$; $\beta = 0.006$, $p = 0.023$) shows a positive significant coefficient with the dependent variable

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financial advantage. Thus, the results provide a strong support for the rejection of the null hypothesis relating to the relationships between independent variables gender, age, education and occupation and the dependent variable financial advantage in the case of all the three websites. Therefore, it could be concluded that the financial advantage strongly depends on the demographic factors.

Table 19. Reliability - coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Amazon	(Constant)	3.987	.123		32.341	.000
	Gender	.029	.058	.024	.506	.013
	Age	.034	.021	.073	1.612	.008
	Education	.000	.021	.001	.018	.045
	Occupation	-.036	-.029	.057	-1.229	.020
Flipkart	(Constant)	3.829	.164		23.289	.000
	Gender	.062	.070	.041	.882	.038
	Age	.044	.027	.076	1.631	.004
	Education	.057	.028	.095	2.013	.045
	Occupation	-.094	.045	-.099	-2.113	.035
Snapdeal	(Constant)	4.283	.237		18.038	.000
	Gender	.049	.100	.031	.495	.021
	Age	.005	.034	.009	.138	.009
	Education	.128	.041	.197	3.155	.002
	Occupation	-.019	.068	-.017	-.277	.042

Dependent Variable: Reliability; All the p values are significant at 0.05 level

Table 20. Financial advantage - descriptive statistics (mean values) n = 1200

S.No.	Variables	Amazon	Flipkart	Snapdeal	Total
1	Payment after delivery is a valuable facility	4.03	4.02	3.85	3.99
2	Provides consumers with different payment options	3.94	3.80	3.56	3.81
3	Products are available relatively at a lower price	3.78	3.53	3.70	3.67
4	Provides a transparent pricing policy is an additional value	3.83	3.56	3.58	3.64
5	Provides discounts and special offers to customers	3.70	3.43	3.56	3.57
6	There are no transaction costs & dealer margins while shopping online	3.71	3.48	3.45	3.57
7	No price discrimination among buyers	3.75	3.44	3.39	3.56
8	Offer zero home delivery costs on minimum level of purchase	3.71	3.44	3.44	3.55
9	Provides the choice of taking relatively best price	3.74	3.31	3.56	3.54
10	Sells products at a fixed price to all the buyers	3.61	3.46	3.52	3.54
11	Online shopping does not incur any shopping costs	3.69	3.34	3.57	3.53
12	Offers old and used products at a second-rate price	3.54	3.46	3.45	3.49
Total		**3.75**	**3.52**	**3.55**	**3.62**

Source: Primary Data

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Table 21. Financial advantage - ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
Amazon	Regression	2.111	4	.528	1.049	.031[b]
	Residual	247.110	491	.503		
	Total	249.222	495			
Flipkart	Regression	9.135	4	2.284	4.923	.001[b]
	Residual	211.541	456	.464		
	Total	220.675	460			
Snapdeal	Regression	11.724	4	2.931	3.321	.011[b]
	Residual	220.674	250	.883		
	Total	232.398	254			

a. Dependent Variable: Financial Advantage

b. Predictors: (Constant), Occupation, Age, Education, Gender

Table 22. Financial advantage - coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Amazon	(Constant)	3.811	.143		26.667	.000
	Gender	.009	.067	.006	.130	.046
	Age	.032	.025	.058	1.277	.002
	Education	.020	.025	.037	.811	.018
	Occupation	.045	.034	.062	1.328	.015
Flipkart	(Constant)	4.147	.155		26.669	.000
	Gender	.138	.066	.096	2.086	.038
	Age	.009	.025	.016	.344	.031
	Education	.063	.027	.110	2.364	.019
	Occupation	.119	.042	.131	2.815	.005
Snapdeal	(Constant)	4.158	.286		14.522	.000
	Gender	.246	.120	.129	2.050	.041
	Age	.011	.041	.016	.265	.037
	Education	.155	.049	.197	3.167	.002
	Occupation	.008	.082	.006	.097	.023

a. Dependent Variable: Financial Advantage; All the p values are significant at 0.05 level

The descriptive statistics of the factor security & privacy (Table 23) reveals that the website Amazon has the highest mean value of 3.84 followed by Snapdeal ($\mu = 3.63$) and Flipkart ($\mu = 3.61$). Among the eleven variables 'shopping is better done at privacy of customer home' secured highest rating ($\mu = 3.89$) followed by the variables 'certified transaction platform with payment gateway mechanism ($\mu = 3.81$)' and 'consumers feel secure in providing sensitive information for online transactions ($\mu = 3.77$)'.

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In case of all the three online websites Amazon, Flipkart and Snapdeal the highly rated variable is 'shopping is better done at privacy of customer home' with mean values 3.99, 3.83 and 3.82 respectively. It is significant to note the total mean value for all the referred variables is 3.71 which indicate that factor security has a positive influence on the consumers' online purchase intentions.

Table 23. Security and privacy - descriptive statistics (mean values) n = 1200

S.No.	Variables	Amazon	Flipkart	Snapdeal	Total
1	Shopping is better done at privacy of customer home	3.99	3.83	3.82	3.89
2	Certified transaction platform with payment gateway mechanism	3.95	3.71	3.74	3.81
3	Consumers feel secure in providing sensitive information for online transactions	3.92	3.67	3.66	3.77
4	Provides adequate security features to create safety perceptions to consumers	3.87	3.70	3.65	3.76
5	Dependable security and privacy promise for online shopping	3.92	3.57	3.60	3.72
6	The website gives assurance that financial details will not be accessible by a third party	3.93	3.52	3.61	3.71
7	Customers personal information is protected	3.83	3.59	3.64	3.70
8	Security features used by the online stores are acceptable	3.74	3.55	3.67	3.65
9	Keeps the personal information confidential & do not misuse it	3.75	3.52	3.53	3.62
10	The review of customers feedback or comments on privacy issue are verified before taking any purchase decision	3.69	3.46	3.65	3.59
11	Customers privacy is guaranteed while shopping online	3.70	3.54	3.40	3.58
Total		**3.84**	**3.61**	**3.63**	**3.71**

Source: Primary data

The ANOVA test (Table 24) results reveals that the websites Amazon ($F = 0.732$, $p = 0.050<0.05$), Flipkart ($F = 4.389$, $p = 0.002<0.05$) and Snapdeal ($F = 2.606$, $p = 0.036<0.05$) shows that the dependent variable has a positive significant influence on the consumer purchase intentions with the predicators occupation, age, education level and gender.

The coefficients (Table 25) reveals that, in case of the three websites Amazon, Flipkart and Snapdeal, all the independent variables gender ($\beta = -0.069$, $p = 0.040$; $\beta = -0.067$, $p = 0.048$; $\beta = -0.058$, $p = 0.037$), age ($\beta = -0.023$, $p = 0.006$; $\beta = -0.096$, $p = 0.039$; $\beta = -0.030$, $p = 0.032$), education ($\beta = -0.021$, $p = 0.015$; $\beta = -0.042$, $p = 0.030$; $\beta = -0.180$, $p = 0.004$) and occupation ($\beta = -0.047$, $p = 0.019$; $\beta = -0.140$, $p = 0.003$; $\beta = -0.025$, $p = 0.015$) shows a negative significant coefficient with the dependent variable security & privacy. Thus, the results provide a strong support for the rejection of the null hypothesis relating to the relationships between independent variables gender, age, education and occupation and the dependent variable security & privacy in the case of all the three websites. Therefore, it could be concluded that security & privacy of a website strongly depends on the demographic factors.

The delivery factor (Table 26) indicate that the website Amazon has the highest mean value of 3.88 followed by Snapdeal ($\mu = 3.73$) and Flipkart ($\mu = 3.58$). Among the fourteen variables 'the products dispatched are well packaged' got highest rating ($\mu = 3.98$) followed by the variables 'effective system of tracking of shipping and delivery details ($\mu = 3.97$)' and 'the website provides gift packing facility (μ

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= 3.82)'. In case of Amazon, the highly rated variable is 'effective system of tracking of shipping and delivery details (μ = 4.12)'. For the websites, Flipkart and Snapdeal the variable 'the products dispatched are well packaged (μ = 3.92 and 3.98)' got highest rating. It is pertinent to note that the total mean value of all the fourteen variables is 3.74 which indicate that the factor delivery has a positive influence on the consumers online purchase behaviour.

Table 24. Security and privacy - ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
Amazon	Regression	1.519	4	.380	0.732	.050[b]
	Residual	254.821	491	.519		
	Total	256.340	495			
Flipkart	Regression	9.750	4	2.438	4.389	.002[b]
	Residual	253.251	456	.555		
	Total	263.002	460			
Snapdeal	Regression	6.336	4	1.584	2.606	.036[b]
	Residual	151.969	250	.608		
	Total	158.304	254			

a. Dependent Variable: Security & Privacy
b. Predictors: (Constant), Occupation, Age, Education, Gender

Table 25. Security and privacy - coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Amazon	(Constant)	3.932	.145		27.100	.000
	Gender	-.100	.068	-.069	-1.456	.040
	Age	-.013	.025	-.023	-.516	.006
	Education	-.011	.025	-.021	-.447	.015
	Occupation	-.034	.035	-.047	-.997	.019
Flipkart	(Constant)	4.198	.170		24.677	.000
	Gender	-.105	.073	-.067	-1.449	.048
	Age	-.057	.028	-.096	-2.066	.039
	Education	-.026	.029	-.042	-.898	.030
	Occupation	-.138	.046	-.140	-2.995	.003
Snapdeal	(Constant)	4.209	.238		17.717	.000
	Gender	-.092	.100	-.058	-.922	.037
	Age	-.016	.034	-.030	-.479	.032
	Education	-.117	.041	-.180	-2.878	.004
	Occupation	-.027	.068	-.025	-.393	.015

Dependent Variable: Security & Privacy; All the p values are significant at 0.05 level

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Table 26. Delivery - descriptive statistics (mean values) n = 1200

S.No.	Variables	Amazon	Flipkart	Snapdeal	Total
1	The products dispatched are well packaged	4.04	3.92	3.98	3.98
2	Effective system of tracking of shipping and delivery details	4.12	3.84	3.92	3.97
3	The website provides Gift Packing facility	3.98	3.67	3.77	3.82
4	There is an exact match between products ordered and products delivered	3.85	3.80	3.74	3.81
5	The behavior of the delivery person is pleasant	3.86	3.65	3.89	3.79
6	Time taken for delivery is acceptable due to price advantage	3.95	3.60	3.75	3.77
7	Facility to deliver the products ordered at conventional stores connected to website	4.01	3.50	3.67	3.75
8	Products are delivered on-time as promised by the online store	3.97	3.52	3.66	3.73
9	Quick delivery at an extra price is good facility	3.92	3.41	3.82	3.71
10	The online store delivers products at customers' convenience time	3.82	3.51	3.79	3.70
11	The products delivered are not damaged or broken	3.86	3.48	3.67	3.67
12	Pickup facility for returned products is available	3.93	3.35	3.71	3.66
13	There is similar treatment for delivery of reordered products	3.68	3.49	3.63	3.60
14	Delivery to any location specified at free of cost	3.36	3.36	3.27	3.34
Total		**3.88**	**3.58**	**3.73**	**3.74**

Source: Primary Data

The ANOVA test (Table 27) indicate that in the case of all three websites Amazon ($F = 0.425$, $p = 0.791>0.05$), Flipkart ($F = 3.573$, $p = 0.057>0.05$) and Snapdeal ($F = 2.089$, $p = 0.083>0.05$), the delivery factor does not show a significant influence on the predicators occupation, age, education level, and gender of the consumer's purchase intentions.

The coefficients (Table 28) between the dependent and independent variables reveals that, in case of all the three websites Amazon, Flipkart and Snapdeal, the independent variables gender ($\beta = 0.026$, $p = 0.588$; $\beta = 0.058$, $p = 0.213$; $\beta = 0.037$, $p = 0.567$), age ($\beta = 0.006$, $p = 0.892$; $\beta = 0.054$, $p = 0.250$; $\beta = 0.042$, $p = 0.504$), education ($\beta = 0.045$, $p = 0.328$; $\beta = 0.026$, $p = 0.576$; $\beta = 0.155$, $p = 0.114$) and occupation ($\beta = 0.038$, $p = 0.423$; $\beta = 0.162$, $p = 0.101$; $\beta = 0.086$, $p = 0.174$) shows positive but insignificant coefficient with the dependent variable delivery. Thus, the results provide a strong support for the acceptance of the null hypothesis relating to the relationships between independent variables gender, age, education and occupation with the dependent variable delivery in the case of all the three websites. Therefore, it could be concluded that the variable delivery does not depend on the demographic factors.

DISCUSSION

The perceived benefits of online shopping are playing a vital role in shifting the consumers shopping behaviour from conventional shopping to online shopping. To know the influence of the perceived benefits on the consumers' demographic profile in the case of all the three websites Amazon, Flipkart and

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Snapdeal the mean values are analyzed and to know the statistical significance the regression analysis is conducted. The descriptive statistics reveals that the convenience in online shopping is the highly perceived benefit followed by product variety and website functionality. The perceived benefits such as delivery, security & privacy, reliability, personalization, financial advantage and innovativeness also got significant ratings by the online shoppers.

Table 27. Delivery - ANOVA[A]

Model		Sum of Squares	df	Mean Square	F	Sig.
Amazon	Regression	.607	4	.152	.425	.791[b]
	Residual	175.264	491	.357		
	Total	175.871	495			
Flipkart	Regression	6.224	4	1.556	3.573	.057[b]
	Residual	198.582	456	.435		
	Total	204.805	460			
Snapdeal	Regression	4.195	4	1.049	2.089	.083[b]
	Residual	125.504	250	.502		
	Total	129.699	254			

a. Dependent Variable: Delivery
b. Predictors: (Constant), Occupation, Age, Education, Gender

Table 28. Delivery - coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Amazon	(Constant)	3.855	.120		32.030	.000
	Gender	.031	.057	.026	.542	.588
	Age	.003	.021	.006	.136	.892
	Education	.020	.021	.045	.979	.328
	Occupation	.023	.029	.038	.802	.423
Flipkart	(Constant)	3.894	.151		25.849	.000
	Gender	.080	.064	.058	1.248	.213
	Age	.028	.025	.054	1.153	.250
	Education	.015	.026	.026	.560	.576
	Occupation	.141	.041	.162	3.453	.101
Snapdeal	(Constant)	4.035	.216		18.689	.000
	Gender	.053	.091	.037	.582	.561
	Age	.020	.031	.042	.668	.504
	Education	.092	.037	.155	2.478	.114
	Occupation	.084	.062	.086	1.364	.174

Dependent Variable: Delivery; All the p values are not significant at 0.05 level.

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In the case of website functionality, 'the website has user-friendly interface facilitating easy navigation' is the most influencing variable. 'Comparison of wide range of product features is possible' is the most influencing variable under product variety. The highly influencing variable of Innovativeness is 'attracts customers with attention drawing programmes like flash sales'. In case of personalization the highly influencing variable is 'online store provides mobile app based shopping'. 'Purchasing online is more convenient as it has 24/7 access' is the most influencing variable of the convenience factor. Under reliability the highly influencing variable is 'online store provides timely delivery of products'. In the similar manner the highly influencing factor of financial advantage is 'payment after delivery is a valuable facility'. For security & privacy, the variable 'shopping is better done at privacy of customer home' is most highly rated by the respondents. Finally, in the case of delivery, 'products dispatched are well packaged' is highly influencing variable of the consumers' online behaviour. Further, it is found that all the variables are significant factors of perceived benefits.

The statistical analysis reveals that in the case of all the three websites Amazon, Flipkart and Snapdeal, the demographic factors gender, age, education and occupation shows significant relation with the factors of perceived benefits (website functionality, product variety, innovativeness, personalization, convenience, reliability, financial advantage, and security & Privacy). The delivery factor does not show significant relation with the demographic factors. Thus, it could be concluded that the all the perceived benefits except delivery depend on the demographic factors (see Table 29).

Table 29. Summary of the hypotheses outcomes

1. Influence of Demographic factors on Consumers' Perceived Benefits:	
H_{01}: The demographic factors (gender, age, education and occupation) do not have significant influence on consumers' perceived benefits (website functionality, product variety, innovativeness, personalization, convenience, reliability, financial advantage, security & privacy).	Rejected
H_{02}: The demographic factors (gender, age, education and occupation) do not have significant influence on consumers' perceived benefits (delivery).	Accepted
2. Perceived Benefits:	
H_{01}: Website Functionality is not significantly considered as perceived benefit.	Rejected
H_{02}: Product Variety is not significantly considered as perceived benefit.	Rejected
H_{03}: Innovativeness is not significantly considered as perceived benefit.	Rejected
H_{04}: Personalization is not significantly considered as perceived benefit.	Rejected
H_{05}: Convenience is not significantly considered as perceived benefit.	Rejected
H_{06}: Reliability is not significantly considered as perceived benefit.	Rejected
H_{07}: Financial Advantage is not significantly considered as perceived benefit.	Rejected
H_{08}: Security & Privacy is not significantly considered as perceived benefit.	Rejected
H_{09}: Delivery is not significantly considered as perceived benefit.	Rejected

CONCLUSION AND MANAGERIAL IMPLICATIONS

The world of retailing is undergoing an unprecedented wave of innovation. New business models are having e-retailing as an integral part and focusing a wider retail value chain. At the same time, consum-

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ers' behavior and expectations are evolving from time to time and are being influenced significantly by online retailing. The competition among e-vendors is getting intensified year by year and all of them are adopting innovative and creative approaches to attract, satisfy and retain customers. Due to ever increasing work pressure, multiple roles in life style, paucity of time, consumers are on the lookout of such facility that can suit to their changing needs. The findings of the study drive to the conclusion that the online shoppers have positive opinion on online retailing. As per the findings of the study, convenience is the highly perceived benefit followed by product variety and website functionality in online shopping. Perceived benefits such as delivery, security & privacy, reliability, personalization, financial advantage and innovativeness also got significant ratings by the online shoppers. However, the study established the gap between the optimum benefit and the actual benefit perceived. This gap in all the nine variables indicates an opportunity to the e-vendors to initiate measures in respective areas for enhancing the benefits to the consumers. Out of the five variables identified as perceived risks, the study found that health risk is highly significant followed by security & privacy risk and convenience risk. The product related risk and financial risk were also considered significant by the respondents. E-vendors have to take measures to minimize risk perceptions of the consumers so that the overall value perception of the consumers from the e-vendors can be optimized.

However, they are certain areas wherein improvements are necessary to achieve higher quality perceptions of the online shoppers. The existing web features of the e-retailers are not providing live chat facility; therefore, the e-retailers shall provide live chat facility 24/7 for effective direct interaction. The e-retailers should recognize the problem of the shoppers and facilitate quick movement to final shopping cart web page by providing a choice to eliminate all other web pages. Reviews and customers' feedback stand as an excellent support the consumers to arrive at a purchasing decision. The e-retailers can provide more reviews and ensure technologically that they are genuine and reliable. E-marketing channels are accessible mostly to the urban population due to the limited availability of delivery channels. Due to this reason, huge market potential in the rural areas is not exploited. The e-retailers should find delivery channels in the rural markets also. Formidable cyber law should be initiated and there should be aggressive policies against the frauds of online retailers. The legal provisions should prevent the e-vendors using and sharing consumer information for any other purpose to others. Further, there must be specific provisions to facilitate web information in regional languages, so that the consumers can understand easily and place orders.

LIMITATIONS AND FURTHER RESEARCH DIRECTIONS

The scope of the study confines to determine the consumers perceived risks and their impact on the shopper's behaviour. The other behavioral dimensions are not included in the study. The results of the study could be further used by the researchers and practitioners for conducting future studies in this area. The researchers can focus on the socio economic and cultural factors influencing the consumers' online shopping behaviour. Further, the influence of various factors on the consumers' purchase decision process can also be studied. The researchers can focus on the online shoppers' behaviour on purchase of goods and services, and also focus on the potential of e-marketers to reach the organizational markets.

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REFERENCES

Atchariyachanvanich, K., Okada, H., & Sonehara, N. (2008). Exploring factors effecting the continuance of purchasing behavior in internet shopping: Extrinsic benefits and intrinsic benefits. *IPSJ Digital Courier*, *4*, 91–102. doi:10.2197/ipsjdc.4.91

Chakraborty, D. (2016). Factors affecting consumer purchase decision towards online shopping: A study conducted in Gangtok, Sikkim. *Adarsh Business Review*, *3*(1), 11–18.

Devaraj, S., Fan, M., & Kohli, R. (2006). Examination of online channel preference: Using the structure-conduct-outcome framework. *Decision Support Systems*, *42*(2), 1089–1103. doi:10.1016/j.dss.2005.09.004

Elwalda, A., Lü, K., & Ali, M. (2016). Perceived derived attributes of online customer reviews. *Computers in Human Behavior*, *56*, 306–319. doi:10.1016/j.chb.2015.11.051

Fei, Y. M., & Liat, C. B. (2015). Factors Affecting Consumer's Continuance Online Purchase Intention in Malaysia. *Global Journal of Business and Social Science Review*, *1*(1), 309–321.

Forsythe, S., Liu, C., Shannon, D., & Gardner, L. C. (2006). Development of a scale to measure the perceived benefits and risks of online shopping. *Journal of Interactive Marketing*, *20*(2), 55–75. doi:10.1002/dir.20061

Har Lee, C., Cyril Eze, U., & Oly Ndubisi, N. (2011). Analyzing key determinants of online repurchase intentions. *Asia Pacific Journal of Marketing and Logistics*, *23*(2), 200–221. doi:10.1108/13555851111120498

Heijden, H. V., & Verhagen, T. (2004). Online store image: Conceptual foundations and empirical measurement. *Information & Management*, *41*(5), 609–617. doi:10.1016/j.im.2003.07.001

Hirst, A., & Ashwin, M. (2009). Cross cultural difference between online shoppers in London and Bangkok. *International Review of Business Research Papers*, *5*(4), 167–191.

Hsu, S., & Bayarsaikhan, B. (2012). Factors Influencing on Online Shopping Attitude and Intention of Mongolian Consumers. *Journal of International Management Studies*, *7*(2), 167–176.

Jadhav, V., & Khanna, M. (2016). Factors Influencing Online Buying Behavior of College Students: A Qualitative Analysis. *Qualitative Report*, *21*(1), 1–15.

Jiradilok, R., Malisuwan, S., Madan, N., & Sivaraks, J. (2014). The Impact of Customer Satisfaction on Online Purchasing: A Case Study Analysis in Thailand. *Journal of Economics*. *Business and Management*, *2*(1), 5–11.

Katta, R. M. R., & Patro, C. S. (2016). Online Shopping Behavior: A Study of Factors Influencing Consumer Satisfaction on Online viz-a-viz Conventional Store Shopping. *International Journal of Sociotechnology and Knowledge Development*, *8*(4), 21–36. doi:10.4018/IJSKD.2016100102

Katta, R. M. R., & Patro, C. S. (2017). Influence of Web Attributes on Consumer Purchase Intentions. *International Journal of Sociotechnology and Knowledge Development*, *9*(2), 1–16. doi:10.4018/IJSKD.2017040101

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A Trust-Based Consumer Decision Model in Electronic Commerce: The Role of Trust, Risk, and Their Antecedents. *Decision Support Systems*, *44*(2), 544–564. doi:10.1016/j.dss.2007.07.001

Lee, G. G., & Lin, H. F. (2005). Customer perceptions of e-service quality in online shopping. *International Journal of Retail & Distribution Management*, *33*(2), 161–176. doi:10.1108/09590550510581485

Lee, K., & Joshi, K. (2007). An empirical investigation of customer satisfaction with technology mediated service encounters in the context of online shopping. *Journal of Information Technology Management*, *18*(2), 18–37.

Mee, L. Y., & Huei, C. T. (2015). A profile of the Internet shoppers: Evidence from nine countries. *Telematics and Informatics*, *32*(2), 344–354. doi:10.1016/j.tele.2014.10.002

Nayak, P. K., & Debashish, S. S. (2017). Young Consumers Online Shopping Decision Influencers: A study on University Students of Odisha. *Effulgence*, *15*(1), 45–50.

Nazir, S., Tayyab, A., Sajid, A., Rashid, H., & Javed, I. (2012). How Online Shopping is Affecting Consumers Buying Behavior in Pakistan? *International Journal of Computer Science Issues*, *9*(3), 486–495.

Park, C., & Kim, Y. (2003). Identifying key factors affecting consumer purchase behavior in an online shopping context. *International Journal of Retail & Distribution Management*, *31*(1), 16–29. doi:10.1108/09590550310457818

Patro, C. S. (2016). Attitudes of E-Shoppers and Non E-Shoppers towards E-Shopping: A Comparative Study. *International Journal of Cyber Behavior, Psychology and Learning*, *6*(2), 96–108. doi:10.4018/IJCBPL.2016040106

Patro, C. S. (2017). Consumer Attitude and Loyalty in Online Shopping Environments: A Study of Facets Driving Shoppers Towards E-Stores. *International Journal of Cyber Behavior, Psychology and Learning*, *7*(3), 57–72. doi:10.4018/IJCBPL.2017070105

Putro, H. B., & Haryanto, B. (2015). Factors Affecting Purchase Intention of Online Shopping in Zalora Indonesia. *British Journal of Economics*. *Management & Trade*, *9*(1), 1–12.

Ranganathan, C., & Ganapathy, S. (2002). Key dimensions of business-to-consumer websites. *Information & Management*, *39*(6), 457–465. doi:10.1016/S0378-7206(01)00112-4

Rao, K. R. M., & Patro, C. S. (2017). Shopper's Stance Towards Web Shopping: An Analysis of Students Opinion of India. *International Journal of Online Marketing*, *7*(3), 42–54. doi:10.4018/IJOM.2017070104

Rasool, A., Gupta, V., Slathia, B., & Mahajan, G. (2017). Online Shopping Adoption and Influencing Factors: A Study in Karnataka. *Apeejay-Journal of Management Sciences and Technology*, *4*(2), 29–40.

San Lim, Y., Heng, P. C., Ng, T. H., & Cheah, C. S. (2016). Customers' online website satisfaction in online apparel purchase: A study of Generation Y in Malaysia. *Asia Pacific Management Review*, *21*(2), 74–78. doi:10.1016/j.apmrv.2015.10.002

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Saravanan, R., Yoganandan, G., & Ruby, N. (2013). A Study on Online Shopping Behaviour of Teachers Working in Self-Financing Colleges in Namakkal District With Special Reference to K.S.R College of Arts And Science, Tiruchengode, Namakkal District. *International Journal of Research in Commerce*. *IT & Management*, *3*(6), 31–37.

Sharma, N. V., & Khattri, V. (2013). Study of online shopping behavior and its impact on online deal websites. *Asian Journal of Management Research*, *3*(2), 394–405.

Shergill, G. S., & Chen, Z. (2005). Web-based shopping: Consumers' attitudes towards online shopping in New Zealand. *Journal of Electronic Commerce Research*, *6*(2), 79–94.

Wolfinbarger, M., & Gilly, M. C. (2003). eTailQ: Dimensionalizing, measuring and predicting e-tail quality. *Journal of Retailing*, *79*(3), 183–198. doi:10.1016/S0022-4359(03)00034-4

Yi, Y., & Gong, T. (2008). The Electronic Service Quality Model: The Moderating Effect of Customer Self-Efficacy. *Psychology and Marketing*, *25*(7), 587–601. doi:10.1002/mar.20226

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Chapter 92
Analyzing Online Customer Satisfaction:
The Impacts of Perceived Benefits, Perceived Risks, and Trust

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ABSTRACT

Online shopping is becoming more and more popular in China. This study investigates factors that might influence customer satisfaction towards online shopping. A theoretical framework was established to explain causal relationships between perceived benefits, perceived risks, trust in online shopping and customer satisfaction. Data was collected from 402 respondents who had experience in online shopping in mainland China. Correlations and regression analyses were done to reveal that three factors of perceived benefits (i.e., shopping convenience, product selection, and hedonic enjoyment), product risk, and trust in online shopping were significant predictors of customer satisfaction. Implications for e-marketers were discussed, and limitations and future research were presented.

INTRODUCTION

Alibaba's 2017 11.11

Starting from 2009, Alibaba Group held the world's largest online shopping event on 11 November each year, known as the "11.11 Global Shopping Festival" This year, the event has been extended from a one-day shopping event on 11 November to a shopping festival that rolled out through 19 October to 11 November. Further validating the New Retail model to offer seamless online and offline shopping experience, and going global are the main themes this year. Alibaba reported 168.3 billion yuan (US$ 25.3 billion) in GMV compared to the 120.7 billion yuan (US$ 17.8 billion) last year. At 13 hours and 9 minutes into the sale, total GMV surpassed the total for the 24-hour sale last year. Sales growth was 39%. … (Report from Asia Distribution and Retail, November 2017)

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A return/rejection rate of 35% was recorded after this year's 11.11 Shopping Festival. Main reasons were poor effects, quality discrepancy with description and imitation brand. Clothing reached the highest rejection rate of 45%, due to color differences and sizes, etc. (Express Delivery Magazine, November 2017)

Customer satisfaction is a judgment that the product or service provides a pleasurable level of consumption-related fulfillment, including levels of under or over fulfillment. It is important because it falls down an optimist outcome from the specific resources and the fulfillment of unmet needs and wants. According to Khristianto, Kertahadi, and Suyadi (2012), customer satisfaction is commonly viewed as a result of comparison between the consumption expectation and experiences, and customer satisfaction is achieved when the final deliverable (i.e., experience) meets or exceeds a customer's expectation. Satisfied customers are most likely to have the intention to repurchase if the service provider reached or exceeded their expectation. Satisfaction and loyalty are the key elements that determine the success of market concept implementation. Identifying the variables of customer satisfaction is significant as it acts as a benchmark of the business performance, and it also serves as guidelines for future improvement (Alan & Yasin, 2010). Customer satisfaction may reduce the outflow of customers. The cost of attracting new customers is significantly higher than maintaining current customers and the intention of repurchase is higher and the loyalty of the customer to purchase in the same shop is stabilized when customers are satisfied with the products and services. Moreover, negative word of mouth would be reduced as satisfied customers are more likely to recommend their choice or to share their shopping experience to the people around. Simply, customer satisfaction is a reflection of business strategy and management. It helps an organization to monitor their business in a better way.

Internet is not only a global network for communication and information sharing, it has become a platform for transaction of products and services between suppliers and buyers. Many marketers, nowadays, are beginning to develop online product marketing. Online shopping is so popular today that some people predict that retails stores will decrease and gradually disappear in the end. The rapid development of online shopping provides business opportunities as well as flexibility and convenience for customers. Both suppliers and consumers seem to enjoy this type of transaction, however, influencing factors of customer satisfaction towards online shopping need to be explored to help online retailers to have a better management system, and to maintain a sustained and sound growth.

Perceived Benefits

Wu (2003) described perceived benefits as meeting consumers' needs and wants by the sum of online shopping advantages and satisfaction. The potential benefits of online shopping for consumers involve in speed and convenience, various selection, low price, personal attention, and easy access to information (Zhou, Dai & Zhang, 2007). Forsythe, Liu, Shannon and Gardner (2006) proposed three dimensions of perceived benefits of online shopping: shopping convenience, product selection and hedonic enjoyment. Shopping convenience is perceived to be the ability to shop almost anytime from a variety of locations without visiting a store. Product selection is the availability of a wide range of products and product experience, custom designing products, etc. There is considerable empirical support for hedonic motives in online shopping (Parsons, 2002).

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Shopping Convenience

Wolfinbarger and Gilly (2001) referred convenience as saving time and effort which consist of physical and mental effort. Consumers make online purchase for both convenience and enjoyment (Childers, Carr, Peck & Carson, 2001). The main reason that motivates consumers to shop online is conveniences (Swaminathan, Lepkowska & Rao, 1999), and it shortens the geographical distance. Jayawardhena and Wright (2009) proved that online shopping reduces travel costs and related barriers and increases efficiency in searching. Wolfinbarger and Gilly (2001) revealed that consumers can shop anytime and everywhere as long as they are able to get online. Convenient access to product information could facilitate and help shoppers' making an online purchase decision (Loshe & Spiller, 1999). Monsuwe, Delleart and Ruyter (2004) identified that convenience help consumers to make purchase decision efficiently. Consumers often love to compare prices from shop to shop as they want to buy their desired product with the cheapest price. They need to spend much time to walk around which requires more time and effort. But when they shop online, they can easily obtain necessary information and online shopping saves time and effort. Thus, online marketers need to ensure online shopping process easy and simple (Jarvenpaa & Todd, 1996). So, the following hypothesis is formulated:

H(1): Conveniences significantly and positively influence customer online shopping satisfaction.

Product Selection

Online shopping offers large choices of products and brands compared to traditional shopping. Consumers have more choices of features, types, and categories. Online retailers often offer a wider range of different products, and provide sufficient information about their products. According to Forsythe et al. (2006), product selection helps consumers in making decision with beneficial products. Studies also reported that online customers prefer wider selection that is even more important than lower price. Mathieson (1991) suggested online marketers make feel to the customers that they are independent of endorsing any company's product. It ensures that customers avail enough choices of product variances in the category in order to make suitable decision (Khatibi, Haque & Karim, 2006). Bakos (1997) identified that lower search costs help consumers seek greater product to satisfy their needs. Raijas (2002) proved that superior variety of products can contribute consumers to meet their needs easier. Therefore, the hypothesis is set as follows:

H(2): Product selection significantly and positively influences customer online shopping satisfaction.

Hedonic Enjoyment

Hedonic value has been studied in both traditional and online shopping (Babin & Attaway, 2000). Similar to traditional shoppers, online shoppers also shop for leisure intentions. According to Kim (2002), consumers who prefer online shopping are also fulfilling the wants of experience and emotion, which demonstrates that internet shoppers are akin to in-store shoppers as they need utilitarian as well as hedonic value. Parsons' (2002) study found that there are plentiful hedonic shopping motivations for online shoppers, including: diversion, self-gratification, and learning about new trends. Hedonic motivations might be evaluated as predictors of online shopping and e-impulse purchases. Online sellers often try to

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generate a hedonic environment that is favorable by many consumers with atmospheric signals (Childers et al., 2001). The main motivation of hedonic consumers for shopping is the pleasure in the procedure (To, Liao & Lin, 2007). Hedonism is oriented around the entertainment and enjoyment values that can be pertained through an online shopping experience (Park & Sullivan, 2009). Hedonism is an essential component of online shopping experiences and determines consumer buying tendency. Koo and Ju's (2002) study verified that online shopping value is created by pleasant, stimulating and novel websites that increase excitement and enjoyment during shopping. Thus, the following hypothesis is established:

H(3): Hedonic enjoyment significantly and positively influences customer online shopping satisfaction.

Perceived Risk

It is widely recognized that consumers face uncertain outcomes when purchase a product or service (Gratorex & Mitchell, 1994). Consumers are afraid of loss or gain in online shopping. Perceived less risk is important in influencing customer satisfaction and decision by online store acceptance (Hsu & Chiu, 2004). Consumers often use different strategies to reduce risk. For example, they do more research to collect information or depend on a famous brand to decrease the amount of risk (Gratorex & Mitchell, 1994). Perceived risk associated with online shopping may include different types. Forsythe et al. (2006) identified three categories: financial risk, product risk and time/convenience risk.

Financial Risk

Perceived financial risk is the possibility of monetary loss rising from online shopping transaction security. Security regarding the use of credit cards is one of the most serious concerns among online consumers (Keeney, 1999). Online stores have made great efforts in increasing their image and building up trust with customers to ensure high quality protection of online transactions. Customers feel secure when online stores use a good quality security online payment system such as Alipay. Some online platform allows trust entities or banks to hold the buyer's payments and forward them to the seller after the buyer has received the product to reduce financial risk. Therefore, it is hypothesized that:

H(4): Financial risk is negatively but significantly correlated with customer online shopping satisfaction.

Product Risk

Product risk is defined as the loss incurred when a brand or product does not perform (Horton, 1976). A higher perceived product quality may increase the perceived value consequently and a customer satisfaction (Snoj, Lorda & Mumel, 2004). During online shopping, however, customers do not physically know about the product, but see the product in online stores as they search for and buy products. Customers cannot physically touch and feel about the product, or try the product. Due to lack of face to face communication, there might be problems such as color difference, and product features not matching context, etc. Customers, thus, may develop low trust and perceive high level of risk towards online shopping. Walter, Gupta and Su (2006) pointed out that perceived product quality uncertainty is a direct cause of consumers' perceived risk of online store. Hence, the following hypothesis is developed:

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H(5): Product risk is negatively but significantly correlated with customer online shopping satisfaction.

Time/Convenience Risk

The perception that time, convenience, or effort may be wasted when a product purchased is repaired or replaced is called time/convenience risk (Hanjun, Jaemin, Joo & Sung, 2004). Time risk is often referred to as the inconvenience occurred during online transaction, such as difficulty of navigation, difficulty of submitting orders, or delays in receiving orders. The decision of which website to use, the time of searching products, and the mode of transaction payment are all potential negative effects on customer satisfaction towards online shopping (Forsythe et al., 2006). On the basis of these studies, the hypothesis is set as follows:

H(6): Time/Convenience risk is negatively but significantly correlated with customer online shopping satisfaction.

Trust in Online Shopping

Morgan and Hunt (1994) described trust as confidence in the exchange partner's reliability and integrity. Similarly, Doney and Cannon (1997) stated trust as the perceived credibility and benevolence of a target. Trust or confidence in online business is dominant in determining the perceived level of risk associated with online purchasing. According to Medintz (1998), customer concerns about security, privacy, and protection. Shannon's (1998) research revealed that providing credit card information to an online business that has no physical location increases the perception of risk for certain customers. Many customers do not trust that the online businesses that they are dealing with would keep their purchase data confidential (Wang, Lee & Wang, 1998). Upon the research result of Singh and Sirdeshmukh (2000), trust is a crucial variable that determines outcomes at different points in the process, and serves as glue that holds the relationship together. As regards online shopping, customers who do not trust electronic business would not be loyal to it even though they are generally satisfied with the experience. In the sense, satisfaction is likely to emerge only after customers build a certain level of trust in online shopping. Consequently, the hypothesis is formed as follows:

H(7): Trust in online shopping is positively and significantly correlated with online shopping satisfaction.

METHOD

Respondents

The data were collected from 402 respondents with online purchase experience in two major cities situated on the Pearl River Delta (in Southern China). All respondents were ethnic Chinese, whose ages ranged from 18 to 46 years, and the proportion of male and female is 41.7% and 58.3%, respectively. Most respondents (66.8%) had bachelor degrees, and 70.6% had income under $8,000 per month. About 36.4% of respondents spent more than 25 hours on the internet.

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Materials

The questionnaire assessed five topic areas, namely, the employee's demographics, perceived benefits (including: shopping convenience, product selection, and hedonic enjoyment), perceived risk (including: financial risk, product risk, and time/convenience risk), and trust in online shopping, and customer satisfaction. The demographics section asked the respondents to report their gender, age, ethnicity, education level, income, time spent on internet, and experience of online purchase. All the questions used a five Likert scale with 1= strongly disagree, and 5=strongly agree.

- **Perceived Benefits:** A scale of 12 items of perceived benefits covering the aspects of shopping convenience, product selection, and hedonic enjoyment was adopted from Forsythe et al. (2006). Sample questions are: "I can shop whenever I want" and "I am exciting to receive a package."
- **Perceived Risk:** A scale of 16 items of perceived risk (financial risk, product risk, and time/convenience risk) was adopted from Forsythe et al. (2006). A sample question is: "I may not get what I want."
- **Trust in Online Shopping:** A scale of 4 items was adopted from Dodds, Monroe and Grewal (1991). A sample question is: "The performance of online website meets my expectations."
- **Language of the Questionnaire:** The original English items were translated into simplified Chinese script by a bilingual professor at a university in China. Another bilingual professor at the same university examined the translated items for their English meaning and evaluated the two versions as equivalent.

Procedure

Data were collected through a web survey within several weeks. Web survey is a relatively quick and inexpensive method compared to other survey methods. As this study is about online shopping satisfaction, it is believed that only those who often surf on the internet may have online purchasing experience. Among the 610 completed questionnaires, only 402 respondents with online purchase experience were considered as valid replies and entered into data analysis.

RESULTS

Scale Reliabilities and Correlations

Cronbach alpha scale reliabilities were run on Customer Satisfaction towards Online Shopping (the dependent variable), the three Perceived Benefits dimensions (Shopping Convenience, Product Selection, and Hedonic Enjoyment), three Percieed Risk dimensions (Financial Risk, Product Risk, and Time/Convenience Risk), and Trust in Online Shopping. Reliabilities for Customer Satisfaction was .82, Trust in Online Shopping was .79. The reliabilities for the Perceived Benefits dimensions were .83 for Shopping Convenience, .89 for Product Selection, and .78 for Hedonic Enjoyment. As regards Perceived Risk, the reliabilities were .73 for Financial Risk, .82 for Product Risk, and .73 for Time/Convenience Risk.

All of the variables were then assessed for correlations. The variable means, standard deviations, intercorrelations, and scale reliabilities are shown in Table 1.

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Table 1.Means, SDs, alpha reliabilities, and correlations of customer satisfaction with perceived benefits, perceived risks, and trust in online shopping

	Alpha	Mean	SD	1	2	3	4	5	6	7
1. Customer Satisfaction	.82	3.41	.53							
2. Shopping Convenience	.83	3.78	.59	.46						
3. Product Selection	.89	3.84	.57	.36	.42					
4. Hedonic Enjoyment	.78	3.65	.49	.36	.28	.37				
5. Financial Risk	.73	3.49	.49	-.18	.04	-.04	-.01			
6. Product Risk	.82	4.07	.57	-.21	.08	.25	.24	.38		
7. Time/Convenience Risk	.73	3.20	.73	-.05	-.03	-.23	-.15	.34	.01	
8. Trust in Online Shopping	.79	3.48	.52	.63	.42	.35	.45	-.24	-.11	-.18

Significance levels for the correlations were: for $r > .17$, $p < .001$; for $r > .14$, $p < .005$; for $r > .12$, $p < .01$, for $r > .10$, $p < .05$.

The hypotheses were all tested using the correlations between the independent variables and the dependent variable. As can be seen from Table 1, there were highly significant, positive correlations between the mean scores on Customer Satisfaction and on all three of the Perceived Benefits dimension, with their r values ranging from .36 ($p < .001$) to .46 ($p < .001$), which lent strong support to H(1) to H(3). The same pattern of significant, but negative correlations were found for the two Perceived Risk dimensions and Customer Satisfaction towards Online Shopping (-.18 for Financial Risk, and -.21 for Product Risk, all *ps* < .001), which strongly supported H(4) and H(5). No significant correlation was found between Time/Convenience Risk and Customer Satisfaction towards Online Shopping, so H(6) was rejected. A significant and positive correlation was found for Trust in Online Shopping and Customer Satisfaction towards Online Shopping (.63, $P < .001$), which supported H(7).

Tests for Common-Method Bias and Multicollinearity

Whereas all the items were evaluated by every respondent, tests for common-method bias and multicollinearity were conducted. Common-method bias was assessed (following O'Connor & Morrison, 2001) by factor analyzing all the variables together, using the maximum-likelihood approach with a forced, one-factor solution. In this method, the resultant χ^2 value is then divided by the degrees of freedom to assess model fit, whereby a ratio of less than 2.00:1 would indicate a good fit (i.e., common-method bias). For the data in this study, the ratio was 14.93:1, indicating that common-method bias was not problematic.

Multicollinearity was assessed with a "tolerance" ($1\text{-}R^2$) test for each independent variable. According to Hair, Anderson, Tatham, and Black (1998, pp. 191-193), a tolerance value of less than .10 is problematic. The tolerances for the independent variables ranged from .70 to .92. Whereas all of the tolerance values were well above the recommended cutoff of .10, multicollinearity was not considered a problem for these data.

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Regression

To assess the strength of the relationships between the independent variables and the dependent variable, a hierarchical, multivariate, step-wise regression was run while controlling for demographics.

A total of 54% of the variance was explained, $F(5,393) = 184.33$, $p < .001$ by five variables. The Perceived Benefits dimensions of Shopping Convenience accounted for 5% of the variance. In terms of power, according to Cohen (1992), the variance explained by the Shopping Convenience variable would yield a small "effect size," $f^2 = .05$ (where $f^2 = R^2 / [1-R^2]$). Cohen uses minimum cutoff values of .02 for a small effect, .15 for a medium effect, and .35 for a large effect. Product Selection explained 1%, and Hedonic Enjoyment explained 5%, yielding a small effect ($f^2 = .05$). Product Risk under Percived Risk explained 3%, also yielding a small effect ($f^2 = .03$). Even though the overall effect of the regression was small, the results lent further support to H(1) to H(3) and H(5).

The remaining 40% of the variance was explained by Trust in Online Shopping, yielding a large effect ($f^2 = .67$). Since the Trust variable produced the most powerful effect, the result further supported H(7).

The results of the regression are presented in Table 2.

Table 2. Stepwise regression for customer satisfaction

Customer Satisfaction		
Predictors	**Beta**	**ΔR^2**
Perceived Benefits		
Shopping Convenience	.20****	.05
Product Selection	.12*	.01
Hedonic Enjoyment	.23****	.05
Perceived Risks		
Financial Risk	-.07	
Product Risk	-.29****	.03
Time/Convenience Risk	-.01	
Trust in Online Shopping	.41****	.40
Total R^2		**.54**
Final F		**89.59****
df		**5,393**

Note: *p<.05, **p<.01, ***p<.005, ****p<.001.

The total df does not equal to N-1 due to list-wise deletion of cases with missing data.

DISCUSSION

The results revealed a number of findings with regard to customer satisfaction towards online shopping, and about variables that can influence the degree of satisfaction.

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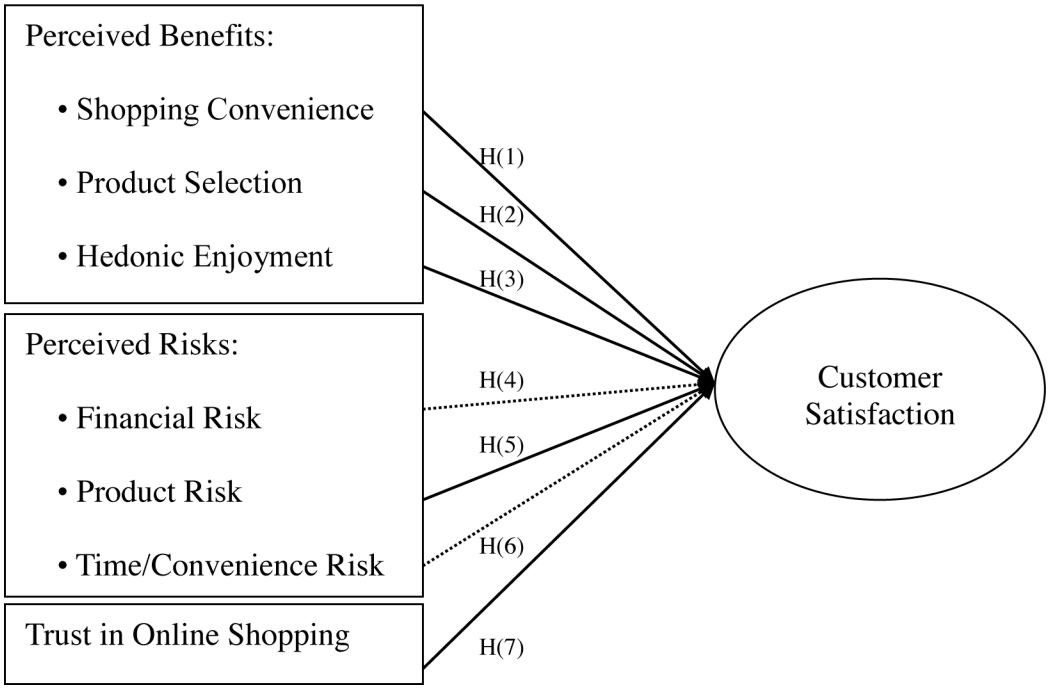
Convenience is the most well-known motivation which encourages consumers to shop online. While most consumers regard convenience as advantageous comparing to traditional shopping, it also encourages impulse buying (Dawson & Kim, 2009). As LaRose (2001) pointed out, online stores are not constrained by opening and closing hours, physical locations, or, product availability. Online shopping can be done at anytime and anywhere as long as consumers want to. It is available on personal computer or smart phone, and it allows around the clock business. Shopping online enables busy working people to visit stores without disturbing their schedule, reduce travel necessity, and save time and energy consumption. It may not be affected by bad weather. People do not have to dress up, drive, or queue in a line in front of a cashier. On the other hand, online retailers are acclaimed as "no pollution" shops.

Figure 1. Online shopping and customer satisfaction



Online shopping provides broader selection of opportunities and greater access to information. Consumers can compare price and benefits offered by various sellers worldwide (Kim, 2002), and window shop a variety of products with the utmost comfort at home. Most physical stores offer a limited array of products. Nevertheless, online stores often offer a variety with diverse features. Shopping online allows customers to have access to several brands and products from different sellers at one place. Moreover, without spending money on travel, they can shop for the latest fashion in other parts of the country or even the world. If one store is out of stock, there surely will be another online store in which the product is available.

Goldsmith and Goldsmith (2002) revealed that hedonic value is a psychological variable that influences an individual's decision to participate in online fashion shopping. The findings of the study show that consumers with high hedonic shopping values tend to favor online shopping, because direct interaction

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with product or salespeople reduces hedonic arousal. A hedonic customer seems to be more enjoyable of the purchase by clicking stores than visiting bricks. This finding implies e-marketing management that in order to be successful, they should increase the hedonic or entertainment value of their website. The fun element in website design is necessary to attract and retain online customers. It also reinforces the fact that customers with hedonic shopping values perceived greater benefits in online shopping. Restrictions of opening hours and poor customer service attitudes of traditional stores negatively affect customers' shopping mood. As Yu and Bastin (2010) pointed out, emotions dominate impulse buying process, and impulse buying behavior is a result of hedonic motivation.

Product risk has the most significant negative impact on customers' online purchase (Bhatnagar & Ghose, 2004), and it was found to have significant impact on the frequency of purchasing online (Forsythe & Shi, 2003). Online shoppers do not have physical contact with product or its performance, so they may have low trust and perceive high risk due to lack of physical sense (looking, touching, tasting, and smelling). Reducing consumers' perception of product risk may enhance customer satisfaction. In this sense, retailers online should provide clear, precise, and understandable information, and quality of their product should be the same as described at company's website.

Trust in online shopping was the dominant predictor of customer satisfaction. It alone explained 40% of the total variance. The result of the regression analysis indicates that trust in online shopping plays a crucial role in determining customer's online shopping satisfaction.

Building trusting relationship is an enormous difficult challenge that faces every organization. It may require companies to go beyond bottom-line profit making, and to differentiate themselves from competitors. Vanguard Group, the leader in building trusting relationship with their customers, has a retention rate of over 90%. Being the second largest mutual-fund seller in the world, it does not sell anything on its website, but solely devotes to continuous education of both current and potential investors, and providing information such as tax regulations and financial planning. By demonstrating to customers that the organization truly cares about them, and want to assist them in investment return and profit maximization, a strong trusting relationship is established and strengthened to guarantee customer satisfaction.

CONCLUSION

This study revealed that shopping convenience, product selection, hedonic enjoyment and trust in online shopping have positive effect on customer satisfaction towards online shopping. Most respondents agreed that online shopping has advantages over traditional shopping. It saves time, effort and money, relieves stress, and most of all, provides flexibility and convenience. The result shows that trust contributes the most to customer satisfaction, while product risk has negative effect on retaining customers in online shopping. The relative high mean scores of perceived risks in this study implied that online shopping is still considered a risky proposition in spite of its numerous benefits. To reduce online consumers' perception of risk, and to increase the possibility of purchases, marketers should take measures to minimize perceived product risk. Particularly, sufficient and accurate information of products should be provided to reduce consumers' uncertainty in product handling. Customer satisfaction is enhanced on the basis of a trusting relationship when customers receive more benefits.

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Limitations and Future Research

The sample size of this study is small, and few variables are included in the framework. Future research may enlarge the sample size, present more antecedents and even outcomes. This research used a quantitative method and quantitative analysis. Future study could adopt qualitative analysis such as target group interview and discussion to collect more in-depth information. Besides, generalization of this research is somewhat limited, as it focused on mainland China only. In future, similar research may be carried out in Hong Kong, Macao, or even countries with different cultural context.

REFERENCES

Alam, S., & Yasin, N. (2010). An Investigation into the Antecedents of Customer Satisfaction of Online Shopping. *Journal of Marketing Development and Competitiveness*, *5*(1), 71–78.

Babin, B. J., & Attaway, J. S. (2000). Atmospheric Affect as a Tool for Creating Value and Gaining Share of Customer. *Journal of Business Research*, *49*(2), 91–99. doi:10.1016/S0148-2963(99)00011-9

Bhatnagar, A., & Ghose, S. (2004). Segmenting Consumers Based on the Benefits and Risks of Internet Shopping. *Journal of Business Research*, *57*(12), 1352–1360. doi:10.1016/S0148-2963(03)00067-5

Childers, T. L., Carr, C. L., Peck, J., & Carson, S. (2001). Hedonic and Utilitarian Motivations for Online Retail Shopping Behavior. *Journal of Retailing*, *77*(4), 511–535. doi:10.1016/S0022-4359(01)00056-2

Dawson, S., & Kim, M. (2009). External and Internal Trigger Cues of Impulse Buying Online. *International Journal of Direct Marketing*, *3*(1), 20–34. doi:10.1108/17505930910945714

Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of Price, Brand and Store Information on Buyers' Product Evaluations. *JMR, Journal of Marketing Research*, *28*(3), 307–319. doi:10.2307/3172866

Doney, P. M., & Cannon, J. P. (1997). An Examination of the Nature of Trust in Buyer-Seller Relationships. *Journal of Marketing*, *61*(2), 35–51. doi:10.2307/1251829

Forsythe, S., Liu, C. L., Shannon, D., & Gardner, L. C. (2006). Development of a Scale to Measure the Perceived Benefits and Risks of Online Shopping. *Journal of Interactive Marketing*, *20*(2), 55–75. doi:10.1002/dir.20061

Forsythe, S. M., & Shi, B. (2003). Consumer Patronage and Risk Perceptions in Internet Shopping. *Journal of Business Research*, *56*(11), 867–875. doi:10.1016/S0148-2963(01)00273-9

Goldsmith, R. E., & Goldsmith, E. B. (2002). Buying Apparel Over The Internet. *Journal of Product and Brand Management*, *11*(2), 89–102. doi:10.1108/10610420210423464

Gratorex, M., & Mitchell, V. W. (1994). Modeling Consumer Risk Reduction Preferences from Perceived Loss Data. *Journal of Economic Psychology*, *15*(4), 669–685. doi:10.1016/0167-4870(94)90017-5

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Hanjun, K., & Jaemin, J. (2004). Cross-Cultural Differences in Perceived Risk of Online Shopping. *Journal of Interactive Advertising*, *4*(2), 20–29. doi:10.1080/15252019.2004.10722084

Horton, R. L. (1976). The Structure of Perceived Risk: Some Further Progress. *Journal of the Academy of Marketing Science*, *4*(4), 694–709. doi:10.1007/BF02729830

Hsu, M. H., & Chiu, C. M. (2004). Predicting Electronic Service Continuance with a Decomposed Theory of Planned Behavior. *Behaviour & Information Technology*, *23*(5), 359–373. doi:10.1080/01449290410001669969

Jarvenpaa, S. L., & Todd, P. A. (1996). Consumer Reactions to Electronic Shopping on the World Wide Web. *International Journal of Electronic Commerce*, *1*(2), 59–88. doi:10.1080/10864415.1996.11518283

Jayawardhena, C., & Wright, L. T. (2009). An Empirical Investigation into E-Shopping Excitement: Antecedents and Effects. *European Journal of Marketing*, *43*(9/10), 1171–1187. doi:10.1108/03090560910976429

Keeney, R. L. (1999). The Value of Internet Commerce to the Customer. *Management Science*, *45*(4), 533–542. doi:10.1287/mnsc.45.4.533

Khatibi, A., Haque, A., & Karim, K. (2006). E-Commerce: A Study on Internet Shopping in Malaysia. *Journal of Applied Science and Technology*, *6*(3), 696–705. doi:10.3923/jas.2006.696.705

Khristianto, W., Kertahadi, I., & Suyadi, I. (2012). The Influence of Information, System and Service on Customer Satisfaction and Loyalty in Online Shopping. *International Journal of Academic Research*, *4*(2), 28–32.

Kim, Y. K. (2002). Consumer Value: An Application to Mall and Internet Shopping. *International Journal of Retail & Distribution Management*, *30*(12), 595–602. doi:10.1108/09590550210453075

Koo, D. M., & Ju, S. H. (2010). The Interactional Effects of Atmospherics and Perceptual Curiosity on Emotions and Online Shopping Intention. *Computers in Human Behavior*, *26*(3), 377–388. doi:10.1016/j.chb.2009.11.009

LaRose, R. (2001). On the negative effects of e-commerce: A sociocognitive exploration of unregulated on-line buying. *Journal of Computer-Mediated Communication*, *6*(3).

Loshe, G., & Spiller, P. (1999). Internet retail store design: How the user interface influences traffic and sales. *Journal of Computer-Mediated Communication*, *5*(2).

Mathieson, K. (1991). Predicting user intentions: Comparing the technology acceptance model with the theory of planned behavior. *Information Systems Research*, *2*(3), 173–191. doi:10.1287/isre.2.3.173

Medintz, S. (1998). Click here for peace of mind. *Money*, *27*(11), 195.

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Monsuwe, T. P. Y., Delleart, B., & De Ruyter, K. (2004). What drives consumers to shop online? A literature review. *International Journal of Service Industry Management*, *15*(1), 102–121. doi:10.1108/09564230410523358

Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, *58*(3), 20–38. doi:10.2307/1252308

O'Connor, W. E., & Morrison, T. G. (2001). A comparison of situational and dispositional predictors of perceptions of organizational politics. *The Journal of Psychology*, *135*(3), 301–312. doi:10.1080/00223980109603700 PMID:11577972

Park, H. H., & Sullivan, P. (2009). Market segmentation with respect to university students' clothing benefits sought: shopping orientation, clothing attribute evaluation, and brand repatronage. *International Journal of Retail & Distribution Management*, *37*(2), 182–201. doi:10.1108/09590550910934308

Parsons, A. G. (2002). Non-functional motives for online shoppers: Why we click. *Journal of Consumer Marketing*, *19*(5), 380–392. doi:10.1108/07363760210437614

Raijas, A. (2002). Free gift with purchase: Promoting or discounting the brand? *Journal of Consumer Psychology*, *14*, 181–186.

Shannon, J. (1998). Net nightmares thwart potential. *Marketing Week*, *21*(16), 25.

Singh, J., & Sirdeshmukh, D. (2000). Agency and Trust Mechanisms in Consumer Satisfaction and Loyalty Judgments. *Journal of the Academy of Marketing Science*, *28*(1), 150–167. doi:10.1177/0092070300281014

Snoj, B., Korda, A. P., & Mumel, D. (2004). The Relationships Among Perceived Quality, Perceived Risk and Perceived Product Value. *Journal of Product and Brand Management*, *13*(3), 156–167. doi:10.1108/10610420410538050

Swaminathan, V., Lepkowska-White, E., & Rao, B. P. (1999). Browsers or buyers in cyberspace? An investigation of factors influencing electronic exchange. *Journal of Computer-Mediated Communication*, *5*(2).

To, P. L., Liao, C., & Lin, T. H. (2007). Shopping motivations on internet: A study based on utilitarian and hedonic value. *The International Journal of Technological Innovation Entrepreneurship and Technology Management*, *27*(12), 774–787.

Walter, Z., Gupta, A., & Su, B. (2006). The sources of on-line price dispersion across product types: an integrative view of on-line search costs and price premiums. *International Journal of Electronic Commerce*, *11*(1), 37–62. doi:10.2753/JEC1086-4415110102

Wang, H., Lee, M., & Wang, C. (1998). Consumer privacy concerns about internet marketing. *Communications of the ACM*, *3*(3), 63–70. doi:10.1145/272287.272299

Wolfinbarger, M., & Gilly, M. (2001). Shopping online for freedom, control and fun. *California Management Review*, *43*(2), 34–55. doi:10.2307/41166074

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Wu, S. I. (2003). The relationship between consumer characteristics and attitude toward online shopping. *Marketing Intelligence & Planning*, *21*(1), 37–44. doi:10.1108/02634500310458135

Yu, C., & Bastin, M. (2010). Hedonic shopping value and impulse buying behavior in transitional economies: A symbiosis in the mainland china marketplace. *Brand Management*, *18*(2), 105–114. doi:10.1057/bm.2010.32

Zhou, L., Dai, L., & Zhang, D. (2007). Online shopping acceptance model - A critical survey of consumer factors in online shopping. *Journal of Electronic Commerce Research*, *8*(1), 41–62.

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Chapter 93
Customer Satisfaction in Online Shopping in Growing Markets: An Empirical Study

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ABSTRACT

The aim of this study is to examine the factors affecting customer satisfaction in online shopping. The conceptual model for this study was developed based on the previous research in the online shopping context. In this research, ten hypotheses on factors affecting customer satisfaction in online shopping are outlined with empirical data from 337 respondents. Data was collected through a Google form. The regression results show that customer service, information quality, response time, transaction capability, delivery, merchandise attributes, security/privacy, convenient payment method, and price have significant positive influence on customer satisfaction in online shopping. From a managerial viewpoint, this study results provide support for investment decisions for customer satisfaction from online retailers in Malaysia.

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INTRODUCTION

Customer satisfaction is one of the main topics in marketing, psychology, and consumer research. Researchers argue that customer satisfaction is the result of a customer's observation of the value received from the product or service what is expected in buying decision and needs associated with the buying. According to Zeithaml and Bitner (2003) satisfaction evaluate by the customers about particular product or service, to check whether it has met the expectations and needs. Researcher indicated that profitability of a firm is depending on the customer satisfaction (Zeithaml, 2000). As customers are the main source of firm's revenue, thus researchers and academician always giving importance on customer satisfaction research.

Purchasing through electronic medium is considered as online shopping where everybody can purchase any time and any location through Internet. There are many types of online shopping. In this research we considered business to consumer (B2C) online shopping where consumers buying their products and services directly from the online retailers. Now-a-days online business portals offers varieties of products to the consumers. Online researchers are well informed that annually online B2C sales volume increasing at a very high rate. According to Ecommerce Foundation (2016) globally 1.4 billion people purchase product and/or services at least one through online, in which they spent 2,272.7 billion dollars online with the annual growth rate of 19.9%. Another report eMarketer (2016) highlighted that it was expected to retail online sales 1.915 trillion dollar in 2016, accounting for 8.7% of total retail spending worldwide and also expecting by 2020 in Asia-Pacific total online retail sales will be 2.725 trillion dollars with growth rate of 31.5%.

In Malaysia online shopping fast gaining popularity because it is offering wide selection of goods and service and convenience shopping environment. Over the past few years due to increased penetration of mobile devices and affordable Internet services in Malaysia the e-commerce market has been growing steadily. According to HKTDC Research (2017) report, currently one third of total Malaysian buy product and services online. Another report by Euromonitor highlighted by HKTDC (2017) Research that online retail sales in Malaysia increased from MYR1.0 billion in 2011 to MYR2.4 billion in 2016, in which the average growth rate is 18.5%.

Due to the rapid growth of online shopping in Malaysia it is emphasizes the importance of focusing customer satisfaction issue while developing online retail store. According to Kim and Stoel (2004) customer will not return to the online outlet if they are not satisfied with their shopping experience through online. Compare to the developed countries online customers, Malaysian customers are different in terms of trust of buying through online. Customers in Malaysia are very cautious in buying decision and also they are very price sensitive. Thus, it is very important to Malaysian to examine the factors that affect online shopping satisfaction.

To gain competitive advantage, it is important to the companies to understand their customers very well, so that they can serve better and continuously. Researcher like Garver and Gagnon (2002) show that market orientation and customer satisfaction have direct relationship between customer satisfaction and organizational performance. In this competitive online business environment, it is also important for the online retail stores to know how to satisfy their customers. This will ultimately assist them to sustain their growth and market share (McKenney et al., 2002).

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PROBLEM STATEMENT

The rapid growth of online retail stores creates new era of competition. It is important for the online retailers to differentiate themselves from one to another and to become market leader they need present themselves well to consumers. On the other hand, online consumers claimed that they are still unsatisfied with their buying experiences through online. The main reason is that consumers are unsatisfied because they do not have enough and actual information during their purchasing time. Due to aggressive competition in online retailing context it is crucial for the online retailers to identify the factors that affects their satisfaction level of online consumers. Thus, the main intention of this research is to examine the factors that affecting satisfaction of Malaysian online consumers.

According to Shore (1998) and Spanos et al. (2002) due to cultural differences information system research results limit the generalizability from one country to another country context. Other researchers also identified customer behavior and satisfaction differ in different culture, logistics and credit context (David, 2007; Sharma et al., 1995; Gentry, 1982). This justified that examine the factors of online shopping customer satisfaction in Malaysia may be different from that of other countries. Moreover, there is a dearth of research on online shopping customer satisfaction on Malaysian context, so little known about the variable of Malaysian online shopping customer shopping.

LITERATURE REVIEW

Relevant Empirical Study

Recently Rajesh (2018) identified factors affecting online shopping and its customer satisfaction in India. Using non-parametric data this study used Mann Whiney U test to analyse the data. This study results identified both male and female equally accepted good after sales service, return policy, clarity about terms and conditions, time consuming process are important factors affecting online customer satisfaction.

Yilan and Suyun (2016) conducted and empirical study on the factors affecting customer satisfaction based on B2C online shopping. This study results reveal that service value, enterprise image, product value and website security have significant effect on customer satisfaction in online context. A study conducted in China on empirical factors affecting customer satisfaction and re-purchase intention in online store. This study results show that convenience, price, product information, financial risk, return policy, delivery risk and product risk have significant effect on customer satisfaction (Khan et al., 2015).

Fang (2014) studied on students e-satisfaction in China and found that service quality, quality of logistics distribution, core value of products, network shopping safety, return policy and online shopping core advantage have positive significant effect on customer satisfaction, whereas customer expectations has negative significant effect. Another study conducted in India by Singhal and Shekhawat (2014) on customer satisfaction in online shopping experience of tourism products and confirmed that ease of website, accuracy of information, speed and price, ease of accessing websites, customized products availability and loyalty for online portals have significant effect on customer satisfaction in online context.

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FACTORS AFFECTING CUSTOMER SATISFACTION IN ONLINE SHOPPING

There are a number of previous empirical research are relevant to this study. These include those addressing the factors that have significant influence on customer satisfaction in online shopping (Liu et al., 2008; Singhal, & Shekhawat, 2015; Kaur & Wei, 2013; Khan et al., 2015). There are few factors identified from the previous research which are found to significant (please refer Table 1). In this research we utilize ten factors i.e. website design, customer service, information quality, response time, transaction capability, delivery, merchandise attributes, security/privacy, convenient payment method and price are used by Liu et al. (2008) and Kaur and Wei (2013).

Table 1. Factors influencing e-satisfaction

Independent Variable	Author and Year
Convenience	Szymanski, & Hise, 2000; Moharrer et al., 2013; Ranjbarian et al., 2012
Website design	Liu et al., 2008; Kaur & Wei, 2013; Szymanski & Hise, 2000; Heiner et al., 2004
Customer service	Liu et al., 2008; Kaur & Wei, 2013
Trust	Dash, 2012
Information quality	Liu et al., 2008; Kaur & Wei, 2013
Response time	Liu et al., 2008; Kaur & Wei, 2013
Transaction capability	Kim, & Stoel, 2004; Liu et al., 2008; Kaur & Wei, 2013
Delivery	Liu et al., 2008; Kaur & Wei, 2013
Merchandise attributes	Liu et al., 2008; Kaur & Wei, 2013 Szymanski & Hise, 2000; Heiner et al., 2004; Ranjbarian et al., 2012
Security/privacy	Liu et al., 2008; Kaur & Wei, 2013
Price	Liu et al., 2008
Product variety	Dash, 2012; Szymanski & Hise, 2000
Financial security	Szymanski & Hise, 2000; Dash, 2012

Website design is one of the most important factors that could help customer to visit website. Liu et al. (2008) identified good website design has significant influence on customer satisfaction in online shopping. Combination effect of colour, website structure, navigation and ease of use are tested by Pastrick (1997) research. Kaur and Wei (2013) study also used website design is one of the predictors for customer satisfaction in online shopping. Shergill and Zhaobin (2005) study found that web site design is one of the important predictors for online shopping.

Logistics efficiency and customer service are another important predictor of customer satisfaction. Chen and Chang (2003) highlighted that in Internet transaction most common complaints are defective product, refund and billing disputed, poor customer service and product exchange and return policies. Kaur and Wei (2013) and Liu et al. (2008) used customer service is one of the important predictors to test customer satisfaction in online shopping.

Information quality, price and variety of merchandise are playing important role for the customer satisfaction in online shopping experience (Liu et al., 2008). According to Bakos (1997) to reduce search cost for customer online store need to provide product and price related information. Peterson et al.

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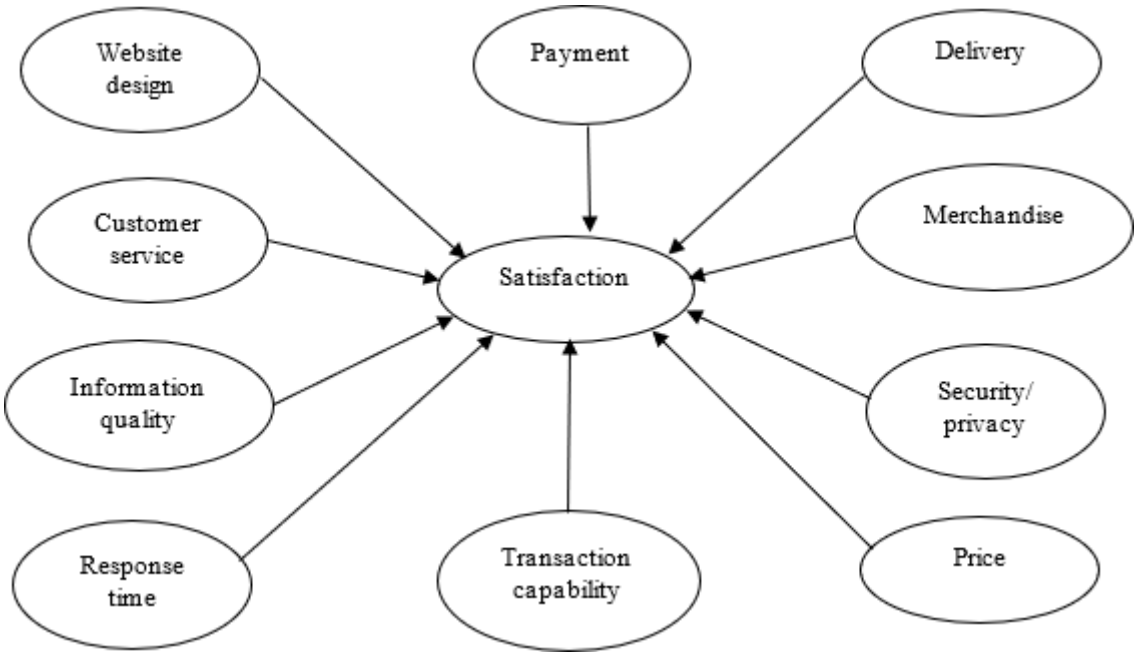
(1997) highlighted that higher level of customer satisfaction depends on the higher quality and extensive information. Price and merchandise variety are playing important for decision making. E-satisfaction would be possible if online retail store offers varieties of product and superior product assortment (Szymanski, & Hise, 2000).

Researcher argued that payment mechanisms, privacy/security, speed of operation and transaction capabilities are some of the important factors those online customer satisfaction (Liu et al., 2008). According to Grewal et al. (2004) and Friedman et al. (2000) argued that consumer preferred secured and privacy protected online store than traditional shop. Grabner-Kraeuter (2002) and Yianakos (2002) also mentioned online store lost sales if the infrastructure is not adequate, privacy is not protected and security is a concern and consumer do not trust the online store. Researcher like Chen and Chang (2003) also stated that online shoppers' tolerance power is very low. Dellaert and Kahn (1999) mentioned that on average online shoppers wait for eight seconds for system feedback before bailing out. So, web designers should provide good appearance and functional website with fastest loading time.

RESEARCH MODEL

The research model for this study was developed based on the previous empirical research done on e-satisfaction in different countries (refer to Figure 1). The model examines the factors that affect customer satisfaction in online shopping.

Figure 1. A schematic diagram of the research model



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The above schematic diagram of the research model shows the independent and dependent variables relationship. The above research model is the foundation of whole research.

In this research customer satisfaction in online shopping is the dependent variable. To find out the answer to the problem the dependent variable is analyse in this research. Moreover, the independent variables in this research are website design, customer service, information quality, response time, transaction quality, delivery, merchandise, security/privacy, convenient payment method and price.

HYPOTHESES

A series of hypotheses were developed based on the proposed model, are shown below:

Hypothesis 1: There is a significant relationship between website design and customer satisfaction in online shopping.

Hypothesis 2: There is a significant relationship between customer service and customer satisfaction in online shopping.

Hypothesis 3: Information quality will have positive effect on customer satisfaction in online shopping.

Hypothesis 4: Response time will have significant influence on customer satisfaction in online shopping.

Hypothesis 5: Convenient payment method has significant positive influence on customer satisfaction in online shopping.

Hypothesis 6: Good transaction capability will have significant influence on customer satisfaction in online shopping.

Hypothesis 7: Prompt delivery of product or services will have significant positive effect on customer satisfaction in online shopping.

Hypothesis 8: Wider merchandise variety will have a significant positive influence on customer satisfaction in online shopping.

Hypothesis 9: Security/privacy will have a positive effect on customer satisfaction in online shopping.

Hypothesis 10: Lower price of the product and services will have significant influence on customer satisfaction in online shopping.

RESEARCH METHODS

Primary data for this research was gathered through online survey. Questionnaire was uploaded in google form. Students from one public university were asked to respond the questions. It was clearly mentioned to the students that anybody purchase online at least one product can be the respondent for this survey. A total of 337 were responded our questionnaire.

Bivariate frequency distribution of the respondents was done based on age, gender and race and other question related online shopping.

Regression analysis was used to test ten hypotheses. The analysis enabled us to test the individual impact of independent variables on customer satisfaction in online shopping.

Female respondents were the majority (56.97%) in this research, more than 60% (62.61%) of the respondent's age between 19 and 24. Malay group was the highest contributors of the total respondents (55.49%) and the second highest group is represented by Chines with 39.76%.

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Most of the respondents spent 1-2 hours on Internet (29.97%), 2 to 3 hours (37.09%), 3 to 4 hours (22.84%) and only 10.97% respondents spent less than 1 hour every day. More than 40% of the respondent buy online frequently (47.77%).

Data Collection Instrument

Structured closed ended questionnaire was used to collect the data. The measures of website design were adapted from Shergill and Chen (2005). Customer service, information quality, privacy/security were adapted from Ariff et al. (2013). Response time, transaction capability, delivery, merchandise, convenient payment and price were measured using scale developed by Liu et al. (2008). In the first section of the questionnaire included questions regarding demographic profile of the respondents. The second section consisted of questions measuring factors that affect customer satisfaction in online shopping using 6-point Likert scale ranging from 1= strongly disagree to 6 = strongly agree. The third part of the questionnaire included questions regarding online shopping habits such as how many times the respondents bought product through online, how frequent they buy and how they spent in the last 6 months.

Reliability

Cronbach's alpha value suggested by Nunnally (1978) was used to test the internal reliability of the items. Minimum value of Cronbach's alpha should be 0.7 suggested by Nunnally. The Cronbach alpha value for customer satisfaction was 0.839, website design was 0.812, customer service was 0.901, information quality was 0.786, response time was 0.841, transaction capability was 0.795, delivery was 0.817, merchandise was 0.764, security/privacy was 0.883, convenient payment method was 0.821 and reasonable price was 0.811. In this study the Cronbach's alpha for all constructs were much higher than 0.7, therefore the constructs deemed to have adequate reliability.

Test for Construct Validity: Factor Analysis

A factor analysis was conducted in order to develop factors that help in explaining the role of experience and reference group in online brand trust. As suggested by Hair et al., (1995), ten factors were identified for the factor analysis using the eigen value criteria that suggest extracting factors with an eigenvalue of greater than 1.0. In conducting the factor analysis we followed Hair et al (1995). The ten factors identified explained 69.07 percent of the total variance. The extraction method used was principal axis factoring with Varimax rotation. This method has been widely accepted as a reliable method of factor analysis (see, Alexander and Colgate, 2000). In our survey, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy score (0.793) was well above the recommended 0.5 level (Malhotra, 1999).

Normality of Data and Multi-Collinearity

This study involves a relatively large sample (377 respondents) and therefore, the Central Limit Theorem could be applied and hence there is no question on normality of the data. Two major methods were utilized in order to determine the presence of multicollinearity among independent variables in this study. These methodologies involved calculation of both a Tolerance test and Variance Inflation Factor (VIF) (Kleinbaum et al, 1988). The results of these analyzes are presented in Table 3. As can be seen from this

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Table 2. Factor analysis

Determinant Factors	Factor Loading	Cronbach's α
Website Design		
This website provides in-depth information It is quick and easy to complete transaction at this web site I feel comfortable in surfing this site This website has a good selection It is easy to use this website The level of personalization at site is about right, not too much or too little	0.723 0.745 0.763 0.721 0.733 0.758	0.812
Customer Service		
The website showed a sincere interest in solving the problem when I face it Inquiries are answered promptly The company is willing and ready to respond to customer needs	0.782 0.801 0.813	0.901
Information quality		
The website provides accurate information The website provides timely information The website provides relevant information Information provided was easy to understand The website provides details information	0.780 0.728 0.754 0.789 0.762	0.786
Response time		
The website loads quickly When I use the website there is very little waiting time between my actions and the website's response	0.756 0.725 0.719	0.841
Convenient payment		
This website has convenient payment method This website has complete payment options I accept the payment method provided by the website	0.785 0.777 0.767	0.821
Transaction capability		
Most business processes can be completed via the website All my business with the company can be completed via the website	0.782 0.798	0.795
Delivery		
The product is delivered by the time promised by the company You get what you ordered from this site The items sent by the site are well packaged and perfectly sound I am satisfied with delivery mode of the website	0.658 0.692 0.687 0.666	0.817
Merchandise		
The product range of this website is complete The products of other similar websites can be found at this site Most of the goods I need can be found at this site There are more choices for goods of a particular type at this site	0.595 0.652 0.673 0.671	0.764
Privacy/security		
I feel my privacy was being protected by this site The transaction of the website makes me feel sage The website provides adequate security features	0.725 0.812 0.816	0.883
Price		
The general pricing of the website's goods is relatively low (goods price plus delivery price) This website has bigger offering of lucky draw and discounts than similar websites	0.701 0.723	0.811
Satisfaction		
If I had to do it over again, I'd make my most recent online purchase at this website My choice to purchase from this website was a wise one I have truly enjoyed purchasing from this website I am satisfied with my most recent decision to purchase from this website	0.762 0.792 0.813 0.841	0.839

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data, i) none of the Tolerance levels is <or equal to 0.1; and ii) all VIF values are well below 10. Thus, the measures selected for assessing independent variables in this study do not reach levels indicate of multicollinearity. The acceptable Durbin – Watson range is between 1.5 and 2.5. In this analysis Durbin – Watson value of 1.924, which is between the acceptable ranges, show that there were no auto correlation problems in the data used in this research. Thus, the measures selected for assessing independent variables in this study do not reach levels indicate of multicollinearity.

Table 3. Test of collinearity

Variable	Tolerance	VIF
Website design	.732	2.312
Customer service	.699	2.861
Information quality	.743	1.963
Response time	.761	2.102
Convenient payment	.742	2.561
Transaction capability	.776	2.111
Delivery	.725	2.873
Merchandise	.801	2.914
Privacy/Security	.794	2.765
Price	.736	1.895

HYPOTHESES TESTING

The strength of the proposed hypothetical relationship was assessed using the respective statistical analyses summarized in Table 4.

Table 4. Regression results

Variables	t-Value	p-Value
Website design	1.567	.113
Customer service	4.952	.000
Information quality	2.596	.01
Response time	5.891	.000
Convenient payment	4.763	.000
Transaction capability	5.114	.000
Delivery	3.856	.000
Merchandise	4.213	.000
Privacy/Security	6.354	.000
Price	2.634	.01

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Hypothesis 1: There is a significant relationship between website design and customer satisfaction in online shopping.

The results of this study show that the relationship between website design and customer satisfaction in online shopping is not significant. The multiple regression result shows that website design have t-value 1.567; p-value = 0.113. This evidence proved that, the null hypothesis could not be rejected. These results indicate that those buying through online are not very serious about the website design of the online retailers.

Hypothesis 2: There is a significant relationship between customer service and customer satisfaction in online shopping.

Customer service is one of the important factors that affect customer satisfaction in online shopping. Most of the consumers are concerned about customer service. The results of this study show that there is a significant relationship between customer service and customer satisfaction in online shopping. This relationship is significant at 0.001 level. Accordingly, the hypothesis 2 could not be rejected. The direction of the association is positive in which it indicates that the more improvement of customer service provided by the online retailers, the higher will be satisfaction of online buyers.

Hypothesis 3: Information quality will have positive effect on customer satisfaction in online shopping.

The third hypothesis is test in this research has found another important predictor that has significant relationship on customer satisfaction in online shopping. Researcher like Liu et al. (2008) also confirmed this research result. The regression results (t-value = 2.596; p-value = 0.01) indicates that the association between information quality and customer satisfaction in online shopping is positive and significant.

Hypothesis 4: Response time will have significant influence on customer satisfaction in online shopping.

Multiple regression result shows that response time is a significant predictor of customer satisfaction in online shopping (t-value = 5.891; p-value = 0.001), which lends support to fourth hypothesis and similar finding reported in Liu et al. (2008). It is expected since past literature has consistently shown that response time has a significant and positive effect on customer satisfaction in online shopping (Kaur and Wei, 2013). This finding suggests that when online consumer finds online retail store response to their query promptly, they satisfied is more likely.

Hypothesis 5: Convenient payment method has significant positive influence on customer satisfaction in online shopping.

Convenient payment method is another important predictor for customer satisfaction in online satisfaction. Studies like Liu et al. (2008) has generally shown that convenient payment methods of an online retail shop have a positive influence on customer satisfaction in online shopping. From the Table 2, regression analysis convenient payment method showed significant influence over customer satisfaction in online shopping (t-value = 4.763; p-value = 0.001). This research therefore further proves the earlier findings.

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Hypothesis 6: Good transaction capability will have significant influence on customer satisfaction in online shopping.

Transaction capability also significantly associated with customer satisfaction in online shopping. Positive sign shows that there is a positive relationship between transaction capability and customer satisfaction in online shopping. Previous studies also found that transaction capability has significant positive effect on customer satisfaction in online shopping (Kim, & Stoel, 2004; Liu et al., 2008; Kaur and Wei, 2013). Multiple regression analysis shows the results of transaction capability (t-value = 5.114; p-value = 0.001), indicating that transaction capability is another very important predictor for customer satisfaction in online shopping.

Hypothesis 7: Prompt delivery of product or services will have significant positive effect on customer satisfaction in online shopping.

Multiple regression analysis shows results of (t-value = 3.856; p-value = 0.001), implying that there is positive and significant relationship between prompt delivery of product and customer satisfaction in online shopping. This research further proves earlier findings that showed delivery of product and services as having positive and significant effect on customer satisfaction in online shopping (Liu et al., 2008; Kaur and Wei, 2013).

Hypothesis 8: Wider merchandise variety will have a significant positive influence on customer satisfaction in online shopping.

Previous researches finding shown that wider merchandise variety played a vital and significant role on customer satisfaction in online shopping (Liu et al., 2008; Kaur and Wei, 2013; Szymanski & Hise, 2000; Heiner et al., 2004; Ranjbarian et al., 2012). The regression results (t-value = 4.213; p-value = 0.001) of this study shown positive and significant effect of merchandise variety on customer satisfaction in online shopping.

Hypothesis 9: Security/privacy will have a positive effect on customer satisfaction in online shopping.

When customer feels privacy and security are protected, they are more likely to product from online retail shop. Studies like those carried out by Liu et al. (2008), Kaur and Wei (2013) and Dash (2012) have generally shown that privacy and security concern is one of most important predictors for satisfaction in online shopping. The results of this study show that when customer is not fear about security and privacy the degree of satisfaction is high. Regression analysis shown results of security/privacy (t-value = 6.354; p-value = 0.001) indicating that security/privacy is most important factor affect customer satisfaction in online shopping. All of the previous studies show that security/privacy positively associated with customer satisfaction in online shopping.

Hypothesis 10: Lower price of the product and services will have significant influence on customer satisfaction in online shopping.

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Low price of the product and services are the important predictor on customer satisfaction in online shopping. Regression analysis showed that price having (t-value = 2.634; p-value = 0.01) indicating that price has significant influence customer satisfaction in online shopping in Malaysia. This is consistent with the study done by Liu et al. (2008).

LIMITATION AND FUTURE DIRECTION

It is important to recognize the limitation of this research. Firstly, since the survey was conducted among respondents from google form, the results should be interpreted with caution, particularly with respect to the generalization of research findings of Malaysian consumer as a whole. Secondly, the sample size is not big enough. A larger sample size is desirable to get accurate Malaysian consumers perception regarding satisfaction level. Further research is needed to focus on a larger cross sectional analysis in the context of online shopping and more diversified random samples to verify the findings of this present study. It is also suggested to use structural equation model to test hypotheses in future.

Implication

- The findings of this research have both research and managerial implications. Customer service and delivery plays an important role for the Malaysian online consumer's satisfaction level. Due to the competition in online business it is important for the online sellers to keep close monitoring on customer services and on time delivery. Delayed delivery and poor customer services will cause customer dissatisfaction. Lack of modern delivery system in Malaysia make customer unhappy. So, it is suggested that online sellers representative should answer customer inquiries and once the problem occurs, they need to solve the problem immediately;
- Complete and detailed services and product information is required. Online context customer cannot see the products and services as it is intangible. Customer has to rely fully on online displays. Therefore, to satisfy customer in online context online retailers should provide understandable and clear information at the transaction time. At the same time online seller should provide all required information, colour, design etc. on their websites;
- Consumer data safety and transaction security is another important concern online buyers. Therefore, online sellers should provide support to protect individual customer data and information and need to assure to the customer by improving their technological system. Annoying factors such as taking longer time to place an order online, difficult to access to the website, availability of product and services online, and mistakes in filling orders online are needed to consider online retailers.

CONCLUSION

The results analyse for this research indicated the relationship between factors affecting customer satisfaction in online shopping. More specifically, customer service, information quality, response time, transaction capability, delivery, merchandise attributes, security/privacy, convenient payment method and price exhibit significant association with customer satisfaction in online shopping. The analytical

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results are consistent with previous studies. Privacy/security has received the most consistent support as factors that influence customer satisfaction in online shopping. Marketers need to realize that online marketing environment affects the way consumers view and develop relationship. Privacy/security is single most important predictor in online buying environment. Furthermore, it was also found that, for online buyers, response time is considered as the best predictor when compared to other constructs.

Experience buyers are different from other inexperience buyers in online shopping context. Therefore, experience gained over time has potential implications for the other buying behavior model and future research should be conducted in this area.

Regardless of some limitations, this study makes some notable contributions. First, we review previous literature in this area and develop a conceptual framework and also find out both and absolute and relative vie of the gap. Secondly, in this research we analyse factors affecting customer satisfaction in online shopping that owes its foundation to existing research and extends, thus unifying and advancing the field of knowledge.

REFERENCES

Alexander, N., & Colgate, M. (2000). Retail Financial Services: Transaction to Relationship Marketing. *European Journal of Marketing*, *34*(8), 938–953. doi:10.1108/03090560010331432

Ariff, M. S. M., Yan, N. S., Zakuan, N., Bahari, A. Z., & Jusoh, A. (2013). Web-based Factors Affecting Online Purchasing Behaviour. *IOP Conference Series. Materials Science and Engineering*, *46*(1).

Bakos, J. Y. (1997). Reducing buyer search costs: Implications for electronic marketplaces. *Management Science*, *43*(12), 1676–1692. doi:10.1287/mnsc.43.12.1676

Chen, S. J., & Chang, T. Z. (2003). A descriptive model of online shopping process: Some empirical results. *International Journal of Service Industry Management*, *14*(5), 557–569. doi:10.1108/09564230310500228

Dash, A. (2012). Online shopping and customer satisfaction: An Empirical investigation. International Journal of Research in Management. *Economics and Commerce*, *2*(11), 42–49.

David, M. (2007). Culture, context, and behavior. *Journal of Personality*, *75*(6), 1285–1320. doi:10.1111/j.1467-6494.2007.00476.x PMID:17995466

Dellaert, B., & Kahn, B. (1999). How tolerable is delay? consumers' evaluations of internet web sites after waiting. *Journal of Interactive Marketing*, *13*(1), 41–54. doi:10.1002/(SICI)1520-6653(199924)13:1<41::AID-DIR4>3.0.CO;2-S

Ecommerce Foundation. (2016). Global B2C E-commerce Report 2016. Retrieved from https://www.ecommercewiki.org/wikis/www.ecommercewiki.org/images/5/56/Global_B2C_Ecommerce_Report_2016.pdf

eMarketer. (2016). *Worldwide Retail Ecommerce Sales Will Reach $1.915 Trillion This Year.* Retrieved from https://www.emarketer.com/Article/Worldwide-Retail-Ecommerce-Sales-Will-Reach-1915-Trillion-This-Year/1014369

Fang, S. (2014). Empirical Study of Influential Elements of University Students' E-satisfaction. *International Journal of Business and Social Science*, *5*(6), 122–129.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Friedman, B., Peter, H. K. Jr, & Howe, D. C. (2000). Trust online. *Communications of the ACM*, *43*(12), 34–40. doi:10.1145/355112.355120

Garver, M. S., & Gagnon, G. B. (2002). Seven keys to improving customer satisfaction programs. *Business Horizons*, *45*(5), 35–42. doi:10.1016/S0007-6813(02)00241-0

Gentry, J. W. (1982). The impact of credit decisions on shopping behavior. *Advances in Consumer Research. Association for Consumer Research (U. S.)*, *9*, 385–388.

Grabner-Kraeuter, S. (2002). The role of consumers' trust in online-shopping. *Journal of Business Ethics*, *39*(1/2), 43–51. doi:10.1023/A:1016323815802

Grewal, D. I., Gopalkrishnan, R., & Levy, M. (2004). Internet retailing: Enablers, limiters and market consequences. *Journal of Business Research*, *57*(7), 703–713. doi:10.1016/S0148-2963(02)00348-X

Hair, J. F. Jr, Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multivariate Data Analysis* (3rd ed.). New York: Macmillan Publishing Company.

Heiner, E., Gopalkrishnan, R. I., Josef, H., & Dieter, A. (2004). E-satisfaction: A re-examination. *Journal of Retailing*, *80*(3), 239–247. doi:10.1016/j.jretai.2004.08.002

HKTDC Research. (2017). Malaysia: Online Retailing Opportunities. Retrieved from http://economists-pick-research.hktdc.com/business-news/article/Research-Articles/Malaysia-Online-Retailing-Opportunities/rp/en/1/1X000000/1X0A94DB.htm

Kaur, K., & Wei, N. P. C. (2013). An empirical study of online shopping customer satisfaction in Malaysia: a holistic perspective. In *Proceedings of the International Conference on Information Technology Infrastructure*, Kuala Lumpur, Malaysia. Academic Press.

Khan, S. A., Liang, Y., & Shahzad, S. (2015). An empirical study of perceived factors affecting customer satisfaction to re-purchase intention in online stores in China. *Journal of Service Science and Management*, *8*(3), 291–305. doi:10.4236/jssm.2015.83032

Kim, S., & Stoel, L. (2004). Apparel retailers: Website quality dimensions and satisfaction. *Journal of Retailing and Consumer Services*, *11*(2), 109–117. doi:10.1016/S0969-6989(03)00010-9

Kleinbaum, D. G., Kupper, L. L., & Muller, K. E. (1988). *Applied Regression Analysis and Other Multivariate Methods*. Boston: PWS.

Liu, X., He, M., Gao, F., & Xie, P. (2008). An empirical study of online shopping customer satisfaction in China: A holistic perspective. *International Journal of Retail & Distribution Management*, *36*(11), 919–940. doi:10.1108/09590550810911683

Malhotra, N. K. (1999). *Marketing research: An applied orientation* (3rd ed.). New Jersey: Prentice Hall.

McKinney, V., Kanghyun, Y., & Zahedi, F. M. (2002). The measurement of web-customer satisfaction: An expectation and disconfirmation approach. *Information Systems Research*, *13*(3), 296–315. doi:10.1287/isre.13.3.296.76

Moharrer, M., Tahayori, H., & Sadeghian, A. (2013). Drivers of Customer Satisfaction in Online Tourism-The Case of European Countries. *Middle East Journal of Scientific Research*, *13*(9), 1172–1179.

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Nunnally, J. C. (1978). *Psychometric Theory* (2nd ed.). New York, NY: McGraw Hill.

Pastrick, G. (1997). Secrets of great site design. *Internet User*, (Fall), 80-87.

Peterson, R. A., Sridhar, B., & Bart, J. B. (1997). Exploring the implications of the internet for consumer marketing. *Journal of the Academy of Marketing Science*, *25*(4), 329–346. doi:10.1177/0092070397254005

Rajesh, R. (2018). Evaluating the Factors Influencing Online Shopping and its Consumer Satisfaction in Pune Area. *PEOPLE: International Journal of Social Sciences*, *4*(1), 54–76.

Ranjbarian, B., Fathi, S., & Rezaei, Z. (2012). Factors Influencing on Customers' E-Satisfaction: A case Study from Iran. *Interdisciplinary Journal of Contemporary Research in Business*, *3*(9), 1496–1511.

Sharma, A., Grewal, D., & Levy, M. (1995). The customer satisfaction/logistics interface. *Journal of Business Logistics*, *16*(6), 1–21.

Shergil, G. S., & Zhaobin, C. (2005). Web-based shopping: Consumers' attitudes towards online shopping in New Zealand. *Journal of Electronic Commerce Research*, *6*(2), 79–94.

Shore, B. (1998). IT Strategy: The Challenge of over-regulation, culture, and large scale collaborations. *Journal of Global Information Technology Management*, *1*(1), 1–4. doi:10.1080/1097198X.1998.10856220

Singhal, S., & Shekhawat, S. (2015). An Empirical Study of Customer Satisfaction in Online Shopping Experience of Tourism Products in India. *International Journal of Scientific Engineering and Research*, *3*(6), 61–64.

Spanos, Y. E., Prastacos, G. P., & Poulymenakou, A. (2002). The relationship between information and communication technologies adoption and management. *Information & Management*, *39*(8), 659–675. doi:10.1016/S0378-7206(01)00141-0

Szymanski, D. M., & Hise, R. T. (2000). E-satisfaction: An initial examination. *Journal of Retailing*, *76*(3), 309–322. doi:10.1016/S0022-4359(00)00035-X

Yianakos, C. (2002). Nameless in cyberspace: Protecting online privacy. *Journal of Banking and Financial Service*, *116*(6), 48–49.

Yilan, Y., & Suyun, D. (2016). Empirical Study for the Influence Factors of Customer Satisfaction Based on B2C Online Shopping. *Journal of Computational and Theoretical Nanoscience*, *13*(12), 10364–10368. doi:10.1166/jctn.2016.6166

Zeithaml, V. A. (2000). Service quality, profitability, and the economic worth of customers: What we know and what we need to learn. *Journal of the Academy of Marketing Science*, *28*(1), 67–85. doi:10.1177/0092070300281007

Zeithaml, V. A., & Bitner, M. J. (2003). *Service Marketing: Integrating Customer Focus Across the Firm*. New York: Mc-Graw Hill.

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Chapter 94
What Factors Influence the Use of Electronic Commerce?
A Case in Turkey

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ABSTRACT

The concept of trade has emerged with the inter-business division of labor. The internet, which is a much more recent concept than trade, has begun to get closer over time. The reason why trade is to see the internet as a commercial tool lies in the fact that the internet is spread over a wide mass network. The aim of this study is to determine socio-economic and demographic factors that are effective in purchasing or ordering goods and services by internet in Turkey. It was found that the number of information equipment, income, being male, working, and education increased the probability of shopping over the internet. It was determined that household size and age decreased. Females shop for clothing and sports goods more than males. The highest correlation with the purchase of other product groups over the internet is through holiday accommodation and other travel-related transactions.

INTRODUCTION

Today, developing technology has caused deep changes in daily life. Some of the usual activities are completely out of our lives and some of the activities have been changed. Among these changes, the way individuals shop has taken its share. In recent years, increasing technology has enabled computer and internet speeds to increase. Thus, the internet has become a part of daily life; it has become used in

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many areas from communication to socialization, from entertainment to trade in daily life. Computer and internet technologies as well as developing logistics activities have led to intensive use of e-commerce.

E-commerce is done some or all of the activities related to commerce such as the purchasing, selling or marketing of any good or service over the internet. Reasons such as the ease of shopping, lower prices, product variety encourage online shopping. Today, individuals can meet their needs from a cheap product such as a pen to technological devices such as computers and holiday shopping without recognizing the country's borders through e-commerce tools. This diversity has led to an increasing volume of e-commerce. Worldwide retail e-commerce has reached the level of 2,304 billion U.S Dollars in 2017 ("eCommerce," 2019). This amount is expected to increase gradually. Because, although there is geographical or cultural distance between buyers and sellers, individuals can shop through e-commerce tools (Prashar, Sai Vijay, & Parsad, 2016, p. 28). Increasing size brings competition in the market. For this reason, it is important for companies to know their customers and develop marketing activities for their customers. Because the effect of individual characteristics on e-commerce behavior can vary for different product groups.

Since most markets are heterogeneous and have a large variety of customers, it is not practical for businesses to implement unfocused marketing activities (Dibb, 1998, p. 394). It is important for businesses to perform appropriate marketing activities by identifying their target customers and segmenting them in terms of both efficiency and effectiveness of marketing activities. Customers with different profiles can focus on different features and can be stimulated by different elements. Demographic characteristics also affect the properties of the product. Personalization in e-commerce increases sales because it increases the customer's perception of site quality (Fernandez-Lanvin, Andres-Suarez, Gonzalez-Rodriguez, & Pariente-Martinez, 2018, p. 1).

The aim of this study is to determine the individual characteristics that affect the individual's purchasing decision over the internet for different product groups. For this purpose, probit regression model, which is one of the binary choice models, was used. In addition, assuming that purchasing behavior for different product groups may affect the purchasing decision of other products, instead of estimating the models separately for each product, a multivariate probit regression model is used which allows simultaneous estimation for all products.

BACKGROUND

1994 is the starting date for online shopping (Ariguzo, Mallach, & White, 2006, p. 240). In 1999, the monetary value of online shopping was about $110 billion (Coppel, 2000, p. 3). E-commerce is one of the fastest growing sectors in the world. The size of the return on e-commerce in Turkey in 2019 is about 8,050 billion USD. Level of return is expected to grow by 25.4% year on year to 19,876 billion USD in 2023. In the world, the size of e-commerce returns is around 1.8 trillion USD. Level of return is expected to grow by 10.4% year on year to 2,674 trillion USD in 2023("eCommerce," 2019). From the beginning to the present day, shopping on the internet has increased at a high rate, and most of the shopping has started to done on the internet. This increase is expected to continue in the future and 95% of the purchases in 2040 are expected to be made via the internet ("Ecommerce Statistics for 2019," 2019).

The increasing number of online shopping makes it necessary to examine the attitudes of internet users in depth (Cristóbal-Fransi, Martín-Fuentes, & Daries-Ramon, 2015, p. 164). It is important to obtain information about customers, and to determine the factors that shape the behavior of customers

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and affect their decision making (Sabaityte, Davidaviciene, Strakova, & Raudeliuniene, 2019, p. 206). Undoubtedly, these factors also include individual factors. Knowing the products purchased according to the individual characteristics can be used in determining the advertisements that will be provided to the individuals who have certain characteristics in social media. Individual features can also be used in the development of suggestion systems. Today, the increasing product diversity in the world makes it difficult for customers to find and choose the product they want. For this reason, it is important to use suggestion systems according to individual characteristics in e-commerce.

Some previous studies have focused on demographic characteristics that affect online shopping and internet use. Foremost among these factors are age, gender, education and income (Doherty & Ellis-Chadwick, 2003, p. 4; Koyuncu & Lien, 2003, p. 721). These factors can be used to profile and segment markets (Akhter, 2003, p. 321). These factors also affect the expectations of individuals from web sites (Lightner, 2003, p. 153). Variables such as race and habitat may be added to these factors (Stranahan, 2007, p. 432).

In recent studies, it is seen that besides the demographic factors, some psychographic factors are also focused. Ramírez-Correa, Grandón, and Arenas-Gaitán (2019, p. 794) researched the trend of online shopping by including sub-components of TRI 2.0 in demographic factors. Adamkolo, Hassan, and Pate (2018, p. 1335) researched the effect of age, gender, monthly income, occupation, education and marital status on perceived service quality. Alqahtani, Goodwin, and de Vries (2018) included age and gender as well as computer use competence in the analysis. Leong, Jaafar, and Ainin (2018, p. 75) examined electronic commerce in the context of Web Usage Theory, Confidence Transfer Theory and F-commerce usage habits in addition to demographic variables. Mobile phone usage, computer usage, social media usage, mobile money transfer use are the variables used in the analysis Hossein et al., 2017, p. 48). In some studies, the relationship between online shopping and traditional shopping has been examined (Cao, Xu, & Douma, 2012, p. 957; Lee, Sener, Mokhtarian, & Handy, 2017, p. 40).

When the studies are examined, it is seen that demographic variables are associated with the use of e-commerce in most studies. In some studies, some variables were used in addition to demographic factors. The studies are differentiated in terms of the country, period and methods used. In this study, conducted in 2018 by the Turkish Statistical Institute, Household ICT Usage Survey micro data set was used. The use of e-commerce has been evaluated in separate models for five different product groups, not aggregate for all products. In addition, the estimation of the models was made simultaneously, and the relationships between the preferences of the product groups to make purchases were determined. In this respect, the study contributes to the literature both in terms of researching e-commerce preference on product group basis and also detecting the interaction between product groups.

LITERATURE REVIEW

Individual characteristics such as income, age, gender, educational background, occupation, individual attitudes, technology etc. on e-commerce behavior has been researched in many studies (Alqahtani et al., 2018, p. 3; Cristóbal-Fransi et al., 2015, pp. 174-178; Lim & Cham, 2015, pp. 345-347). The demographic characteristics of the individual affect the e-commerce attitude. When evaluated in terms of gender, it can be said that males have a higher habit of using e-commerce compared to females (Escobar-Rodríguez, Grávalos-Gastaminza, & Pérez-Calañas, 2017, p. 141; Vicente, 2015, p. 980). In addition, social differences can differentiate the relationship between gender and e-commerce habits. In closed societies,

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females can use e-commerce more than males (Alqahtani et al., 2018, p. 8). The habits of individuals may vary according to age. This variability also emerges on e-commerce behavior. In this respect, it can be said that young people use e-commerce more intensively (Alqahtani et al., 2018, p. 1; Cristóbal-Fransi et al., 2015, p. 172). Middle-aged people use e-commerce more than the elderly (Law & Ng, 2016, p. 261). Education affects the approach to technological innovation (Awa, Baridam, & Nwibere, 2015, p. 332). Well-educated individuals often shop online (Cristóbal-Fransi et al., 2015, p. 179; Vicente, 2015, p. 980). Another demographic factor influencing online shopping is salary (Hashim, K Ghani, & Said, 2009, p. 24). Income is a positive variable on online shopping (Burkolter & Kluge, 2011, p. 21). Individuals more familiar with new technologies use e-commerce more (Alqahtani et al., 2018, p. 8).

In addition to these factors, online shoppers are individuals who value convenience, are innovative, impulsiveness, seek diversity, and have positive attitudes towards online shopping and advertising (Lim & Cham, 2015, pp. 349-351). They are young, educated and have good income and use the internet for various purposes and online shopping (Cristóbal-Fransi et al., 2015, p. 179).

When the e-commerce behavior with the distinction between buyers and sellers, it is seen that buyers and sellers have different characteristics. Vendors are low educated, unemployed, living in low income areas and using the internet in a narrow area, while purchasing behavior is positively related to education, working, using social networks, living in high income areas and, using the internet widely (Vicente, 2015, p. 980).

DATA SOURCES AND METHODOLOGY

Data

In this study, the data of 28,888 individuals who participated in the Household Information Technology Usage Survey were used. Household Survey on Information Technology Usage of individuals living in Turkey, which was conducted by Turkish Statistical Institute in 2018, was used to determine the factors influencing their choice to make shopping over the internet.

Household Information Technology Usage Survey in Turkey in general have been covered for the selection of samples each settlement. Persons covered are household in all settlements located within the borders of Turkey. Institutional population which defined as school, dormitory, hotel, kindergarten, nursing home, hospital and prison and barracks and army residences is not covered. In addition, the settlements (small villages, nomad group, hamlet etc.) thought cannot be reached adequate sample size, which population does not exceed 1% of the total population, are excluded. According to the methodology of the study, individuals aged 16-74 years are included.

The sampling method of the study is 2-stage stratified cluster sampling. In the first stage, the clusters (blocks), which consist of 100 households, were selected as proportional to the size of the sample (PPS), and in the second stage, sample addresses were determined using the systematic selection method from the selected clusters. Classification of Statistical Region Units Level 1 is used as stratification criterion (TURKSTAT, 2018).

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Table 1. Some articles related to online shopping

Author (Year)	Country / Number of Samples	Main Findings
Lim and Cham (2015)	Malaysia, Singapore and, Taiwan/1200	Online shoppers are individuals who value convenience, are innovative, impulsiveness, seek diversity, and have positive attitudes towards online shopping and advertising.
Cristóbal-Fransi et al. (2015)	Spain/700	In this study, individuals were divided into three segments. The individuals in the first segment are mostly young, educated, have good income and use the internet for various purposes and online shopping. The second segment is mostly low-income, elderly and female, uses the internet very little and avoids online activities. In the third segment, the individuals are middle-aged, mostly college graduates and individuals with higher than average income. These individuals use the internet mostly for business purposes.
Vicente (2015)	EU/24961	In this study, the determinants of customer-to-customer e-commerce were examined. The characteristics of buyers and sellers are different. Vendors are low educated, unemployed, living in low income areas and using the internet in a narrow space. Selling behavior is positively related to education, working, using social networks, living in high-income areas and widespread use of the internet. Females are less prone to e-commerce in both respects.
Escobar-Rodríguez et al. (2017)	Spain/1200	For the tourism sector, gender, age and marital status are important variables to segment the market. The most effective factors in the purchase of tourist products are perceived value and perceived trust. The relationship between perceived value and purchasing tendency is higher for male, married and elderly individuals.
Saarijärvi, Joensuu, Rintamaki, and Yrjölä (2018)	Finland/380	In this study, customer-to-customer e-commerce was examined via Facebook and 4 different customer profiles called enthusiasts, bargain hunters, salvagers and apathetics were created. Enthusiasts are those who use C2C e-commerce the most, bargain hunters use C2C e-commerce but know that they cannot meet all their needs from here, and salvagers and apathetics use C2C e-commerce because of its economic value.
Prashar et al. (2016)	India/203	In this study, individuals were divided into 4 different groups according to their internet shopping habits: traditional shoppers, benefit seekers, convenience and assurance seekers and information and price seekers. Companies targeting the largest segment, the benefit seekers, should focus on value, trust and quality. Those in the "information and price seekers" segment give importance to product, price and product appearance.
Alqahtani et al. (2018)	Saudi Arabia/904	Individuals were divided into three groups according to their e-commerce using frequency. The frequency of use is influenced by age, gender and computer proficiency. E-commerce users are often young and mostly female.
Doherty and Ellis-Chadwick (2003)	England/164	In the study, surveys were conducted on the major retail companies in the UK and it was determined that the customer base of the companies using the internet for information provision, marketing and sales were mostly male, young and upper class employees.
Koyuncu and Lien (2003)	USA/8717	Age, education and frequency of internet use increase online shopping. Shopping is more common in areas where the internet is secure. Gay and bisexual individuals are more inclined to shop online.
Akhter (2003)	USA/3087	The tendency to buy symphony tickets over the internet increases by being a man, decreases by age, and increasing education and income.
Teo (2006)	Singapore/1171	Internet users in Singapore are usually young and educated. Those who shop online are male and well educated, but older and higher incomes.
Stranahan (2007)	USA/512	Online shoppers shop for less than $1000. Indıviduals mostly shop from familiar sites, and shopping from familiar/unfamiliar sites varies according to demographic characteristics. Young people, educated, high-income and people living in suburban, rural or small towns use internet shopping more often. Caucasians make purchases more often than African Americans and Hispanics.
Hui and Wan (2009)	Singapore/211	The tendency to shop from the online supermarket is the highest for those aged 21 to 40 and the lowest for those with less than $2000. Prone customers are varied according to ease of use and the perception of usability, age and, income.

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Table 1. Continued

Author (Year)	Country / Number of Samples	Main Findings
Phang, Kankanhalli, Ramakrishnan, and Raman (2010)	USA/1457	The use of combinations of relationship variables will provide a better explanation of the change in online shopping behavior. Focusing on middle income and low educated people would be more beneficial. Elderly, middle-income and low-educated people should be researched.
Ramírez-Correa et al. (2019)	Chile/788	Psychographic and demographic factors affect shopping attitudes. As the difference between gender and age increases, the difference between shopping behavior emerges. The generation of individuals reduces the relationship between the dimensions of TRI 2.0 and their shopping. Optimism has a special impact on the baby-boomers generation. Insecurity does not affect online shopping.
Wiegandt et al. (2018)	Germany/2900	In the study conducted in Aachen, Bochum, Bonn, Dortmund, Munster and Cologne, demographic and socioeconomic factors, rather than spatial factors, affect consumer attitudes for six cities. Gender, age and lifestyle affect online shopping, but not income.
Leong et al. (2018)	Malaysia /808	The study focuses on shopping, not shopping inclination on the Internet/Facebook. Previously used F-commerce, use of Facebook, hedonic motivation, shopping without membership, age, number of children, monthly income, education level are effective on F-commerce.
Hossein et al. (2017)	Bangladesh/600	The study focused on the internet shopping of individuals living in rural areas of Bangladesh. Online shopping is related to mobile phone usage, computer usage, social media usage, mobile money transfer usage, age, gender, working status, education, monthly family spending.
Law and Ng (2016)	Hong Kong/447	Middle-aged people are more inclined to e-commerce. Males are more inclined to e-commerce as they are more concerned with innovation and usability than females. Security is important for mature users.
Hashim et al. (2009)	Malaysia/210	Gender, age, salary, occupation and marital status affect online shopping attitude. Men, the 30-39 age group, high salaries and senior employees are more inclined to shop online.
Burkolter and Kluge (2011)	Germany/405	Online shoppers are generally young, male, employed, highly educated and value service quality and brand. NFE adversely affects online shopping.
Lee et al. (2017)	USA/2000	Attitudes and perceptions affect the decision of the frequency of shopping. Online shopping is influenced by utilitarian motivations and technological orientations. Shopping online and in stores is positively related.

Variable Description

The dependent variables of the study are the purchase status of goods or services in five different groups over the last 12 months. Dependent variables consist of two categories. If the individuals buy the related goods or services in the dependent variable groups over the internet, the code 1 is given and code 0 is given if an individual does not buy. The dependent variables of the study were coded as E1, E2, E3, E4, and E5. The types of goods or services in the dependent variable groups are given in Table 2.

Qualitative independent variables included in the model, gender (male, female), working status (working, not working), education level (did not finish a school, primary, secondary, high school, university) and the region where the individual lived (TR1, TR2, TR3, TR4, TR5, TR6, TR7, TR8, TR9, TRA, TRB, TRC). Qualitative independent variables are the number of IT equipment in the household, average monthly income of the household, household size and age.

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Table 2. Types of goods or services in the dependent variables groups

Code	Types of Goods/Services
E1	Food and daily requirements (including flowers, cosmetics, tobacco and beverages); Household goods (Furniture, toys, home appliances etc.)
E2	Clothing, sports goods
E3	Computer and other additional equipment; Electronic devices (mobile phone, camera, radio, TV, DVD player, video, etc.); Telecommunication services (TV, broadband subscription services (ADSL, etc.), fixed or mobile phone subscriptions, pre-paid phone cards to load/deposit money, etc.)
E4	Holiday accommodation (hotel etc. reservations), Other travel related activities (ticket reservation for transportation, car rental, etc.)
E5	Purchase of tickets for sports and cultural activities (cinema, theater, concerts, matches, etc.); Film, music; Books, newspapers (including e-books); e-learning tools (audiovisual materials, online learning software, electronic textbooks, etc.)

Turkey, under the name of Nomenclature of Units for Territorial Statistics (NUTS), is divided into 12 regions at Level 1. These regions and the provinces in these regions are shown in Table 3 in detail. Turkey, on the basis of the creation of the NUT, there lies obligation of the establishment of Regional Development Agencies. Since the national program, which was prepared after the accession partnership agreement with the EU, see NUTS regions as a prerequisite for the establishment of Development Agencies, NUTS regions have to be established. In forming of the NUTS regions in Turkey, current geographical regions were not taken into account, zone boundaries were determined depending on very different criteria. The most important of these is the population. Apart from the population, the cultural structure and the development status of the provinces were also taken into consideration.

Table 3. Nomenclature of Units for Territorial Statistics -NUTS 1

Code	Nuts 1	Provinces
TR1	İstanbul	İstanbul
TR2	West Marmara	Tekirdağ, Edirne, Kırklareli, Balıkesir, Çanakkale
TR3	Aegean	İzmir, Aydın, Denizli, Muğla, Manisa, Afyonkarahisar, Kütahya, Uşak
TR4	East Marmara	Bursa, Eskişehir, Bilecik, Kocaeli, Sakarya, Düzce, Bolu, Yalova
TR5	West Anatolia	Ankara, Konya, Karaman
TR6	Mediterranean	Antalya, Isparta, Burdur, Adana, Mersin, Hatay, Kahramanmaraş, Osmaniye
TR7	Middle Anatolia	Kırıkkale, Aksaray, Niğde, Nevşehir, Kırşehir, Kayseri, Sivas, Yozgat
TR8	West Blacksea	Zonguldak, Karabük, Bartın, Kastamonu, Çankırı, Sinop, Samsun, Tokat, Çorum, Amasya
TR9	East Blacksea	Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane
TRA	Northeast Anatolia	Erzurum, Erzincan, Bayburt, Ağrı, Kars, Iğdır, Ardahan
TRB	Middle East Anatolia	Malatya, Elazığ, Bingöl, Tunceli, Van, Muş, Bitlis, Hakkâri
TRC	Southeastern Anatolia	Gaziantep, Adıyaman, Kilis, Şanlıurfa, Diyarbakır, Mardin, Batman, Şırnak, Siirt

Source: TurkStat

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Table 4. Frequency and percentages of dependent variables

Dependent Variables	Frequency		Percent	
	Purchased	Not Purchased	Purchased	Not Purchased
E1	2619	26269	9.1	90.9
E2	4348	24540	15.1	84.9
E3	2218	26670	7.7	92.3
E4	2194	26694	7.6	92.4
E5	2039	26849	7.1	92.9

Empirical Model

In this study, multivariate probit regression model was used to determine the factors that affect individuals' online shopping. The multivariate probit model is a preferred model when dependent variables are interrelated. When there is a relationship between the dependent variables affected by the same explanatory variables, the multivariate probit model provides more efficient results than the individual binary logit or probit model estimates for each dependent variable. Multivariate probit model is used to study the online shopping choices of individuals because it can capture latent effects among various choices, which cannot capture other alternative models (Greene, 2012, p. 752). The purchase of goods or services over the internet in Table 2 are dependent variables. The variables given in Table 5 are independent variables of the model.

The general specification for the MVP is (Greene, 2012, p. 752):

$$Y_m^* = x_m^{'}\beta_m + \varepsilon_m \quad Y_m = 1 \, if \, Y_m^* > 0, otherwise \, Y_m = 0, m = 1,2,\ldots,5 \tag{1}$$

$$Y_1^* = x_1^{'}\beta_1 + \varepsilon_1$$

$$Y_2^* = x_2^{'}\beta_2 + \varepsilon_2$$

$$Y_3^* = x_3^{'}\beta_3 + \varepsilon_3$$

$$Y_4^* = x_4^{'}\beta_4 + \varepsilon_4$$

$$Y_5^* = x_5^{'}\beta_5 + \varepsilon_5$$

$$E = (\varepsilon \mathrm{m}_{|} \, \mathrm{x}1_{,} \ldots, \mathrm{x}5_{)} = 0$$

$$Var = (\varepsilon \mathrm{m}_{|} \, \mathrm{x}1_{,} \ldots, \mathrm{x}5_{)} = 1$$

$$Cov = (\varepsilon \mathrm{j}_{\varepsilon} \mathrm{m} | \, \mathrm{x}1, {}_{\mathrm{x}}2, {}_{\ldots}, \mathrm{x}5) = \rho \mathrm{im}$$

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$(\varepsilon 1,\ldots,\varepsilon 5 \sim {}_{N}5[0,{}_{R}])$

Where x i*s* a covariates matrix having any explanatory variables, β is a matrix of unknown regression coefficient and ε is a residual error. R is the variance-covariance matrix. The off-diagonal elements in correlation matrix ρjm rep$_{re}$sent the unobserved correlation between the stochastic component of the jth and mth options.

In this study, STATA 14 program was used for frequency analysis and multivariate probit regression analysis.

Table 5. Descriptive statistics of independent variables used in the model

Independent Variables			
Qualitative Variables		**Frequency**	**Percent**
Gender	Female	15169	52.5
	Male	13719	47.5
Working status	Not working	16296	56.4
	Working	12592	43.6
Level of education	Didn't finish a school	3861	13.4
	Primary school	9444	32.7
	Middle School	5419	18.8
	High school	5413	18.7
	University	4751	16.4
The region where the individual lives	TR1	3687	12.8
	TR2	1672	5.8
	TR3	3184	11
	TR4	2643	9.1
	TR5	2850	9.9
	TR6	3008	10.4
	TR7	2071	7.2
	TR8	2115	7.3
	TR9	1614	5.6
	TRA	1461	5.1
	TRB	2211	7.7
	TRC	2372	8.2
Quantitative Variables		**Mean**	**Standard Deviation**
Number of IT equipment		2.18	1.234
Average monthly income (₺1000)		29.92	2503.275
Household size		3.91	1.925
Age		42	15.605

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EMPIRICAL RESULTS

Characteristics of Sample Respondents

The frequency and percentages of the dependent variables used in the study are given in Table 4. According to Table 4, 9.1% of individuals purchase goods or services in the E1 group, 15.1% in the E2 group, 7.7% in the E3 group, 7.6% in the E4 group and 7.1% in the E5 group via the internet.

Descriptive statistics of qualitative and quantitative variables used in the study are given in Table 5. 52.5% of the participants were female, 56.4% were not working and 32.7% were primary school graduates. While 12.8% of the individuals are in the TR1 region, 5.1% are in the TRA region. The average number of IT equipment in the households in 2.18, the average monthly income of the households in the study is 29.92 thousand Turkish Liras, the average number of individuals in households is 3.91 and the average age of the participants in 42.

Table 6. Multivariate probit model results of factors influencing online shopping

Variables	E1	E2	E3	E4	E5
Number of IT equipment	0.1906* (0.0108) [0.0233]	0.1933* (0.0096) [0.0319]	0.2149* (0.0116) [0.0219]	0.2161* (0.0117) [0.0207]	0.2195* (0.0118) [0.0208]
Average monthly income (₺1000)	0.0239* (0.004) [0.0029]	0.0329* (0.0039) [0.0054]	0.0254* (0.0043) [0.0026]	0.0404* (0.0039) [0.0039]	0.0405* (0.004) [0.0038]
Household size	-0.0998* (0.0094) [-0.0122]	-0.0714* (0.0075) [-0.0118]	-0.1047* (0.01) [-0.0107]	-0.1662* (0.0108) [-0.0159]	-0.0979* (0.0104) [-0.0093]
Age	-0.0193* (0.0011) [-0.0024]	-0.038* (0.0011) [-0.0063]	-0.0283* (0.0012) [-0.0029]	-0.0199* (0.0012) [-0.0019]	-0.0297* (0.0013) [-0.0028]
Gender (Reference: Female)					
Male	0.0126 (0.0266) [0.0015]	-0.2977* (0.0237) [-0.0493]	0.6051* (0.0296) [0.0597]	0.291* (0.0289) [0.0275]	0.0758* (0.0287) [0.0072]
Working status (Reference: Not Working)					
Working	0.304* (0.0279) [0.0371]	0.341* (0.0249) [0.0568]	0.2656* (0.0302) [0.0266]	0.3205* (0.0304) [0.0304]	0.1155* (0.0308) [0.0109]
Level of education (Reference: Didn't finish a school)					
Primary school	0.7927* (0.2042) [0.0255]	0.487* (0.0878) [0.0412]	3.8202 (125.3493) [0.0245]	0.2668 (0.1905) [0.0069]	0.6263** (0.2635) [0.0134]
Middle school	1.087* (0.204) [0.0483]	0.7222* (0.0868) [0.072]	4.0457 (125.3493) [0.0374]	0.5445* (0.1879) [0.0186]	0.8552* (0.2609) [0.0238]
High school	1.5035* (0.203) [0.1013]	1.1428* (0.0862) [0.1484]	4.5291 (125.3493) [0.0831]	1.1172* (0.1858) [0.066]	1.3352* (0.2598) [0.0618]

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Table 1. Continued

Variables	E1	E2	E3	E4	E5
University	1.8481* (0.2032) [0.1677]	1.4864* (0.0872) [0.231]	4.9277 (125.3493) [0.1446]	1.6538* (0.1858) [0.152]	1.9136* (0.2598) [0.1495]
The region where the individual lives (Reference: TRC)					
TR1	0.4511* (0.0664) [0.0547]	0.1477* (0.053) [0.0234]	0.375* (0.0734) [0.0334]	0.2285* (0.0692) [0.0233]	0.46* (0.0723) [0.0431]
TR2	0.512* (0.0753) [0.064]	0.3828* (0.0625) [0.0655]	0.3777* (0.0846) [0.0337]	0.0951 (0.081) [0.0091]	0.4031* (0.0839) [0.0367]
TR3	0.3268* (0.0691) [0.0372]	0.1247** (0.0554) [0.0196]	0.4713* (0.0755) [0.0442]	0.0921 (0.0722) [0.0088]	0.3181* (0.0757) [0.0277]
TR4	0.2679* (0.0709) [0.0295]	0.1293** (0.0567) [0.0203]	0.3083* (0.0777) [0.0265]	-0.0965 (0.0754) [-0.0084]	0.2409* (0.0777) [0.0201]
TR5	0.1293*** (0.07) [0.0132]	0.0946*** (0.0553) [0.0147]	0.3508* (0.0756) [0.0309]	0.1594** (0.0714) [0.0157]	0.3022* (0.075) [0.0261]
TR6	0.1945* (0.0708) [0.0206]	0.1267** (0.0556) [0.0199]	0.4639* (0.0762) [0.0433]	0.092 (0.0734) [0.0088]	0.1322*** (0.0782) [0.0104]
TR7	0.0438 (0.0784) [0.0043]	0.0407 (0.0607) [0.0062]	0.1029 (0.0861) [0.0079]	-0.3844* (0.0899) [-0.0292]	-0.1204 (0.0907) [-0.0082]
TR8	0.2833* (0.0756) [0.0315]	0.1975* (0.0606) [0.0318]	0.3189* (0.0836) [0.0276]	0.0309 (0.081) [0.0029]	0.2952* (0.0836) [0.0254]
TR9	0.1135 (0.0823) [0.0115]	0.2547* (0.0644) [0.0418]	0.3909* (0.0867) [0.0351]	0.0049 (0.0858) [0.0005]	0.1065 (0.0912) [0.0082]
TRA	0.0543 (0.0942) [0.0053]	0.1189*** (0.0705) [0.0186]	0.1901*** (0.1) [0.0153]	0.1258 (0.0955) [0.0122]	0.0782 (0.1027) [0.006]
TRB	0.0719 (0.0808) [0.0071]	0.125** (0.0605) [0.0196]	0.1225 (0.0883) [0.0095]	-0.1475*** (0.0873) [-0.0126]	0.209** (0.0858) [0.0171]
Constant	-2.5601* (0.2184)	-1.0696* (0.1071)	-5.8918 (125.3494)	-2.2434* (0.2034)	-2.4083* (0.2741)

- *,** and *** show %1, %5 ve %10 significance level, respectively.
- From top to bottom, values given in each cell are coefficients, standard errors and average marginal effects respectively.

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Model Estimation

The results of multivariate probit regression analysis, which was made to determine the factors influencing the situation of individuals' online shopping states, were given in Table 6.

The number of information equipment variables is significant in all dependent variable groups and has a positive effect on online shopping situations. One unit increase in the number of information equipment increases the probability of shopping from E1, E2, E3, E4 and E5 groups by 2.33%, 3.19%, 2.19%, 2.07% and 2.08%, respectively.

The monthly income variable of the household is also significant in all dependent variable groups and has a positive effect on internet shopping situations. The increase in the monthly income of the household by ₺1000 increases the probability of buying from E1, E2, E3, E4 and E5 groups by 2.9‰, 5.4‰, 2.6‰, 3.9‰ and 3.8‰, respectively.

The household size variable is significant in all dependent variable groups and has negative impact on online shopping situations. One unit increase in the household size variable reduces the probability of shopping from groups E1, E2, E3, E4 and E5 by 1.22%, 1.18%, 1.07%, 1.59% and 9.3‰, respectively.

Age variable is also significant in all dependent variable groups and has a negative effect on online shopping situations. One unit increase in the age variable decreases the probability of buying from E1, E2, E3, E4, and E5 groups by 2.4‰, 6.3‰, 2.9‰, 1.9‰ and 2.8‰, respectively.

Gender variable is significant in E2, E3, E4, and E5 dependent variable groups. It has a negative effect on the internet shopping situation for the E2 group and a positive effect on the internet shopping situation for the E3, E4 and E5 groups. Males are 4.93% less likely to shop from the E2 group than women, and 5.97%, 2.75% and 7.2‰ more likely to shop from the E3, E4 and E5 groups than women, respectively.

The variable of working status of individuals is significant in all dependent variable groups and has a positive effect on internet shopping situation. The probability of shopping among the E1, E2, E3, E4 and E5 groups is 3.71%, 5.68%, 2.6%, 3.04% and 1.09% more than the non-working individuals.

When the education level variable is examined, it is seen that probability of shopping for primary school graduates from the E1, E2 and E5 groups is 2.55%, 4.12% and 1.34% higher than the non-school graduates, respectively. Secondary school graduates are 4.83%, 7.2%, 1.86% and 2.38% more likely to shop from groups E1, E2, E4 and E5 than non-school graduates, respectively. High school graduates are 10.13%, 14.84%, 6.6% and 6.18% more likely to shop from the E1, E2, E4 and E5 groups than non-school graduates, respectively. University graduates are 16.77%, 23.1%, 15.2% and 14.95% more likely to shop from the E1, E2, E4 and E5 groups than non-school graduates, respectively. As the education level increases in all of the dependent variable groups, the likelihood of online shopping increases.

When the region variable is analyzed, it is seen that individuals living in the TR1 region are more likely to buy from the E1, E2, E3, E4 and E5 groups according to reference category (TR12) by 5.47%, 2.34%, 3.34%, 2.33% and 2.31% respectively. Individuals living in the TR3 region are 3.72%, 1.96%, 4.42% and 2.77% more likely to shop from the E1, E2, E3 and E5 groups than the reference category, respectively. Individuals living in the TR4 region are 2.95%, 2.03%, 2.65% and 2.01% more likely to shop from the E1, E2, E3 and E5 groups than the reference category, respectively. Individuals living in the TR5 region are 1.32%, 1.47%, 3.09%, 1.57%, and 2.61% higher than the reference categories in the E1, E2, E3, E4 and E5 groups, respectively. Individuals living in the TR6 region are 2.06%, 1.99%, 4.33%, and 1.04% more likely to shop from the E1, E2, E3 and E5 groups than the reference category, respectively. Individuals living in the TR7 region are 2.92% less likely to shop from the E4 group than the reference category. Individuals living in the TR8 region are 3.15%, 3.18%, 2.76% and 2.54% more

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likely to shop from E1, E2, E3 and E5 groups than the reference category, respectively. Individuals living in the TR9 region are 4.18% and 3.51% more likely to shop from the E2 and E3 groups than the reference category, respectively. Individuals living in the TR10 region are 1.96% and 1.71% more likely to shop from the E2 and E5 groups than the reference category, and 1.26% less likely to shop from the E4 group, respectively.

Correlation Coefficients of Outcome Variables

One of the most important uses of the multivariate probit model is the ability to show the interaction between dependent variables. Table 7 shows the correlation coefficient for each model showing the relationship between residuals. According to the tests for correlation coefficients, the coefficients are significant. It shows that these models can be handled simultaneously in a single model. In addition, the coefficients are positive. That is, the probability of shopping from any product group is affected by the possibility of shopping from other product groups in the same direction. Unobservable factors for each product affect the likelihood of purchase from other products. The E1, E2, E3 and E5 categories are associated with the E4 category at most. The E4 category is associated with the E5 category at most.

CONCLUSION

This study aimed to determine the factors influencing the preferences of individuals living in Turkey to do shopping over the internet. To this end, Information Technology Usage Survey micro data set, which was conducted by Turkish Statistical Institute in 2018, was used. Multivariate probit model was used in the analysis. The number of equipment, income, household size, age, gender, working status, level of education, and region of residence affect the possibility of online shopping.

In the study, it was found that the number of information equipment positively affected the shopping on the internet. The number of IT equipment is directly related to its use (Cristóbal-Fransi et al., 2015, p. 179). The increase in the number of phones in the family also increases the possibility of online shopping (Hossein et al., 2017, p. 50). In the literature, the belief, income affects online shopping by positive way, is dominant. In this study, parallel to Burkolter and Kluge (2011, p. 21), Cristóbal-Fransi et al. (2015, p. 179), Vicente (2015, p. 980) and, Akhter (2003, p. 325), the increase in income was found to increase the likelihood of shopping over the internet. Household size adversely affects online shopping. In the study of Stranahan (2007, p. 428), the effect of the number of children was negative, small but not significant, Cao et al. (2012, p. 968) found no effect, Leong et al. (2018, p. 88) found that the effect is the same direction. Hiser, Nayga, and Capps (1999, p. 87) found that the number of children and household size had no effect. In parallel with the main literature, it was found that age affects shopping over the internet in the opposite direction. Similarly, Alqahtani et al. (2018, p. 1), Law and Ng (2016, p. 261) and Teo (2006, p. 506) found that the younger ones prefer more shopping online. The effect of gender variable varies according to product groups. The shopping preference of foodstuffs, daily necessities, and household goods does not differ in terms of gender. Females make more purchases of clothing and sports goods over the internet than men. In other categories, males prefer more to shop online. Doherty and Ellis-Chadwick (2003, p. 1), Hashim et al. (2009, p. 24) ve Escobar-Rodríguez et al. (2017, p. 141) found that males were more likely to shop online than women. In parallel with Vicente (2015, p. 980), it was found that employed ones tend to shop more on the internet than unemployed ones. It was found

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that education affects the purchasing over the internet for all variables except technological products such as computer, other equipment, and telecommunication services. Parallel to Stranahan (2007, p. 432), Koyuncu and Lien (2003, p. 722) and Leong et al. (2018, p. 88), it was found that educated people prefer internet shopping more. The region also affects the shopping on the internet. While those who prefer to shop on the internet most live in Istanbul and West Marmara, those who prefer the least live in Southeastern Anatolia. The possibility of online shopping for all product groups is mostly related to holiday accommodation and other travel related transactions.

According to the findings of the study, it was found that the number of information equipment, income, being a man, working, and education increased the probability of shopping over the internet. It was determined that household size and age decreased. One of the interesting findings of the study is that females shop for clothing and sports goods more than men. Another is that the highest correlation with the purchase of other product groups over the internet is through holiday accommodation and other travel related transactions. This can be interpreted as the fact that those who make holiday accommodation and other travel related transactions over the internet tend to purchase all product groups over the internet and vice versa.

FUTURE RESEARCH DIRECTIONS

The study has some limitations. The dependent variables that were the subject of this study were not obtained from any commercial records. Transaction was made by considering the answers of the participants. Therefore, the answers may be biased. The variables used in this study are the variables included in the Household Information Technology Usage Survey micro data set. Variables such as occupation, marital status, race, social media usage, mobile/internet banking usage which could affect individuals' shopping via internet could not be taken into consideration. Household Information Technology Usage Surey has been conducted regularly since 2004. In future studies, the trend in the use of e-commerce of individuals living in Turkey between 2004 and 2018 can be determined. The difference between genders in the use of e-commerce in Turkey can be examined. Likewise, e-commerce usage differences according to the status of individuals living in Turkey can be determined.

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REFERENCES

Adamkolo, M. I., Hassan, M. S., & Pate, A. U. (2018). Consumers' Demographic Factors Influencing Perceived Service Quality in e-Shopping: Some Evidence from Nigerian Online Shopping. *Pertanika Journal of Social Science & Humanities*, *26*(3), 1335–1369.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Akhter, S. H. (2003). Digital divide and purchase intention: Why demographic psychology matters. *Journal of Economic Psychology*, *24*(3), 321–327. doi:10.1016/S0167-4870(02)00171-X

Alqahtani, A. S., Goodwin, R. D., & de Vries, D. B. (2018). Cultural factors influencing e-commerce usability in Saudi Arabia. *International Journal of Advanced and Applied Sciences*, *5*(6), 1–10. doi:10.21833/ijaas.2018.06.001

Ariguzo, G. C., Mallach, E. G., & White, D. S. (2006). The first decade of e-commerce. *International Journal of Business Information Systems*, *1*(3), 239–255. doi:10.1504/IJBIS.2006.008598

Awa, H. O., Baridam, D. M., & Nwibere, B. M. (2015). Demographic determinants of electronic commerce (EC) adoption by SMEs: A twist by location factors. *Journal of Enterprise Information Management*, *28*(3), 326–345. doi:10.1108/JEIM-10-2013-0073

Burkolter, D., & Kluge, A. (2011). Online consumer behavior and its relationship with socio-demographics, shopping orientations, need for emotion, and fashion leadership. *Journal of Business and Media Psychology*, *2*(2), 20–28.

Cao, X. J., Xu, Z., & Douma, F. (2012). The interactions between e-shopping and traditional in-store shopping: An application of structural equations model. *Transportation*, *39*(5), 957–974. doi:10.100711116-011-9376-3

Coppel, J. (2000). *E-Commerce: Impacts and Policy Challenges.* OECD Economics Department Working Papers, No. 252, OECD Publishing, Paris. doi:10.1787/801315684632

Cristóbal-Fransi, E., Martín-Fuentes, E., & Daries-Ramon, N. (2015). Behavioural analysis of subjects interacting with information technology: Categorising the behaviour of e-consumers. *International Journal of Services Technology and Management*, *21*(1-3), 163–182. doi:10.1504/IJSTM.2015.071121

Dibb, S. (1998). Market segmentation: Strategies for success. *Marketing Intelligence & Planning (Chicago, Ill.)*, *16*(7), 394–406. doi:10.1108/02634509810244390

Doherty, N. F., & Ellis-Chadwick, F. E. (2003). The relationship between retailers' targeting and e-commerce strategies: An empirical analysis. *Internet Research, 13*(3), 170-182.

eCommerce. (2019). Retrieved from https://www.statista.com/outlook/243/113/ecommerce/turkey

Ecommerce Statistics for 2019. (2019). Retrieved from https://kinsta.com/blog/ecommerce-statistics/

Escobar-Rodríguez, T., Grávalos-Gastaminza, M. A., & Pérez-Calañas, C. (2017). Facebook and the intention of purchasing tourism products: Moderating effects of gender, age and marital status. *Scandinavian Journal of Hospitality and Tourism*, *17*(2), 129–144. doi:10.1080/15022250.2015.1137784

Fernandez-Lanvin, D., Andres-Suarez, J., Gonzalez-Rodriguez, M., & Pariente-Martinez, B. (2018). The dimension of age and gender as user model demographic factors for automatic personalization in e-commerce sites. *Computer Standards & Interfaces*, *59*, 1–9. doi:10.1016/j.csi.2018.02.001

Greene, W. H. (2012). Econometric analysis (7th ed.). Boston: Prentice Hall.

Hashim, A., K Ghani, E., & Said, J. (2009). *Does Consumers' Demographic Profile Influence Online Shopping? An Examination Using Fishbein's Theory* (Vol. 5). Academic Press.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Hiser, J., Nayga, R. M. Jr, & Capps, O. Jr. (1999). An Exploratory Analysis Of Familiarity And Willingness To Use Online Food Shopping Services In A Local Area Of Texas. *Journal of Food Distribution Research*, *30*(1), 1–13.

Hossein, K. M., Nishikitani, M., Kitaoka, H., Yokota, F., Islam, R., Okajima, H., ... Ahmed, A. (2017). Factors Associated to Online Shopping at the BoP Community in Rural Bangladesh. *International Journal of Advanced Computer Science and Applications*, *8*(10), 46–51.

Hui, T. K., & Wan, D. (2009). Who are the online grocers? *Service Industries Journal*, *29*(11), 1479–1489. doi:10.1080/02642060902793334

Koyuncu, C., & Lien, D. (2003). E-commerce and consumer's purchasing behaviour. *Applied Economics*, *35*(6), 721–726. doi:10.1080/0003684022000020850

Law, M., & Ng, M. (2016). Age and gender differences: Understanding mature online users with the online purchase intention model. *Journal of Global Scholars of Marketing Science*, *26*(3), 248–269. doi:10.1080/21639159.2016.1174540

Lee, R. J., Sener, I. N., Mokhtarian, P. L., & Handy, S. L. (2017). Relationships between the online and in-store shopping frequency of Davis, California residents. *Transportation Research Part A, Policy and Practice*, *100*, 40–52. doi:10.1016/j.tra.2017.03.001

Leong, L. Y., Jaafar, N. I., & Ainin, S. (2018). Understanding Facebook commerce (f-commerce) actual purchase from an artificial neural network perspective. *Journal of Electronic Commerce Research*, *19*(1), 75–103.

Lightner, N. J. (2003). What users want in e-commerce design: Effects of age, education and income. *Ergonomics*, *46*(1-3), 153–168. doi:10.1080/00140130303530 PMID:12554404

Lim, Y. M., & Cham, T. H. (2015). A profile of the Internet shoppers: Evidence from nine countries. *Telematics and Informatics*, *32*(2), 344–354. doi:10.1016/j.tele.2014.10.002

Phang, C. W., Kankanhalli, A., Ramakrishnan, K., & Raman, K. S. (2010). Customers' preference of online store visit strategies: An investigation of demographic variables. *European Journal of Information Systems*, *19*(3), 344–358. doi:10.1057/ejis.2010.32

Prashar, S., Sai Vijay, T., & Parsad, C. (2016). Segmenting online shoppers: A study of consumers' web portal selection motivations for e-shopping. Asian Academy of Management Journal, 21(1).

Ramírez-Correa, P., Grandón, E., & Arenas-Gaitán, J. (2019). Assessing differences in customers' personal disposition to e-commerce. *Industrial Management & Data Systems*, *119*(4), 792–820. doi:10.1108/IMDS-07-2018-0280

Saarijärvi, H., Joensuu, J., Rintamaki, T., & Yrjölä, M. (2018). One person's trash is another person's treasure: Profiling consumer-to-consumer e-commerce in Facebook. *International Journal of Retail & Distribution Management*, *46*(11/12), 1092–1107. doi:10.1108/IJRDM-04-2017-0091

Sabaityte, J., Davidaviciene, V., Strakova, J., & Raudeliuniene, J. (2019). Decision tree modelling of e-consumers' preferences for internet marketing communication tools during browsing. *E+M. Ekonomie a Management*, *22*(1), 206–221. doi:10.15240/tul/001/2019-1-014

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Stranahan, H., & Kosiel, D. (2007). E-tail spending patterns and the importance of online store familiarity. *Internet Research*, *17*(4), 421–434. doi:10.1108/10662240710828076

Teo, T. S. H. (2006). To buy or not to buy online: Adopters and non-adopters of online shopping in Singapore. *Behaviour & Information Technology*, *25*(6), 497–509. doi:10.1080/01449290500256155

Vicente, M. R. (2015). Determinants of C2C e-commerce: An empirical analysis of the use of online auction websites among Europeans. *Applied Economics Letters*, *22*(12), 978–981. doi:10.1080/13504851.2014.993127

Wiegandt, C. C., Baumgart, S., Hangebruch, N., Holtermann, L., Krajewski, C., Mensing, M., ... Zucknik, B. (2018). Determinants of online shopping - an empirical study in six North Rhine-Westphalian city regions. *Raumforschung Und Raumordnung-Spatial Research and Planning*, *76*(3), 247–265. doi:10.100713147-018-0532-5

ADDITIONAL READING

Bidgoli, H. (2002). *Electronic commerce: principles and practice*. Academic press. doi:10.1016/B978-012095977-8.50005-7

Bondari, B. (2010). *Wordpress 2.9 e-commerce: build a proficient online store to sell products and services*. Packt Publishing Ltd.

Carey, P. (2001). *The Internet and E-commerce*. Thorogood Pub.

Choi, S.-Y., Stahl, D. O., & Whinston, A. B. (1997). *The economics of electronic commerce*. Macmillan Computer Publishing.

Jank, W., Shmueli, G., & Wang, S. (2008). *Statistical methods in e-commerce research*. John Wiley & Sons. doi:10.1002/9780470315262

Kraemer, K. L., Dedrick, J., Melville, N. P., & Zhu, K. (2006). *Global e-commerce: impacts of national environment and policy*. Cambridge University Press. doi:10.1017/CBO9780511488603

Lubbe, S. (2002). *The economic and social impacts of e-commerce*. Idea Group Publishing.

Lucas, H. C. (2003). *Strategies for electronic commerce and the Internet*. MIT Press.

Mann, C. L., Eckert, S. E., & Knight, S. C. (2000). *Global electronic commerce: A policy primer*. Institute for International Economics.

Peacock, M. (2010). *PHP 5 e-commerce Development*. Packt Publishing Ltd.

Schneider, G. (2010). *Electronic Commerce* (11th ed.). Cengage Learning.

Smith, G. E. (2004). *Control and Security of E-commerce*. John Wiley & Sons.

Watson, R.T., Berthon, P., Pitt, L.F., & Zinkhan, G.M. (2007). *Electronic Commerce: The Strategic Perspective*: Creative Commons Attribution 3.0 License.

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Yokoo, M., Ito, T., Zhang, M., Lee, J., & Matsuo, T. (2008). *Electronic commerce: theory and practice* (Vol. 110). Springer Science & Business Media.

KEY TERMS AND DEFINITIONS

Correlation Coefficient: The correlation coefficient (r) is a measure of the relationship between two variables and varies between -1 and +1. The correlation coefficient between the two variables is the degree of variation of these two variables together.

Dependent Variable: The dependent variable is a variable whose change depends a factor; whose value does not change if the factor does not change. Variables that change depends on another variable are called dependent variables.

Electronic Commerce: It is a concept that emerged with the increase of internet usage. Production, promotion, sales, insurance, distribution and payment of goods and services are carried out through computer networks.

Electronic Commerce Between Company and Consumer: It is the most known type of electronic commerce. Virtual store applications are the direct selling of goods or services to the consumer in electronic environment.

Electronic Commerce Between Consumer and Public Administration: We can define all kinds of tax, health and legal activities between consumer and public administration in this field.

Household Information Technologies Usage Survey: Household Information Technology Usage Survey have been held by Turkish Statistical Institute since 2004. The main objective of the Household Information Technology Usage Survey to determine the extent of the information society in Turkey and is the production of relevant statistics.

Independent Variable: It is the variable whose effect is wondered in any research. It is the variable that affects the dependent variable.

Multivariate Probit Regression: This is a preferred model where dependent variables (two categories) are multiple and dependent variables are interrelated.

Probit Regression: It is a model used as an alternative to logistics regression. It is a model that can be used in cases where the dependent variable has two categories. Probit model is based on benefit theory and rational choice approach.

Regression: The most appropriate relationship between dependent variable(s) (Y) and independent variable(s) (X) is expressed as a mathematical function.

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Chapter 95
The Perceived Risks Affecting Online Shopping Adoption in Jordan

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ABSTRACT

This article studies online shopping and e-commerce adoption in Jordan due to the significant growth of this industry in Jordan particularly and the rest of the world generally, which is receiving attention globally and has proven to largely contribute to the growth of nations' economies. This article specifically studies the risk that online users perceive from online shopping and how they affect the growth of this industry. This study adopts a quantitative research approach, with a total of 355 questionnaires distributed by the researchers, to determine whether perceived risks of online shopping have an effect on a number of user adoptions. The article studies the two main risks of online shopping, payment risk, and product risk. Payment risks are defined as the financial loss which included risks associated with using credit cards and identity theft. Product risk is described as the loss incurred when a product does not perform as expected or does not match what was shown and described online. The study concludes that perceived payment risk and product risk affect online shopping negatively and has negatively impacted the number of users adopting this phenomenon.

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1. INTRODUCTION

1.1. Research Significance

This growing industry is based on a concept that is electronic commerce and online shopping that is linked to the terms "Internet economy" and "digital economy."

These terms and concepts related to the adoption and utilization of the Information and communications technology (ICT) advancements for economic activities. The digital economy is defined as the commercial activities that generate revenue from the Internet or Internet-related products or services (Costa, 2016). On the other hand, some activities, such as building Internet connections for commercial use, are a part of Internet economy, but yet not necessarily categorized under electronic commerce. The digital economy is based on digital technologies such as a computer, software, and networking infrastructures.

Electronic commerce has been recognized as one of the most dominant concepts in this digital era, as it has actually transformed the way people conduct business and the way the design their business models and business strategies.

1.2. Business Size

E-commerce is the fastest growing retail market in the world (eMarketer, 2017). In 2015 retail e-commerce sales worldwide amounted to 1.55 trillion US dollars, in 2016, the sales grew to 1.86 trillion US dollars and It's forecasted that the sales in 2017 to be around 2.29 trillion US dollars. According to (eMarketer, 2017) online shopping is one of the most popular online activities worldwide.

Online revenues in Western Europe and Poland raised from 201.33 billion Euros in 2015 to 232.60 billion Euros in 2016 that means 15.6% growth rate (Foundation, E-commerce, 2017). E-commerce will be a mega-trend for businesses in the UAE and the market is expected to be valued at 10 billion US dollars by 2018, according to Frost & Sullivan.

Based on the (Centre for Retail Research, 2017) study, e-commerce or "Online retailing" is expected to hit nearly $333 billion in sales revenue by the end of 2018 in Europe, an increase of 18% in a single year time driven by massive growth in the number of internet shoppers, and the percentage of internet sales revenues dedicated online purchased products are trends that are expected to continue growing.

Shoppers of the US brought around 360 billion US dollars a year in revenue in 2016 and is expected to increase by 13.6% in 2017 (Statista DMO; Statista, 2017), and based on their purchase power, it was found essential for retailers and consumer behavior specialists to properly analyze and comprehend this population's attitudes toward shopping through the traditional shopping experience in shops, and retailers versus the new, emerging shopping experiences, such as e-commerce.

In the US for example, Americans are adopting a wide range of digital tools and platforms into their purchasing decisions and buying habits, according to a survey administered by Pew Research Center of U.S. adults. The survey found that 79% Americans are online shopping users: 79% have made an online purchase of any type, while 51% have purchased a product or a service using smartphones and 15% have made purchases by following a link from social media sites. The survey was a repetition for a previously conducted study that took place 17 years ago in June 2000, which found at the time that 22% of Americans had made a purchase online showcasing the massive increase in numbers, size and growth rate of this behavior and purchasing habit. (Smith & Anderson, 2016)

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Furthermore, it was found that 3.4 billion people in the world access the internet daily on a regular basis (Internet Live Stats, 2017) and that internet has spread to 56% of the Jordanian population (Telecommunication Regulatory Commission TRC, 2016). Which highlights the importance of studying this area in Jordan in particular.

This study intends to better understand the local market in Jordan among this segment and understand the factors affecting online shopping adoption in order to help grow this industry in the lights of the current economic situation which will positively be reflected on the prosperity of the economy and the country as a whole.

The Hashemite Kingdom of Jordan has witnessed an increase in the online shopping websites number such as the leading, Souq.com, Cash Basha, Marka VIP, JAMALON and many others, yet this industry is still to be considered as an emerging business industry in its early stages, requiring more understanding for it to develop, progress and show greater profits.

1.3. Research Gap

As the internet penetration is exponentially increasing in today's world and be it one of the fastest-growing areas where retail businesses are starting to pay attention to considering it as one of the most important industry key success factors, and the most effective and profit-making distribution channel among their distribution networks.

Despite this growth many Jordanians are still reluctant to shop online due to the risks associated with buying online. This research intends to understand risk factors associated with online shopping from the perspective of customers and the ways to address them in the future in order to lower perceived risks and allow more customers to appreciate and use the internet for purchasing purposes.

The government and businesses efforts to adopt to this online shopping will be shattered by the customers reluctance due to high perceived risk. That is why it is very important to understand the hurdles and obstacles in the face of exploiting online purchasing by Jordanian Customers.

1.4. Research Objectives

This research is trying to achieve the main purpose of understanding the Perceived Risks Affecting Online Shopping Adoption in Jordan. This requires understanding risks associated with online shopping that are most relevant to the Jordanian context.

2. LITERATURE REVIEW

Electronic Commerce, E-commerce or online shopping, also known as e-business, which refers to the exchange of goods and services through electronic communications, such as websites, emails, and social media platforms. Which was first introduced over 30 years ago although the general public has become familiar with it only in the last decade for both types of commerce; business-to-business (B2B) and business-to-consumer (B2C).

In B2B, businesses conduct transactions with their suppliers, distributors, and other partners through electronic networks, where B2C, companies sell goods and services to end users and consumers. (Nanehkaran, 2013)

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E-commerce or online shopping also includes mobile commerce which uses optimized websites designed or applications that are more compatible and user-friendly designed for a higher satisfaction for shopping at anytime and anywhere.

The literature review for this study has undertaken and has found that 22% of the consumers surveyed by (Rowley & Okelberry, 2000) expressed inconvenience and discomfort with shopping online, which led (Szymanski & Hise, 2000) to conduct a study that aimed to explore the shopping satisfaction using e-commerce, convenience, merchandising and website user experience using focus groups in addition to financial security. (Rowley & Okelberry, 2000) (Szymanski & Hise, 2000)

The lack of trust and online payment security have been always a concern by online shoppers since the inception of e-commerce (Kwon & Lee, 2003) (Szymanski & Hise, 2000).

(Szymanski & Hise, 2000) stated that the level of online payment security consumers perceive with e-commerce is directly related to online shopping experience satisfaction. Further, product performance and financial risk are associated with online shopping risks affecting it negatively (Bhatnagar & Ghose, Segmenting consumers based on the benefits and risks of Internet shopping, 2004).

According to Rouibah et al. (2016) many Middle Eastern countries cash is still preferred over electronic payment systems. Culture play a vital role in this; especially the issue of trust in the context of Arab and Middle Eastern countries.

Another study indicated that the most important factors that encourage consumers to buy and purchase online products using e-commerce channels and websites included the web page design, ease of navigation and the searching for information, security guarantees, and clearly stated return policies for products that the consumer might intend to replace or return (Siddiqui, O'Malley, McColl, & Birtwistle, 2003).

Other studies included different factors that encourage online shopping for products such as avoiding crowded stores especially in holiday seasons, the low prices offered by the frequent promotional campaigns e-commerce merchants announce, the ease of comparison shopping, the subsidized shipping costs, delivery, the improved customer service, convenience and time saving as key drivers for encouraging consumers for apparel online shopping (Rowley & Okelberry, 2000; Magee, 2003).

Magee's (2003) study indicated that the growth in the number of online shoppers is greater than the growth in internet users, showing that internet users are accommodating to shopping online despite the existing and dominant concerns of fraudulent chargebacks and fraudulent transactions as a threat of using credit cards and sharing their credentials online which greatly decreases the consumer confidence.

The relationship between the concerns about online and digital payment security and the tendency to use e-commerce platforms for shopping was discussed in a study conducted by (Kwon & Lee, 2003) where their study sample expressed comfort using online shopping, and observed that consumers with a positive attitude toward online shopping seem to be less concerned about digital payments fraudulent transactions. On the other hand, consumers who are concerned regarding online payment security saw this as a determinant factor and decreased their internet purchases.

Shopping involves risk because a buyer's decision has consequences that cannot be predicted and is more evident in online shopping than in traditional shopping due to the spatial and temporal separation between the buyers and sellers (Chiu et al., 2014).

Perceived risks are defined as the uncertainty of a situation and the seriousness of outcome out of a certain situation (Cox & Harvard University, 1967), which was concluded to negatively affect online shopping attitudes (Jarvenpaa, Tractinsky, & Saarinen, 1999; Kimery & McCord, 2002).

The main perceived risks studied by Bhatnagar & Ghose (Bhatnagar & Ghose, Segmenting consumers based on the benefits and risks of Internet shopping, 2004) are the financial risks and product perfor-

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mance risk. Financial risks are described as the potential loss of money (Derbaix, 1983) including risks associated when using a credit card, while product performance risks are definite as the loss incurred when a product does not perform as expected (Horton, 1976). Trust in online retailers is a major factor inducing the success of online shopping, and in order to improve their experience, retailers and marketers need to implement new strategies to eliminate the perceived risks in consumers' minds.

Many marketers and researchers started investigating the perceived risk and how it affects consumers' attitudes towards online shopping because of the major growth in e-commerce and the number of internet users worldwide. (Chang, Cheung, & Lai, 2005), which was studied by the assessment of the respondents whether they perceive online shopping as risky or if they were concerned with the security and privacy issues of the online shopping system, the digital payment risks be it fraudulent chargebacks or credit cards faults, in addition, product's risk such as the product being faulty, irreplaceable, or not matching the specifications listed on these e-commerce platforms which stated the perceived risks are prominent obstacles in the increase of e online shopping users.

On the other hand, other researchers have also conducted studies considering those who believe that online shopping perceived risks are low confirming the hypotheses of the direct relationship between the level of perceived risk and using online shopping e-commerce channels as those were found to be frequent users (Poel & Leunis, 1999).

Online shopping levels of perceived risks are what leads to attitudes towards online purchasing, for example, those who are hesitant to use their credit card credentials on online shopping e-commerce sites are less likely to shop online (Salkin, 1999).

The literature review also confirmed that the levels of perceived risks differ from an individual to another when comparing between shopping conventionally and shopping online (Featherman & Pavlou, 2003).

Based on the differences in the way individuals perceive risks and the way they define it, it was found that the perceived risks are to be operationalized as the probability and the magnitude of a negative outcome of the purchasing online (March & Shapira, 1987).

Therefore, this research will be studying the perceived risk of apparel online shopping among individuals from both genders, 18 and above and who live in Jordan operationalized into two major constructs which are the probability of a negative outcome taking place out of online shopping and the magnitude of this negative impact on online shopping consumers.

In the risk perceptions of online payment security, this paper will study the concern of purchasers that their credit card information is not secure. As many shoppers refuse online shopping due to the perceived risk of payment security, it is also a reason why some existing shopper stop buying online. This research will study the number of participants who fear to buy online due to payment security and the number of participants who stopped using online shopping caused by an event regarding payment security and the preferred payment method this group is routed to, similarly, it will include the number of participants who make online purchases often and did not face any problems.

Further, this research will study the perceived risk of products in terms of quality and approval of the purchasers as they see a risk in assessing the product due to the intangibility of online purchasing. a might prefer buying apparel in traditional shops as they can evaluate the quality and reliability and try on these products before buying. The research will study how many participants consider this risk before making an online purchase and if it has stopped them from proceeding.

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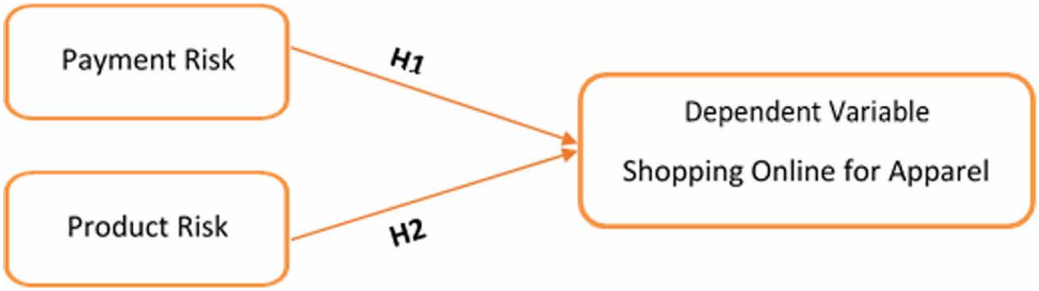
3. GENERAL OBJECTIVE

The purpose of this research is to study the concerns about Online Shopping Perceived Risks and the tendency to use e-commerce platforms for shopping online among Jordanians of both genders and above 18 years old. The reason being is that the Middle Eastern culture, including Jordan, is considered as a risk-averse culture that can be challenging.

4. RESEARCH MODEL

The research model (Figure 1) assesses two important types of risk (Payment Risk and Product Risk). Risk causes discouragement for many customers when they are buying online especially in a culture like the one that exists in Jordan.

Figure 1. Research model



5. RESEARCH QUESTION

- The first question of this research is, does risk of payment security and fraud prevent users from online purchasing.
- The second question is, does risk of receiving a product that is not the same as shown online and not matching expectations prevent users from online purchasing.

6. PROPOSED HYPOTHESIS

The hypotheses of this search are as follows:

H1: The concerns of users about payment security decrease the number of e-commerce purchasing and negatively affects the attitude towards online shopping in Jordan.

H2: The concern of users about receiving a different/faulty product than expected, decreases the number of e-commerce purchasing and negatively affects the attitude towards online shopping in Jordan.

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7. METHODOLOGY

As the research objective implies, this research will be a quantitative research to measure the effect of the perceived risks of online shopping on individual's choice for shopping online from both genders, 18 years old and above and who live Jordan which represent around 39% of the total population in Jordan (Jordan Department of Statistics, 2015). Looking into the sampling methodology, the entire population of the targeted segment (18 years old and above) in Jordan is 3,648,989. In collecting the data about this study, a total of 400 questionnaire survey has been distributed to respondents through both physical distribution and online survey using convenience sampling. However, a total of 355 surveys were filled and returned back successfully, that means a response rate of 88.75% which is quite adequate according to (Sekaran, 2003).

Then analyze the findings so we can confirm or deny perceived risks are to be recognized as an obstacle to the growth of online shopping and e-commerce adoption. The survey questions are based on the paper by (Forsythe, Liu, Shannon, & Gardner, 2006) which was a study to develop a scale to measure the perceived benefits and risks of online shopping which is appropriate to this paper.

This study employed normality and reliability for testing the goodness of data. Then, compare means T-test for testing the hypothesis using the Statistical Package for Service Solution (SPSS).

8. EMPIRICAL RESULTS

Table 1 demonstrates in details the respondents' gender, age, current place of residence, whether they do online shopping and if so, the frequency of doing online shopping. The questionnaires have been distributed to different ranges of groups to have different opinions and perspectives from different respondents.

In order to measure the perceived payment risk and the perceived product risk, a set of Likert questions have been asked for each. Where, 0 is considered as low perceived risk and 5 is considered as high perceived risk.

As mentioned above in Table 1, 97 respondents who adopt online shopping (27.3%) in their purchase behavior and 258 (72.7%) respondents who do not. Table 2 shows the descriptive analysis for these two groups.

For this study, the perceived product risk for online shopping user and non-users is higher than the perceived payment risk. That means, for both users and non-users, the perceived product risk has a higher effect on online shopping adoption than the perceived payment risk because the researchers have tested the purchase adoption for online apparel shopping in specific, and according to (Bhatnagar, Misra, & Rao, On risk, convenience, and Internet shopping behavior, 2000) the perceived product risk will be higher for product categories where feel and touch are essential.

8.1. Reliability Test

In order to examine the internal consistency and the reliability of the data. Usually, Cronbach's Alpha coefficient is used. The Cronbach's coefficient must be above 0.7 to have acceptable internal consistency and reliable results. According to (Pallant, 2013), a value below 0.7 is considered inadequate.

Table 3 shows the Cronbach's Alpha coefficient for four independent variables and one dependent variable in which all of them are above 0.7, i.e., all variables are reliable.

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Table 1. Demographic analysis

	Component	Frequency	Percentage
Gender	Male	202	56.9%
	Female	153	43.1%
Age	18-23	78	22.0%
	24-29	92	25.9%
	30-35	111	31.3%
	More than 35	74	20.8%
Current residence place	Amman	167	47.0%
	Irbid	72	20.3%
	Zarqa	38	10.7%
	Aqaba	56	15.8%
	Other	22	6.2%
Do you use online shopping	Yes	97	27.3%
	No	258	72.7%
How often do you shop online	Very often	21	13.9%
	Often	41	27.2%
	Not very often	52	34.4%
	Rarely	37	24.5%

Table 2. Demographic analysis

Independent Variables	N	Mean	Std. Deviation
Payment risks for online shoppers	97	2.32	0.58
Product risks for online shoppers	97	3.49	0.62
Payment risks for non-online shoppers	258	3.55	0.5
Product risks for non-online shoppers	258	4.44	0.45

Table 3. Cronbach's alpha test

Construct	Number of Items	Cronbach's Alpha Coefficient
Payment risks for online shoppers	6	0.701
Product risks for online shoppers	5	0.728
Payment risks for non-online shoppers	6	0.717
Product risks for non-online shoppers	5	0.778
Online shopping adoption	4	0.801

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8.2. Exploratory Factor Analysis

Exploratory Factor Analysis or EFA is used to test the interrelationship of variables. Usually, two measurements are used to check the appropriateness of the factor analysis. Which is, Bartlett and Kaiser-Meyer-Olkin (KMO). Table 4 shows the EFA results.

The Bartlett Test of Sphericity which is the Sig. (P) Values in the table above are less than 0.05 which means that the relationship between variables is significant. Meanwhile, the KMO values are above 0.5 which is the minimum for an acceptable factor analysis (Williams, Onsman, & Brown, 2010). Therefore, all the variables are appropriate and the factor analysis is considered applicable.

8.3. Pearson Correlation

In order to test the hypotheses of this study. Pearson Correlation is used to validate if there is a relationship between the dependent and the independent variables and if any to what extent. Pearson Correlation is mainly used to indicate if there is a linear relationship between two variables and to what extent.

The Pearson correlation coefficient, r, can take a range of values from +1,0 to -1. A 0 value means that there is no relationship between the two variables, a greater than 0 value indicates a positive relationship; that means, as the value of one variable increases, the value of the other variable increases. While a less than 0 value indicates a negative relationship; that means, as the value of one variable increases, the value of the other variable decreases. According to literature a value between 0 to 0.3 reflects weak correlation, between 0.3 to 0.7 moderate correlation and a value of more than 0.7 indicates strong correlation.

Table 5 demonstrates the relationship between the dependent variable (Online Shopping Adoption) and the independent variables (Payment and Product risks). Both Payment Risk and Product Risk are negatively correlated with the Online Shopping Adoption the dependent variable. The former's r value is -0.526 while the latter's r value is -0.465.

Table 4. Cronbach's alpha test

Construct	Approx. Chi Square	DF	Sig (p)	KMO
Payment risk	406.503	15	.000	0.8118
product risk	323.392	10	.000	0.7235

Table 5. Pearson correlation results

Construct	Online Shopping Adoption	Sig.
Payment risk	- 0.526	.000
Product risk	- 0.465	.000

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8.4. Regression Analysis

Table 4 indicates that the dependent variable and the dependents variables are correlated that means the proposed hypotheses of this study are valid and accepted. Although they are valid and accepted, a Regression Analysis will be conducted to ensure that there are actual relationships between these variables.

Table 6 shows that the R square value (coefficient of determination) for this research model is 9.7%. This value indicates that about 10% of the variation in Online Shopping Adoption accounted for by the variation in both of explanatory variables in the regression equation. The remaining 90% accounted for other factors that aren't being explained in this study.

The Sig. value in Table 7, which is less than the level of significance 0.05 considered for this study, proves that the relationship between the independent variables and the independent variables and the dependent variable are significant. In other words, we proved that this model accurately predicts the impact of perceived risks (Payment risk and Product risk) on Online Shopping Adoption.

After proving the relationship between the Perceived Risks and the Online Shopping Adoption. Then, the researchers want to know the extent of this relationship. Payment Risk and Product Risk coefficients (see Table 8) have negative signs and that precisely what it's expected, that means; as these two factors decrease the Online Shopping Adoption in Jordan increases. β of Payment Risk is greater than β of Product Risk, that is; the Product Risk has the most significant relationship with the Online Shopping Adoption in Jordan.

Table 6. Model summary

Model	R	R Square	Adjusted R Square
1	.312[a]	.097	.092

a. Predictors: (Constant), Payment Risk, Product Risk

Table 7. ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.393	2	3.697	15.34	.000[b]
	Residual	84.767	352	0.241		
	Total	92.160	354			

a. Dependent Variable: Online Shopping Adoption
b. Predictors: (Constant), Payment Risk, Product Risk

Table 8. Regression coefficients

Construct	Unstandardized Coefficients β
Payment risk	- 0.201
Product risk	- 0.134

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According to findings of this study, researchers failed to reject the propsed hypotheses, in other words, both perceived risks, Payments Risks and Product Risks, are correlated with the Online Shopping Adoption. Specifically, they negatively correlated and negatively affect the Online Shopping adoption in Jordan.

9. DISCUSSION

The study found that perceived product risk for online shopping is higher than the perceived payment risk. Perceived product risk has a higher effect on online shopping adoption especially for product categories where feel and touch are essential.

According to findings of this study, both perceived risks (Payments Risks and Product Risks) are correlated with the Online Shopping Adoption. Specifically, they negatively correlated and negatively affect the Online Shopping adoption in Jordan.

The importance of identifying and reducing perceived risks is highly attributed to the distinction between different types of risk and to use them to examine perceptions of online purchase risks. This helps to better identify the differences in perceived risk and thus enhance the precision with which actions to reduce risk can be taken.

Payment risk such as fear of fraud, phishing or disclosing private information has negative effect on attitude toward online shopping, this is already established in the literature (Almousa, 2011; Javadi et al., 2012), However, The study results showed that product perceived risk such as the inability to judge the quality of the product over Internet was found to have a higher influence on the consumers decision to by online; lots of research indicated the importance of product related risks (Forsythe et al., 2003; Javadi et al., 2012).

10. CONCLUSION

In light of the overall findings and empirical results, the independent variables (Payment Risk and Product Risk) are correlated with the dependent variable (Online Shopping Adoption in Jordan). Regression Analysis shows a negative relationship between the two perceived risks and the online shopping adoption in Jordan, that is; as these two factors increase the online shopping adoption in Jordan decreases. Consumers worry to shop online because they have concerns about using their credit cards credentials, their personal information will be leaked or used elsewhere, and/or they have concerns about the quality, size the product.

According to this study, people in Jordan are more concerned about using their credit cards credentials than what they do towards quality, size and/or defects in the product because however, most of the e-commerce platform thanks to the new logistics technologies have managed to decrease the perceived product risks by offering a complete refund, exchange, warranties, etc.

11. MANAGERIAL IMPLICATIONS

Managers need to take perceived risk into account when designing their electronic marketing channels. To reduce perceived risk, especially frequently updated information should be provided to improve the

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website contents. Since behavioral intention toward online shopping has positive impact on actual purchase behavior; online vendors need to understand the factors that influence the formation of consumer's intention toward online shopping.

Online retailers should send notifications to all their customers assuring them the security of their online transactions and use all the safety measures to do so, this will help in reducing the payment risk. In order to help reduce product risk; online retailers should grant customers a trial period to assess the product physically, this may happen upon the delivery for the product or for a longer period of time guaranteeing a full refund if customers didn't like the product.

Online vendors should work on their e-commerce institutional mechanisms to create a less risky transaction environment using regulatory assurances to enables customers to rely less on trust to continue a transaction (Fang et al., 2014).

REFERENCES

Almousa, M. (2011). Perceived risk in apparel online shopping: A Multi dimensional perspective. *Canadian Social Science*, *7*(2), 23–31.

Bhatnagar, A., & Ghose, S. (2004). Segmenting consumers based on the benefits and risks of Internet shopping. *Journal of Business Research*, *57*(12), 1352–1360. doi:10.1016/S0148-2963(03)00067-5

Bhatnagar, A., Misra, S., & Rao, R. H. (2000, November). On risk, convenience, and Internet shopping behavior. *Communications of the ACM*, *43*(11), 98–105. doi:10.1145/353360.353371

Centre for Retail Research. (2017). *Online Retailing: Britain, Europe, US and Canada 2017*. Retrieved from http://www.retailresearch.org/onlineretailing.php

Chang, M. K., Cheung, W., & Lai, V. S. (2005, May). Literature derived reference models for the adoption of online shopping. *Information & Management*, *42*(4), 543–559. doi:10.1016/S0378-7206(04)00051-5

Chiu, C. M., Wang, E. T., Fang, Y. H., & Huang, H. Y. (2014). Understanding customers' repeat purchase intentions in B2C e-commerce: The roles of utilitarian value, hedonic value and perceived risk. *Information Systems Journal*, *24*(1), 85–114. doi:10.1111/j.1365-2575.2012.00407.x

Costa, E. d. (2016). *Global E-commerce Strategies for Small Businesses*. Cambridge, MA, USA: MIT Press.

Cox, D. F. (1967). *Risk taking and information handling in consumer behavior.* Harvard University.

Derbaix, C. (1983). Perceived risk and risk relievers: An empirical investigation. *Journal of Economic Psychology*, *3*(1), 19–38. doi:10.1016/0167-4870(83)90056-9

E-commerce Foundation. (2017, June 26). *Ecommerce in Europe: €602 billion in 2017*. Retrieved from https://ecommercenews.eu/ecommerce-europe-e602-billion-2017/

Fang, Y., Qureshi, I., Sun, H., McCole, P., Ramsey, E., & Lim, K. H. (2014). Trust, satisfaction, and online repurchase intention: The moderating role of perceived effectiveness of e-commerce institutional mechanisms. *Management Information Systems Quarterly*, *38*(2), 407–427. doi:10.25300/MISQ/2014/38.2.04

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Featherman, M. S., & Pavlou, P. A. (2003, October). Predicting e-services adoption: A perceived risk facets perspective. *International Journal of Human-Computer Studies*, *59*(4), 451–474. doi:10.1016/S1071-5819(03)00111-3

Forsythe, S., Liu, C., Shannon, D., & Gardner, L. C. (2006). Development of a Scale to Measure the Perceived Benefits and Risks of Online Shopping. *Journal of Interactive Marketing*, *20*(2), 55–75. doi:10.1002/dir.20061

Forsythe, S. M., & Shi, B. (2003). Consumer patronage and risk perceptions in Internet shopping. *Journal of Business Research*, *56*(11), 867–875. doi:10.1016/S0148-2963(01)00273-9

Horton, R. L. (1976, September). The structure of perceived risk: Some further progress. *Journal of the Academy of Marketing Science*, *4*(4), 694–706. doi:10.1007/BF02729830

Internet Live Stats. (2017, December 4). *Internet Users*. Retrieved from internetlivestats.com: http://www.internetlivestats.com/internet-users/

Jarvenpaa, S. L., Tractinsky, N., & Saarinen, L. (1999, December). Consumer Trust in an Internet Store: A Cross-Cultural Validation. *Journal of Computer-Mediated Communication, 5*(2), 0.

Jordan Department of Statistics. (2015). *Population and Housing Census 2015/General Characteristics of Population/Table 3.4: Distribution of Population by Population Category, Sex, Nationality, Age Groups, Urban/ Rural and Governorate*.

Kimery, K. M., & McCord, M. (2002, January 1). Third-Party Assurances: Mapping the Road to Trust in E-Retailing. *Journal of Information Technology Theory and Application*, *4*(2), 63–82.

Kwon, K.-N., & Lee, J. (2003, September 1). Concerns About Payment Security of Internet Purchases: A Perspective on Current On-Line Shoppers. *Clothing & Textiles Research Journal*, *21*(4), 174–184. doi:10.1177/0887302X0402100404

Magee, M. (2003, December). Boom or bust for e-shopping. *The Sunday Tribune*.

March, J. G., & Shapira, Z. (1987, November). Managerial Perspectives on Risk and Risk Taking. *Management Science*, *33*(11), 1404–1418. doi:10.1287/mnsc.33.11.1404

Moshrefjavadi, M. H., Dolatabadi, H. R., Nourbakhsh, M., Poursaeedi, A., & Asadollahi, A. (2012). An analysis of factors affecting on online shopping behavior of consumers. *International Journal of Marketing Studies*, *4*(5), 81. doi:10.5539/ijms.v4n5p81

Nanehkaran, Y. A. (2013, April). An Introduction To Electronic Commerce. *International journal of scientific & technology research, 2*(4).

Pallant, J. (2013). *SPSS survival manual: a step by step guide to data analysis using IBM SPSS* (5th ed.). England: McGraw Hill.

Poel, D. V., & Leunis, J. (1999, July). Consumer acceptance of the Internet as a channel of distribution. *Journal of Business Research*, *45*(3), 249–256. doi:10.1016/S0148-2963(97)00236-1

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Rouibah, K., Lowry, P. B., & Hwang, Y. (2016). The effects of perceived enjoyment and perceived risks on trust formation and intentions to use online payment systems: New perspectives from an Arab country. *Electronic Commerce Research and Applications*, *19*, 33–43. doi:10.1016/j.elerap.2016.07.001

Rowley, M. L., & Okelberry, A. (2000, January 1). Shopping.com: Analysis of a Trend. *Journal of Family and Consumer Sciences*.

Salkin, S. (1999). Fear of buying. Logistics Management and Distribution Report.

Sekaran, U. (2003). *Research Methods for Business: A Skill-Building Approach* (4th ed.). NY, US: John Wiley & Sons.

Siddiqui, N., O'Malley, A., McColl, J. C., & Birtwistle, G. (2003, December 1). Retailer and consumer perceptions of online fashion retailers: Web site design issues. *Journal of Fashion Marketing and Management: An International Journal*, *7*(4), 345–355. doi:10.1108/13612020310496949

Smith, A., & Anderson, M. (2016, December 19). *Internet & Tech/Online Shopping and E-Commerce*. Retrieved from Pew Research Centre: http://pewrsr.ch/2i0pI9e

Statista. (2017). *U.S. e-commerce market size 2015-2022*. Retrieved from statista.com: https://www.statista.com/statistics/272391/us-retail-e-commerce-sales-forecast/

Statista. (2017). *Global retail e-commerce sales 2014-2021*. Retrieved from statista.com: https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/

Szymanski, D. M., & Hise, R. T. (2000, July 1). E-satisfaction: an initial examination. *Journal of Retailing, 76*(3).

Telecommunication Regulatory Commission TRC. (2016). *Annual Report 2016.* Amman: TRC.

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Chapter 96
Legal and Regulatory Challenges in Facilitating a Sustainable ASEAN E-Commerce Sector

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ABSTRACT

The ASEAN region's potential ability to reap the benefits of e-commerce is considerable, and it is timely to strategize a sustainable pathway for ASEAN's e-commerce market. This chapter explores the arising legal and regulatory challenges with measures needed to facilitate e-commerce activities in the region. A qualitative research design is utilized to review secondary data and analyze ASEAN's current legal and regulatory framework. The findings reveal that despite the untapped potential of the collectively large "ASEAN market," there are significant challenges to developing e-commerce in some countries. Moreover, there are additional regulatory challenges in tackling a myriad of issues related to cross-border challenges in terms of security and reliability of payments: logistics, customs and border administration, foreign market access, data protection, and the regulatory environment for national and cross-border e-commerce transactions. Some form of legal and regulatory harmonization is required between member nations in order to mutually reap the benefits of e-commerce.

INTRODUCTION

E-commerce in the 21st century has expanded at the global level at an unprecedented rate, in tandem with high market demands in most parts of the world. For the most part, this trend has been facilitated by new technologies and trends brought about by the Fourth Industrial Revolution wave. These are rapidly developing and shaping a strong digital ecosystem designed specifically for e-commerce businesses and their customers. Thus, more and more entrepreneurs and e-commerce firms around the world are explor-

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ing the infinite potential of the business of e-commerce by embracing new technologies—ones such as big data analytics, the internet of things (IoT), artificial intelligence (AI), augmented reality (AR), virtual reality (VR), and blockchain technology (ESCAP & ADB, 2018). These enabling technologies allows businesses to be in sync with evolving customer needs, greater customization, maximum convenience, and security in order to attract consumers from around the world without having the inconveniences and expenses normally associated with registering and setting up brick-and-mortar businesses in numerous countries each with a different set of laws. Furthermore, e-commerce has greater potential ability to capture the untapped markets in developing nations faster than those of more developed nations due to increase internet penetration and mobile applications (Kinda, 2019).

The ASEAN region has considerable potential to reap the benefits of e-commerce. E-commerce is touted to be a contributor to economic growth for nations jointly and severally (Mik, 2019). More importantly, it could be the integrating force for the vastly diverse ASEAN nations. The projection in a report by Google and Temasek Holdings reveals that the digital market in South East Asia (SEA) could exceed US$200 billion by 2025—which is not surprising in view of it having a joint population of 630 million people, a growing middle class, and rising internet penetration. Undoubtedly, the ASEAN e-commerce market is a potential goldfield. Improvements are required in terms of technological infrastructure, and in the regulatory and legal environment in which e-commerce firms operate across ASEAN (CCS, 2017). But the realization of its full potential requires the integrating of three dimensions—environmental, social, and economic—into e-commerce in order to ensure sustainability for both present and future generations, while thriving as an industry (Oláh et al., 2019). It is thus timely to strategize the best pathway towards achieving a sustainable ASEAN e-commerce market. Such an initiative can only be successful when multiple obstacles and challenges related to economic, environmental, legal, and institutional, as well as social, developments are properly dealt with (ESCAP & ADB, 2018).

The objectives of this chapter are two-fold: (1) to evaluate the legal and regulatory challenges that will be faced by the ASEAN e-commerce sector; and (2) to suggest the concomitant measures that are required to facilitate the ASEAN e-commerce sector. A qualitative research design is utilized to review related secondary data and analyze the current regulatory framework of ASEAN with a view to identifying the challenges that arise.

AN OVERVIEW OF E-COMMERCE DEVELOPMENT in THE ASEAN REGION

Both the Organization for Economic Co-operation and Development (OECD 2011) and the United Nations Conference on Trade and Development (UNCTAD 2017a) have defined e-commerce as transactions utilizing computer networks for the purchase and sale of products (such as physical goods, and digital products or services). These e-commerce transactions generally utilize technologies such as internet and electronic data interchange over devices such as personal computers, tablets, and mobile phones. The definition of e-commerce in this chapter also includes mobile commerce (M-Commerce) consisting of the sale and purchase of goods and services using mobile (smart) phones. This is an important consideration in view of the growth in smart phone usage that is overtaking access to conventional computers/laptops (CCS, 2017).

Currently, e-commerce is precariously positioned halfway between the phases of inception and growth e-commerce with a huge potential for future growth and adoption globally (Oliviera & Toaldo, 2015; as cited in Goyal et al., 2019, at p. 3). At one end of the continuum, the ongoing innovations in

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digital technologies is recreating new dimensions to the business, customer, and competition framework. On the other end of the continuum is the byproduct of global inequity, which—according to numerous studies reviewed by Goyal et al. (2019)—reveal most developing or underdeveloped nations to still lack basic infrastructure and access to enabling technologies which is exacerbated by low levels of computer education among the general population and low levels of internet and mobile penetration (Oliviera and Toaldo, 2015; Alshibly and Chiong, 2015; Sila, 2013; Al-Somali et al., 2011; Kamari and Kamari, 2012; Bordonaba-Juste et al., 2012; Weisberg et al., 2011; Ifinedo, 2011; Yen, 2010; Van Slyke et al., 2010; Yee-Loong et al., 2009; Boateng et al., 2008; Elbeltagi, 2007; Zhuang and Lederer, 2003; McKnight and Chervany, 2001). This scenario resonates with a majority of the ASEAN nations apart from Singapore, Malaysia, and Brunei. Such digital divides and gaps in key infrastructure and e-commerce legislation are still preventing many Asian economies from maximizing the potential benefits (Kinda, 2019). But the latest Global Digital Reports (2019) indicate that the digital landscape of Southeast Asian nations is rapidly transforming: Not only is the number of internet users rapidly increasing (416 million users with 63% internet penetration), but e-commerce spending is undergoing an even faster growth (Kemp & Moey, 2019). Statista reports (2019) referred to by Kemp & Moey (2019) reveal the following:

- The rate of growth of Thailand's ecommerce market is faster than that of any other country—with total online consumer spending in the country up by 25 percent in just 12 months between 2017 and 2018.
- The annual growth rates of Malaysia, Vietnam, Singapore, and Indonesia were in excess of 20 percent in comparison to the Philippines—recording a growth rate of 16 percent during the same period.

It is therefore essential to improve enabling factors in the region to further boost e-commerce by addressing the existing digital divides and gaps in key infrastructure such as Internet penetration, delivery logistics, and access to financial accounts, as well as limits in e-commerce legislation.

It is also critical for these biodiversity-rich nations to ensure that the activities that take place in the context of ASEAN e-commerce do not endanger sustainability. Sustainability in e-commerce refers to every party involved in e-commerce transactions—manufacturing companies, logistic service providers, retailers, and consumers—consciously working together in attaining sustainable solutions in the process of manufacturing, packaging, transporting, and reducing shipment returns, with a view to minimizes the impact on the environment (Oláh et al., 2019 citing Tang et al., 2016, at p. 4). Such cooperative strategies will have positive impacts in terms of reductions in the cost of operations, goods, shipment, and recycling—resulting in all stakeholders having economic advantages (Oláh et al., 2019). It is extremely important that the pathway chosen by ASEAN retains a balance between the growth of e-commerce businesses and the resulting environmental-social negative effects, in order to minimize the harm done to societies through pollution (Oláh et al., 2019; citing Kostakis et al., 2016; and p. 4 of Fourcroy, 2014). Such an approach, which reduces the carbon footprint of e-commerce activities, will potentially enhance overall financial, social, economic, and environmental performance (Oláh et al., 2019).

Nevertheless, merging e-commerce activities with sustainability dimensions may not be that straightforward for businesses. There is no universal, standard way of conducting such improvements or of properly incorporating it into the business strategy, where it gets even more difficult when involving companies from different countries who might have different regulations (Berglund & Svanteson, 2018 citing Zhu et al., 2012, at p. 9). This factor can negatively affect the work with merging the e-commerce

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and the sustainability dimensions on account of variations in international sustainability laws that companies need to adapt to when selling their products globally (Berglund & Svanteson, 2018 citing Zhu et al., 2012, at p. 9). Some form of consensus is needed between ASEAN member states on the issue of sustainability to facilitate e-businesses operating in the region.

The development of sustainable strategies for the untapped potential of the ASEAN e-commerce is, indeed, not an easy task. The Economic Development Board of Singapore has pointed out that for most ASEAN nations (apart from Singapore), e-commerce accounts for a small slice of total retail which presents many opportunities for growth (EDB, 2018). Even though the collectively large "ASEAN market" has untapped potential, there are significant challenges when it comes to developing e-commerce in some countries and additional regulatory challenges in tackling a myriad of issues related to cross-border challenges in terms of the security and reliability of payments; logistics, customs, and border administration; foreign market access; data protection; the national e-commerce regulatory environment; and the regulatory environment for cross-border e-commerce transactions. An extensive review of previous studies (Goyal et al., 2019) has revealed that these challenges can be classified into the following three broad categories:

- **Macro Challenges:** Such challenges are generally in the form of inappropriate technology and banking infrastructure (i.e., internet penetration, digital literacy, financial inclusion, and credit-card penetration) as well as ineffective government policies and regulations towards dataprivacy, taxation, the fairness of competition, and secured online payment infrastructure, etc.
- **Consumer-Oriented Challenges:** Such challenges include the need for aesthetics, affordability, accessibility, availability, and awareness, in addition to managing the cognitive perceptions and attitudes of consumers.
- **Organizational-Level Challenges:** Such challenges include ones that necessitate the designing and implementing of suitable business models that have a mix of strategic actions to manage channel coordination and integration; a scarcity of skilled resources; and the need for competitive differentiation, processes, and systems; etc.

In the following section, a review will be undertaken on the ongoing regional initiatives and the macro challenges related to the legal and regulatory framework in carrying e-commerce activities between countries in the ASEAN region.

THE E-COMMERCE READINESS OF ASEAN NATIONS

Current Regional Initiatives and Regulatory Challenges that Arise in the ASEAN E-Commerce Sector

In general, there is a widespread consensus that digitalization could have far-reaching implications for the realization of the sustainable development goals of developing economies. However, as with any new technology, this is predicated on their readiness to receive and implement these technologies in a manner that is all-inclusive (digital inclusion), leaving no one behind. Although the 21st century is witnessing an unprecedented growth in e-commerce sales and the digital economy, the current digital divide is a genuine concern of many developing countries—especially least-developed countries (LDCs) (UNCTAD,

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2019b). Clearly the gains from e-commerce are not automatic; as appropriate national policies, strategies, regulations and support measures are crucial both to building national digital industrial capacities and to improving national preparedness (UNCTAD, 2019b). Otherwise, the consequent challenges will impede these nations from drawing benefits from vibrant global digital trade due to a lack of adequate digital capacities. In this context, the ASEAN nations—in support of ASEAN regional economic integration objectives—began various initiatives a few decades ago in order to build on their digital capacities that could ensure a strong and sustainable ASEAN Economic Community (AEC). Namely, these have been: the e-ASEAN Initiative (1999), the e-ASEAN Framework (2000), the ASEAN Economic Community (AEC) Blueprint 2015 (2007), the ASEAN ICT Masterplan 2015 adopted in 2011 by the tenth ASEAN Telecommunications and IT Ministers (TELMIN) (UNCTAD, 2013), and, most recently, the ASEAN Economic Community Blueprint 2025 (2015). These continual initiatives signify clearly the intention of Member States to develop a regionally harmonized e-commerce legal framework consistent across jurisdictions, providing guidelines in order to facilitate the development of common objectives and principles for an electronic commerce (e-commerce) legal infrastructure.

The ASEAN ICT Masterplan 2015 (AIM 2015) deserves special mention. Its focus was on six strategic thrusts—i.e., economic transformation, people empowerment and engagement, innovation, infrastructure development, human capital development, and bridging the digital divide (UNCTAD, 2013). It had recognized that the establishment of harmonized e-commerce laws in each member country was vital not only to ensure a conducive information and communications technology (ICT) environment for businesses but also to build trust by facilitating secure transactions within the ASEAN community, developing a common framework for information security, and promoting cybersecurity (UNCTAD, 2013). The report by the ASEAN Secretariat reveals that the AIM 2015 (which was duly completed in 2015) can be considered as being successful in many respects, as its framework and roadmap for the regional development of ICT has enabled greater ICT development in ASEAN (ASEAN, 2015) and is evident in the following aspects:

- ICT services are now a larger component of total service exports at the macro level, thereby becoming an important engine of regional economic growth;
- Costs of internet access and mobile subscription at the individual level have reduced considerably in ASEAN Member States (AMS), thereby resulting in greater connectivity for millions of ASEAN citizens;
- Employment in the ICT sector has also increased due to the advancement of ICT; and
- Government services have become digitalized, and there is a greater awareness of cybersecurity in ASEAN due to greater ICT development.

It is clear from the above developments that AIM 2015 has made significant strides towards ASEAN integration and has further contributed to this in terms of two ASEAN plans—i.e., The Master Plan on ASEAN Connectivity and The AEC Blueprint ASEAN (2015).

A comparative analysis was made by Mik (2019) on the ASEAN Economic Community Blueprint 2015 (Blueprint 2015) adopted in 2008 with the aim of implementing the AEC by 2015 and the ASEAN Economic Community Blueprint 2025, adopted in 2015 (Blueprint 2025). The scope of Blueprint 2015 was found to revolve around the transactional aspects of e-commerce and on the mutual recognition of digital signatures, with placement of only marginal attention on consumer and privacy protections. In contrast, the focus of Blueprint 2025 was on retail payment systems in order to bolster cross-border

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online transactions being cognizant of the importance of protecting and promoting consumer interests. This it does by adopting a more practical and consumer-centered approach and innovative e-commerce strategies that are backed by comprehensive national and regional consumer protection systems enforced through effective legislation, redress mechanisms, and public awareness (Mik, 2019; citing the ASEAN Economic Community Blueprint 2025, 2015, pp. 10–11). Although the UNCTAD found that the aims of the Blueprint 2015 were mostly achieved vis-à-vis the enactment of legal instruments for electronic contracting (Mik, 2019), the focus of e-commerce legislation harmonization was more on electronic transaction laws, and less on other cyberlaws (UNCTAD, 2013). The AEC Blueprint 2025, on the other hand, is relatively more ambitious in its efforts to ensure that the AEC integration process is more transparent and inclusive (Menon et al., 2018). It undertakes reform initiatives in difficult areas such as reducing non-tariff measures, simplifying rules of origin, deepening trade facilitation measures, and harmonizing standards and regulations (Menon et al., 2018). Underlying the 2025 Blueprint is a growing recognition that the success of AEC is dependent on fully engaging businesses and the broader community; and consequently, it focuses on creating stronger community engagement and greater partnership arrangements with the private sector and industry associations (Menon et al., 2018).

ASEAN has been generally proactive in ensuring that there are ongoing efforts to address the arising issues contributing to the digital divide and e-Trade readiness in the region. Another momentous step was taken by ASEAN with the recent ratification of the *Digital Integration Framework Action Plan 2019–2025* at the 18th AEC Meeting in Bangkok, Thailand, on 31 October 2019, with an aim to advance and overcome digital integration barriers in ASEAN through the following ways (Nantu, 2019):

- By intensifying cooperation to strengthen the competitiveness of their ICT industries, and
- Expand e-commerce and facilitate digital connectivity that included plans to sign an ASEAN e-commerce agreement and adopt an ASEAN Digital Integration Framework to help transform the region into a competitive global digital hub.

There was follow up within a few months with the signing of the *ASEAN Agreement on Electronic Commerce* (AAEC) on 12 November 2018, thereby making ASEAN the first region in the world to have an e-commerce agreement. It symbolizes the recognition by ASEAN of the digital economy's potential to contribute to regional development with the growth of e-commerce through the advancing of trade rules in e-commerce and the building up of greater digital connectivity in the region. The agreement is part of the implementation of the *ASEAN Work Programme on Electronic Commerce 2017–2025*. It has, as its objectives, the facilitating of cross-border e-commerce transactions; the creating of an environment of trust and confidence in the use of e-commerce; and the deepening of cooperation among ASEAN member states to further develop and intensify the use of e-commerce to drive economic growth and social development in the region (Zahra, 2019). The agreement denotes a firm commitment from each member state to maintain or adopt as soon as practicable, laws, and regulations governing electronic transactions with a view to enhance the efficiency of businesses in the ASEAN countries—particularly small and medium-sized enterprises.

The net result is consumers of e-commerce in these nation states will have a higher degree of certainty and trust in online transactions and will be accorded the same protection as consumers of conventional commerce. Although AAEC is a positive move in creating a common framework guiding the enactment of domestic laws and regulations in the respective ASEAN jurisdictions, each state needs to undertake considerable and timely initiatives to support the development and implementation of regional e-commerce,

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in addition to enacting and enforcing the necessary laws and regulations for facilitating electronic commerce. These legal initiatives need to keep pace with ongoing advancements in technologies related to e-commerce. Thus, it is safe to surmise that the efforts to translate them will need considerable political will—jointly and severally at the regional and national levels, respectively.

A Review of Regulatory Challenges for a Harmonized E-Commerce Legal Environment

There is no doubt that ASEAN will continue to face uphill challenges in the creation of a favorable environment for a more effective contribution of e-commerce towards sustainable development in the region. The facilitation of e-commerce in the region is tantamount to the harmonization of the relevant laws and regulations in this area (Mik, 2019). But the mere creation and harmonization of broader e-commerce laws and regulations within an appropriate *legal* framework for e-commerce will not suffice when dealing with high-volume and low-value cross-border transactions involving multiple regional initiatives touching on a wide spectrum of cross-cutting and jurisdictional issues (Mik, 2019). The said complexity is further exacerbated by the fact that unlike the European Union, ASEAN does not have the benefit of a legal superstructure for developing a unified regime with the capacity to support regional e-commerce (Mik, 2019, Sengpunya, 2019). The constraints of the ASEAN Secretariat are particularly noteworthy, with functions being limited to those of a secretariat and not in keeping with a complex agenda to harmonize and implement policies across 10 diverse nations (Sengpunya, 2019; Menon et al., 2018).

Another overarching challenge which ASEAN must grapple with is the need to work in partnership with concerned parties to drive sustainable e-commerce, as was discussed in the preceding section. This is particularly relevant in the context of the global nations which are striving to implement the 2030 Agenda for Sustainable Development based on a universal blueprint for building peaceful, prosperous societies on a healthy planet (UNCTAD, 2019b). While harnessing the great power of information and communications technologies can potentially bring economic prosperity to developing nations via new pathways of development that also allows them access to the global store of knowledge (UNCTAD, 2019b), it is extremely prudent to ensure that it does not become a double-edged sword that negates intergenerational equity. Thus, ASEAN is presented with the perfect opportunity for developing a regional business environment that benefits companies complying with e-commerce sustainability in three dimensions—environmental, social, and economic—to facilitate future sustainable e-commerce (Oláh et al., 2019; citing Aras & Crowther, 2009, at p. 3). The challenge, essentially, is to develop sustainable regulations—and to encourage manufacturing companies, logistic service providers, retailers, and consumers to work together to facilitate sustainable solutions in e-commerce in the process of manufacturing, packaging, transporting, and reducing shipment returns, in order to ensure a favorable environment (Oláh et al., 2019; citing Macchion et al., 2017 at p. 5; and Tang et al., 2016, at p. 4). As there is yet a universally accepted methodology for including sustainable e-commerce in a business strategy, it is important to incorporate trade-offs that will bring benefits (in both the short term and long term) to stakeholders alike. Thus, ASEAN nations must not only work with one another but also with businesses operating in the region in order to create harmonious regulations that are applied uniformly across the region (Oláh et al., 2019; citing Mangiaracina et al., 2015).

It is extremely important for ASEAN to ensure that online businesses—particularly the Micro, Small, and Medium Enterprises (MSMEs) operating in the region—can reap the benefits inherent in the proposed Single Market and a regional digital economy through the Digital ASEAN initiative by avoiding regula-

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tory inconsistencies and ensuring a coherent legal and regulatory framework for electronic commerce. Some noteworthy facts were pointed out in a report by Asia Pacific MSME Trade Coalition (AMTC), including the fact that a majority of their 2500 MSMEs that are engaged in e-commerce and digital trade stand to benefit from the application of digital technology in terms of reducing time costs by 29 percent and dropping direct business costs by 82 percent (Elms, 2019). Digital tools are particularly essential for the survival of smaller firms who can tap the benefits of digital tools in a rapidly evolving market. Although all these MSMEs are not located in ASEAN, many of those which are engaged in or which support trade-flows across the region have encountered challenges related to inconsistent trade rules and regulations within ASEAN (Elms, 2019). Such barriers to expansion in the form of restrictive forms of regulations or broad technological delays will affect all firms in the market and potentially impede the growth and development of e-commerce markets (CCS, 2017). Potential entrants or small firms are also likely to encounter barriers to entry; e.g., economies of scale or network effects (CCS, 2017). ASEAN needs address these barriers through appropriate policies and regulations.

Currently, the challenges with e-commerce law and policymaking in ASEAN is an interplay of two levels—i.e., the national level and the regional level. They include barriers ranging from differing legal systems (civil and common law) to different e-commerce frameworks at the national level (e.g. payment system and consumer protection) with policy issues being dealt with by multiple agencies. These issues are further complicated by obstacles to cross-border selling ranging from communication and language barriers, cultural nuances, and global shipping problems due to insufficient infrastructure and varying degrees of internet penetration, not to mention legal restrictions in different markets (UNCTAD, 2013).

For a detailed analysis, the e-commerce ecosystem and the components therein will provide a good starting point for determining the type of legal and/or regulatory challenges that will have to be taken into consideration when developing a regional framework for harmonious regulations (See Figure 1). Since e-commerce involves the buying and selling of goods and services electronically, the e-commerce ecosystem necessarily "involves a network of interconnected functions within the lifecycle of the buying and selling of goods and services electronically" (Mahn, 2017). The different phases of the lifecycle involve a whole range of different types of industries and companies within those industries—all of which can potentially benefit from the activities taking place within the ecosystem, but which are subject to appropriate legislation governing these activities (Mahn, 2017):

- The lifecycle usually begins with the consumer connecting to the internet in search of an online retailer in order purchase a selected item. They, then, proceed with the transaction by entering information related to the mode of purchasing the item; and conclude their part in the process by submitting the order.
- The next phase of the lifecycle involves the online merchant who processes the order, locates the product, obtains the product from their inventory (in a warehouse or distribution center), ships the order to the consumer, and (ultimately) collects payment.

Appropriate regulations for the various activities in the said eco-system need to be formulated in order to tackle complex challenges in the following areas.

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Cross-Border e-Commerce

Cross-border commerce basically involves the sale or purchase of tangible products via online shops across national borders involving different jurisdictions, different currencies, and parties (to different transactions) speaking different languages (Khan, 2017). Currently, the level of e-commerce readiness amongst the ASEAN nations is at different levels by virtue of the diversities of their legal and institutional environments. Philippines and Vietnam, for instance, have created e-commerce offices and agencies to reshape their regulatory environment (EDB, 2018). Among its initiatives include an e-commerce trust-mark that is displayed on the website in order to verify the trustworthiness of the business by the issuing organization (such as TRUSTe and VeriSign). However, despite these trust-marks, shoppers in the region still lack awareness and confidence that these websites will process their information securely. Furthermore, Indonesia and Thailand still have insufficient regulations to support businesses involved in cross-border transactions (EDB, 2018). Malaysia has relatively strong e-commerce regulations but is weak in terms of the enforcement of existing regulations. Thus, each of these nations are facing different types of challenges and hurdles—particularly in the context of implementing suitable electronic payment options and providing adequate consumer protection that has the capacity to generate trust in online transactions. These differences need to be minimized for ASEAN to jointly benefit from the potentials of a sustainable e-commerce framework. It is therefore essential for these nations to harmonize the regulations to facilitate international online trade.

The complexity particularly increases when dealing with the challenge of shipping/transporting goods from one location to another has increased environmental hazards to communities—not forgetting that after delivery, some products are returned to the suppliers, simply because they do not meet the green product expectations of consumers. Sustainable solutions integrating the three dimensions (i.e., environment, social, and economic) need to be identified in order both to reduce the carbon-footprint created by these transactions and to enable future sustainable e-commerce in the region.

The following cross-cutting issues need to be addressed by devising a specific regulatory environment for cross-border activities and a general regulatory environment for e-commerce (EDB, 2018):

- **Payments:** Many of the ASEAN states still need to address policy and regulatory issues concerning the security and reliability of payments—particularly for businesses and consumers in Indonesia, Philippines, Thailand, and Vietnam, where Cash on Delivery (COD) is still the preferred payment method. E-commerce firms that operate in e-commerce ecosystems that lack well-developed e-payment systems are forced to utilize unsustainable business models. Apart from Singapore, the remaining jurisdictions still need to make major changes in order to improve the e-commerce payment infrastructures in Southeast Asia. A recent report pointed out that 25% of SMEs regarded limited cross-border payment options as being a key barrier to selling products and services online to other countries (Hoppe et al., 2018).
- **Logistics:** There is great variation in the cost and capability of logistics providers in Southeast Asia, as they face unique last-mile delivery challenges. According to a recent report, approximately 50% of SMEs that sell online consider complex cross-border trade processes or poor logistics infrastructure as being the top barriers to selling online to other countries (Hoppe et al., 2018). In addition to the high logistical costs generated by the challenging geography of many countries in the region, regulations that restrict competition in logistics have further amplified the challenges in this context (World Bank, 2019).

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- **Customs and Border Administration:** Most of the nations in ASEAN encounter serious issues in relation to custom transparency and inconsistent custom procedures with wide variations in import procedures, VAT, and duties across countries and for different product types. In addition, apart from Singapore, most of these nations also face problems with corruption in the customs and border process.
- **Foreign Market Access:** Most SMEs—particularly in Indonesia, Philippines, Thailand, and Vietnam—continue to encounter challenges in obtaining access to foreign markets to sell their products and services. This is largely attributable to a lack of regulations for e-commerce and to the presence of non-tariff barriers over a broad range of products. Although Malaysia has encouraged foreign business access through many free trade agreements, many minor hurdles remain in terms of accessing the market. Singapore, on the other hand, has opened its trade borders. Only the Singapore government has progressively adopted an agenda of open trade borders by lowering barriers to trade.
- **Geo-Blocking:** The EU Commission had identified geo-blocking to be an impediment to the free movement of goods and services and countered it with geo-blocking regulations. This practice essentially denies customers access to the websites of other nations in the region and/or prevents access to the products or services of a specific country. ASEAN, too, needs to address this problem through relevant regulations.
- **Jurisdiction:** There is a dire need for a specific legislation to be enacted in order to determine issues involving jurisdiction for e-commerce disputes (Khan, 2017). The determination of jurisdiction about a transaction is a primary and fundamental question in matters related to the enforcement of rights of the parties; dispute settlement; intellectual property rights; consumer protection; data protection; and taxation (Khan, 2017).

ELECTRONIC TRANSACTIONS

ASEAN requires effective laws regulating electronic transactions in order to facilitate e-commerce, as it will provide legal certainty for the recognition of electronic communications, electronic records, and electronic signatures (UNCTAD, 2013). The overall progress of ASEAN towards the harmonization of basic electronic transaction laws has been satisfactory. In ASEAN, all member countries already use either one or both of the model laws—the UNCITRAL Model Law on Electronic Commerce (1996) and/or the UNCITRAL Model Law on Electronic Signatures (2001)—as a foundation for local laws (either draft or implemented laws). Even though the national laws were based on the same international reference frameworks, some variations—sometimes significant ones—were found not only in the text of each law but also in their interpretation by the respective courts (UNCTAD, 2013).

Although most of the ASEAN member countries (except Cambodia, Lao PDR, and Myanmar) have in place legal and regulatory frameworks for secure electronic transactions, data protection and privacy, and consumer protection for online purchases, they may lack the depth and details to address current issues in the digital economy; may lack the requisite compatibility with other countries; and may be inadequate in terms of implementation (World Bank, 2019). The World Bank Report (2019) found that despite these legislations, data policies and regulations were largely underdeveloped, with some even posing potential risks to the growth of the digital economy—especially by adopting policies which take a blanket approach requiring the localization of data within national borders. Such closed approaches

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may impede the growth of local firms due to their inability to harness digital technologies while risking similar responses from other countries.

PRIVACY & DATA PROTECTION

A report by Klynveld Peat Marwick Goerdeler (KPMG) International had cited privacy concerns as the main reason given by 55% of consumers surveyed globally for their decision against buying products online (ESCAP & ADB, 2018 citing KPMG, 2016). According to the surveys, most organizations are not equipped to deal with security or privacy issues. Consumers are further discouraged from fully utilizing online transactions due to lack of honesty among businesses and concerns over the potential misuse of personal information by government agencies and businesses alike (ESCAP & ADB, 2018). These problems are particularly serious in countries without data protection and privacy laws. An e-commerce eco-system that engenders such a high degree of mistrust toward businesses will impede the B2C e-commerce growth in the region (ESCAP & ADB, 2018). The situation in ASEAN member states is gradually improving with more nations such as the Philippines and Singapore following Malaysia's lead in passing privacy legislations since 2010 (UNCTAD, 2019b). Countries such as Indonesia and Vietnam have already put partial privacy legislation laws in place by virtue of their omnibus e-commerce laws but still lack the depth and scope of a full privacy legislation, while Thailand has taken initial steps in drafting general data protection legislation (UNCTAD, 2019b).

Although ASEAN member states have adopted the ASEAN Framework for Personal Data Protection, cross-border digital trade is still not at an optimal level. More initiatives are needed to address this challenge, since some member states have implemented cross-border data transfer restrictions to address data security issues. Digital entrepreneurs and businesses commonly found navigating digital regulations to be a commonly encountered barrier. They were particularly concerned with data localization regulations that formed a key barrier to seamless trade and which presented unwarranted hurdles in their business operations (Hoppe et al., 2019).

Consumer Protection

There is diversity in the shape and form of consumer protection available throughout the ASEAN region. Some member countries have specific consumer protection laws for online commerce. Those who did not will resolve consumer protection issues through existing laws in areas such as unfair contract terms and competition laws (UNCTAD, 2013). There is still no general guidance for online consumer protection in ASEAN, but the task of investigating issues which arise have been delegated to the ASEAN Committee on Consumer Protection that looks at these issues (UNCTAD, 2013). The e-ASEAN Framework Agreement has prescribed that international norms will be the primary source for the development of e-consumer protection in ASEAN member states (Tanodomdej, 2017). Nevertheless, the protection of e-consumer welfare is far from satisfactory, given the following challenges (Tanodomdej, 2017):

- There is no legal enforcement mechanism at the regional level requiring ASEAN members to implement the missions within the binding and non-binding instruments, despite achieving consensus to do so.
- It lacks a regional redress mechanism—an essential tool for cross-border e-consumer protection.

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- There are still no instruments in ASEAN which address the issue of a harmonized choice of law in e-commerce cases or which offer a mechanism offering cross-border enforcement for e-consumers.

Thus, the development of e-consumer protection in each ASEAN country is entirely discretionary and is predominantly influenced by the perceived economic opportunities in e-commerce (Tanodomdej, 2017). It is extremely challenging for ASEAN to develop a cohesive legal framework to facilitate a uniform e-consumer protection by assimilating countries with diverse development levels.

Cybersecurity & Cybercrime

The digital evolution taking place in ASEAN states is transforming mobile banking systems and e-commerce trading and is accompanied by the rise of cyber linkages. According to recent research, countries in the region are becoming "global hotspots" for suspicious web activities—particularly, locations with vulnerable infrastructure that are at risk of cyberattacks as well as attacks from spam botnets (World Bank, 2019). The vulnerability of the region to such risks could detrimentally impact user confidence and the resilience of the digital economy—thereby impeding the full realization of the region's digital and economic potential (Victor, 2018).

Cybersecurity is essentially a function of several elements—technical, financial, physical, and personnel-related—and an effective cybersecurity agenda must be all-encompassing and multidimensional (World Bank, 2019). Inadequate attention in any of these elements will increase the threat level. A whole range of factors has contributed to the creation of the poor state of cybersecurity in the region. An important factor is due to an under-investment in the 'hard' and 'soft' infrastructure of cybersecurity. Despite ASEAN's high threat level, the average regional expenditure/investment in cybersecurity (0.07 percent) has been below the global average (0.13 percent). Other factors that have contributed to poor cybersecurity in the region include limited threat intelligence sharing, diverging national priorities, increasing interconnectedness, and rapid technological evolution (Victor, 2018). The only member states in the region with an advanced state of cybersecurity regulatory instruments are Malaysia and Singapore while the Philippines and Thailand have already established several regulatory frameworks required to address cybersecurity. Thus, ASEAN as an institution and most of its member states are still in a nascent stage in terms of there being international frameworks beyond ASEAN that could specifically address cybersecurity issues in Southeast Asia (SPI, 2018). Several countries—such as Singapore, Malaysia Thailand, and recently, Indonesia—have developed a specific government agency to manage cybersecurity issues in their respective countries (SPI, 2018).

The focus of the ASEAN region, to date, has been on including cybercrime into existing frameworks. Consequently, the UNCTAD review (2013) had commended ASEAN for its excellent progress towards harmonization, with 8 out of 10 members (except for Cambodia and the Lao People's Democratic Republic) already having enacted legislation that is in alignment with the international model contained in the Council of Europe Convention on Cybercrime. Nevertheless, law-enforcement authorities continue to face challenges in investigating cybercrime and malicious cyber-attacks in the region due to two factors: the motives for the attacks are complex; and most cybercrimes are cross-border operations. In order to successfully combat cybercrime, it is essential for ASEAN to continue their efforts in the harmonization of laws against cybercrime and to step up their commitment to collaboration (AustCyber & Austrade, 2019).

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Intellectual Property

Intellectual property rights (IPR) protection in the e-commerce platform is one of the key areas in which ASEAN will face an uphill task for implementation and enforcement as a single economic unit. Although the ASEAN Framework Agreement on Intellectual Property Cooperation was adopted in 1995 to facilitate ASEAN integration, there are no harmonized substantive rules on IP rights that have been adopted by ASEAN members, including the principle of IP exhaustion (Calboli, 2019). In particular, the inconsistency of national approaches to IP exhaustion—combining a variety of approaches favoring national or international exhaustion, or simply failing to address the issue—may cause impediments to the free movement of goods within ASEAN (Calboli, 2019) as well as impediments to cross-border e-commerce.

Unlike the European Union, ASEAN has neither the competence nor the appropriate legal infrastructure to enforce harmonization among its member states by means of regulations or directives (Jusoh et al., 2019). The current IPR management in ASEAN remains relatively individualistic, in which each state retains sovereignty over the IPR system in their country (Jusoh et al., 2019). This will pose barriers for e-businesses planning to operate in the region in the form of regulatory heterogeneity costs—i.e., costs attributable to the fragmentation of rules. The varying regulations will inevitably hike the cost of regional economic activities, as it compels e-businesses to adapt to different regulatory environments in terms of IPRs (Jusoh et al., 2019). 3 types of costs will be incurred in this respect; namely: legal consultation costs, regulation compliance costs, and conformity assessment costs arising from duplication (Jusoh et al., 2019). These expansion barriers are contrary to the development of a sustainable e-commerce platform and will have a negative impact on Micro and Small and Medium Enterprises operating in the region. Most importantly, it will detrimentally affect the realization of the ASEAN single market and the deeper economic integration of the region.

E-Commerce Taxes

Although the e-commerce sector in Southeast Asia has been growing exponentially during the past six years, the move towards the taxing of digital transactions only began recently (Luo, 2018). But the scope of most of the existing taxation laws is limited to local players and not foreign companies (Lim, 2018a). The current scenario in ASEAN is varied — companies operating across the region are exposed to either different e-commerce tax regimes; or alternatively, no such tax regimes (see Figure 2) (Lim, 2018a). It is apparent that each government in the region is facing challenges in formulating appropriate e-commerce taxation at the national level as dictated by local considerations in view of the diversity of issues faced by the respective states in the region (Lim, 2018a). Given the diverse and uncertain legal environments of the ASEAN nations, implementing new tax regimes will not be easy (Luo, 2018). These barriers (see Figure 3) include (but are not limited to) the following challenges in enforcing e-commerce taxes:

1. Drafting suitable tax regimes for e-commerce;
2. The ‘permanent establishment’ issue due to the borderless nature of e-commerce that allows businesses to participate in multiple transactions with customers in different countries without ever having a physical presence there;
3. The difficulty in enforcing tax collections from suppliers operating outside the jurisdiction of the state where the goods are being received either if there is a lack of trusted third party involved in the tax calculation or there is an absence of a simplified registration system for foreign suppliers;

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4. Difficulty in categorizing the various types of e-commerce income for taxation purposes; and finally,
5. Without setting a proper tax threshold, there may be a potential slowdown in e-commerce activities, as companies are discouraged from the inconveniences which arise, such as having to file multiple returns for relatively minor activities in other states (Lim, 2018b).

Competition

In the context of competition policy, the ASEAN competition authorities need to consider the nature of competition within that market—i.e., the relationships between all sides of the market, in their assessment of the market power of a firm (CCS, 2018). Generally, four broad categories of barriers to entry vis-à-vis e-commerce platforms have been identified by the Competition Commission of Singapore (CCS), and these include:

1. **The economic advantages** enjoyed by incumbents in terms of economies of scale and scope; and privileged access to essential inputs, technologies or information;
2. **Costs and network effects** that inhibit consumers from switching suppliers;
3. **Legal barriers** in the form of regulatory rules and the arising compliance costs that curtail the number of market participants, tariffs, government licensing requirements, and intellectual property ownership by incumbents; and
4. **The conduct of large incumbent firms** exercising their market power through vertical restrains exemplified by retail Most Favored Nation ("RMFN") clauses that hinders the ability of new businesses to enter, or compete effectively in, the market (CCS, 2018).

In view of the above, nine of the ten ASEAN member states had implemented comprehensive competition regimes within their jurisdictions by 2015—i.e., Indonesia, Singapore, Thailand, Vietnam, Malaysia, Brunei, Myanmar, Laos, and the Philippines. Nevertheless, there are variations between ASEAN member states on how they apply competition law and policies within their jurisdictions; and this is bound to give rise to challenges and burdens to firms that plan to carry out e-commerce activities across ASEAN—particularly in relation to the to the use of vertical restraints by firms operating in online markets (CCS, 2017). Such differences will force businesses to adapt their conduct in accordance with the different approaches adopted in the different territories in which they plan to do business.

In summary, the preceding discussions reveal that the wave of e-commerce activities taking place in individual ASEAN countries are at varying levels—and that they are encountering different types of hurdles and challenges in terms of electronic payment, taxation, logistics, privacy issues, and data and consumer protection. Some of the underlying barriers to an effective harmonized e-commerce legal framework in ASEAN include a lack of capacity building on legal issues surrounding e-commerce among policymakers and users; a lack of coordination between the different governmental authorities involved in e-commerce; a lack of coordination at the regional level on the design and implementation of relevant legislation; and a lack of strong enforcement institutions. It is extremely important that the nations of ASEAN harmonize their approaches and minimize the arising differences to facilitate a smooth transition into a digitalized regional economy which is sustainable and leaves no one behind. To this end, it is essential to develop a "sound legal architecture" for the implementation of the AEC Blueprint 2025 and the fruition of the new economic community (Hsieh & Mercurio, 2019; Sengpunya, 2019). The follow-

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ing section will consider measures that are needed to ensure that ASEAN is strategically positioned in the global e-commerce platform.

SOLUTIONS AND RECOMMENDATIONS

ASEAN is currently in the early stages of the digital revolution and is poised to become a key digital economy at the global level in view of its current ranking as third in the world in terms of population, sixth in terms of GDP, and fourth in terms of trade value (Hoppe et al., 2018). Although ASEAN's digital economy is lagging at merely 7% of GDP relative to China (16%), Europe (27%), and the US (35%), policymakers in ASEAN can strive together to maximize its digital potential—a projected US$0.8 trillion; and a $1.1 trillion increase in GDP across ASEAN by 2025—through the removal of barriers and make digital integration a reality for all local businesses (Hoppe et al., 2018). The end goal is to ensure that the ASEAN region, as a unit, will always be resilient and relevant—despite global developments at the interface of e-commerce and digitalization of technologies including market monopoly by global giants (Devadason, 2019).

ASEAN needs to upscale its efforts to address the novel challenges it is facing when transitioning into a digital economy. It is highly doubtful that the postcolonial mindset that promulgated the "ASEAN Way" based on "non-interference and consensus-based principles" will suffice, in view of its evolving role in the region ranging from political considerations at its inception to the current economic endeavor to develop a new regional economic order (Hsieh & Mercurio, 2019). In order to effectuate its policies and gain momentum in its development as an ASEAN economic community (AEC) as well as a key digital economy in the world, there is an urgent need to reinvent itself according to the aspirations of the AEC Blueprint 2025, "A Competitive Innovative and Dynamic ASEAN." An effective implementation mechanism is critical to the success of the AEC; and consequently, the said blueprint has assigned the ASEAN Economic Council with the mandate to enforce compliance of all measures—which is a clear departure from the typical ASEAN way (Hsieh & Mercurio, 2019). It is clearly apparent that a significant shift in the ASEAN Way is required. Otherwise, the organization will end up adopting only those policies which satisfy the "lowest common denominator." In decision-making by consensus, members must see eye to eye before ASEAN can move forward on any issue (Leviter, 2010).

The next overarching issue that needs to be addressed by ASEAN is ensuring that in its pursuit to achieve regional prosperity through inter- and intra- e-commerce trade, all policies and laws must be in line with the 2030 Agenda for Sustainable Development. To this end, there have been suggestions for the development of laws and policies, with the following features for e-commerce business:

5. Support minimum trade-offs and maximum benefits in the tripartite strategy involving economics/environment/social strategy;
6. Ensure transparency while carefully considering all options that will protect the economy from ecological degradation and keep it socially viable; and
7. Joint efforts of governments with e-retailers, researchers, and experts for continuous improvement at different levels—i.e., markets, society, governments, sectors, and economies (Oláh et al., 2019; citing Choi, 2013, at p. 6).

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More importantly, these policies should be backed up by sustainable regulations (Berglund & Svanteson, 2018; citing Macchion et al., 2017, at p. 9). It was recently suggested that trade law can be a vehicle for Sustainable Development Goals (SDGs) since they consist of bottom-up activities encompassing environmental, economic, and social dimensions (Leal-Arcas et al., 2019). This can be done in the ASEAN context by agreeing on preferential trade agreements (PTAs) with environmental and sustainable development chapters on a unilateral, bilateral, or plurilateral basis (Leal-Arcas et al., 2019). Promoting inclusive trade for sustainable development will also require ASEAN to improve both physical and digital connectivity (OECD & WTO, 2017).

As observed in the preceding section, a lack of harmonization of cross-border digital regulations constitutes one of the major barriers to e-commerce trade in the region; and this critical problem is not merely limited to logistics and customs clearance (Devadason, 2019). A pragmatic way to address this problem is to recognize that since the complete harmonization of cross-border digital regulations may not be conceivable in the near future, mutual recognition agreements (MRAs) may be an alternative for creating a single digital market with common rules on e-signatures, cybersecurity, data protection, and privacy laws (Devadason, 2019). New rules are further needed on a regional scale to keep abreast with arising issues; and this requires timely information sharing between member states (e.g., cross-border sharing of data). Lastly, a concerted regional effort is required to propel the development of e-commerce along its next growth trajectory. It will require various measures that essentially require being on top of e-commerce trends ranging from upscaling the dimensions of connectivity to strengthening their legal, physical, and technology infrastructure and improving the purchasing penetration of consumers.

Some of the following measures can be considered for ASEAN to harness the infinite potential of e-commerce:

- Develop an adequate legal and regulatory framework that enables e-commerce stakeholders to mitigate transaction risks, provide transparency, and ensure a level-playing field (UNCTAD, 2017a).
- Ensure the compatibility of each country's national legislation in the areas of e-transactions, consumer protection, data protection, and privacy with that of its trade partners to facilitate cross-border e-commerce. It is also desirable to align such laws with international legal instruments (UNCTAD, 2017b).
- Globalization and expansion in international trade has resulted in increases in the number of re-registration of applications of cross-border intellectual property rights. In response, a coherent and predictable intellectual property protection system throughout ASEAN is needed to ensure that domestic innovations are protected and promoted, as expected by foreign investors, as it is an important consideration for investors when establishing investments and commencing business operations in ASEAN member states (Jusoh et al., 2019).
- Enable the harmonization of cross-border complaints through an agreement between consumer protection regulators in each country, complemented by appropriate investigation and referral tools (UNCTAD, 2013). Furthermore, the ASEAN Committee on Consumer Protection (ACCP) should be accorded with increased powers to investigate, pursue, obtain, and share relevant information and evidence on matters relating to cross-border commercial practices. Or, alternatively, the ACCP should be given the mandate to cooperate with the consumer protection agencies of other ASEAN member states in order to enforce the rights of e-consumers (Tanodomdej, 2017).

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- ASEAN should strengthen the investigation of cybercrimes and the enforcement of related both national and international laws across borders by stepping up regional cooperation between cybercrime law enforcement agencies. In addition, a common training and resource center needs to be established; in addition to the establishment of 24/7 national points of contact where law enforcement agencies can get help in investigating those crimes (UNCTAD, 2013).
- ASEAN, like the European Union, can consider creating a VAT Digital Single Market Package through a digital online portal—a "one-stop shop," as it were—that constitutes a single electronic registration and payment mechanism in order to reduce the administrative burdens of businesses arising from different Value-Added Tax (VAT) regimes (Cassetti, 2017). Such an effort may improve consumers' and businesses' access to online goods and services within ASEAN.
- ASEAN should consider more ways to improve the adoption of digital payment mechanisms in the region, as doing so would improve the e-commerce ecosystem in the region. The Measures that policymakers may consider include: (a) strengthening consumer protection to build trust in digital payments; (b) improving cross-sectoral coordination in policymaking and regulation, including standard-setting; (c) strengthening digital ID to facilitate the adoption of digital payments; (d) improving monitoring capabilities; (e) promoting interoperability of services; and (f) promoting electronic payments to and from government (World Bank, 2019).
- To facilitate the legal recognition of electronic signatures through the development of an ASEAN mutual recognition agreement, which would detail minimum acceptable standards for electronic signatures and related trust services based on international norms for electronic authentication (UNCTAD, 2013).
- Consideration should be given to the establishment of an effective and efficient regional online dispute resolution scheme for the handling of domain-name disputes (UNCTAD, 2013) to ensure a high level of confidence in the resolution of intellectual property (trademark) disputes arising in the internet.
- To update laws and policies in tandem with the rapid emergence of new issues (such as offshore outsourcing, e-payment, social networks, and cloud computing) has required several countries to amend and redraft legislation (legislation pertaining to privacy and data protection, for instance) (UNCTAD, 2013).
- Ensure a resilient cybersecurity ecosystem in ASEAN by carefully taking into consideration the political, cultural, and technical opportunities and challenges:
    - As a political precondition, it is critical to establish a more coordinated policy framework both at the ASEAN level and at the Member States level;
    - As a cultural precondition, combatting internet piracy and increasing cybersecurity awareness is crucial; and,
    - As a technical precondition, appropriate investment in cybersecurity initiatives is crucial to addressing the ongoing cases of attack patterns and malware (SPI, 2018).

FUTURE RESEARCH DIRECTIONS

In order to harness e-commerce's contributions to sustainable development, it is important to adopt an innovative strategy that is "concerted, holistic, cross-sectoral and multi stakeholder" (UNCTAD, 2017b). Sustainability in e-commerce is increasingly generating interest, as it impacts on the future of this planet.

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Future research should explore sustainable e-commerce models or frameworks which can be adopted by businesses and governments alike.

Another area that is of practical utility for present and future e-businesses alike is the assessment of the e-commerce readiness of micro, small, and medium enterprises. It is viable for the diverse ASEAN nations to explore global initiatives such as the *eTrade for All*—launched in July 2016 at UNCTAD's 14th ministerial conference in Nairobi. This dynamic, online platform is an interactive knowledge-sharing tool that has the capacity to provide real-time assistance to ASEAN nations in a manner that capitalizes on existing knowledge and maximizes synergies with partners with a view to strengthening commerce readiness in seven policy areas—namely:

8. **E-commerce assessments,**
9. **ICT infrastructure,**
10. **Trade logistics,** the
11. **Legal and regulatory environment,**
12. **E-payments,**
13. **Skill development,** and the
14. **Financing of e-commerce ventures.**

It enables developing countries and donors to navigate the needed technical and financial support systems to enhance e-commerce and digital trade, keep abreast on trends and best practices, and promote their various initiatives and resources (UNCTAD, 2017b). In addition, it is possible for policymakers to use the UNCTAD B2C E-Commerce Index 2016 group indicators to help make an assessment both of the extent that their economies are e-commerce ready and of what areas are in greatest need of improvement. The Index comprises four readiness indicators:

15. **Internet use penetration**,
16. **Secure servers per million inhabitants,**
17. **Credit card penetration,** and
18. **Postal reliability** (UNCTAD, 2017b).

It is also important to explore appropriate platforms at the regional level that facilitate information sharing and exchanges of best practices between member countries in ASEAN—countries that are at various stages of e-commerce development (UNCTAD, 2013). Institutions of higher learning in these regions can play a role in enabling these endeavors. This may include setting up a regional database documenting and disseminating proven best practices and sharing lessons amongst networks of partners. Particular attention could be given to efficient and effective e-government applications, e-payments, and cloud applications. Financial and human (skills development) resources should also be made accessible for regular regional workshops related to e-commerce and law reform; and a resource database based on the workshop could be made available to all stakeholders (UNCTAD, 2013).

Continuous monitoring and improvement are particularly needed on harmonization in cross-border jurisdiction issues, thereby reducing conflicts and improving cooperation among ASEAN regulators and public law enforcement agencies (UNCTAD, 2017b). Further research and dialogue is needed in order to better understand the implications of e-commerce for sustainable development and to recognize the needs of developing countries in their efforts to make the most of e-commerce opportunities. ASEAN

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can utilize several recognized international fora for multi-stakeholder dialogue, as they provide a suitable neutral platform for exchanging information, establishing contacts, and voicing concerns. Such fora would ideally include the UNCTAD Intergovernmental Group of Experts on E-commerce and Digital Economy, the UNCTAD E-Commerce Week, the UNCTAD E-Trade for All Initiative, the World Summit on the Information Society Forum, various OECD bodies, and the WTO Global Aid for Trade Review (UNCTAD, 2017b). Future research should monitor ongoing ASEAN initiatives with a view to obtaining better data for feedback and continuous improvement. This will facilitate more comprehensive assessments of the various aspects of e-commerce readiness and will help to understand better the impact of government strategies, policies, rules, and regulations (UNCTAD, 2017b).

Finally, several emerging technologies and the Fourth Industrial Revolution are expected to impact global e-commerce. ASEAN, too (in many of the Member State economies), is witnessing the digital ecosystem's rapid development of strong support for e-commerce. More and more e-commerce firms are tapping into new technologies such as cloud computing, big data analytics, the Internet of Things (IoT), artificial intelligence (AI), machine learning (ML), and blockchain technology in order to transform their e-businesses. More research is needed in order to understand the implications of these technologies and to determine whether appropriate legal responses (in the form of regulatory amendments or new laws) might be needed (ESCAP & ADB, 2018).

CONCLUSION

The rapid growth of e-commerce and digital technologies can have transformative effects on the economy and development prospects of the member nations in the Association of Southeast Asian Nations (ASEAN) region. This is contingent upon the ASEAN nations' achievement of a consensus on the appropriate pathway for leveraging information and communication technologies (ICTs) as tools for regional integration—so that the aspirations of the AEC Blueprint 2025 for "A Competitive Innovative and Dynamic ASEAN" can be achieved. It is inevitable that the expansion of the digital economy will affect all aspects of business activities. Thus, it is timely for ASEAN as a region to consider how regional policies and laws can help harness e-commerce for sustainable development.

This chapter provides an overview of e-commerce developments in the region and then analyzed the e-commerce readiness of ASEAN nations by reviewing the current regional initiatives and arising regulatory challenges in the ASEAN e-Commerce Sector. It can be concluded that most nations in the region have yet to realize their full e-commerce potential despite various regional initiatives. There are various impediments—i.e., macro challenges, consumer-oriented challenges, and organizational-level challenges—that the respective member states as well as the businesses and consumers therein must overcome before the full benefits of e-commerce can be tapped. The member states of the ASEAN Economic Community need to jointly facilitate a sustainable digital economy, including the creation of a new cross-border e-commerce framework. In order to harness the full potential of e-commerce, it is crucial not only to have access to affordable ICT infrastructure and services combined with effective logistics and payment systems but also to foster the development of trust among users—such as governments, businesses, and consumers. The effective and timely (1) enactment—and (2) enforcement—of harmonized legislation in a way that promotes regional integration are critical steps in this context. The work is never-ending, because the wheels of legislative process are not able to keep pace with the rapidly

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evolving nature of the technologies. Thus, it is important both to continuously monitor the progress made and to identify areas that need further work and revision.

In conclusion, there is a critical need for a revitalized governance regime on the part of the 10 member states with a view to organizing and maintaining e-commerce sectorial cooperation through an efficient regional trade mechanism. This means that an appropriate sustainable model for e-trade must be developed for collaboration utilizing an adaptive and participatory management approach geared to addressing e-commerce concerns that arise at the national, international, and regional levels from time to time. The ASEAN member states also need to be cognizant of the fact that the ongoing revolutionary changes due to digitalization in the region will inevitably affect their capacity to achieve sustainable development. Since the common denominator that underlies all the regional instruments is sustainable development, there is a need for more efficient mechanisms that facilitate cooperation, coordination, and synergy at the national, international, and regional (including sub-regional) levels in order for those e-commerce laws which have already been successfully harmonized to be implemented.

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REFERENCES

Association of Southeast Asian Nations (ASEAN). (2015). *ASEAN Economic Community Blueprint 2025.* ASEAN Secretariat, Jakarta. Retrieved from https://www.asean.org/storage/2016/ 03/AECBP_2025r_FINAL.pdf

Association of Southeast Asian Nations (ASEAN). (2015). *ASEAN ICT Masterplan 2015 completion report*. ASEAN Secretariat.

Australian Trade and Investment Commission (Austrade). (2019). *Cyber security opportunities in the ASEAN region*. Retrieved from https://www.austcyber.com/resource/cyber-security-opportunities-asean-region

Berglund, A., & Svanteson, M. (2018). *Sustainable e-commerce: How to integrate the dimensions of sustainability within the e-commerce sector* (Unpublished master's thesis). University of Gävle, Gävle, Sweden.

Calboli, I. (2019). Free movement of goods and intellectual property exhaustion in ASEAN: A road block in the ASEAN way? In P. Hsieh & B. Mercurio (Eds.), *ASEAN law in the new regional economic order: Global trends and shifting paradigms* (pp. 317–341). Cambridge University Press. doi:10.1017/9781108563208.017

Cassetti, L. (2018). *Current and upcoming EU regulatory challenges in the e-commerce sector.* Retrieved from https://unctad.org/meetings/en/Presentation/dtl_eWeek2018p66_LucaCassetti_en.pdf

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Competition Commission Singapore (CCS). (2017). *Handbook on e-commerce and competition in ASEAN*. Retrieved from https://www.cccs.gov.sg/resources/publications/other-publications/asean-ecommerce-handbook

Devadason, E. S. (2019). *E-commerce: The way forward for engagement between ASEAN and China?* Retrieved from https://theasiadialogue.com/2019/08/07/e-commerce-the-way-forward-for-engagement-between-asean-and-china/

Economic and Social Commission for Asia and the Pacific (ESCAP) & the Asian Development Board (ADB). (2018). *Embracing the e-commerce revolution in Asia and the Pacific*. Asian Development Bank, Manila.

Economic Development Board Singapore (EDB). (2018). *E-commerce in ASEAN: Seizing opportunities and navigating challenges*. Retrieved from https://www.edb.gov.sg/en/news-and-events/insights/innovation/e-commerce-in-asean-seizing-opportunities-and-navigating-challenges.html

Goyal, S., Sergi, B. S., & Esposito, M. (2019). Literature review of emerging trends and future directions of e-commerce in global business landscape. *World Review of Entrepreneurship, Management and Sustainable Development*, *15*(1/2), 226–255. doi:10.1504/WREMSD.2019.098454

Hsieh, P. L., & Mercurio, B. (2019). ASEAN law in the new regional economic order: An introductory roadmap to the ASEAN economic community. In P. Hsieh & B. Mercurio (Eds.), *ASEAN law in the new regional economic order: Global trends and shifting paradigms* (pp. 3–21). Cambridge University Press. doi:10.1017/9781108563208.002

Jusoh, S., Ramli, I., & Damuri, Y. (2019). Regional regulatory coherence in the Association of Southeast Asian Nations: The case of competition law and intellectual property. In P. Intal & M. Pangestu (Eds.), *Integrated and connected seamless ASEAN economic community* (pp. 127–171). ERIA.

Kemp, S., & Moey, S. (2019). *Digital 2019 spotlight: Ecommerce in Southeast Asia.* Retrieved from https://datareportal.com/reports/digital-2019-spotlight-ecommerce-in-southeast-asia?rq=Southeast%20Asia

Khan, S. (2017). Hangzhou Forum: Cross-border e-commerce – Legal issues in e-commerce. *UNECE*. Retrieved from https://www.unece.org/fileadmin/DAM/cefact/cf_forums/2018_China/eCommerce_Bio-PPT/PPT_10_Khan.pdf

Kinda, T. (2018). *E-commerce as a potential new engine for growth in Asia*. IMF Working Paper WP/19/135. Retrieved from https://www.imf.org/en/Publications/WP/Issues/2019/07/01/E-commerce-as-a-Potential-New-Engine-for-Growth-in-Asia-46950

Leal-Arcas, R. (2019). *Solutions for sustainability: How the international trade, energy and climate change regimes can help*. Springer Nature. doi:10.1007/978-3-030-23933-6

Lee, C., & Das, S. B. (2017). *E-Commerce & ASEAN Economic Integration*. Retrieved from https://asean-competition.org/research/uploads/admin-88de83727/files/blogs/23092018/batch2/E-commerce and ASEAN Economic Integration_CasseyLeeandSanchitaBasu.pdf

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Leviter, L. (2010). The ASEAN Charter: ASEAN failure or member failure? *New York University Journal of International Law & Politics. New York University. International Law Society*, *43*, 159–210. https://www.researchgate.net/publication/328214049_The_Deadlock_of_ASEAN_Dispute_Settlement_Mechanisms_and_Why_ASEAN_Cannot_Unlock_It

Lim, C. (2018a). *Are e-commerce taxes materialising on the Southeast Asian horizon?* Retrieved from https://theaseanpost.com/article/are-e-commerce-taxes-materialising-southeast-asian-horizon

Lim, C. (2018b). *Part 2: How Southeast Asian e-commerce taxes could pan out, on an international scale.* Retrieved from https://theaseanpost.com/article/part-2-how-southeast-asian-e-commerce-taxes-could-pan-out-international-scale

Luo, C. (2018). *Understanding the upcoming and current tax regulations on ecommerce in Southeast Asia.* Retrieved from https://ecommerceiq.asia/tax-regulations-ecommerce-southeast-asia/

Mahn, K. D. (2017). *Navigating the e-commerce ecosystem for growth opportunities*. Smart Trust Unit Investments, August 9, 2017. Retrieved from https://www.smarttrustuit.com/whitepaperspost/navigating-the-e-commerce-ecosystem-for-growth-opportunities/

Menon, J., Todd, L., & Arujunan, D. (2018). *The ASEAN integration report, API Report No. 1, December 2018*. Retrieved from http://www.ideas.org.my/wp-content/uploads/2018/12/Asean_Integration_V8.pdf

Mik, E. (2019). Legal and regulatory challenges to facilitating e-commerce in ASEAN. In P. Hsieh & B. Mercurio (Eds.), *ASEAN law in the new regional economic order: Global trends and shifting paradigms* (pp. 342–370). Cambridge University Press. doi:10.1017/9781108563208.018

Nantu, L. (2019). *ASEAN ratifies Digital Integration Framework Action Plan 2019–2025.* Retrieved from https://theinsiderstories.com/asean-ratifies-digital-integration-framework-action-plan-2019-2025/

Nawawi, W. (2018). Regionalisation of competition law and policy in ASEAN. In B. Ong (Ed.), *The regionalisation of competition law and policy within the ASEAN economic community* (pp. 31–57). Cambridge University Press. doi:10.1017/9781108182058.004

Oláh, J., Kitukutha, N., Haddad, H., Pakurár, M., Máté, D., & Popp, J. (2019). Achieving sustainable e-commerce in environmental, social and economic dimensions by taking possible trade-offs. *Sustainability*, *11*(1), 89. doi:10.3390u11010089

Organisation for Economic Co-operation and Development (OECD). (2011). *OECD guide to measuring the information society 2011.* Paris: OECD.

Organisation for Economic Co-operation and Development (OECD). (2014). *Addressing the tax challenges of the digital economy (OECD/G20 Base Erosion and Profit Shifting Project)*. OECD Publishing. doi:10.1787/9789264218789-

Sengpunya, P. (2019). Asean E-Commerce Legal Framework -Towards the Development and Prospects. *Journal of the Humanities and Social Sciences*, *11*(2), 95–112.

Sociedade Portuguesa de Inovação (SPI). (2018). *Deliverable 1.1 – Overview of cybersecurity status in ASEAN and the EU.* Retrieved from https://project-yaksha.eu/wp-content/uploads/2019/05/ D1.1_Overview-of-Cybersecurity-Status-in-ASEAN-EU_vf.pdf

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Tanodomdej, P. (2017). E-consumer protection in ASEAN at the crossroads: Challenges in the harmonization of e-commerce law. *CPG Online Magazine, 6*. Retrieved from http://www.cpg-online.de/wp-content/uploads/2017/12/COM-6.2017.pdf

United Nations Conference on Trade and Development (UNCTAD). (2013). *Review of e-commerce legislation harmonization in the association of Southeast Asian nations.* New York: Author.

United Nations Conference on Trade and Development (UNCTAD). (2017a). *Information economy report 2017*. Geneva: Author.

United Nations Conference on Trade and Development (UNCTAD). (2017b). Harnessing e-commerce for sustainable development. In OECD/WTO, *Aid for trade at a glance 2017: Promoting trade, inclusiveness and connectivity for sustainable development*. WTO & OECD Publishing.

United Nations Conference on Trade and Development (UNCTAD). (2018). *The least developed countries report 2018: Entrepreneurship for structural transformation – beyond business as usual.* Geneva: Author.

United Nations Conference on Trade and Development (UNCTAD). (2019a). *Digital economy report 2019, value creation and capture: Implications for developing countries*. Retrieved from https://unctad.org/en/PublicationsLibrary/der2019_en.pdf

United Nations Conference on Trade and Development (UNCTAD). (2019b). *Summary report, e-commerce week, 1–5 April 2019*. Retrieved from https://unctad.org/meetings/en/SessionalDocuments/dtl_eWeek2019_summary_en.pdf

Victor, P. (2018). ASEAN in dire need of sturdier cybersecurity. *The ASEAN Post*. Retrieved from https://theaseanpost.com/article/asean-dire-need-sturdier-cybersecurity

World Bank Group. (2019). *The digital economy in Southeast Asia: Strengthening the foundations for future growth*. Information and Communications for Development. World Bank. Retrieved from http://documents.worldbank.org/curated/en/328941558708267736/pdf/The-Digital-Economy-in-Southeast-Asia-Strengthening-the-Foundations-for-Future-Growth.pdf

Zahra, R. (2019). *ASEAN agreement on e-commerce: What it tries to tackle*. ASEAN Studies Center. Retrieved from https://asc.fisipol.ugm.ac.id/2019/09/17/asean-agreement-on-e-commerce-what-it-tries-to-tackle/

ADDITIONAL READING

Chen, L., & Kimura, F. (Eds.). (2019). *Developing the digital economy in ASEAN*. Routledge. doi:10.4324/9780429504853

Hsieh, P., & Mercurio, B. (Eds.). (2019). *ASEAN law in the new regional economic order: Global trends and shifting paradigms*. Cambridge University Press., doi:10.1017/9781108563208

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Kim, H. (2019). Globalization and regulatory change: The interplay of laws and technologies in e-commerce in Southeast Asia. *Computer Law & Security Review*, *35*(5), 105315–105335. doi:10.1016/j.clsr.2019.03.009

Lee, C., & Lee, E. (Eds.). (2020). *E-commerce, competition & ASEAN economic integration*. ISEAS Publishing.

Mueller, S. (2007). *Legal implications of e-commerce: Basic issues, initiatives and experiences in Asia* (No. 207). United Nations Economic and Social Commission for Asia and the Pacific (ESCAP).

Organisation for Economic Co-operation and Development (OECD)/World Trade Organization (WTO). (2017). *Aid for trade at a glance 2017: Promoting trade, inclusiveness and connectivity for sustainable development*. Geneva: WTO / Paris: OECD Publishing. Retrieved from https://www.wto.org/english/res_e/booksp_e/aid4trade17_e.pdf

Raymond, A. H., & Lambert, J. B. (2014). Technology, e-commerce and the emerging harmonization: The growing body of international instruments facilitating e-commerce and the continuing need to encourage wide adoption. *International Trade & Business Law Review*, *17*, 419.

Rothchild, J. A. (Ed.). (2016). *Research handbook on electronic commerce law*. Edward Elgar Publishing. doi:10.4337/9781783479924

Weber, R. H. (2015). Digital trade and e-commerce: Challenges and opportunities of the Asia-Pacific regionalism. *Asian J. WTO & Int'l Health L & Pol'y*, *10*, 321.

KEY TERMS AND DEFINITIONS

Consumer Protection: Consumer protection are laws that aim to protect consumers from unfair practices in the marketplace ranging from improperly described or damaged to faulty or dangerous goods and services as well as from unfair trade and credit practices.

Cross-Border E-Commerce: Transactions utilizing various technologies involving the selling and buying of goods and services across national borders using e-commerce.

Data Protection: The process of safeguarding important information from misuse, corruption, compromise, or loss.

Digital Technology: Entails the use of a variety of devices that enable access to cyberspace, the use of digital audio/video and information communications technology (ICT).

E-Commerce: Transactions that utilize various technologies through devises such as personal computers, tablets, and mobile phones in business-to-consumer (B2C), business-to-business (B2B), consumer-to-consumer (C2C) and business-to-government (B2G) for diverse activities on the electronic platform ranging from taking customer orders, processing payments, providing customer service and marketing related activities.

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Harmonization: To bring into harmony, accord, or agreement the diverse laws of nations.

Privacy: A person's right to control access to his or her personal information.

Sustainable Development: Development that requires attaining a delicate balance between the needs of the present and future by carefully utilizing natural resources and ecosystems for the wellbeing of the planet and all life forms.

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Chapter 97
The Challenges and Opportunities of E-Commerce Data Collection in Indonesia Compared to BRICS Countries

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ABSTRACT

The development of e-commerce business in Indonesia is very rapid. The rapid development of e-commerce in Indonesia will make Indonesia the largest digital economy in Southeast Asia in 2020. However, there are several obstacles, one of which is the provision of a trusted e-commerce database. Data has an important element in development in developing an e-commerce business in Indonesia. As the National Statistics Organizations, BPS Statistics Indonesia was pushed to collect the e-commerce data. BPS has developed several methods of collection e-commerce data using e-commerce survey and crawling technique in 2018 but still has a weakness. As a comparative study, there are several countries of G-20 that have high development in e-commerce and associate themselves as BRICS countries. With SWOT Analysis and Maturity Assessment, this study wants to analyze strength, weakness, opportunity, and thread, also measure the maturity from each method of collection used. Based on the result, Indonesia has better maturity in technology implemented, but worse regulation and people cooperation.

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INTRODUCTION

The growth of e-commerce business in developing countries has been increased rapidly, including in Indonesia as one of the developing countries in South-east Asia. According to research by Google and Temasek regarding "e-Conomy SEA 2018", GMV (Gross Merchandise Value) in e-commerce sector in South-east Asia reached 23 Billion US Dollar equal to 333 Trillion ID Rupiah in 2018. This value growth indicates growth of 60 percent compared to last year. For Indonesia, GMV in e-commerce sector reached 12.2 Billion US Dollar equal to 176 Trillion ID Rupiah in 2018.

Indonesian e-commerce contributes 1 US Dollar for each 2 US Dollar spent in South-east Asia. Indonesian e-commerce contributes 50 percent of online shopping transactions in these regions. This value is the greatest in South-east Asia. In 2025, Indonesia's GMV value is predicted to increase 334,43 percent by 53 Billion US Dollar equal to 768 Trillion ID Rupiah.

As the largest e-commerce market in Southeast Asia, Indonesia has transformed in this changing digital era. In 2016, the Indonesian e-commerce Association (idEA) noted that around 24.74 million Indonesians bought products via online or around 9.47 percent of the population of Indonesia. Growth in the value of electronic commerce (e-commerce) in Indonesia reached 78 percent. The growth rate is the highest in the world.

Based on the latest data from Bank Indonesia (BI) in 2016, e-commerce transactions reached 75 Trillion ID Rupiah per year. That value includes e-commerce transactions not a market place. While over the past 10 years, the average growth in the value of e-commerce transactions has reached 17 percent, so that in 2018, the value of e-commerce transactions is estimated to be around 102 Trillion ID Rupiah. If you receive 10 percent VAT, then the potential tax revenue is already 10 Trillion ID Rupiah per year. The amount is very small towards Indonesia's GDP (Gross Domestic Product), which is assumed to reach 13,588 Trillion ID Rupiah. The contribution of e-commerce to the GDP is only 0.75% or around 1.34% of total household consumption.

According to BPS-Statistics Indonesia in 2016, the digital economy sector was able to contribute 7.3 percent of the total GDP with a value of Rp 225 trillion, growing 10 percent annually. The driving factor for the high contribution of the digital economic sector is supported by information and communication technology, especially the internet. According to a survey conducted by the Indonesian Internet Service Provider Association (APJII), in 2017 internet users in Indonesia increased to 143.26 million people and the use of mobile devices for internet surfing reached 44.16 percent. With the increasing number of internet users, it will affect the number of e-commerce agents in Indonesia. Since 2017 the number of e-commerce agents has been 81.5 million or around 30.87 percent of Indonesia's population. This number is predicted to increase until 2022 by 241.5 million users.

Based on e-commerce user side, when viewed from the label generation of their birth year, namely: X generation (1960 - 1980), Y generation (1980 - 1995), Z generation (1995 - 2010), alpha generation (> 2010). Based on data from the STATISTA, the biggest percentage is Y generation, which is 41.58 percent. Meanwhile, Z generation has also a percentage that is not much different from Y generation, which is 34.41 percent. The rest of it is X generation by 23.7 percent. Y generation dominates with almost half of e-commerce users in Indonesia. When viewed from the characteristics of gender, most e-commerce users are men (around 52.3 percent), while the rest are women (47.7 percent). When viewed from the level of income, the e-commerce user group is mostly found in the high-income population with a percentage of 34.83 percent. This number is not much different from middle-income e-commerce users, which is 33.7 percent.

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Based on data of the Bank of Indonesia, the value of e-commerce marketplace transactions in Indonesia in July 2019 is estimated to reach 23.7 Trillion ID Rupiah. This value grew quite dramatically, in the amount of 124.5% (Years on Years). The frequency of transactions that occurred was 52.1 million transactions with a growth value of 73.2% (Years on Years). Product categories with the largest transaction value in the e-commerce marketplace in July 2019 are fashion (21.8%), cellphones & accessories (19.3%), and personal care & cosmetics (11.5%). Then, E-commerce transactions in July 2019 are still dominated by buyers and sellers in Java, respectively 77.6% and 88.2%.

The rapid development of e-commerce in Indonesia will make Indonesia the largest digital economy in Southeast Asia in 2020. To realize this achievement, the e-commerce roadmap in Indonesia is regulated in presidential regulation number 74 of 2017. In carrying out the roadmap, there are several principles related to e-commerce roadmap management in Indonesia. Among them are openness for all parties, legal certainty and protection, increasing human resources of e-commerce agents, as well as prioritizing and protecting national interests.

Even though the development of e-commerce is going pretty fast, there are still obstacles that interfere with the roadmap of Indonesia becoming the largest digital country in ASEAN in 2020. The obstacle relates to the availability of a reliable e-commerce database. In addition, there is not clear who recorded and what was recorded. This is because there is no mechanism for collecting and sharing data between ministries / institutions from and to e-commerce agents. Obstacles to data collection and sharing are related to conflicts of interest between Ministries / Institutions. In addition, there is also no legal protection and harmonization of regulations related to e-commerce data collection.

As the response for government demands encourages BPS as National Statistics Office to collect e-commerce data. BPS collected e-commerce data in 2018, although not all agents in this industry wanted to share their data. This weakness is a classic problem in data collection in Indonesia. E-commerce agents are still unwilling to provide real data on their income. This is suspected because education about the importance of e-commerce data to economics and statistics laws is still minimal.

The rapid development of e-commerce does not only happen in Indonesia but also in other countries. The progress of e-commerce business in a country that is classified as a developed country like the United States is in line with the completeness of e-commerce data owned by that country. However, for developing countries, the process of collecting e-commerce data independently and completely becomes a big challenge.

One of developing country association that also has great potential in the e-commerce business is incorporated in BRICS (Brazil, Russia, India, China, South Africa). As a large economic association for developing countries, BRICS is an appropriate picture in representing economic conditions including e-commerce in developing countries. BRICS have also collected e-commerce data in their countries by their own collection method. The collection methods carried out by each country have advantages and disadvantages. Some of the strengths and weaknesses of their collection methods are very related to the completeness and accuracy, privacy and data security, easy access, and technological support used.

The purpose of this research is to conduct a comparative study on the collection of e-commerce data between Indonesia and BRICS countries that has opportunities and challenges to be applied in Indonesia. By conducting comparative studies related to e-commerce data collection methods in Indonesia and BRICS countries, It is hoped that an effective and efficient method of collecting data will be obtained and can provide better e-commerce data.

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LITERATURE REVIEW

E-Commerce

E-commerce (Electronic Commerce) is trade in products or services that refer to technologies such as cellular commerce, electronic funds transfer, internet marketing, online transaction processing, and Electronic Data Interchange (EDI). The use of a comprehensive Information and Communication Technology (ICT) system and global standard network infrastructure is indispensable in e-commerce practices (Turban et al 2015). E-commerce can also be referred to as a modern business methodology that answers the needs of business organizations, vendors, and customers to reduce costs and improve the quality of goods and services while increasing the speed of delivery (Vadwala & Vadwala, 2017). The major different classifies of e-commerce are (Nanehkaran, 2013):

1. *Business to Business* (B2B) *e-commerce*

This type has a focus on providing products from one business to another. There is an e-commerce platform that specifically targets companies and works in a closed environment. One of the e-commerce business models in Indonesia is MBiz (2015), a subsidiary of the Lippo Group. MBiz provides integrated web-based procurement of goods and services for companies and government institutions. Products offered by MBiz include technology products, office equipment, industrial equipment, to retail goods.

2. *Business to Consumer* (B2C) *e-commerce*

This model sells services / products to individuals, but businesses run on an online platform compared to physical stores. One of the e-commerce business models in Indonesia is Blibli. Evaluation of e-commerce reputation is generally based on consumer trust which is formed from several fagents, including product guarantee, service quality, to the effectiveness of the system presented.

3. *Consumer to Consumer* (C2C) *e-commerce*

This model is divided into two models, they are marketplace and classifieds/P2P. Consumer can sells or buys to another consumer. The examples of this classification in Indonesia are Bukalapak, Shopee, Tokopedia, etc. Besides through marketplace, trading activities can also carried out directly between individuals without including from third parties. Some examples of platforms with this business model are OLX, Kaskus, through Instagram.

4. *Customer to Business* (C2B) *e-commerce*

This type is sells services/products to business or it is a business model when end users create products and services that are used by business and institutions.

5. *Mobile Commerce* (M-C)

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This type is allow to use access to internet and shopping in i without needing to find place to plug in. Mobile commerce transaction continue to improve and the phrase includes the purchase and sale of a wide range of products and services, online banking, bill payment, information delivery and so on.

The application of e-commerce has several advantages and disadvantages. For customers, the existence of e-commerce will facilitate them in meeting their needs. Customers becomes more flexible when buying their needs, they don't need to wait in line, and can do transactions anywhere. Besides that, e-commerce also makes customers easy to get global offers, so they can compare the prices from various sources. Through e-commerce, customers will easily meet their needs with minimum transaction costs. While for providers, the existence of e-commerce will make them easier to conduct business. They will easily offer better customer service and fast communication if customers need it. Besides that, providers are potentially to get new customers through global visibility without traditional intermediaries who take away margins.

There are several disadvantages as well as a challenge of the existence of e-commerce. First challenge is about security. When customers use e-commerce to buy something, usually they are required to provide personal data. This encourages bad people to steal and misuse customer's personal data. Then, as a customer sometimes hesitate in choosing a provider because of the possibility of bogus and fraudulent firm. Especially there is no guarantee for product quality. After that, security is also pursue to be a main problem in e-commerce. Then, form social side, e-commerce has not any contacts and relationships with other persons and loss our social contacts. While for provider, they need to provide higher logistics cost because goods have to be sent to the customer's location. Then provider will have difficulty if there are anonime customers.

E-Commerce Policy in Indonesia

There are some rules related to e-commerce in Indonesia. Through the Economic Policy Package Volume XIV published on November 10, 2016, the government provides incentives for ecommerce startups in the form of tax breaks, namely:

1. Tax reduction for local investors who invest in startup companies.
2. Simplification of permit procedures for taxation for e-commerce startups whose turnover is below Rp. 4.8 billion per year through the implementation of PP No. 44 of 2013 concerning income tax on income from businesses received or obtained by taxpayers who have a certain gross circulation, so the ecommerce startup is subject to a final tax of 1%.
3. Providing equal treatment of taxation between foreign and domestic ecommerce entrepreneurs. Foreign business agents providing services and / or content in Indonesia are required to comply with all tax requirements.

And then, the Economic Policy Package XIV: e-commerce Road Map. In the Perpres on the e-commerce Roadmap that will soon be published, there are 8 aspects of regulation, namely:

1. **Funding**, in the form of KUR for tenant platform developers, grants for startup companion business incubators, USO funding for digital MSMEs and e-commerce platform startups, angel capital, seed capital from the adoptive father, crowdfunding, and DNI opening.

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2. **Taxation**, in the form of tax reduction for local investors who invest in startups, simplification of tax permits/procedures for e-commerce startups whose turnover is below Rp 4.8 Billion/year, and equality of tax treatment among e-commerce entrepreneurs.
3. **Consumer protection**, in the form of government regulations on trade transactions through electronic systems, regulatory harmonization; trade payment systems and government purchases of goods / services through e-commerce; and development of a national payment gateway in stages.
4. **Education and HR**, in the form of e-commerce awareness campaign; national incubator program; e-commerce curriculum; and e-commerce education to consumers, agents and law enforcement.
5. **Logistics**, in the form of utilization of the National Logistics System (Sislognas), strengthening local / national courier companies, development of MSME logistics data transfer, and logistics development from villages to cities.
6. **Communication infrastructure** through the development of broadband networks.
7. **Cyber security**, in the form of compilation of a national supervision system model in e-commerce transactions, public awareness about cyber crime, and preparation of SOP related to consumer data storage, certification for consumer data security.
8. **Forming Implementing Management** by monitoring and **evaluating** the implementation of e-commerce roadmaps.

The e-commerce Roadmap was further refined by the presidential regulation of Indonesian Republic Number 74 in 2017. The improvement of this regulation is intended to provide the direct strategic and guidance to accelerate the implementation of e-commerce Roadmap. According to the Presidential Regulation Number 74 of 2017 in article 3 paragraph 3, this regulation has a function being a reference for the government and stakeholders. For government, it is as a reference for establishing sectoral policies and follow-up plans while it is as a reference in carrying out e-commerce activities for stakeholders.

By applying the principles of the e-commerce Roadmap that is legal certainty and legal protection, openness for all parties, increasing the competence of e-commerce human resources, and prioritizing and protecting national interests, MSMEs and start-up companies, it is expected to be able to use e-commerce maps that are possessed high economic potential for Indonesia and has become one of the backbones of the national economy. This e-commerce Road Map provides facilitation which translates into 62 action plans that support and facilitate the development of a digital economic system.

SWOT Analysis

SWOT analysis is a tool or technique that can be used for strategic planning and strategic management in organizations. There are four components in SWOT analysis, they are strengths, weaknesses, opportunities, and threats (GÜREL and TAT, 2017). This components is used to evaluate involved in an organization, a plan, a project, a person or a business activity. Through SWOT analysis, will be known how strengths are able to take the opportunities that exist and deal with the existing threats. Besides that, SWOT analysis is expected to be able to overcome weaknesses that prevent profits and create a new threat. In general, SWOT analysis is divided into two categories, internal and external factor. Internal factor consists of strengths and weaknesses, while external fagents consist of opportunities and threats. It gathers data about internal issues and external issues then analyzes the data to inform future goal, decisions, and strategies.

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Maturity Assessment

Maturity refers to the ability of an organization to reliably perform. Maturity is measured by organizational readiness and capability expressed through People, Process, Data, Technology, and Measurement. Organizational maturity is directly related to the ability to carry out strategies in achieving the organization's vision and mission. Therefore, there is a need to assess organizational maturity as input to realistic plans and as a guide to achieving maturity to the desired level. Organizations that have good maturity are able to adapt and mitigate any obstacles encountered.

Maturity assessment involves the organization's assessment of specified criteria and rating schemes. A rating scale that is often defined in the range of 1–5 which shows an increase in the level of maturity is as follows:

1. **Performed** — Activities are performed in an ad hoc manner.
2. **Managed** — Activities are performed with managed processes.
3. **Defined** — Activities are defined so the organization can perform them in a uniform manner.
4. **Measured** — Oversight is given to the performed activities to ensure performance and uniformity.
5. **Optimized** — Continuous improvement processes are in place on the defined and measured processes.

METHODOLOGY

Method of Collecting Data

The data collection method that was used in this study is obtained from the guidelines of e-commerce survey in statistics Indonesia and other literatures. After that, we compared data collection method from selected countries of G-20 members (BRIICS countries). The literature review conducted sourced from journals and research reports in the selected countries. Subject collected related to:

1) Support and source data on agents and users of e-commerce
2) Data collection methods used
3) Limitations and obstacles experienced

Method of Analysis

SWOT Analysis

From a number of e-commerce data collection methods carried out by several countries that have collected from the literature, there are certainly several advantages and disadvantages of each. The strengths and weaknesses are analyzed using Strength, Weakness, Opportunity, and Threat (SWOT) techniques. In the future, the results of this SWOT analysis will be used in designing the e-commerce data collection methods that are able to accommodate all the strengths and weaknesses. It also see the opportunities and threats of each data collection method related to collection techniques that are appropriate for Indonesia.

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Maturity Assessment

There are several indicators that was used to compare maturity among Indonesia and BRIICS countries. The indicators was adapt and adopt from EITBOK Maturity Assessment, including: People (Society Behaviour), Process (Ease of Access), Data (Completeness Data, Privacy and Security), Technology, dan Measurement (Regulations).

RESULT AND DISCUSSION

Indonesia's E-Commerce Data Collecting Method

As a National Statistics Office, e-commerce data is collected by BPS-Statistics Indonesia. Unfortunately, the data collection of e-commerce had several problems, such as only 20 e-commerce companies gave their data to BPS. Moreover, the data given to BPS were only the trade transactions data, although BPS wanted to record foreign and domestic investment data of those 20 e-commerce companies. From these issues, the Chief Statistician of BPS-Statistics Indonesia, Suharyanto said that his agency would classify e-commerce in several categories, such as marketplace, transportation, logistics, and payment. E-commerce companies' data in Indonesia can actually be used for many things. Aside from being a database for controlling imports of consumer goods, the data is also useful as a basis for better policymaking.

BPS has also developed a collection method through E-commerce Survey using CAPI (Computer Assisted Personal Interviewing) and PAPI (Paper Assisted Personal Interviewing). The benefit of using CAPI is e-commerce trade transactions data will be collected faster and more efficient. BPS also uses an alternative method of collecting e-commerce data by using Crawling Technique. This method is calculating the sales turnover of e-commerce products through websites. This method is commonly used in some international survey institutions engaged in the digital economy (Yudhistira, 2018).

E-Commerce Survey

Sample

This survey covered 34 provinces by listing 3504 census blocks. The unit under study was a business unit with a sample framework for the results of the 2016 Economic Census. The listing procedure was done by listing each census building in one census block as well as conducting e-commerce data collection for the business as e-commerce agents that has visited. Listing was done using CAPI in 29 provinces, and 5 provinces using PAPI.

Timeline

E-commerce data collection in Indonesia was being carried out by BPS. Data from 34 Provinces had just been collected at the end of July 2019, until now it is still in the processing stage. It is likely that an e-commerce survey will be released by BPS at the end of 2020.

Following is the scheme of e-commerce survey of BPS-Statistics Indonesia:

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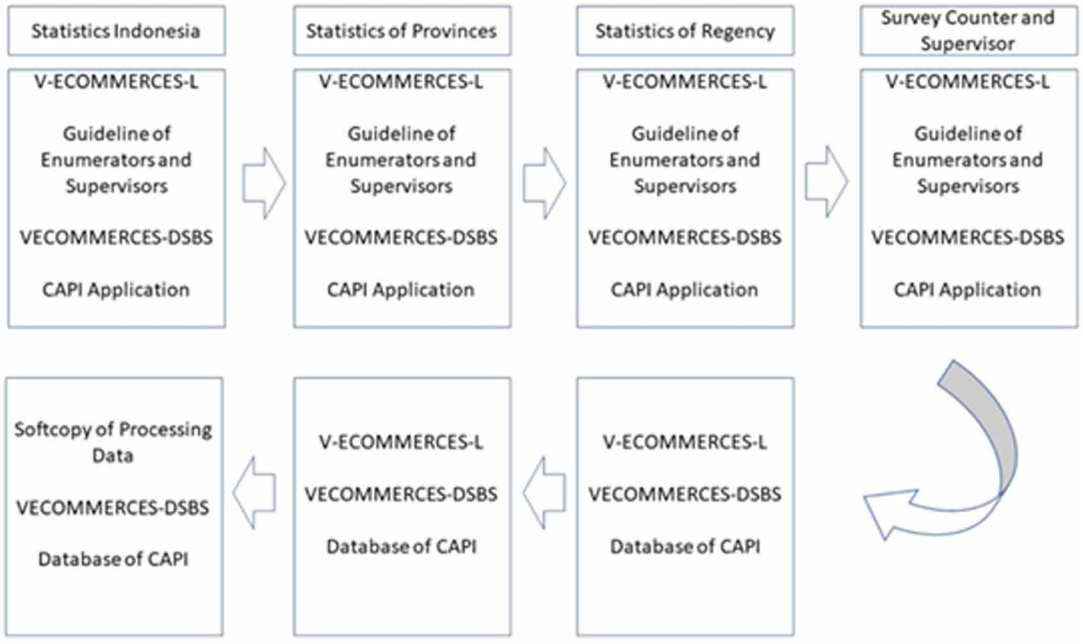
Figure 1. The business process of data collection of e-commerce



Crawling Technique

Crawling technique is a technique used to collect information on a web automatically using keywords provided by the user. The crawler is a program that uses a certain algorithm to scan web pages. Crawling techniques are only carried out by the BPS Headquarters using Big Data with coverage throughout Indonesia.

The overview of e-commerce data collection technique has been performed by several developing countries that belong to BRICS:

BRICS Countries

China's E-Commerce Data Collecting Method

The development of information technology and economic globalization called e-commerce makes economic growth in the country of China increasingly developed. China is known as one of the developing countries with the largest number of internet users in the world above 802 million. There are several renowned e-commerce companies in China, including Amazon, Alibaba, e-bay, JD.com and Taobao as B2C and C2C companies that dominate the e-commerce market in China. The successful result of the e-commerce company is due to the trusted e-business model that offered the privacy and security of user's network and presence the state of institutions. It also presents the guarantee of e-commerce business security.

The rapid development of e-commerce was obtained from e-commerce data in China. The e-commerce data collection method were divided into two methods, they are a retail survey conducted on several

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large e-commerce companies and SWOT analysis of cross-border e-commerce in China in 2017. The result from survey retail showed that e-commerce users came from 62 percent in population from the age above 25 to 44 years. This increasing number of internet users and e-commerce market in China caused the value of China's GDP that rose into $15.543.710 in 2018.

Brazil's E-Commerce Data Collecting Method

Brazil is known as an economic market users with the fifth largest economy where started to use e-commerce since 2011. It was representing 42 percent of e-commerce users in Latin America with the internet user above 150 million. Most of its online orders categories are fashion, accessories, cosmetics and appliances. It knows how to get potential customers with the right product at the right time. Unfortunately, the official data from Brazil are still unavailable in the public government. However, some researchers have begun to study about SWOT analysis. Some studies include the development of business management for shipbuilding in Santa Carina in 2018 and the method of storing/shipping goods in general in 2019.

Russia's E-Commerce Data Collecting Method

Russia doesn't have any definition and formal statistics in e-commerce indicator. Russia's National Statistics Organization don't consider cross border e-commerce. Between association and e-commerce agents still use different numbers and data. Even the Ministry of Industry and Trade related to trade data still depend on market consultations.

India's E-Commerce Data Collecting Method

Based on the metadata of Ministry of Statistics and Implementation Program, the official statistics database of e-commerce in India is still not available. The Equity Brand Association in India has published B2C (business to consumer) as development of draft e-commerce national policy in India. The size of B2B (Business to Business) in India has reported in news and articles based consultant research. According to the result analysis, ratio between B2B and B2C in 2015 was used to estimate the total of e-commerce in 2017. Until now, the government is still focusing on developing of classification code for e-commerce.

South Africa's E-Commerce Data Collecting Method

South Africa still has the same problem with Russia and India, which is the availability of official statistics database off e-commerce. As an effort to produce e-commerce data, South Africa still uses adjustment based on result of retail trade or retail business survey that using 2800 companies. From the sample grouped by type of transaction and the type of business, we can estimate the number of e-commerce companies and including their characteristics.

SWOT Analysis Result

Based on information from the data collection methods that have been obtained for Indonesia and the BRICS Country, SWOT Analysis can be made as follows:

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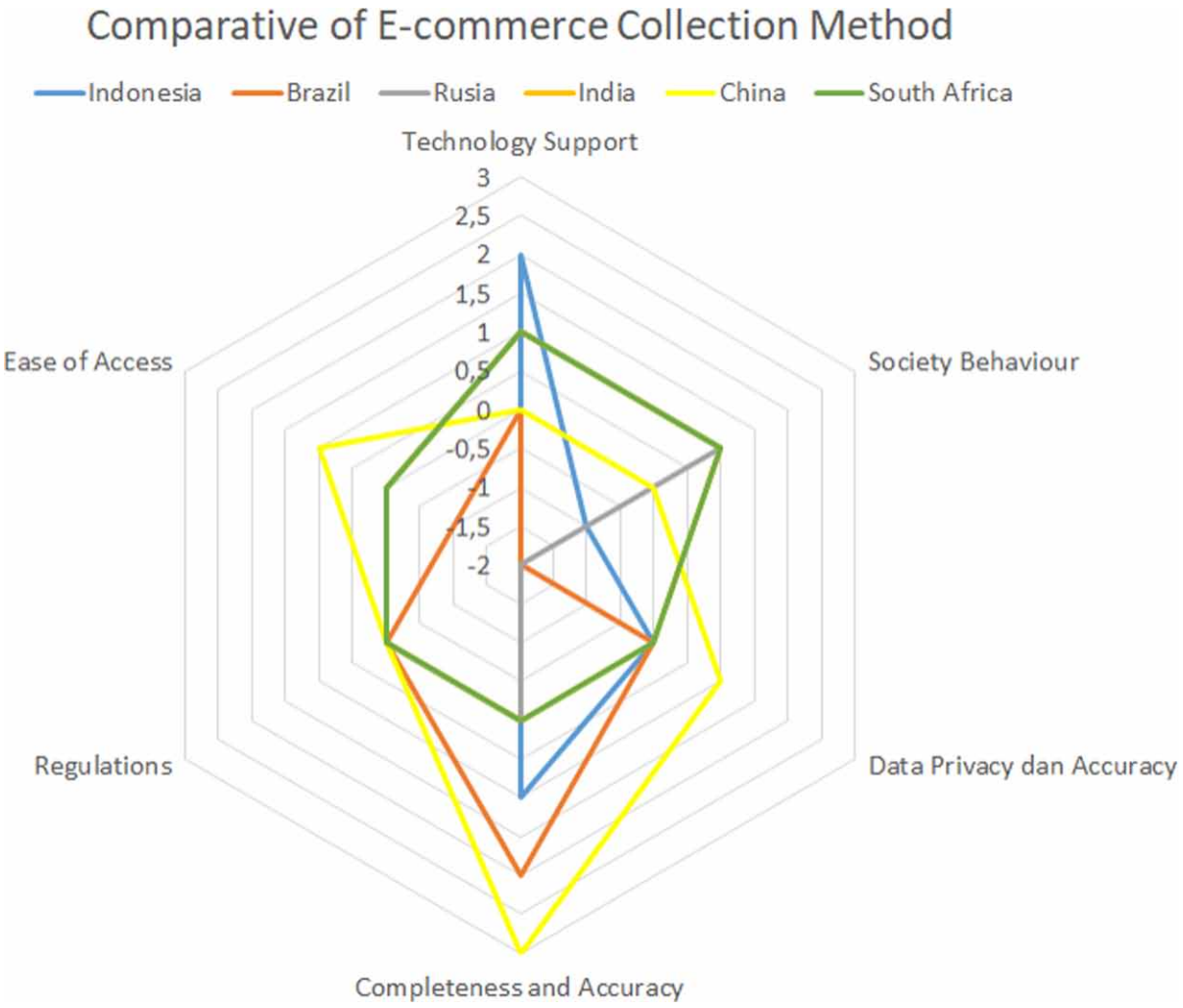
Table 1. SWOT Analysis Results

Country	Strength	Weakness	Opportunity	Threat
Indonesia	- Utilizing CAPI as a data acquisition tool **(Technology Support)** - Using crawling techniques from several e-commerce websites **(Technology support)**	- Not harmonized regulations **(Regulation)** - There are weak laws and regulations **(Regulation)** - Official e-commerce database is still not available in National Statistics Office **(Technology Support)**	- Large market share **(Ease of Access)** - data collected can be very diverse **(Ease of Access)** - Has a lot of cross border e-commerce transactions **(Completeness and Accuracy)**	- Not cooperative Respondent **(Society Behaviour)** - Wide area coverage **(Ease of access)** - Not cooperative e-commerce players **(Ease of access)** -
China	- A large capital data accumulation **(Completeness and Accuracy)** - High efficient fulfillment network strategy and databases **(Technology Support)** - Accumulated media resources **(Ease of access)** - Cross-border shopping business and data preparation **(Completeness and Accuracy)**	- Incomparable advantage of users data in each area/district **(Completeness and Accuracy)** - Slow localization process for summarizing local customer data **(Technology support)** - Different attitudes to email the e-commerce marketing promotion **(Technology Support)**	- The future big data trend from C2C and B2C companies **(Completeness and Accuracy)** - Many statistical tools that can be used to analyze the e-commerce product in each company **(Technology Support)**	- The implementation of cross-border business became threatened of the security in individual data, fraud and strange competitors **(Data privacy and Security)**
Brazil	- Nationalization studies of product in e-commerce **(Completeness and Accuracy)** - Share knowledge through personal interaction **(Data Privacy and Security)** - Represent the largest e-commerce market in Latin America **(Completeness and Accuracy)** - Competitive prices and proliferation of payment method which help the e-commerce growth **(Regulations)**	- The using of e-commerce data was not come from NSO official data **(Data Privacy and Security)** - Brazil has cultural need to try before buying and it affects the rate of e-commerce **(Society Behaviour)** - Most of the products are attractive to females only **(Society Behaviour)** - The worst prepared nation to adopt cloud technology because of its week legislation against cybercrime **(Technology Support)**	- Corporates are experiencing high levels of risk and will be looking out for structured finance deals that provide an opening for e-commerce data **(Ease of Access)** - E-bit is going to enhance trust in internet shopping by publishing on its website the results of evaluation of people who bought online **(Technology Support)** - Brazil's federal government is creating a national plan to provide cheap broadband internet access **(Society Behavior)**	- The trade war between the US and China impact on Brazilian's e-commerce data, so that Brazil has a hard time for having its own data **(Regulations)** - The growth of e-commerce id slowing and declining **(Society Behaviour)** - Increased fraudulent activity **(Data Privacy and Security)** - E-commerce shopper penetration is lower than developed nations **(Society Behaviour)**
Rusia	- It has a large number of e-commerce users **(Society Behaviour)**	- In providing e-commerce data, it still uses data from market consultants and there is no official data from NSO in that country. **(Data Privacy and Security)**	- Development to carry out standardized measurements of the market value and characteristics of e-commerce in the country. **(Technology Support)**	- There are no officially e-commerce data collection by NSO. The collection was done by an Outside Organization which can endanger the country **(Data Privacy and Security)**
India	- The country with a large number of e-commerce users **(Society Behaviour)**	- Official e-commerce database still not available **(Technology Support)**	- Development of special e-commerce classification codes and preparation for conducting e-commerce surveys for e-commerce users **(Technology Support)**	- There is no implementation of e-commerce data collection in accordance with market conditions **(Technology Support)**
South Africa	- The country with a large number of e-commerce users **(Society Behaviour)**	- Official e-commerce database still not available **(Technology Support)**	- There is an opportunity to conduct e-commerce surveys **(Technology Support)**	- Still using adjustment numbers that making not reliable data and not relevant to existing market conditions **(Technology Support)**

Maturity Assessment Result

This is Maturity Assessment for each countries of e-commerce data collection:

Figure 2. Comparative of E-Commerce Collection Method



Based on figure 2, China has high score of maturity assessment in almost every aspect except regulations. On the other side, Brazil has the lowest score of maturity assessment in society behaviour. Many Brazilians don't like buy goods from e-commerce platform. But, Brazil has high score on the regulation aspect. Then, Russia has weak score in data privacy and security of e-commerce agents because the e-commerce data is collected from Non Government Organization. The data from NGO has risk of data trading. India and South Africa have similar score of maturity assessment. They are developing e-commerce survey because they have big users of e-commerce. The maturity of e-commerce data collection in Indonesia, has highest score in technology, but weakest in regulation.

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Based on the Figure 2, although Indonesia e-commerce has high score especially on Technology. Based on Global Innovation Index, Indonesia has a score of 29.8 or 85th rank of 129 countries. In the ASEAN region, Indonesia innovation's rank is the second lowest position. Indonesia Innovation Index decreases from 32 (2013) to 29.8 (2019). From that data, Indonesia need allocate the budget to improve the information communication technology in the era industry 4.0 right now.

We consider that Indonesia has a big e-commerce data transaction. However, the real problem that we faced as being researcher are the availability and reliability of e-commerce data. From the availability side, there are some problems such as weak regulation and incorporative respondent from e-commerce corporate. While, from the reliability of e-commerce data is still not being official statistics at National Statistics Office of Indonesia. Thus, the data consumer couldn't use the e-commerce data for their researches and public policies. Both of these e-commerce problems are correlated to the activity for data collection.

CONCLUSION

Statistics Indonesia have been collecting the e-commerce data using crawling technique and e-commerce survey in 2019. On the other hand, China has developed e-commerce data collection since 2003. The other countries are similar with Indonesia, they are still trying to develop the method of e-commerce data collection. Indonesia always hope for having the opportunity to grow-up on providing the sustainable data collection for e-commerce and deploy the chance on e-commerce data serving.

This chapter has some weakness such as some information about e-commerce in Indonesia in details. However, this chapter contributes about the e-commerce in Indonesia as a whole. This chapter has used new measurement about e-commerce quality comparation among BRIICS countries.

REFERENCES

Eka, R. (2018). *Riset Google-Temasek : Indonesia Kuasai Pangsa Pasar Ekonomi Internet di Asia Tenggara Indonesia negara dengan pertumbuhan tercepat dan terbesar*. Riset Google-Temasek: Indonesia Kuasai Pangsa Pasar Ekonomi Internet di Asia Tenggara. https://dailysocial.id/post/indonesia-kuasai-ekonomi-digital

Friana, H. (2018). *Para pelaku e-commerce enggan didata BPS : Siapa yang rugi?* Retrieved from https://tirto.id/para-pelaku-e-commerce-enggan-didata-bps-siapa-yang-rugi-datM

Friana, H. (2018). *BPS masih kesulitan data e-commerce di Indonesia*. Retrieved from https://tirto.id/bps-masih-kesulitan-data-e-commerce-di-indonesia-datm

Gürel, E., & Tat, M. (2017). Swot analysis: A theoretical review. *The Journal of International Social Research*, *10*(51), 994–1006. Advance online publication. doi:10.17719/jisr.2017.1832

Kutz, M. (2016). *Introduction to E-Commerce: Combining Business and Information Technology*. London: Bookboon.

EBSCOhost - printed on 2/8/2023 2:15 PM via . All use subject to https://www.ebsco.com/terms-of-use

Nanehkaran, Y. A. (2013). An introduction to ecommerce. *International Journal of Scientific & Technology Research.*, *2*(4), 190–193.

Putra, Y. S. (2016). Theoritical review : Teori perbedaan generasi. *Jurnal Ilmiah Among Makarti*, *9*(18). Advance online publication. doi:10.1192/bjp.111.479.1009-a

Sindo. (2017). *Kontribusi ekonomi digital terhadap PDB cukup signifikan*. Retrieved from https://ekbis.sindonews.com/read/1266720/34/kontribusi-ekonomi-digital-terhadap-pdb-cukup-signifikan-1513588157

Tayyiba, M. (2019). *Capaian dan evaluasi implementasi peta jalan e-commerce*. Retrieved from https://ditjenpdt.kemendesa.go.id/index.php/download/getdata/Capaian_dan_Kendala_Road_Map_e-Commerce.pdf

Turban, E., King, D., Lee, J. K., Liang, T. P., & Turban, D. C. (2015). *Electronic commerce: a managerial and social networks perspective* (8th ed.). Springer International Publishing. doi:10.1007/978-3-319-10091-3

Vadwala, M. A. Y., & Vadwala, M. M. S. (2017). E-commerce: Merits and demerits a review paper. *International Journal of Trend in Scientific Research and Development Journal*, *1*(4). Advance online publication. doi:10.31142/ijtsrd106

ADDITIONAL READING

Junadi, S., & Sfenrianto. (2015). A Model of Factors Influencing Consumer's Intention To Use E-payment System in Indonesia. *Procedia Computer Science*, *59*, 214–220. Advance online publication. doi:10.1016/j.procs.2015.07.557

Kurnia, S., & Ali, M. (2012). B2B E-Commerce Adoption by the Grocery Industry in Developing Countries: Indonesia versus Bahrain. *45th Hawaii International Conference on System Sciences*, Maui, HI, pp. 3100-3109. 10.1109/HICSS.2012.130

Luthfihadi, M., & Dhewanto, W. (2013). Technology Acceptance of E-commerce in Indonesia. *International Journal of Engineering Innovation and Management*, *3*(1).

MacGregor, R. C., & Kartiwi, M. (2010, January). Perception of Barriers to E-Commerce Adoption in SMEs in a Developed and Developing Country: A Comparison Between Australia and Indonesia. *Journal of Electronic Commerce in Organizations*, *8*(1), 61–82. Advance online publication. doi:10.4018/jeco.2010103004

Rahayu, R., & Day, J. (2015). Determinant Factors of E-commerce Adoption by SMEs in Developing Country: Evidence from Indonesia. *Procedia: Social and Behavioral Sciences*, *195*, 142–150. doi:10.1016/j.sbspro.2015.06.423

Santosoa, A. S., & Erdakab, A. (2015). Customer Loyalty in Collaborative Consumption Model: Empirical Study of CRM for Product-Service System-Based e-Commerce in Indonesia. *Procedia Computer Science*, *72*, 543–551. doi:10.1016/j.procs.2015.12.162

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Triandini, E., Djunaidy, A., & Siahaan, D. (2010). A Maturity Model for E-Commerce Adoption By Small And Medium Enterprises In Indonesia. *Journal of Electronic Commerce in Organizations*, *15*(1), 44–58. Advance online publication. doi:10.4018/JECO.2017010103

KEY TERMS AND DEFINITIONS

E-Commerce (Electronic Commerce): A trade in products or services that refer to technologies such as cellular commerce, electronic funds transfer, internet marketing, online transaction processing, and Electronic Data Interchange (EDI).

Maturity Assessment: An assessment that involves the organization's assessment of specified criteria and rating schemes.

SWOT Analysis: A tool or technique that can be used for strategic planning and strategic management in organizations.

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