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Developing Relationships, Personalization, and Data Herald in Marketing 5.0

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IGI Global
PUBLISHER of TIMELY KNOWLEDGE

Developing Relationships, Personalization, and Data Herald in Marketing 5.0

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A volume in the Advances in
Marketing, Customer Relationship
Management, and E-Services
(AMCRMES) Book Series

Advances in Marketing, Customer Relationship Management, and E–Services (AMCRMES) Book Series

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MISSION

Business processes, services, and communications are important factors in the management of good customer relationship, which is the foundation of any well organized business. Technology continues to play a vital role in the organization and automation of business processes for marketing, sales, and customer service. These features aid in the attraction of new clients and maintaining existing relationships.

The Advances in Marketing, Customer Relationship Management, and E-Services (AMCRMES) Book Series

addresses success factors for customer relationship management, marketing, and electronic services and its performance outcomes. This collection of reference source covers aspects of consumer behavior and marketing business strategies aiming towards researchers, scholars, and practitioners in the fields of marketing management.

COVERAGE

- B2B marketing
- CRM strategies
- Text Mining and Marketing
- Relationship Marketing
- E-Service Innovation
- Cases on CRM Implementation
- Mobile Services
- Electronic Services
- Online Community Management and Behavior
- Web Mining and Marketing

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Titles in this Series

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Armando Luis Vieira, DEGEIT, GOVCOPP, University of Aveiro,
Portugal

The COVID-19 pandemic is interfering with one of our most important needs as human beings: people-based interactions. While a post-pandemic future is still uncertain, people feel the need to get back as soon as possible to that 'human touch', which has always been a fundamental characteristic of marketing. Based on a sample of representatives of hotels and their privileged interlocutors in corporate clients, this chapter focuses on the quality of business-to-business relationships, in which each organisation is represented by an individual, and proposes a relationship quality model from a people-based, inter-organisational perspective, while providing relevant insights in the context of the integration between traditional and digital approaches in modern marketing.

Chapter 2

Md Shamim Hossain, Hajee Mohammad Danesh Science and
Technology University, Bangladesh
Mst Farjana Rahman, Hajee Mohammad Danesh Science and
Technology University, Bangladesh

The goal of this study is to apply machine learning (ML) approaches to assess user sentiment and predict review ratings for Bangladeshi shopping apps. The data for this study was obtained from the Google Play Store reviews of 15 Bangladeshi shopping apps. The AFINN and VADER sentiment algorithms were used to assess the filtered summary phrases as positive, neutral, or negative sentiments after cleaning. The

present study additionally employed five supervised machine learning approaches to divide users' assessments of shopping apps into three sentiment groups. According to the findings of this survey, the majority of ratings for shopping apps were positive. While all five machine learning approaches (SVC, k-neighbors classifier, logistic regression, decision tree classifier, and random forest classifier) can properly categorize review text into sentiment classes, the random forest classifier outperforms in terms of high accuracy. This study adds to the literature on customer sentiment and aids app marketers in understanding how consumers feel about apps.

Priya Jindal, Chitkara Business School, Chitkara University, India
Radhika Gambhir, Universal Group of Institutions (UGI), Lalru, India

The COVID-19 outbreak has shocked the world and spins the economies around the globe; it is far more than a health crisis. Many businesses face difficulties in survival, and marketing will be the only approach to their recovery. As the pandemic affects every aspect of business and life, consumer behavior shifts dramatically; the change in behavior of consumers is not short-term in nature but it has long-lasting effects. However, within this uncertain and complex environment, businesses should rebuild their marketing mix and philosophy and showcase honest and transparent values to face this downturn phase with ease. Firms should focus on the fundamentals of marketing during the pandemic, go along with the trend of consumer behavior, bring clarity through their actions, and rebuild their products around consumer needs. Only then can they lead in this unknown environment.

Reza Bagus Valentino, University of Muhammadiyah Malang, Indonesia

Marketing is a vital aspect of business, regardless of whether the business is big or small. Marketing is also obliged to update its systematics with the social or era or even the situation and conditions prevailing at the time. In this pandemic situation and condition, marketing has changed drastically. The era now in charge is Marketing 5.0: a world of mobile technology and global social interaction that can reach customers anytime, anywhere. Therefore, developing a personalized relationship with customers is also something that must be continuously developed along with the development of the era and the adjustment of situations and conditions. Customers want a new level of satisfaction with products and services that not only meet their basic needs but also complement their creativity and value by offering something more. Some are compliant with Marketing 5.0, which will provide a personalized experience. This study will address upcoming and important topics in Marketing 5.0. In other words, renewable marketing during a pandemic will be more focused

on in the discussion in this study.

Chapter 5

Arijit Goswami, ITM University, India
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The concept of neuromarketing is emerging in recent years. It signifies the use of research on the brain in the managerial context. Gradually this concept gained popularity in academics as well as the practical world. Neuromarketing is an evolving interdisciplinary discipline that blends psychology, neuroscience, and economics. Neuromarketing is an essential change as it gives insight into the way the subliminal mind facilitates the buyers to make decisions. The chapter focuses on studying the influence of neuromarketing tools to understand the purchasing behavior of consumers. The enhanced application of neuromarketing methods for gauging preferences of customers and making purchasing decisions will be an added benefit for both consumers and marketers.

Chapter 6

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Social media marketing, which has redefined the traditional 4Ps of marketing into the modern 2Ps, namely pipeline and personalisation, is a modern-day tool to build the brand, increase sales, and multiply the online traffic. This involves bringing out great content on social media profiles, paying attention and engaging followers, results, and managing social media advertisements. With the growing popularity, it can be presumed that social media promotions are one of the fastest and best ways to connect with your target group or as the marketeers call it, prospects. At the same time, blockchain social media can be defined as decentralized platforms that enable the development of applications and smart contracts. From a spend analysis standpoint, these advertisements give a lot of moneymaking freedoms and are an extraordinary method to upgrade your marketing outreach activities, especially the digital channels. This work visualises the spend nature of advertisements and investigates how blockchain technology can help to reshape the social media advertisement market.

Marketing is not merely the advertisement for the consumers; instead, it is a physiological and psychological science that directly deals with the understanding of brain and cognitive decision making. This also raises an important question, How do we make buying decisions? Was that decision made on fact reason, consciousness, or logic? Through the concept of neuromarketing, marketers are able to see that consumers are making decisions unconsciously based on feelings, emotions, and intuitions. In this chapter, the authors intended to study neuromarketing as the science of consumer decisions and to unfold the new marketing markings and new signs of consumer decisions (i.e., to identify the role of emotions and institutions in shaping consumers' buying decisions). The authors would also like to study the gravity of paying attention to consumers' emotions, intuitions, and the unconscious mind. This chapter will add value in decoding the buy button inside the brain and how the future of branding is personal and knowing why you buy.

Technological advancements improve the knowledge potential of business and help in building interactions with the customers. Artificial intelligence is drastically changing the way businesses used to engage with the customers by extracting and analyzing tremendous data generated through customer interaction. However, this area is not much explored in academic research. Hence, this study aims at understanding the role of artificial intelligence in enhancing customer engagement. It also deals with artificial intelligence tools used for engaging customers, challenges in using artificial intelligence for customer engagement, and the future of artificial intelligence in customer engagement. This study depends on secondary data that have been gathered from various sites, journals, books, and other available e-content. This study has implications for marketers in enhancing customer engagement and for academicians as it contributes to the literature on the role of artificial intelligence in developing customer engagement.

    Jyoti Verma, Chitkara Business School, Chitkara University, Punjab,India
    Jasneet Kaur, Lovely Professional University, India

The entry of new technologies has upgraded the dynamics of various marketing strategies and enables it to tap a wider range of uncovered markets. In the present scenario, technology helps businesses to deeply penetrate the existing market and fetch more precise consumer information. It has much emphasis on increasing service quality, efficient management systems, and customer loyalty. In the 21st century, blockchain technology has the potential to upgrade business models across various industries. In this chapter, much emphasis has been given to how blockchain technology can potentially impact a firm's marketing strategies and present some of the applications of blockchain in the marketing domain. Applications of blockchain in marketing and its comprehensive discourse on integrating the applications of IoT system with this technology have also been covered in this chapter. It can be concluded that blockchain technology has a huge impact on a firm's marketing strategies. It will not only provide the features to consumers but assist many businesses to frame their strategies.

    Shreyasi Pranjal, Sam Higginbottom University of Agriculture, Technology, and Sciences, India
    Pradhyuman Singh Lakhawat, Department of Business Studies, Sam Higginbottom University of Agriculture, Technology, and Sciences, India

In the 21st century, marketing research has been oriented towards four components of consumers—physical body, mind, heart, and spirit—which contributes to the birth of new term, neuromarketing. Neuromarketing is an infant field of marketing science. It tends to help in measurement of physiological and neural signals of brain to gain insight into consumer motivations, preferences, and decisions related to market current situations. In simple words, it's the study of consumer responses in response to marketing stimuli. Human feelings, thoughts, actions are the parts of neural activities in the brain. This chapter sheds light on the neuromarketing approach to give an overview of it in respect to the future market. As it can easily reduce the uncertainty, it helps in studying consumer behavior and draws a brain map to predict and manipulate decision making.

Seprianti Eka Putri, Universitas Bengkulu, Indonesia

Marketing practice is changing in this era of digital disruption and revolutionary technologies. Transformation technology is a difficult task, but the adoption of blockchain and AI will make it easier. Regardless of the number of partners (internal, external, or both) participating in a given commercial transaction, a system in which numerous electronic parties can safely communicate, collaborate, and transact without human intervention is highly adaptive and efficient. The authors of this study propose a methodology for reviewing numerous situations of marketing through the use of transformative technologies and their relevant consequences for enterprise, consumer, and academic research to assess blockchain and AI as transformational.

Meenu Kumari, Lalit Narayan Mithila University, India

The way consumers used to think about making purchases is totally changed in the period of COVID-19. Due to the coronavirus, consumers are less likely to visit a physical store to buy almost anything. Consumers are being forced to change their shopping behaviour. People are buying products online that they never have before. It could not have been possible if these e-commerce platforms were not available. One of these major platforms is Flipkart, which is grabbing a larger share of the e-commerce market. However, with the announcement of nationwide lockdown, everything came to a standstill at Flipkart. The company accepted the challenge and came out with practical solutions. This chapter analyses the strategies adopted by Flipkart and offers suggestions for other online/offline retailers to overcome this unfavourable time.

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    Sanjeev Kumar, Sohar University, Oman
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    Sumit Agarwal, Chitkara Business School, Chitkara University, Punjab,
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    Ajay Kumar Sharma, J.V. Jain College, Saharnpur, India

Customer engagement (CE) with brands has come to hold a major place in brand management research and practice in recent years, since it has been shown to result in increased firm sales, competitive advantage, and stock returns. Scholars have investigated CE's conceptualization, operationalization, and nomological networks in light of various theoretical viewpoints. Despite significant progress, the intellectual framework of the whole literature of CE scholarship remains shaky, as this chapter explores. Customer interaction may have originated in other fields, but then in today's crowded and fiercely competitive industry, it is especially important in marketing. Confidence, dedication, loyalty, and advocacy have all been identified as components of customer involvement. Co-creation was the second aspect that developed. The length of time spent working with the bank was a key element in determining the level of involvement and co-creation.

    Md Shamim Hossain, Hajee Mohammad Danesh Science and
       Technology University, Bangladesh
    Mst Farjana Rahman, Hajee Mohammad Danesh Science and
       Technology University, Bangladesh

The current study looks at how marketing managers utilize machine learning and artificial intelligence to analyze large amounts of client data and develop effective marketing strategies. A qualitative research design was used in this study. With a total sample of 30 respondents, the study used purposive sampling since selecting the exact demographic participating in the study is subjective. The data for the study was gathered through in-depth interviews with the interviewees. The study found that marketing managers use ML and AI to disclose patterns and trends by incorporating them into decision-making algorithms. The findings of the study will be of great benefit to business managers and markers. To the authors' knowledge, prior studies verified how to analyze business data using AL and ML but did not

demonstrate how organizations use the AL and ML approaches in practice. As a result, in the current study, they demonstrated how businesses use AL and ML in practice, especially for improving marketing strategies.

Chapter 15

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Simranjeet Kaur, USB, Chandigarh University, India
Sanjay Taneja, Chandigarh University, India
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In this study, a review of green tourism research is conducted. Using bibliometric analysis, existing and emergent research clusters were identified for epistemological investigation in the study. The field of eco-friendly tourism and other research areas incorporating similar areas such analysis aids in the identification of major subjects, interrelationships, and collaboration patterns. The visualization of similarities is used to create a graphical map of the green tourism study field (VOS). From 1987 to 2021, this source code analysed bibliography from 163 Scopus-indexed research publications. This graphical map reveals the contributions of writers and countries through time, as well as their collaboration and publication trends. This chapter provided major research concepts that have been analysed, as well as shared spaces of current study interest and potential research projects.

Chapter 16

Ajay Chandel, Lovely Professional University, India
Tejbir Kaur, Independent Researcher, Canada

This study tries to decipher the role of neuromarketing in the myriad fields of business employing in-depth review of literature. This work thus proposes abundant acumens into important facets of neuromarketing in the business world employing a bibliometric investigation. The chapter presents an assessment of important neuromarketing enablers and their function in several business disciplines aimed superior business performance. The existing literature was classified based on a variety of bibliometric factors such as year, location, author, institution, and source related data. The literature is further classified based on keyword co-occurrence. The observed clusters indicate neuromarketing applications and execution problems in business. The complete overview, which spans the years 2000 to 2021, can help managers keep current on the uses of neuromarketing in many sectors. The chapter also identifies potential topics for neuromarketing research in several industry sectors to support neuromarketing adoption.

Preface

Marketing has become one of the cornerstones for growing a successful business. Our era is responsible for Marketing 4.0: the world of mobile technology and global social interaction that can reach a customer anytime, anywhere. The benefit goes both ways: Brands have unprecedented access to customer data and insights to guide their efforts, while customers have the power of choice and can use social media to amplify their voices. However, the future holds more promise. Customers want a new level of satisfaction—products and services that not only meet their basic needs but also complement their creativity and values by offering something more. The result is Marketing 5.0, which will deliver personalized experiences.

Digital marketing is leveraging the unique capabilities of new interactive media to create a new form of interactions and transaction between consumers and marketers, and satisfy the needs of the marketing. Also, it can be considered an innovative way of marketing in the digital marketplace which includes online advertising, online market research, online promotions and online pricing models. To make it successful there are different strategies such as Targeting, Product Strategy, Pricing strategy, Distribution strategy and promotional strategy. This publication will try to contrast the advantages and disadvantages of modern marketing over traditional marketing. It will also focus to identify that how companies and society as a whole can be benefited with this. This publication will try to come up with new ways to cater to the needs of the society and also in an efficient manner.

This Book will help the policymaker in the following ways:

- Enhancing customer trust through digital marketing
- The role of Digital Payment Methods
- The cost-effective way of marketing
- Better conversion rate from leads to sales
- Better revenue generation through Digital Marketing
- Better interaction with target customers
- The role smart phone in catering customer needs
- Brand Reputation through Digital Marketing

- Building better ROI
- The change-ready business

This book is compiled in the form of 16 chapters covering the latest problems and challenges in the implementation of Marketing 5.0

1. People-Based Interaction in Modern Marketing: Developing a B2B Relationship Quality Model

In chapter titled 'People-Based Interaction in Modern Marketing: Developing a B2B Relationship Quality Model' limelight's the effect of Covid-19 pandemic in slowing down one of our most significant requirements as individuals: individuals based collaborations. While a post-pandemic future is as yet dubious, individuals tend to get back at the earliest opportunity to that 'human touch', which has generally been a basic quality of showcasing. In light of an example of agents of lodgings and their special conversationalists in corporate clients, this section centers around the nature of business-to-business connections, in which every association is addressed by an individual, and proposes a relationship quality model from a group based, between authoritative viewpoint, while giving important experiences with regards to the combination among customary and computerized approaches in current promoting.

2. Sentiment Analysis and Review Rating Prediction of the Users of Bangladeshi Shopping Apps

The objective of chapter 'Sentiment Analysis and Review Rating Prediction of the Users of Bangladeshi Shopping Apps' is to apply AI (ML) ways to deal with evaluate client feeling and anticipate survey appraisals for Bangladeshi shopping applications. The information for this study was acquired from the Google Play Store audits of 15 Bangladeshi shopping applications. The AFINN and VADER feeling calculations were utilized to survey the sifted outline phrases as good, nonpartisan, or pessimistic opinions subsequent to cleaning. The current concentrate furthermore utilized five managed AI ways to deal with partition clients' evaluations of shopping applications into three opinion gatherings. As indicated by the discoveries of this study, most of evaluations for shopping applications were positive. While each of the five AI draws near (SVC, K-neighbors classifier, strategic relapse, choice tree classifier, and arbitrary backwoods classifier) can appropriately order audit message into opinion classes, the irregular woods classifier outflanks with regards to high exactness. This study adds to the writing on client opinion and helps application advertisers in understanding how customers feel about applications.

3. Marketing in Pandemic

The Coronavirus episode has stunned the world and twirls the economies around the globe; it is undeniably more than the wellbeing emergency. Numerous organizations face hardships in endurance and advertising will be the main way to deal with their recuperation. As the pandemic influences each part of business and life, buyer conduct moves drastically, the adjustment of conduct of customers isn't present moment in nature yet it makes enduring impacts. In any case, inside this unsure and complex climate, organizations ought to reconstruct their advertising blend and reasoning and exhibit genuine and straightforward qualities to confront this slump stage effortlessly. Firms ought to zero in on the basics of showcasing during the pandemic, obliges the pattern of purchaser conduct, brings clearness through their activities, and modify their items around customer needs really at that time they can lead in this obscure climate.

4. Developing Relationships, Personalization, and Data in the Pandemics

Marketing is a vital aspect of business, regardless of whether the business is big or small. Marketing is also obliged to update its systematics with the social or era or even the situation and conditions prevailing at the time. In this pandemic situation and condition, marketing has changed drastically. The era now in charge of Marketing 5.0: a world of mobile technology and global social interaction that can reach customers anytime, anywhere. Therefore, developing a personalized relationship with customers is also something that must be continuously developed along with the development of the era and the adjustment of situations and conditions. Customers want a new level of satisfaction with products and services that not only meet their basic needs, but also complement their creativity and value by offering something more. Some are compliant with Marketing 5.0, which will provide a personalized experience. This study will address upcoming and important topics in Marketing 5.0. In other words, renewable marketing during a pandemic will be more focused on the discussion in this study.

5. Neuromarketing Emerging Trend in Consumer Behavior

Idea of Neuromarketing has been highlighted in chapter 'Neuromarketing Emerging Trend in Consumer Behavior', which connotes the utilization of exploration on mind in administrative setting. Gradually steadily this idea acquired prevalence in scholastics as well as functional world. Neuromarketing is a developing interdisciplinary discipline that mixes brain science, neuroscience, and financial aspects. Neuromarketing is a

fundamental change as it gives understanding how the subconscious brain works with the purchasers to take choices. The book section centers around concentrating because of neuromarketing instruments to get the buy conduct of customers. The upgraded utilization of neuromarketing strategies for measuring inclinations of clients and taking buy choices will be an additional advantage for the two buyers as well as advertisers.

6. Role of Blockchain and Data Visualisation in Advertisement Lead Purchase Across Social Media

With the developing technologies, 'Role of Blockchain and Data Visualisation in Advertisement Lead Purchase Across Social Media', it can assumed that virtual entertainment advancements are one of the quickest and most ideal ways to make an associate with your objective gathering or as the marketers call it, possibilities. Simultaneously, Blockchain Social Media can characterized as decentralized stages which empowers the improvement of utilizations and savvy contracts. From a spend examination viewpoint, these promotions give a great deal of moneymaking opportunities and are an exceptional technique to update your advertising effort exercises, particularly the advanced channels. This work pictures the spend idea of ads and researches how Blockchain innovation can assist with reshaping the online entertainment commercial market.

7. Demystifying the Role of Neuromarketing in Creating Value for the Marketers

'Demystifying the Role of Neuromarketing in Creating Value for the Marketers' showcase advertisement for the customers rather now physiological and mental science straightforwardly manages the comprehension of mind and mental independent direction. Through the idea of neuromarketing, advertisers can break that shoppers are settling on choices unknowingly founded on sentiments, feelings, and instincts. In this part, the creators are planned to study neuromarketing as the study of purchaser choices. To unfurl the new advertising markings and new indications of customer choices for example to recognize the job of feelings and foundations in forming customers' purchasing choices. The creators might likewise want to concentrate on the gravity of focusing on customers' feelings, instincts, and the oblivious psyche. This part will add esteem in interpreting the purchase button inside the cerebrum and how the eventual fate of marking is private and knowing why you purchase.

8. Developing Customer Engagement Through Artificial Intelligence Tools: Roles and Challenges

Innovative headways further develop the information capability of business and help in building communications with the clients. 'Developing Customer Engagement Through Artificial Intelligence Tools: Roles and Challenges' highlights targets of understanding the job of man-made reasoning in improving client commitment. It likewise manages computerized reasoning devices utilized for connecting with clients, challenges in involving man-made brainpower for client commitment and fate of man-made consciousness in client commitment. This study relies upon auxiliary information that have been accumulated from different destinations, diaries, books and other accessible e-content. This study has suggestions for advertisers in improving client commitment and for academicians as it adds to the writing on job of man-made consciousness in creating client commitment.

9. Blockchain Technology: How Will It Impact Marketing Domain?

The chapter highlights the importance of blockchain technology and its importance to marketing domain. The entry of new advancements has updated the elements of different advertising methodologies and empowers it to tap a more extensive scope of uncovered markets. In the current situation, innovation assists organizations with profoundly entering the current market and get out more exact buyer data. It has a lot of accentuation on expanding administration quality, productive administration framework, and client reliability. In the 21st century, Blockchain innovation can possibly overhaul plans of action across different businesses. In this section, much accentuation has been given to how blockchain innovation might possibly affect a company's advertising methodologies and present a portion of the utilizations of blockchain in the promoting area. Utilizations of blockchain in promoting and its thorough talk on coordinating the uses of IoT framework with this innovation has additionally been shrouded in this part. It tends to be presumed that blockchain innovation massively affects an association's promoting techniques. It won't just give the elements to buyers yet help numerous organizations to approach their systems.

10. Neuromarketing Approach: An Overview of Future Market Research

'Neuromarketing Approach: An Overview of Future Market Research' discusses the role of neuromarketing in 21st Century. Advertising research has been situated towards four parts of shoppers as: actual body, brain, heart and soul, which keeps an eye on

the introduction of new term Neuromarketing. Neuromarketing is the baby field of showcasing science, it will in general assistance in estimation of physiological and brain signs of mind to acquire knowledge into customer's inspirations, inclinations, and choices connected with market current situations. In basic words we can say it's the investigation of shoppers' reactions going through on accordingly of showcasing improvements. Human sentiments, contemplations, activities are only the pieces of brain exercises in cerebrum. Under this part according to the creators, will illuminate Neuromarketing way to deal with give an outline of it in regard of future market. As it can without much of a stretch diminish the vulnerability, helps in concentrating on customer conduct and attracts a mind guide to foresee and ability to control as far as independent direction.

11. An Assessment of Blockchain and Artificial Intelligence as Transformational Technologies in Marketing

'An Assessment of Blockchain and Artificial Intelligence as Transformational Technologies in Marketing' reflected the change in Marketing practice in this time of advanced disturbance and progressive advances. Change innovation is a troublesome errand, however the reception of blockchain and AI will make it more straightforward. No matter what the quantity of accomplices (inner, outer, or both) taking part in a given business exchange, a framework in which various electronic gatherings can securely convey, team up, and execute without human mediation is profoundly versatile and productive. The creators of this study is to propose a procedure for surveying various circumstances of advertising using ground breaking innovations and their significant ramifications for big business, shopper, and scholastic examination to evaluate blockchain and AI as ground-breaking.

12. Marketing Strategies in the Era of COVID-19

The manner in which shoppers used to contemplate making buys is completely different in the time of COVID-19 is discussed in chapter 'Marketing Strategies in the Era of COVID-19'. Due to the Covid, customers are less having a tendency to visit an actual store to purchase nearly anything. Customers are being compelled to change their shopping conduct. Individuals are purchasing items online that they never have. It could never have been conceivable in the event that these internet business stages were not accessible. One of these significant stages is Flipkart which is getting a bigger portion of the internet business market. Be that as it may, with the declaration of cross country lockdown everything halted at Flipkart. The organization acknowledged the demand and emerged with pragmatic arrangements.

This paper investigations the methodologies embraced by the Flipkart and gives ideas for other on the web/disconnected retailers to defeat this troublesome time.

13. An Experimental Investigation of Customer Engagement in Indian Retail Banking

Client commitment (CE) with brands has come to hold a significant spot in brand the executives exploration and practice lately, since it has been displayed to bring about expanded firm deals, upper hand, and stock returns. Researchers have explored CE's conceptualization, operationalization, and nomological networks considering different hypothetical perspectives. Notwithstanding critical advancement, the scholarly structure of the entire writing of CE grant stays unsteady, as this paper investigates. Client association might have begun in different fields, however at that point in the present swarmed and savagely cutthroat industry, it is particularly significant in showcasing. Certainty, devotion, dependability, and support have all been recognized as parts of client contribution. Co-creation was the second angle that created. The time span enjoyed working with the bank was a vital component in deciding the degree of association and co-creation.

14. Machine Learning and Artificial Intelligence: The New Move for Marketers

The review of the chapter 'Machine Learning and Artificial Intelligence: The New Move for Marketers' sees how promoting directors use AI and computerized reasoning to break down a lot of client information and foster viable showcasing techniques. A subjective exploration configuration was utilized in this review. With an all out example of 30 respondents, the review utilized purposive examining since choosing the specific segment it is abstract to partake in the review. The information for the review was accumulated through inside and out interviews with the interviewees. The investigation discovered that promoting administrators use ML and AI to unveil examples and patterns by fusing them into dynamic calculations. The discoveries of the review will be of incredible advantage to business directors and markers. As far as anyone is concerned, earlier examinations confirmed how to break down business information utilizing AL and ML, yet didn't show how associations utilize the AL and ML approaches by and by. Thus, in the current review, it was highlighted how organizations use AL and ML by and by, particularly for further developing advertising procedures**.**

15. Bibliometric Analysis of Green Tourism Based on Scopus Platform

Under the title 'Bibliometric Analysis of Green Tourism Based on Scopus Platform', an audit of green the travel industry research is directed. Utilizing bibliometric examination, existing and rising exploration groups were recognized for epistemological examination in the review. The field of eco-accommodating the travel industry and other exploration regions fusing comparative regions such investigation helps with the recognizable proof of significant subjects, interrelationships, and cooperation designs. The representation of likenesses is utilized to make a graphical guide of the green the travel industry concentrate on field (VOS). From 1987 to 2021, this source code broke down book reference from 163 Scopus-recorded research distributions. This graphical guide uncovers the commitments of journalists and nations through time, as well as their cooperation and distribution patterns. This article gave significant exploration ideas that have been examined, as well as shared spaces of flow concentrate on interest and potential examination projects.

16. Demystifying Neuromarketing: A Bibliometric Analysis Using VOS Viewer

This study tries to decipher the role of Neuromarketing in the myriad fields of business employing in-depth review of literature. This work thus proposes abundant acumens into important facets of Neuromarketing in Business world employing a Bibliometric investigation. The paper presents an assessment of important Neuromarketing enablers and their function in several business disciplines aimed superior business performance. The existing literature was classified based on a variety of bibliometric factors such as year, location, author, institution, and source related data. The literature is further classified based on keyword co-occurrence. The observed clusters indicate Neuromarketing applications and execution problems in business. The complete overview, which spans the years 2000 to 2021, can help managers keep current on the uses of Neuromarketing in many sectors. The paper also identifies potential topics for Neuromarketing research in several industry sectors to support Neuromarketing adoption.

Marketing is an organizational activity that absorbs much of the environmental disturbance at the interface of the corporation and its current and potential markets. Marketing is shifting and evolving in response to consumer requirements and wants, as well as technological advancements. Customers are more empowered than ever before, as they can obtain information instantaneously and with little effort, they can connect globally. Hence they expect businesses to be just as accessible and connected as they are. The company may communicate with customers on their terms

and reach out to new customers intended to buy products and services by keeping a digital presence. The growth of artificial intelligence, Blockchain, Neuromarketing, and social media, has resulted in a more sophisticated consumer who expects high degrees of personalization from brands in every contact. Therefore, marketing teams rigorously adopt integrated marketing and technology strategies to win in the marketplace.

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Chapter 1

People-Based Interaction in Modern Marketing:
Developing a B2B Relationship Quality Model

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ABSTRACT

The COVID-19 pandemic is interfering with one of our most important needs as human beings: people-based interactions. While a post-pandemic future is still uncertain, people feel the need to get back as soon as possible to that 'human touch', which has always been a fundamental characteristic of marketing. Based on a sample of representatives of hotels and their privileged interlocutors in corporate clients, this chapter focuses on the quality of business-to-business relationships, in which each organisation is represented by an individual, and proposes a relationship quality model from a people-based, inter-organisational perspective, while providing relevant insights in the context of the integration between traditional and digital approaches in modern marketing.

INTRODUCTION

The available online tools, among other technological advances, are capable to provide powerful, versatile, and effective contributions to mitigate some of the pandemic's negative effects, such as social distancing, face masks, and infection

risk. Indeed, video conferencing and other digital services allow for face-to-face and personalized communication and contribute to enhance the quality of personal and business relationships. This chapter focuses on the quality of business relationships between companies and corporate clients, in which each organization is represented by an individual, and proposes a relationship quality (RQ) model from a people-based, inter-organizational perspective. The development of the model calls for the identification, contextualization, and substantiation of the relational determinants and dimensions of RQ, as well as clarification about how they connect in the model, from the viewpoint of the actors who are living the phenomena under examination. To that end, this study explores the nature of marketing relationships within the corporate hotel business context. It is important to allow the actors of the business, in this case the representatives of hotels and corporate clients, to speak for themselves, aiming at exploring issues that are important to the quality of their business-to-business (B2B) relationships (which also have an unassailable personal component). The main purpose of this chapter is, therefore, to describe the process through which the proposed RQ model was developed.

A detailed description of the sample will be presented, followed by the description of the interview procedures, and the analysis strategy employed to achieve the proposed objectives. A characterisation of the nature of people-based relationships in an inter-organizational context will also be presented. Through a combination of literature and qualitative empirical evidence, the last part of the chapter describes the development of a proposed RQ model that considers the perspectives of both buyer and seller. Despite the growing importance of RQ in the marketing literature, there continues to be significant ambiguity about its nature, determinants, and dimensions. Previous research has addressed this issue predominantly from the buyer's perspective, to a lesser extent from the provider's perspective, but rarely focusing on both sides of the dyad. The buyer's perspective is certainly important; it is the buyer who evaluates the relationship and who decides to repurchase (or not). However, given that relationships are two-way, the perspective of the seller is equally important. The process described in this chapter is believed to constitute a stronger approach to modelling RQ, as compared to previous approaches. This is not only because the model was developed in a research setting that provides one of the best habitats for RQ (i.e., B2B relationships in a business setting where services are predominant and where the representatives of both organizations engage in a dyadic interaction), but also due to the adopted dyadic approach. This study suggests that people-based interaction plays a fundamental role in the digital ecosystem, and provides new avenues for future research and practice in the context of the integration between traditional and digital tools in modern marketing.

AN EXPLORATORY, QUALITATIVE APPROACH

The quality of the interactions among business partners in a network of relationships (commonly referred to as relationship quality – RQ) has been a concern of both researchers and practitioners. The relationship marketing (RM) literature is implicitly predicated on the expectation that improvements in RQ will lead to better performance. Indeed, according to the literature (e.g., Beck *et al*. 2015; Maggon and Chaudhry 2015; Palmatier *et al*. 2013), the 'hit-and-run' marketing approach is no longer effective, and the future of marketing is inexorably linked to RM and RQ. This is in line with what Gümmesson (2014) refers to as 'Paradigm 3' which, in turn, revolves around the customer-centric, service dominant logic, also revisited by Lusch e Vargo (2014). Moreover, successful relationships should display a degree of congruence between both buyers and sellers, and, therefore, it is important to explore RQ using a dyadic approach. Moreover, the simultaneous perspectives of both parties may be of great value, not least because they allow for a degree of triangulation in empirical evidence. More generally, this exploratory, qualitative approach aims at getting a 'first hand', 'lived' account of the phenomena at hand, while being open and alert to any issues that might emerge, both expected and unexpected, paving the way for future research. Indeed, in line with Shah and Corley (2006, p. 1824), 'the primary benefits of qualitative methods are that they allow the researcher to discover new variables and relationships, to reveal and understand complex processes, and to illustrate the influence of the social context'.

The development of the proposed RQ model from a people-based, inter-organisational perspective calls for the identification, contextualization, and substantiation of the relational determinants and dimensions of RQ, as well as clarification about how they connect in the model, from the viewpoint of the actors who are living the phenomena under examination. It is also necessary to explore the nature of marketing relationships within the specific context of the present research.

In this context, the next sections present a detailed description of the sample, interview procedures, and analysis strategy employed in order to achieve the proposed objectives. Then, a characterisation of the nature of people-based relationships in an inter-organisational context will be presented, followed by a section dedicated to the development of a proposed RQ model that considers the perspectives of both buyer and seller combined with literature.

Sampling

This study is based on a sample constituted by representatives of hotels operating in Portugal and their corporate clients. Hotels operating in Portugal can be classified according to the following three types: hotel chains with corporate centres physically

separated from the hotels, with designated client managers that have portfolios of clients under their responsibility; hotel chains with designated client managers in each hotel, who also have the responsibility of managing portfolios of corporate clients; and independent hotels without designated client managers, in which that function can be performed by various members of staff (e.g. public relations, commercial director, receptionist, etc.).

In case study research, sampling is theoretical, not random (Eisenhardt, 1989). The selection of cases resulted from both theoretical reasons, e.g., to provide examples of the different types of ways hotels approach the corporate segment, and practical reasons, i.e., the adopted dyadic perspective. This approach corresponds to that of 'purposeful sampling', in the words of Patton (1990, p. 169), corroborated by Yin (1994). Purposive and theoretical sampling is a necessary ingredient to ensure rigour in qualitative research (Lincoln and Guba 1985; Shah and Corley 2006). The final sample comprises eight hotels and twenty-three corporate clients. The eight hotels were numbered 1 to 8 and the corporate clients were labelled after their partners in potential dyads. For example, corporate client A1 forms a potential dyad with hotel 1, and so does corporate client B1; corporate clients A2, B2, and C2 form three different potential dyads with hotel 2, and so forth. Potential dyads, in turn, were labelled after the participants in the dyad, which, in this case and for the sake of simplicity, coincides with how corporate clients were labelled (for example, the potential dyad formed by corporate client C8 with hotel 8 is labelled C8 – see Appendix).

Although hotels 1 and 2 are located in Porto (North of Portugal), and hotel 3 in Aveiro (Portugal's central region), client managers representing these hotels are located in a corporate centre for the North area (Porto). This is due to the approach to the market adopted by the hotel chain that owns hotels 1, 2, and 3, that is, corporate centres physically separated from the hotels, in this case one for the North area, and another one for the South area. Hotels 4 (located in Coimbra, Portugal's midland) and 5 (Porto) are represented by client managers located in each of these hotels. Again, this is due to the chosen market approach on the part of the owners of hotels 4 and 5, that is, to have a designated client manager in each hotel. Hotels 6, 7, and 8 do not have designated client managers. They belong to the mentioned third type of hotels, in which the interaction with clients is carried out by employees with various functions. In terms of the participants in the interview phase, and as far as hotels are concerned, interviews were conducted with client managers representing hotels 1 to 5, the general manager of hotel 6, the public relations for hotel 7, and a receptionist of hotel 8. During these interviews, the representatives of hotels indicated a person in each of their corporate clients to be subsequently interviewed. Designated client managers were able to name a key contact in each firm, typically senior staff (e.g., purchasing director, marketing director, general manager), whereas representatives

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of hotels 6, 7, and 8 had more difficulties in naming somebody to be interviewed in each of their corporate clients, opting for indicating administrative/secretarial staff.

Data Collection

Consistent with the research context for this study - i.e., a B2B services environment in which the relationships between partners is mainly based on person-to-person interactions between key individuals representing firms - the adopted qualitative approach involved a series of 'face-to-face' semi-structured interviews with a sample including hotel representatives and their counterparts in corporate clients. Hotel corporate clients were chosen for this study also because they are considered the segment that presents more potentialities for repeat business, an assumption that would be subsequently corroborated by interviewees. Bearing in mind the considerations presented above, the interviews were used as a tool for:

- Exploring the nature of RQ in the context of the relationships between representatives of hotels and their counterparts in corporate clients, namely to assess the role of social bonds, within the current pandemic context, and thinking ahead to a post-pandemic view that integrates traditional and digital marketing;
- Helping inform the development of the proposed model, in terms of what constructs should be included as determinants and dimensions, how do the constructs interact with each other, and how do they influence RQ.

A common problem with model development is to ensure that the adequate components are selected. To overcome this difficulty, a multiple case-study, based on in-depth personal interviews, in combination with literature, was used to propose the determinants and dimensions of RQ, as well as their associations in the model. The literature, a selection of seminal studies (complemented with more recent studies, in those cases where relevant value has been effectively added), suggests some relational constructs associated with RQ that work as 'rough boundaries' for model development purposes, in accordance with the prevalence of the social level of business relationships, and in line with this study's context and goals.

Analysis Strategy

The employed multiple case approach was deemed necessary to prevent the risk of bias potentially associated to the idiosyncrasies inherent to a single case. The number of hotels determined the number of cases, and the number of corporate clients determined the number of potential dyads. The analysis of the collected data

was carried out at the level of potential dyads and in two phases, i.e., within-case analysis and cross-case analysis (Eisenhardt 1989; Miles and Huberman 1994). Although within-case analysis occurred typically as the first phase of the analysis, in some stages of the process both phases occurred simultaneously. (Figure 1)

Figure 1. Overview of the qualitative analysis process
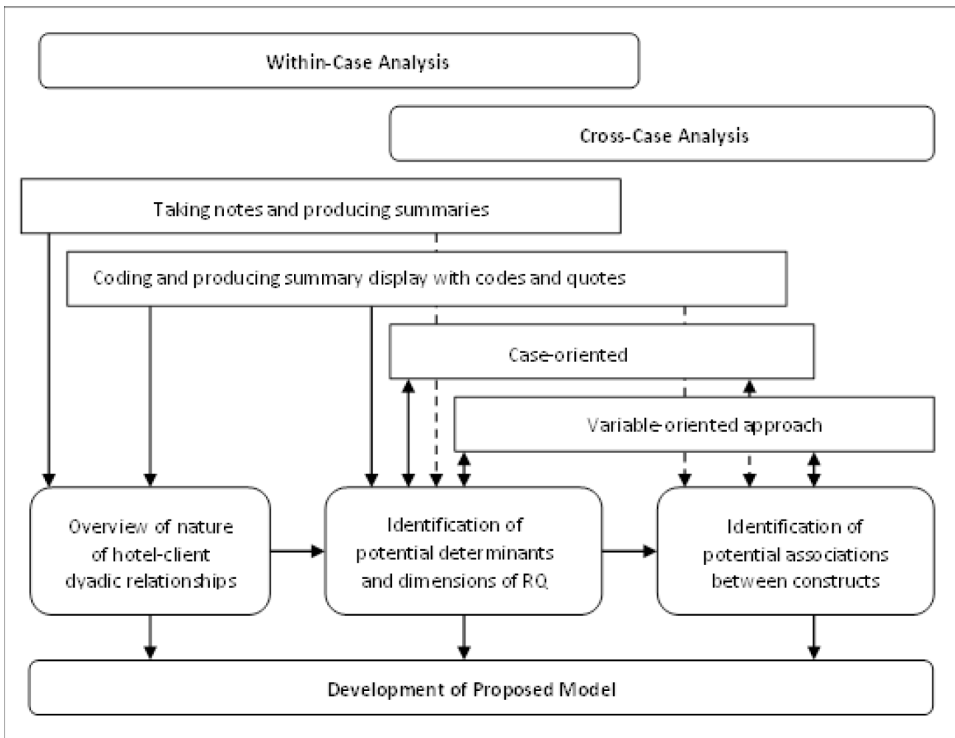
The purpose of within-case analysis was to get a first insight on each case, before moving on to the identification of patterns across cases. 'Quotes' refer to interview notes, which were made in Portuguese and then translated into English. The coding procedure included codes derived from the literature.

Regarding the cross-case analysis phase, two main approaches were used: the case-oriented approach, which focuses on one case in depth at a time, to find out whether patterns start to emerge; and the variable-oriented approach, which focuses on one variable at a time across all cases (Miles and Huberman 1994; Ragin 1987). Given the exploratory nature of this research, the former approach was used for the earlier steps of the cross-case analysis. Then, as soon as patterns started to shape in a relatively consistent manner, both approaches were used simultaneously and in a

complementary way. The combination of within and cross-case analysis led to the emergence, not only of themes or concepts, but of possible associations between variables, the 'why' behind the emergent links. To this end, theory and data were permanently compared in an iterative process towards the refinement of constructs, as a first step to the shaping of hypotheses (Eisenhardt 1989; Shah and Corley 2006).

The Nature of People-Based Relationships in a B2B Context

Findings derived from the qualitative analysis showed that representatives of hotels with designated client managers and their corporate clients (i.e., dyads A1, B1, A2, B2, C2, A3, B3, C3, A4, B4, C4, A5, B5, and C5) were able to identify individuals that were key in the relationship – i.e., their privileged interlocutors. Conversely, in hotels without designated client managers (hotels 6 to 8), client representatives interacted with several hotel representatives and had more difficulties in identifying a privileged interlocutor, which suggests that social bonds are less likely to develop. This is an interesting finding and a relevant contribution to the characterisation of the nature of B2B relationships from a people-based perspective, for it draws the attention to the crucial role of the presence of a designated client manager, thereby corroborating the prevalence of the social, people-based level of interfirm relationships. Moreover, the existence of a designated client manager – and, thus, stronger social bonds – seemed to be positively associated to a higher percentage of clients with a signed contract, suggesting an apparent link between social and structural bonds. One explanation for this is the fact that in the two groups of hotels where there are formal, designated client managers, there is evidence of more proactive management of the relationship. The client manager's activities typically include winning and retaining clients, and monitoring levels of satisfaction. One of the most important tasks for client managers' goals is 'animating' contracts, an industry term that is used to describe a proactive process of increasing the volume of business associated with a particular contract. In effect, results of the interviews demonstrate that the percentage of signed contracts with corporate clients is very high (close to 100% in some cases) in hotels with designated client managers, and vice-versa (close to zero in some cases where there is no designated client manager). This is consistent with previous findings stressing the association between strong social bonds and commitment to maintain the relationship (Wilson 1995).

Of particular significance is the high degree of congruence between the perceptions of both parties. When discrepancies did arise, they tended to be more evident in those cases where social and structural bonds appeared to be weaker. The high degree of congruence found in pairs/dyads including hotels where there are designated client managers (hotels 1 to 5) is also an important finding, and strengthens the

reasonableness of looking at those pairs as dyads (and vice-versa in relation to the remaining cases).

The Proposed Relationship Quality Model

Subsequently to the above-described analysis, Table 1 presents the list of the constructs included as potential constituents of the proposed model and their definitions.

Table 1. Potential RQ key constructs included in the proposed model

Constructs	Definitions	References
Commitment	The parties' firm and consistent motivation to maintain a certain relationship that is valued by them.	(Dwyer et al. 1987; Fullerton 2003; Hewett et al. 2002; Morgan and Hunt 1994)
Communication	The means by which the firm can establish a dialogue and build relationships with consumers.	(Kotler and Keller 2012)
Customer Orientation	The degree to which salespeople adopt behaviours aiming at increasing the customer's long-term satisfaction.	(Dorsch et al. 1998; Kelley 1992)
Mutual Goals	The degree to which parties share goals that can only be achieved through joint action and the maintenance of the relationship.	(McQuiston 2001; Wilson 1995)
Relational Net Benefits	The parties' expected net benefits from a relationship.	(Dwyer et al. 1987)
Satisfaction	The assurance, perceived by the buyer, regarding the salesperson's future performance, given that past performance has been consistently satisfactory.	(Crosby et al. 1990)
Trust	The ability and willingness to rely on the salesperson's integrity and behaviour so that the long-term expectations of the buyer will be met.	(Crosby et al. 1990; Hewett et al. 2002; Morgan and Hunt 1994; Roberts et al. 2003)

The proposed conceptual framework of RQ based on the patterns emerged from the combination of literature and the opinions of representatives of both hotels and corporate clients (see Appendix) is presented in Figure 2 and will be described in detail in this section.

Figure 2. Proposed model of relationship quality
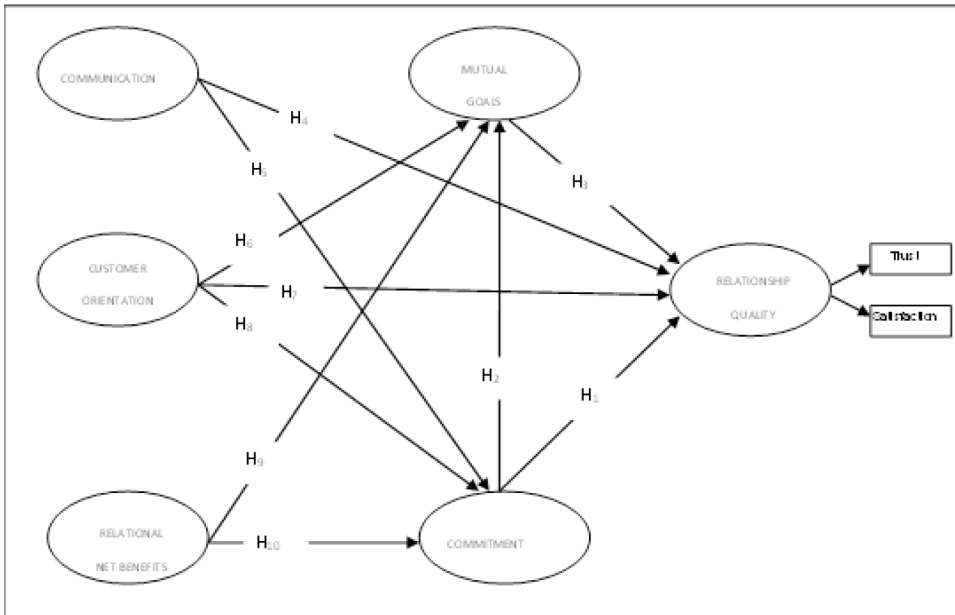
RQ Dimensions

RQ is defined in this study as 'an evaluation of the personal and business ties linked to an interaction between a buyer and a salesperson in a business setting' (Boles et al. 1997, p. 254). Consistent with this definition and the dominant trend in the literature, RQ is viewed as a higher-order construct composed of two dimensions, trust and satisfaction. This is in line with Crosby et al.'s (1990) seminal people-based approach, in which RQ is addressed from the customer's perspective, which, in turn, is predominantly based on employee-customer encounters.

Trust

Practically all participants agreed on trust being an essential ingredient for successful relationships. Indeed, the crucial importance of trust for the good quality of relationships is virtually consensual in the literature (Dwyer et al. 1987; Morgan and Hunt 1994; Roberts et al. 2003). As an interviewee stressed:

If our interlocutor in negotiations can't gain our trust, it's very unlikely that we get to the point of signing contracts… [corporate client A1]

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The representative of corporate client B3 was even more direct:

In any business, the most important asset is trust, not financial power, status, quality awards, technology, or any other kind of supposed competitive advantage… [corporate client B3]

Hotel managers seem to corroborate clients' feelings about the importance of trust in the salesperson. For example, the client manager representing hotel 3 explained:

Clients don't know my organisation, they know me; they don't talk to the hotel chain, they talk to me. I represent the hotel… the hotel chain is too abstract for them, so, for the client, I am the hotel. So, how can you talk business with somebody you don't trust? I know I wouldn't. So, if I want my clients to talk to me, first I have to deserve their trust… [hotel 3]

Another client manager added:

If you're not able to conquer the client's trust, you're not even going to get them to listen to you, let alone to close any deal with them… [hotel 1]

The importance of trust is also found 'a contrario', as some of the firms' representatives pointed out:

… you cannot trust somebody who has failed to keep his promises, can you? I'm not saying that we won't do any more business with them, but we're certainly going to be a bit more cautious [corporate client B7]

…I can understand that they are under pressure because of their commercial goals, but if we are to continue to do business with the hotel, they have to be completely honest with us. [corporate client A6]

These extracts from the empirical evidence seem to underlie the fundamental role of trust, defined as the ability and willingness to rely on the salesperson's integrity and behaviour so that the long-term expectations of the buyer will be met (Crosby et al. 1990; Moorman et al 1992; Morgan and Hunt 1994). Again, the high level of agreement within respondents, regardless of the existence of designated client managers, is noteworthy and strengthens the crucial role of trust as a dimension of RQ.

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Satisfaction

The importance of the concept of satisfaction was also highlighted by respondents' opinions. In effect, both clients and hotel managers, considered buyer's satisfaction with the client manager's performance a major element of RQ. As a client manager put it:

We know that we cannot keep a client by just being friends with each other; if our service is not professional and effective, we'll lose the client [hotel 2]

This statement by the client manager representing hotel 2 was corroborated by one of his key contacts in firms:

We intend to use their services as long as they keep their good level of service [corporate client C2]

Another client manager (hotel 3) explained:

I know that my clients are always analysing every little detail in me. They like me because they like the way I treat them… my clients are used to a high level of excellence in my performance, and I do everything possible not to let them down. For instance, I try to do everything for my clients, but I never compromise myself with things I know I'm not going to be able to do for them, because, the minute I fail, I'm going to ruin an image that took me so much time and effort to build. [hotel 3]

Corporate clients seem to second the notion that satisfaction corresponds the perceived assurance in relation to the salesperson's future performance, considering that past performance has been consistently satisfactory (Crosby et al. 1990). For example, a firm's representative reported:

We feel very reassured in relation to our account manager because she knows how to do things right. I don't recall any situation in which she didn't correspond to our needs, even in covid times, contrary to other situations that I've had with other hotels… [corporate client B3]

Two other client representatives observed:

I feel happy when I feel that we've made a good deal, and everybody is happy... [corporate client A1]

…we are a bit disappointed with this hotel, we're a bit unhappy with their performance on some occasions, and Covid-19 does not justify everything, so we don't expect much from them anymore… [corporate client A7]

Satisfaction has been consistently included in the literature on modelling RQ as a dimension, alongside trust. And, indeed, as stated before, good quality relationships imply more than trust between parties. As one of the client managers put it:

I see the level of my clients' satisfaction as a barometer that tells me all the time about how healthy our relationship is developing and whether or not I am doing things the right way. [hotel 1]

The other hotel representatives also seem to be aware of this:

… at the end of the day, everything we do is to keep the client satisfied, isn't it? [hotel 5]

My clients are used to a certain level of service, so I work every day to live up to their expectations, I always do my best to maintain an excellent level of performance [hotel 2]

The client's side also agrees that concrete actions are needed:

Of course, we like her, but one of the reasons we like her is because of her good level of service, not just because we like her as a person… [corporate client B5]

…we'll stay with them as long as they keep their good level of performance… [corporate client C2].

…we find our account manager very professional and nice (…), so we're satisfied with our relationship with them… [corporate client C3]

These opinions seem to be in line with the idea that business relationships are characterised by both professional and social, people-based relationships (e.g. Holmlund 2001; Wong and Sohal 2002). However, actors in the hotel industry also seem to make a clear distinction between the social level and the professional level of the relationship. As one hotel representative stressed:

…as we get to know each other, sometimes there's a feeling of friendship or so, but we always maintain the professional level… [hotel 3]

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These quotes essentially address the issue of satisfaction, and contribute to support the decision to include it as a dimension of RQ. In this context, trust and satisfaction were included as equally important dimensions of RQ, without a causal relationship between them. This is in line with a pattern of numerous studies identified in the literature on modelling the central construct of interest in the present investigation (e.g. Crosby et al. 1990; Hewett et al. 2002; Shamdasani and Balakrishnan 2000).

Having looked at the dimensions of RQ, we now move on to its determinants, which, in turn, correspond to the hypotheses contained in the proposed model.

RQ Determinants

Commitment

Empirical evidence suggests that the majority of both clients and hotel managers acknowledge the importance of commitment, in line with the idea conveyed in the literature that commitment is considered a pilar of successful relationships (Dwyer et al. 1987; Gundlach et al. 1995; Morgan and Hunt 1994). For example, the representative of corporate client B4 mentioned:

…we like to feel that our account manager in the hotel is really interested in solving our problems, that she shows that our partnership is important for them, that she makes everything possible to improve our relationship… [corporate client B4]

The client manager representing hotel 4 seemed to corroborate this idea:

We don't take our clients for granted; we show them day by day that they can count on us. [hotel 4]

Another interviewee said:

We like her both as a professional and as a person, the hotel industry is a personality business, she knows how to maintain a nice mood between us, she makes us feel important, even in covid times, she was able to maintain that kind of physicality of marketing that we value so much, and we do our best to correspond [corporate client A3]

The above-mentioned opinion of the representative of corporate client A3 seemed to be in line with what the respective client manager (representative of hotel 3) said:

…every day I ensure that my clients know that I'm always there for them, whatever the kind of help they need from me… [hotel 3]

As a rule, a high degree of congruence was found among clients and hotels about the importance of commitment, even in relation to hotels without designated client managers (hotels 6 to 8). The above-mentioned client representative's comments also highlighted the 'physicality of marketing', a feature of traditional marketing that seems to be even more valued in times where we are forced to maintain social distancing and/or cover our faces with masks in a 'personality', face-to-face business. We are, therefore, in the presence of marketing issues that must be considered in modern marketing.

Commitment can be defined as the parties' firm and consistent motivation to maintain a certain relationship that is valued by them (Moorman et al. 1992). A client's representative suggested that the perception of commitment might help to bring together perspectives that at the beginning seemed to be distant:

…there are situations where, if we feel that the client manager is really willing to work together with us, we tend to be more flexible and try to make our proposals compatible with their proposals… [corporate client A1]

Conversely, the representative of corporate client B8 warned:

…they haven't shown any efforts whatsoever to improve our business relationship and to work for a good deal for both companies, they don't show any interest at all, they just want us to sign the contract at any cost. If they don't change their attitude, it's very unlikely that we end up stretching our flexibility to the point of signing the contract. [corporate client B8]

This is consistent with some literature (e.g. Anderson and Narus 1990; Palmatier et al. 2007) suggesting that parties work together towards the achievement of mutual goals when they are committed to cooperate. This apparent association between commitment and mutuality of goals seems to find echo among client managers as well. For example, representative for hotel 1 stated:

The more the dedication towards the partnership, the sooner we find common grounds to do business… [hotel 1]

Dwyer et al. (1987) advocate that commitment corresponds to the highest status of relationship bonding. Furthermore, commitment is considered a key element of all organisational interactions (Morgan and Hunt 1994), generally recognised

as important in modelling RQ (Roberts et al. 2003). Considering, finally, that commitment acts as a precursor of trust (Lawler and Yoon 1993) and satisfaction (Molm 1991), and represents a strong signal of the parties' perception of the quality of the relationship (Gundlach et al. 1995), the following hypotheses are suggested:

H_1: The higher the level of commitment, the higher the level of RQ.

H_2: The higher the level of commitment, the higher the level of mutual goals.

Mutual goals

In the case of mutual goals there is a more evident separation between dyads including hotels with designated client managers vs. dyads including hotels without designated client managers. While the dyads with designated client managers exhibit unanimity about the high importance of mutual goals, dyads including hotels without designated client managers reveal mixed results, in terms of both opinion congruence and importance attributed to the concept of mutual goals. Indeed, in dyads including hotels without designated client managers, there is some discrepancy between the opinions of hotel vs. firm representatives, with hotel representatives attributing higher ratings to the importance of mutual goals than their counterparts in firms. One interpretation is that this has probably to do with the existence of closer relationships in dyads with designated client managers - and, therefore, a higher level of opinion congruence - which might influence client's perceptions of several aspects pertaining to the partnership. This piece of empirical evidence also corroborates the idea that the presence of a designated client manager can make a difference in terms of the parties' perceptions of RQ and its determinants and dimensions. Indeed, consensus on the importance of mutual goals was found in dyads formed by hotels with designated client managers and their counterparts. This is consistent with the widespread idea in the literature on buyer-seller relationships, namely in the RM area, according to which successful partnerships are collaborative in their nature, suggesting that working towards mutual goals is important (McQuiston 2001; Wilson 1995). Both designated client mangers and their counterparts in firms seem to be aware of, and agree on the importance and advantages accruing from mutuality of goals. Reporting on her relationship with corporate clients' representatives, one of the client managers (hotel 5) commented:

…we think the same way about business… [hotel 5]

Her counterpart in corporate client B5 corroborated this thought:

…things work well between us because we both know that this is business, and we have to deliver - it's as simple as that. We're both businesswomen, we work in different sectors but the way to do business is the same… [corporate client B5]

The existence of mutual goals provides an adequate environment for sharing values and for non-opportunistic behaviours, which, in turn, lead to the possibility of profiting from being in a certain relationship (McQuiston 2001). In the words of a client:

We need to know that on the other side they understand our points of view and are willing to bring together the points of view both sides, that they do their business, and we do our business as well. [corporate client C4].

In this context, the concept represented by the construct mutual goals is defined as the degree to which parties share goals that can only be achieved through joint action and the maintenance of the relationship (Wilson 1995. Hotel managers seem to correspond to this idea:

…we like to think of our clients not as clients but as business partners… [hotel 4]

…the ideal situation is when they help us delivering the service… that they are using! …and this is just an example of the atmosphere of mutual success that we proactively try to create between our clients and us. Another example is when we arrange meetings with our clients with the specific purpose of knowing what we expect of each other, or, if you will, to set commercial objectives. Clients seem to value this and, at the end of the day, if you get what you agreed, everybody is satisfied. [hotel 5]

The above remarks concur to support the importance of co-creation and mutuality of goals and offer support for the decision to add mutual goals as eligible for integrating the RQ model to be proposed in this study. As corporate clients C4 and C5 observed:

If we are to sign a contract, we have to sit down, or connect online and talk first. As soon as both parties are convinced that that's the best deal possible for both firms, then we sign the contract. [corporate client C4]

Sometimes it's not easy to reach an agreement, but when we do, we feel okay, we feel it was worth the effort, because we are happy with the result of negotiations… [corporate client C5]

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Hotel managers seem to correspond to this idea as well. The representative of hotel 4 stressed:

Of course we try to persuade our clients that our offer is the best, but we don't want to push negotiations so hard that it could seem like we were trying to take advantage of them; rather we use some flexibility – the bottom line is that we do not want to lose our best clients. [hotel 4]

Client manager of hotel 5 coincided:

… although we aren't that much empowered by our administration, we can always use a degree of flexibility for both parties to be satisfied after closing the deal [hotel 5]

The above described scenario seems to suggest an association between goal congruence and RQ, in line with previous models suggested in the literature (e.g., Huntley 2006). This interpretation takes also into account that trust is enhanced when channel partners have similar goals (Anderson and Weitz 1992), and that mutual goals may also enhance satisfaction with both the relationship and the performance of the seller (Wilson 1995). Hence, the following hypothesis is suggested:

H_3: The higher the level of mutual goals, the higher the level of RQ.

Communication

There is a high degree of consensus on the crucial importance of the concept of communication within hotels 1 to 5 and their corporate clients, in contrast with hotels without designated client managers and their corporate clients, although in the latter group there were no representatives attributing low importance to communication.

The consensus emerged in dyads formed by hotels with designated client managers corroborates the importance of communication in buyer-seller relationships expressed in the literature (Kotler and Keller, 2012; Williams et al. 1990). Relationship managers are marketers, even if they don't formally belong to the marketing department, and have an important responsibility in establishing the link between the client and the organisation (Boles et al. 1997). Communication exerts a positive influence on the client's perception about a relationship manager (Williams et al. 1990).

The interviewed client managers seem to be aware of the importance of communication. For example, within the dyad formed by the representative of hotel 3 and her key contact in firm C3, there seems to be a high degree of congruence about this matter. The client manager indicated that:

… to communicate is to know where they are and try and maintain communication all the time, like we have been doing online or over the telephone lately, due to the pandemic, the special attention, the 'spoiling' (…), to maintain a pleasant communication for them to know that they can count on us… [hotel 3]

The corporate client's representative seconded this opinion:

If they have everything but don't have the ability to communicate with us, in a nice, cordial manner, I don't think they'll be successful with us or any other client. [corporate client C3]

In addition, to quote the client manager in hotel 1:

An account manager with no communications skills is in the wrong business (…) even if he's a genius (…) in the hotel business or whatever business… it just doesn't work if you don't know how to deal with people… [hotel 1]

In a similar vein, one of the privileged interlocutors of hotel 1's representative stated:

We like to be considered both as business partners and as persons (…) I am not a number, we're not robots, so I expect everybody to talk to me as friendly and respectfully as I talk to everybody. [corporate client B1]

Another client warned:

…the way you say things is as important as what you say… [corporate client B5]

This is consistent with the idea that just as important as the type of information that is conveyed is the way it is disclosed, as the following opinions on the part of hotel representatives reinforce:

We must show the clients that we're there for them, that they can count on us, that we are available in-person, over the telephone, or online, and that we do it with enthusiasm. [hotel 5]

Sometimes we can't do exactly what they want, we have to say 'no', but still, we have to maintain a nice and professional tone when we say 'no'… clients are clever and respect somebody who knows how to say 'no' without damaging the level of dialogue. [hotel 2]

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From the interviews it is also possible to infer that one of the main functions of client managers is the 'animation' of contracts, as implied before. These actions include maintaining frequent contacts with clients and little courtesies like offering birthday cakes or flowers in special occasions. Interviews also revealed that frequency of contacts plays an important role. As the representative of corporate client C3 put it:

…each time they come to visit us, or each time we meet online, or each time they call us on the phone, and please let us not forget the good old phone call (…) we tend to increase our utilisation of their hotels. [corporate client C3]

From the point of view of hotel representatives, 'animation' and contact frequency are subsumed in communication (hotels 1, 2, and 5). Communication has been considered the most basic activity during the exchange within a customer-salesperson dyad, essential to the interaction established between the individuals involved (Williams et al. 1990). In the context of the present study, several pieces of empirical evidence that emerged from interviews pointed out to the influence that communication abilities and efforts seem to have on the level of commitment between parties, in line with Anderson and Weitz (1992). In the words of two representatives of corporate clients:

…the more we appreciate our account manager's communication skills, including the ability to adapt to the pandemic constraints, the more we feel motivated to strive for the success of the relationship… and we need to interact more often with no face masks on, pleeeease… we need to see each other's faces, not just the eyes and the hair… which are very important, of course, but we need to see the facial expressions, the smile, you see what I mean? [corporate client B4]

…when we sense that there is a friendly and open communication between us, we feel kind of obliged to contribute to maintain the best relationship possible… [corporate client A3]

These perceptions seem to be seconded by the hotel's side:

we search for empathy between the two parties, behaviour breeds behaviour (…) and it seems to me that clients value more and more the good old brick-and-mortar approach, whose relevance and usefulness is coming back in these strange times we are living in, especially when combined with the numerous, and available new marketing tools … [hotel 3]

…we try to create an interpersonal interaction as good as possible, in fact nowadays we've been trying to capitalize the online possibilities, in which we don't need to wear a face mask, hoping to strengthen the interpersonal bonding as much as possible… [hotel 4]

The above opinions highlight the importance of people-based interaction in modern marketing, ideally combined with digital tools. In this context, communication is defined in this study according to the perspective of Kotler and Keller (2012, p. 476) as 'the means by which the firm can establish a dialogue and build relationships with consumers'. The empirical evidence also suggests an association between communication and commitment, which, in turn, is proposed as a determinant of RQ. In addition, effective communication between parties enhances trust, one of the dimensions of RQ in this study, notably within channel dyads (Moorman et al. 1992; Morgan and Hunt 1994; Palmatier et al. 2007). Furthermore, and according to Roberts et al. (2003), communication has been found as an antecedent of RQ in previous studies. It is, therefore, posited that communication exerts both direct and indirect (through commitment) effects on RQ. Thus, the following hypotheses are suggested:

H_4: The higher the level of communication, the higher the level of RQ.

H_5: The higher the level of communication, the higher the level of commitment.

Customer Orientation

The scenario that emerged from the interviewees' answers highlights some of the principles and actions that relationship managers are expected to embrace in the context of a customer-centric approach. For example, there seems to be relatively high congruence among representatives of corporate clients about the opinion that client managers should:

…ask us what we want first, and then talk about selling her services, not the other way around… [corporate client C5]

…think also about our needs when they think about the accomplishment of the hotel's objectives (…) and not just their own… [corporate client C4]

We don't need a 'yes man', we need someone who informs us correctly about the pros and cons of each situation [corporate client B1]

Which seems to be corroborated by the hotel's side:

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… as a client manager I should explain in detail how our services suit the client's needs [hotel 5]

… as an account manager I should put myself in my client's shoes [hotel 4]

These facets of the relationship manager's behaviour seem to be captured by customer orientation, a construct present in the literature on buyer-seller relationships in general (Kelley 1992; Saxe and Weitz 1982), and particularly on RQ (Bejou et al. 1996; Wray et al. 1994). Customer orientation is defined in the literature as the degree to which salespeople adopt behaviours aiming at increasing the customer's long-term satisfaction (Kelley 1992; Saxe and Weitz 1982). Sometimes the behaviour of the client manager is not perceived by their counterparts in firms as leading to the buyer's satisfaction, as reflected by the following quotations:

He's only interested in selling, selling as much as he can – he's not interested in talking business, just selling… [corporate client B7]

…with him, it's like this: if we're not careful, we end up contracting more services and spending more money than we should – he's a very aggressive salesman. [corporate client C6]

This probably also explains why these two corporate clients attributed relatively low ratings to RQ, showing a discrepancy of opinions with their counterparts in hotels regarding several issues covered by the interviews. Customer orientation plays a particular role in service organisations, due to the absence of tangible cues with which to evaluate the offering (Kelley 1992). To have a customer-oriented selling behaviour is often cited as a prerequisite for the practice of RM (Bejou et al. 1996; Saxe and Weitz 1982). Highly customer-oriented relationship managers adopt actions that lead to the customer's long-term satisfaction, and avoid opportunistic behaviours that sacrifice customer interest in favour of an immediate sale or a short-term goal (Kelley 1992; Saxe and Weitz 1982). For example, opportunistic behaviour is inversely related to the quality of relationships (Dorsch et al. 1998). One of the hotel managers said:

We can't force clients to do business with us. What we can do is to show them what's in it for them… [hotel 1]

In coherence with the opinion of hotel 1's client manager, one of his clients warned:

…what we have with our account manager is informative dialogue, rather than any kind of pressure from either side – that's what we expect from him… had he taken the wrong attitude, and I guess our motivation to do business with them would have disappeared… [corporate client B1]

These quotes suggest a possible association between customer orientation and, not only satisfaction (one of the dimensions of RQ), but also with trust (another dimension of RQ, alongside satisfaction), in line with prior research which suggests that buyers are more likely to trust sellers that are customer oriented (Swan et al. 1985). Another firm's representative commented:

If we are to commit ourselves to the relationship and do our best to improve it, we must at the same time feel that on the other side there is somebody who understands our needs [corporate client A3]

The hotel's representative corroborated these opinions, as illustrated by the following comments:

…clients like to feel that when they pose a question, we are really concerned about it and make our best efforts to solve the problem'; '…that there's someone on the other side of the phone, or Skype, nowadays (…) for them to turn to in case some doubt comes up [hotel 3]

This apparent link between customer orientation and commitment has been already suggested, e.g., by Baker et al. (1999), who found empirical support for the link between perceived seller market orientation and buyer commitment. Moreover, in marketing relationships a high customer-oriented selling corresponds to switching from the 'us vs. them' to the 'we' approach (Hewett et al. 2002), suggesting that customer orientation is closely related to the idea of working towards mutual goals. As one client representative put it:

Things only work well when they take our interests into consideration, not just their own. That's why we always take the first step and show them that we consider their interests as well… [corporate client A5]

On the other side, hotel 5's representative revealed:

I've been in this business long enough to learn the strategy to make them happy, while simultaneously accomplishing my commercial objectives. It's this simple: first I get them to talk to me, what do they really want, what can I do to give them what

they want, then I have a look at my 'toolbox' – meaning, the array of services we offer – and I decide what's best for everybody, hoping that they'll agree with me. This technique rarely fails, even if it requires some negotiation here and there… [hotel 5]

This illustrates the adoption of a co-creation attitude on the part of the seller that takes into consideration and aims at contributing to the client's satisfaction, in line with the definition of the customer orientation construct in the literature. In this context, it is posited that customer orientation influences RQ, both directly, in line we previous conceptualisations (Bejou et al. 1996; Wray et al. 1994), and indirectly, through mutuality of goals and commitment:

H_6: The higher the level of customer orientation, the higher the level of mutual goals.

H_7: The higher the level of customer orientation, the higher the level of RQ.

H_8: The higher the level of customer orientation, the higher the level of commitment.

Relational net benefits

Analogous to mutual goals and communication, the concept of relational net benefits gathered more consensus among the opinions emerged from data collected through interviews with hotels with designated client managers and their corporate clients. The opinions of both clients and hotel managers reveal that the participants do balance relational rewards and costs, or, in other words, they consider relational net benefits, as reflected by the following comment by one of the interviewed clients:

We must feel that we are getting satisfactory feedback to our efforts in doing business with the hotel… [corporate client A4]

In Grönroos's (2000) terminology this would correspond to the balance between perceived benefits and sacrifices. Clients seem to balance these pros and cons of participating in a relationship, and, to stay in it, each party must feel, not only that there are positive net benefits (Corsten and Kumar 2005; Crosby 1989), but that the rewards from the relationship are relatively higher than the rewards that could be obtained from an alternative one (Crosby 1989; Morgan and Hunt 1994). In this context, relational net benefits are defined as the parties' expected net benefits from a relationship (Dwyer et al. 1987), resulting from balancing relational benefits and sacrifices. To quote a client's representative, who explained how expected relational net benefits might influence the parties' behaviour:

Sometimes when we feel that we could gain from having a contract with a certain hotel, we don't mind being flexible in turning our business objectives more compatible with the hotel's business objectives… [corporate client B4]

This is consistent with Ulaga and Eggert (2006), who suggest that the existence of social bonds, resulting from the development of interpersonal ties, is associated with a better understanding of each partner's goals. According to (McQuiston 2001), the definition of the benefits each partner is willing to offer to the other partner, as well as the sacrifices it is willing to accept, and the way they are converted into common practices and goals, determines whether parties are likely to take advantage of participating in the relationship. This also suggests an apparent link between the concepts depicted by the constructs relational net benefits and mutual goals. The following quotations reflect the aspects that surfaced in the interviews. One of the interviewed representatives of the corporate clients said:

Sometimes we feel that we invested so much in working with a certain hotel group, that we feel we can't afford not to be flexible and make all efforts possible to bring together both sides' expectations… [corporate client C5]

On the other side, the hotel representative stated:

…the more we are aware of the benefits we can expect from working with a certain client, the more we are willing to understand the other side and their perspectives on doing business with us, as long as they try to understand ours… [hotel 5]

Some literature suggests a positive association between relationship-specific investments and commitment (Anderson and Weitz 1992; Palmatier et al. 2007). In addition, in most B2B interactions, the more the relational net rewards, the more the commitment to maintain a relationship (Rusbult 1983). As a client's representative put it:

The more we expect to gain from engaging in a partnership, the more the effort we put in that partnership, the more the motivation to stick to that partner… [corporate client B2]

Coherently, the correspondent client manager said:

…when we spot a good prospect, I mean, a potentially profitable client, we use as much resources - be it people, time, etc., you name it - as we can for the relationship to work, and make everything possible to maintain and improve it… [hotel 2]

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That is, each partner's commitment seems to depend on the motivation for engaging in a relationship, which, in turn, is in part influenced by the assessment of expected (intrinsic) benefits and sacrifices. The preceding discussion seems to suggest that, from the interviewees' perspective, the bottom line is, after balancing benefits and sacrifices, and according to their perception of the level of expected net benefits, they decide on the degree of both commitment to the relationship and the will for working towards mutual of goals (Anderson and Weitz 1992; Rusbult 1983). Therefore, it is expected that:

H_9: The higher the level of relational net benefits, the higher the level of mutual goals.

H_{10}: The higher the level of relational net benefits, the higher the level of commitment.

CONCLUSION

The study highlights the importance of social bonds, alongside a certain nostalgia of traditional marketing approaches, such as 'good old brick-and-mortar', and 'that physicality of marketing', in the words of some of the interviewees, ideally combined with the modern marketing exciting and value adding possibilities. Social bonds, in turn, appear to foster structural/contractual bonds, and positively influence the perception of RQ, in line with the opinion that 'the hotel industry is a personality business'. As far as contractual bonds are concerned, for example, results of the interviews indicate that the percentage of signed contracts with corporate clients is very high in hotels with designated client managers and rather weak in hotels without designated client managers, in line with the literature, namely the alleged association between strong social bonds and commitment to maintain the relationship. Of particular significance is also the finding that there is considerable congruence between the perceptions of both parties of the relationship – hotel client managers and their key contacts in corporate clients - especially in dyads including hotels with designated client managers.

This exploratory, qualitative investigation, conducted from a dyadic perspective, lends credence from practitioners for the proposed conceptual development, and the integration of qualitative evidence and prior approaches provides strong support for the conceptualisation of RQ and its dimensions and determinants, as well as for the way they connect in the model. It also believed that this work provides relevant insights, and new avenues for future research and practice, thinking ahead to marketing effectiveness in a post-pandemic era, namely in the context of good quality business relationships, and the integration between traditional and digital in modern marketing.

Relationship Quality is Key to Modern Marketing Success

By looking at the connections in the model, in addition to the constructs themselves, it is possible to apprehend how to build good quality relationships, as reflected by the levels of trust and satisfaction. Customer-centric organizations and respective representatives who are able to capitalize on mutual goals and omnichannel, people-based communication, while simultaneously inspiring commitment and improving performance, will be successful in developing mutually beneficial business relationships. Examples of benefits for the buyer range from a higher opportunity for customization and, thus, for better satisfaction of needs and preferences, to a greater effectiveness in decision-making, and the reduction of the perceived risks related to future purchases. Relational efforts also provide the customer with safety. In time and with the development of committed-based relationships, parties build a 'healthy' atmosphere, which, in turn, fosters repurchase, provided that, at the same time, the buyer can rely on a consistent level of service offered by the provider.

The Modern Marketing Twins: Ms. Digital and Mr. Traditional

A strategy combining traditional and digital marketing is mutually beneficial. It enables consumers to be in control of their choices, which, in turn, helps firms to improve customer retention rates, lower average costs per customer contact, and increase revenue. The key to integrate traditional and digital is to gather all the possible online data and use it in the 'person-to-person' interactions with your clients. For example, to capitalize on the customers 'digital footprint' (e.g., search queries, clicks and impressions, keywords), which can be identified with the help of Google Analytics.

   In this context, there is a growing number of firms increasing their omnichannel (not just multichannel) efforts. The key to succeed in an omnichannel strategy is – again – to adopt a customer-centric approach, i.e., to find out how customers choose to interact with the company, instead of focusing on how marketeers would like customers to interact with the company. The marketeers' job is to create a clear, cohesive, and consistent message, throughout the different available channels, one that bridges the gap between traditional and digital marketing and gives consumers the freedom of choice. This will most probably lead to co-creation, satisfaction, and repurchase.

Omnichannel Marketing with that Human Touch

The interviewees' comments also suggest that clients value an omnichannel strategy on the part of firms, provided that their key contacts maintain 'that human touch',

which has always been a fundamental feature of marketing. This omnichannel approach to marketing is effectively customer-centric, as it focuses on each customer's profile, and interacts between channels, while creating a personalized message, and one seamless, consistent, and unified experience. Hearing the voices and seeing the faces of privileged interlocutors will play a central role as far the 'human touch' is concerned. Fortunately, the plethora of available marketing and communication tools, such as video conferencing and other digital services, allow for face-to-face and personalised communication, and contribute strongly to mitigate some of the pandemic's incidences, namely social distancing, face masks, and, thus, to enhance the quality of personal and business relationships. And let us not forget the 'good old phone calls', as one of the interviewees' also pointed out.

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APPENDIX: PERCEIVED IMPORTANCE OF RELATIONSHIP QUALITY KEY CONSTRUCTS

Table 2.

Importance of RQ Determinants	Hotels with Corporate Centers (1, 2, 3) and their Clients (A, B, C)								Hotels with Client Managers (4, 5) and their Clients (A, B, C)						Hotels without Client Managers (6, 7, 8) and their Clients (A, B, C)								
	1: high		2: high			3: high			4: high			5: high			6: high			7: high			8: high		
	A1	B1	A2	B2	C2	A3	B3	C3	A4	B4	C4	A5	B5	C5	A6	B6	C6	A7	B7	C7	A8	B8	C8
Trust (dimension)	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high
	1: high		2: high			3: high			4: high			5: high			6: high			7: high			8: high		
	A1	B1	A2	B2	C2	A3	B3	C3	A4	B4	C4	A5	B5	C5	A6	B6	C6	A7	B7	C7	A8	B8	C8
Satisfaction (dimension)	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high
	1: high		2: high			3: high			4: high			5: high			6: high			7: high			8: high		
	A1	B1	A2	B2	C2	A3	B3	C3	A4	B4	C4	A5	B5	C5	A6	B6	C6	A7	B7	C7	A8	B8	C8
Commitment (determinant)	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high
	1: high		2: high			3: high			4: high			5: high			6: high			7: high			8: mod		
	A1	B1	A2	B2	C2	A3	B3	C3	A4	B4	C4	A5	B5	C5	A6	B6	C6	A7	B7	C7	A8	B8	C8
Mutual Goals (determinant)	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	mod	low	low	high	mod	high	mod	high
	1: high		2: high			3: high			4: high			5: high			6: high			7: high			8: mod		
	A1	B1	A2	B2	C2	A3	B3	C3	A4	B4	C4	A5	B5	C5	A6	B6	C6	A7	B7	C7	A8	B8	C8
Communication (determinant)	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	mod	high	mod	low	high	high	high	high
	1: mod		2: high			3: high			4: high			5: high			6: high			7: low			8: mod		
	A1	B1	A2	B2	C2	A3	B3	C3	A4	B4	C4	A5	B5	C5	A6	B6	C6	A7	B7	C7	A8	B8	C8
Relational Net Benefits (determinant)	high	mod	high	high	high	high	high	high	high	high	mod	high	high	high	high	high	high	high	mod	high	high	mod	high
	1: high		2: high			3: high			4: high			5: high			6: mod			7: high			8: mod		
	A1	B1	A2	B2	C2	A3	B3	C3	A4	B4	C4	A5	B5	C5	A6	B6	C6	A7	B7	C7	A8	B8	C8
Customer Orientation (determinant)	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high	high

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Chapter 2

Sentiment Analysis and Review Rating Prediction of the Users of Bangladeshi Shopping Apps

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ABSTRACT

The goal of this study is to apply machine learning (ML) approaches to assess user sentiment and predict review ratings for Bangladeshi shopping apps. The data for this study was obtained from the Google Play Store reviews of 15 Bangladeshi shopping apps. The AFINN and VADER sentiment algorithms were used to assess the filtered summary phrases as positive, neutral, or negative sentiments after cleaning. The present study additionally employed five supervised machine learning approaches to divide users' assessments of shopping apps into three sentiment groups. According to the findings of this survey, the majority of ratings for shopping apps were positive. While all five machine learning approaches (SVC, k-neighbors classifier, logistic regression, decision tree classifier, and random forest classifier) can properly categorize review text into sentiment classes, the random forest classifier outperforms in terms of high accuracy. This study adds to the literature on customer sentiment and aids app marketers in understanding how consumers feel about apps.

INTRODUCTION

Information flows digitally between users in today's fast-paced environment (Hossain et al., 2021), and it may also influence how other users perceive an event. As a result, it's critical to grasp popular opinion (Daudert, 2021). Because blogs, forums, and online social networks have all sprung up as a result of Web 2.0, allowing users to discuss and share their thoughts on any subject. They may, for example, express their dissatisfaction with a product they purchased, discuss current events, or voice their political opinions. Many applications (such as recommender systems), as well as organizational survey analysis and political campaign preparation, rely on such information about users (Dang et al., 2020). Basically, all businesses rely on data to function. Data-driven decisions are becoming increasingly important in order to stay competitive or fall farther behind. Massive volumes of data can now be collected in modern times. Manually gathering and evaluating data is, however, exceedingly difficult (Aslam et al., 2020), so we need artificial intelligence (AI) to effectively acquire and evaluate vast volumes of data (Kler et al., 2022). In the current project, for example, more than 111944 users' data will be gathered and assessed using ML programming, which is a subset of AI.

A review is a piece of feedback provided by a user who has either purchased and used the product or service, or has had some other interaction with it. User reviews are a type of customer feedback that may be found on the internet (Hossain and Rahman, 2022; Pashchenko et al., 2022). Electronic user reviews are peer-generated product evaluations and judgments that are posted on a company's or a third-party website such as the Google Play Store. User reviews provide additional backing for a choice and boost trust in the decision maker (Dwidienawati et al., 2020). Furthermore, Wang et al. (2021) claimed that increasing the volume and quality of evaluations boosted the profitability of a business. According to Chevalier and Mayzlin (2006), users' online reviews have a major influence on product and service revenue.

Over the last few years, smartphone applications have become increasingly popular (Hassan et al., 2017). People's abilities to perform daily tasks and activities have tended to be extended by mobile apps. As the number of smartphones in the world grows, so does the number of apps downloaded from app stores (Triantafyllou et al., 2020).

App platforms such as the Google Play Store and other app stores give app developers a unique consumer feedback system in the form of app reviews. The Google Play Store is a Google-run digital distribution platform. It also offers other digital products such as e-books, movies, and music, in addition to applications. In the app shops, users can find both paid and free apps. Paid applications must be purchased before they can be used, whereas free applications may be downloaded for free. Apps may be manually or automatically downloaded and updated via the

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Google Play store (McIlroy et al., 2015). Additionally, Aslam et al. (2020) described how developers can keep track of their apps through ratings and reviews. The user's experience, information about issues, requests for new features, and a word rating of the app are all examples of app reviews. For developers, manually categorizing app evaluations is crucial and time-consuming. Developers may benefit from automatic classification of app reviews, especially when it comes to correcting errors quickly. Additionally, users frequently examine reviews before installing an app, just as they do with other online stores. According to research, ratings and reviews are related to sales and download rankings (Finkelstein et al. 2017). Higher downloads and sales are associated with stable multiple ratings (Martens and Maalej, 2019).

Nonetheless, app user review categorization for discovering useful nuggets of data for app software development is a hard and multifaceted topic. To categorize app evaluations into particular subjects, it needs a complex combination of text pre-processing, feature extraction, and machine learning methods. Previously, manual-reading each review independently was not a viable strategy (Maalej et al., 2016; Aslam et al., 2020). That is, the more popular an app grows, the more reviews it receives, and the more difficult it becomes to assess them. Several previous studies (Triantafyllou et al., 2020; Maalej et al., 2016; Aslam et al. 2020) have found automated feature engineering schemas capable of classifying reviews based on ratings or broad topics.

Due to the importance of app reviews when making judgments, both other users and developers may benefit from user reviews. As far as we know, there haven't been any published studies on reviews of shopping apps. As a result, in the current study, we looked at how users felt when writing and reading shopping app evaluations in order to predict how they would rate the app.

LITERATURE REVIEW

User reviews are the most well-known and commonly utilized use of sentiment analysis. To examine the feedback or review, many types of machine learning approaches are used (Nasreen Taj & Girisha, 2021). Sentiment analysis, for example, has been used to analyze educational data (Ali et al., 2020), drug-related data (Basiri et al., 2020), and transportation service data (Kastrati et al., 2020).

Due to the tremendous expansion of digital information, sentiment analysis is a fast-emerging research subject. Sentiment analysis is one of the most important approaches for extracting emotion information from large amounts of data in today's artificial intelligence world (Kumar et al., 2020). Sentiment analysis is a sort of natural language processing (NLP) in which text evaluation is done using machine learning techniques (Feizollah et al., 2019). The goal of sentiment analysis is to

figure out how emotions are expressed in texts (Hossain et al., 2022). Sentiment analysis (SA) seeks to assess if emotions conveyed in texts are favorable, neutral, or negative toward a subject (Daudert, 2021). Basically, SA is a method for analyzing and comprehending human emotions based on natural language processing (Yue et al., 2019; Pak & Paroubek, 2010). Sentiment analysis has evolved into a strong tool for learning about people' attitudes, with a wide range of applications (Dang et al., 2020).

The term "Sentiment Analysis" was coined by Nasukawa and Yi (2003) to describe the process of determining the subjective polarity (negative or positive) and polarity strength (slightly positive, strongly positive, weakly positive, etc.) of a consumer's review text; in other words, determining the writer's attitude (Hossain et al., 2022). Sentiment analysis is the process of extracting sentiment, thoughts, and feelings from text (Ravi & Ravi, 2015). The field has applications in anything from consumer happiness to political ideas (Ravi & Ravi, 2015; Borg and Boldt, 2020; Mäntylä, et al., 2018).

Sentiment analysis is a wide phrase that encompasses a variety of topics. Sentiment analysis, for instance, can include sentiment classification, subjectivity classification, and the detection of opinion spam, among other things. Also included are polarity determination, ambiguity resolution, and other components of sentiment classification (Ravi & Ravi, 2015). Sentiment analysis has exploded in popularity recently, result of the emergence of a vast supply of opinionated data via the internet and its wide range of applications in many aspects of life (Garay et al., 2019). Sentiment analysis is a subfield of natural language processing (NLP) that classifies the polarity of a text's expressed attitude (for example, positive, negative, or neutral) (Amin et al., 2019). The evaluation theory is a psychological model that explains why people feel the way they express.

Appraisal Theory focuses on how language conveys positive or negative evaluations, as well as how attitudes and emotions classify interpersonal offers and propositions, and is based on Systemic Functional Linguistics (SFL) (Barcena et al., 2020; Martin and White, 2005). In addition, appraisal theory is a theoretical framework used in SFL to discriminate between different types of evaluative utterances (Martin and White, 2005). It views meaning to be a set of choices made by the speaker or writer, and it demonstrates how these choices are reflected in the SFL lexicon and syntactic structure of evaluative writing (Halliday and Matthiessen, 2004). Emotions are formed by our evaluations (appraisals or estimates) of events that elicit distinct reactions in different persons, according to appraisal theory. To put it another way, our assessment of a circumstance leads to an emotional, or affective, response based on that assessment (Scherer et al., 2001). Because it is impacted by a range of distinct overlapping concerns beyond the realm of evaluation theory, syntactic structure can be examined via the lens of a local grammar, notwithstanding

its complexity. When linguistic occurrences happen at random in a text and are articulated using a range of linguistic resources, local grammars explain the patterns that they follow. The functions of an assessment statement are defined by appraisal theory and local grammar. Appraisal theory, which is an interpersonal meaning concept used to mediate interpersonal relationships by telling the reader how they feel (or think) about things and people, explains how languages interact with one another (Widyaningrum et al., 2019; Read and Carroll, 2012). Although Appraisal Theory has been used to analyze the sentiment of reviewers, it has not been used to evaluate the sentiment of Bangladeshi shopping apps users, specifically how they feel when they write review.

The vast majority of sentiment analysis (SA) studies are used to analyse subjective data from online reviews. These studies give a rapid picture of public opinion on a particular institution or commodity, such as a hotel. Kanna and Pandiaraja (2019), for example, looked at customer sentiment for product reviews, whereas Al Ajrawi et al. (2021) looked into customer review star ratings sentiment analysis. Instead of manually assessing reviews, SA uses Machine Learning (ML) technologies to analyze them and give timely information. A plethora of sentiment analysis algorithms based on machine learning have been presented in recent years. Polarity detection is the most common method of sentiment analysis (Han et al., 2018). There are two sorts of learning methods: supervised learning methods and lexicon-based learning methods (unsupervised learning methods) (Saif et al, 2016; Jurek et al., 2015). Because of their importance, consumer reviews have been used in a number of recent studies (Feizollah et al., 2019; Luo and Xu, 2021; Mostafa, 2020; Mostafa, 2019; Mostafa, 2018) to assess customer sentiments, but reviews of shopping apps are still to be investigated to analyze user sentiment. Thus, in the current study we used two lexicon based unsupervised learning methods to analyze sentiment of the users of Bangladeshi shopping apps and five supervised learning methods to predict review rating.

Research Questions

There have been a few questions concerning user reviews of Bangladeshi shopping apps that have yet to be answered. Although such questions are necessary for shopping applications to learn about the opinions of their users. We're particularly looking for answers to the four research questions listed below in these proposals.

Lexicon-Based Methods to Sentiment Analysis

Lexicon-based and corpus-based sentiment analysis are the two main ways for doing sentiment analysis with text mining tools (Miao et al., 2010). The corpus-based

technique for measuring sentiment orientation, on the other hand, is rarely employed in research. The sentiment score is determined by comparing the phrase given against an expert-defined dictionary entry in all cases, whether the two methodologies discussed above are based on a pre-defined expert lexicon or a corpus of subjective terms. For sentiment analysis, several lexicons are available (Preethi et al., 2015); lexicon-based techniques are simple to deploy, and lexicon-based approaches have been employed in several recent and similar studies (Machová et al., 2020; Yang et al., 2020). In this study, we used Afinn and VADER sentiment algorithms, both of which are lexicon-based machine learning approaches.

Afinn is a basic yet commonly used sentiment analysis vocabulary created by Finn Rup Nielsen. Afinn evaluates sentiment using a wordlist approach and includes over 3300 words, each with a polarity score ranging from -5 (top total for negative emotion) to 5 (best score for positive emotion) (highest score for positive sentiment). The Score () method of the AFINN object takes in a sentence and returns a score. You might get a score that is favorable, neutral, or negative. Previous research has employed the AFINN lexicon, which is undoubtedly one of the most basic and widely used lexicons for sentiment analysis (Tan and Guan, 2021; Vashishtha & Susan, 2020; Kim and Chung, 2020). Also, Vashishtha and Susan (2020) discovered that the AFINN lexicon has the maximum accuracy after reviewing the results of the fuzzy method on three benchmark datasets: hotel reviews dataset, polarity movie dataset by Pang and Lee (2008), and IMDB dataset. In addition, one of the study's goals is to divide customers' feelings into three categories: positive, negative, and neutral. Another goal is to determine which customer views are the most positive and which are the most unfavorable. As a result, in this investigation, the AFINN lexicon was used.

VADER, on the other hand, is a reviewer sentiment analysis tool based on a language and Parsimonious rules that has been fine-tuned to identify emotions on social networking sites. The VADER emotion lexicon understands popular social media phrases, acronyms, slang, gestures, and emojis (Pano and Kashef, 2020). On Twitter data, the frameworks did just as well as human raters. Furthermore, when compared to seven sentiment analysis lexicons, VADER sentiment performed equally well or better (Hutto and Gilbert, 2014). Because it does not require training, it is often much quicker than supervised machine learning algorithms. For each sentence, VADER sentiment generates an emotion score vector that includes negative, neutral, positive, and compound polarities. As a result, we employed the VADER vocabulary in this investigation.

It was also observed that lexicon-based techniques have been utilized in a number of sectors to extract a score from textual data and identify the most positive and negative sentences, including users' tweets during Covid-19 about online learning (Mujahid et al., 2021), tweets (Bhaumik and Yadav, 2021), news (Nemes & Kiss,

2021), stock market (Oliveira et al., 2016), but not in shopping apps reviews. As a result, in the current study, we used two lexicon-based algorithms to find sentiment ratings and top positive and unfavorable reviews. We'd want to use our investigation to obtain answers to the following study questions:

a. How do lexical tools score shopping app review texts?
b. How can we find the most significantly unfavorable and good shopping app review texts?

Review's Length and Rating

Consumers are more likely to express negative emotions (such as sadness or anger) while they are consuming with others, according to Zeelenberg and Pieters (2004). An unhappy customer is more likely to tell others about their dissatisfaction by leaving a bad review. When it comes to catching attention, bad is more powerful than good (Fors Brandebo et al., 2016). Negative experiences, sentiments, and facts, in general, carry more weight and have a greater effect than positive information, emotions, or similar events (Baumeister et al.,2001). Furthermore, substantially negative feedback has a greater impact on brand perception than mildly negative or extremely positive product reviews. The "negativity effect" or "negativity bias" has been coined to describe these phenomena (Lee et al., 2009). According to Rodrguez-Hidalgo et al. (2015), negative emotions outnumber positive emotions in web posts.

These findings backed up the theory that a longer review length is associated with lower review ratings, because negative emotions are more likely to generate longer written connections in online reviews, similar to how negative emotions speed up verbal exchanges in face-to-face interactions, according to this theory (i.e., resulting in longer and more extensive verbal exchanges). As a result, if someone is dissatisfied with a product or brand, they are more likely to tell someone else about it (Ghasemaghaei et al., 2018). Consumers who have had a terrible encounter with a product/service are more inclined to share their ideas and experience with others, hence bad feedback in the form of online user evaluations is more likely to be longer than good feedback (Jiménez-Zafra et al., 2017).

Ghasemaghaei et al. (2018) analyzed a panel dataset of learner reviews for home, vehicle, and life insurance using a database scraping technology from January 2012 to December 2015 and observed that longer review content was associated with lower review rating. In this study, we also want to examine if there's a link between the length of a review and its emotion classifications. We'd want to use the findings of our study to respond to the following research question:

c. Does the length of a shopping app review affect its rating?

Machine Learning Model Performance

Furthermore, in the bulk of supervised learning-based research, the support vector machine (SVM) demonstrates high efficiency and precision. When it comes to determining the kind of spillway, Gul (2021) indicated that SVM had the greatest classification accuracy. Mullen and Collier (2004) proposed an SVM-based sentiment classification system that assigned values to chosen phrases and words before combining them to form a text classification model. Pang et al. (2019) studied the efficacy of supervised machine learning algorithms for sentiment categorization in the movie domain, finding that the SVM method outperformed the Naive Bayes method.

Also, the SVM outperformed the Nave Bayes approach, according to Ye et al. (2009), who employed a controlled tool to identify sentiment learner ratings on traveler review websites. Preethi et al. (2015) developed SVM-based sentiment analysis prediction. According to them, SVM offers the following advantages. (i) It offers a high level of overfitting resistance, (ii) can handle huge feature areas, and (iii) it is particularly good at extracting attitudes from massive social media datasets and even predicts knowledge. As a consequence, we use five machine learning approaches (SVC, K-neighbors classifier, logistic regression, decision tree classifier, and random forest classifier) in this study to predict Bangladeshi shopping apps users' attitudes, and we want to examine how well each model works in the setting of the halal restaurant dataset.

We'd want to use a new query to get a response to the following research question:

d.   Which machine learning models perform better when it comes to predicting user ratings for shopping apps?

METHOD

Google Play, formerly known as the Android Market and known as the Google Play Store, is a digital distribution service run and developed by Google. It provides the official app store for authorized devices running Android and its variants, as well as Chrome OS, letting users browse and download apps created using the Android software development kit (SDK) and published by Google. Online reviews have had a huge impact on customer purchasing decisions (von Helversen et al., 2018). Users may share their own experience with any app in the Google Play store (https://play.google.com/store/apps) by leaving a review and assigning a star rating from 1 to 5 (low to high satisfaction). Each app has its own homepage in the app stores. The page includes information on the app's title, creator, star score, description, comparable

apps, upload date, user reviews, thumbnails, video previews, and a download link (McIlroy et al., 2015). In Bangladesh, there are numerous shopping apps; we chose the top 15 apps based on the Alexa (alexa.com) ranking of the main website of those apps on July 2, 2021, and then scrapped the number of reviews from the Google Play Store (presented in Table 2).

All reviews, as well as the name of the reviewer, the date, and the number of likes for each review, were collected using the Google-play-scraper package in Python in this study. There were several Bengali as well as English reviews. We also utilized the GoogleTrans program to convert Bengali to English phrases. As a result, after removing punctuations, stopwords, and missing values from user evaluations, the TF-IDF (Term Frequency Inverse Document Frequency) vectorizer was used to turn text into an appropriate numerical representation. After the data was cleansed, AFINN Sentiment and VADER (Valence Aware Dictionary for sEntiment Reasoning) sentiment, two lexicon-based intrinsic Python programming tools, were used to analyze customers' sentiments toward reviews. The users' emotions were judged based on the review star they gave while submitting their review message. Assuming that the reviewers gave bad feelings 1 and 2 stars, favorable feelings 5 and 4 stars, and neutral feelings 3 stars, as a result, we calculated a score of -1 to bad feelings (1 and 2 stars), 0 to neutral sentiment (3 stars), and 1 to positive sentiment (5 and 4 stars).

Finally, five machine learning models, namely decision trees, KNeighbors Classifier, SVM (Support Vector Machine), logistic regression, and random forest classifier, were employed to predict users' attitudes towards Bangladeshi shopping apps. In addition, the study models' performance was calculated using accuracy, precision, recall, R squared, and F1-Score. After importing the needed machine learning packages like pandas, seaborn, wordcloud, afinn, googletrans, and vaderSentiment, to examine the research findings, Python scripts have to be run in a Jupyter notebook.

RESULTS AND DISCUSSION

The number of app reviews in relation to the number of stars was shown in Table 1. Positive reviews were given 4 and 5 stars, neutral reviews were given 3 stars, while bad reviews were given 1 and 2 stars.

Table 1. (a) Number of app reviews against review star

Review star	Apps						
	Bikroy	**Daraz**	**aarong**	**ajkerdeal**	**aleshamart**	**bdshop**	**bdstall**
1	2136	2255	**285**	3286	1022	21	8
2	398	297	19	401	97	3	3
3	734	584	40	536	115	6	1
4	1280	1405	30	987	160	2	1
5	**15996**	**14961**	216	**10244**	**1653**	**81**	**20**

Table 1. (b) Number of app reviews against review star

Review star	Apps						
	chaldal	**eorangeshop**	**evaly**	**othoba**	**pickaboo**	**priyoshop**	**rokomari**	**shwapno**
1	700	**183**	7779	**361**	498	**1075**	369	**55**
2	115	11	690	6	97	17	96	3
3	162	15	959	9	106	14	188	1
4	204	11	1547	8	74	12	296	4
5	**1034**	165	**32344**	65	**592**	530	**2212**	34

Table 2. Review statistics and Alexa rank for apps

Apps	Alexa rank	sentiment			Total
		Negative	**Neutral**	**Positive**	
Daraz	2,576	2,552	584	**16,366**	19,502
evaly	5,127	8,469	959	**33,891**	43,319
Bikroy	10,189	2,534	734	**17,276**	20,544
chaldal	12,532	815	162	**1,238**	2,215
rokomari	19,717	465	188	**2,508**	3,161
aleshamart	24,237	1,119	115	**1,813**	3,047
priyoshop	28,951	**1,092**	14	542	1,648
eorangeshop	30,112	**194**	15	176	385
othoba	34,759	**367**	9	73	449
bdstall	35,486	11	1	21	33
pickaboo	44,269	595	106	666	1,367
bdshop	44,736	24	6	83	113
shwapno	56,941	**58**	1	38	97
ajkerdeal	60,493	3,687	536	**11,231**	15,454
aarong	83,172	**304**	40	246	5,90
Total		22,286 (20%)	3,470 (3%)	86,168 (77%)	1,11,924

According to our research, 77% of reviewers have a positive opinion about shopping apps, 20% have a negative attitude, and only 3% have a neutral attitude toward apps (shown in table-2). We also discovered that users have more negative feelings regarding the priyo shop, e-orange shop, othoba, shwapno, and aarong apps than positive feelings.

Additionally, we computed the average amount of words in the review text for each emotion type using the def word count (text string) function, finding that negative sentiment has 11.91 words, neutral sentiment has 8.26 words, and positive sentiment only has 4.38 words (presented in table 3). As a result, we've discovered a correlation between longer review content and negative feelings. This suggests that disgruntled app users are more likely than happy app users to share their opinions with others and write more words in their Google Play Store reviews.

Table 3. Average word count, afinn score, vader score for each sentiment class

	word_count	afinn_score	vader_neg	vader_neu	vader_pos	vader_compound
sentiment						
-1	11.9138	-0.83465	0.186146	0.720446	0.09341	-0.14885
0	8.25562	1.214697	0.051555	0.596533	0.351908	0.183469
1	4.377646	2.61972	0.006845	0.418446	0.574709	0.432762

The polarity scores for 1,11,924 cases were computed in this study. The AFINN Sentiment Lexicon's polarity ratings ranged from -18 to 30 (as shown in Tables 4 and 5), with a mean value of -0.83 for negative feelings, 2.61 for good feelings, and 1.21 for neutral feelings (Table 3). Also, tables 4 and 5 display the top ten negative and positive review messages, respectively (we only showed one line of each text from the entire text). The iloc [] machine learning function may also be used to display the complete review texts. To see the whole review texts for a minimum AFINN negative score and a maximum AFINN positive score, we looked at the full texts of iloc [44827] and iloc [43830] (given in appendix-1 and 2), respectively.

Table 4. Top 10 negative reviews based on afinn score

	Apps	content	afinn_ score
43830	Daraz	Your app is home for scammers, too much fraud people looting money online and sending garbage in...	-18
62845	evaly	Evaly does not deserve number 1 E-Commerce site in Bangladesh though they think it. But actually...	-17
107196	priyoshop	It's deceiving technically. I have lots of proof about priyoshop. Nobody can talk against them i...	-17
76857	evaly	They are cheater...They are thief...I have ordered 2 products almost 3 months ago...They don't d...	-16
25300	Bikroy	Ok, but app has some bugs..... And most irritating think is nowdays you are allowing bogus and f...	-16
94934	evaly	Worst and the most lame ecom app ever. These suckers are using facebook for paid promotion and m...	-16
107950	priyoshop	fraud fraud fraud number one fraud eCommerce site in Bangladesh	-16
5344	ajkerdeal	Today i ordered a product. I got a call from their customer service. They just misbehaved with m...	-16
90780	evaly	One of the most lame and fake company in Bangladesh. CEO try to sell his spoiled company that's ...	-16
103258	evaly	Most ever fraud app with fraud services. So poor, so horrible. Name of a cheating app	-16

Sentiment Analysis and Review Rating Prediction

Table 5. Top 10 positive reviews based on afinn score

	Apps	content	afinn_ score
109151	rokomari	I liked this app very very much.... And this app is so amazing app... Because Delivery service i...	22
51105	Daraz	This is the best online shopping app. I like it I love this app daraz app is the best...	23
111266	rokomari	It's an awesome apps for all the book lovers who love to read book. it's really an excellent onl...	23
80385	evaly	One of the most wonderful and best product quality based online shop. I am happy to recommend ot...	23
78253	evaly	This app is one app like a market in your hands on, and then it's very simple to use, essay to f...	24
4351	ajkerdeal	Best apps for bangladesh, very helpful apps. Very easy to order and available very quickly. The ...	25
59006	Daraz	Alhamdulillah, In a word, great ... Last year obdi amr 4 star chilo eibar 5 star kore dilam♡ A...	25
17497	aleshamart	Really good commitment,customer satisfied, big discount, so at a present time Aleshamart is a mo...	25
95124	evaly	Nice app evaly, good evility system customer suforted . finly nice app, i think buy and prossi...	28
44827	Daraz	This app is amazing.It works truly nice.That's the best online shopping app across not only the ...	30

In addition, the mean polarity score for negative feelings was 0.093 for VADER positive, 0.186 for VADAR negative, 0.72 for VADAR neutral, and -0.149 for VADER compound, according to table 3. While the mean polarity score for neutral sentiments was 0.352 for VADAR positive, 0.052 for VADAR negative, 0.596 for VADAR neutral, and 0.183 for VADAR compound, the mean polarity score for positive emotions was 0.574 for VADER positive, 0.006 for VADAR negative, 0.418 for VADAR neutral, and 0.433 for VADER compound.

Also, table 6 displayed the afinn and vader scores for each app, revealing that the daraz shopping app had the highest Afinn score and the othoba shopping app had the lowest. Similarly, daraz had the highest vader compound score, while shwapno received the lowest.

Table 6. afinn score, vader score for each app

	afinn_score	vader_neg	vader_neu	vader_pos	vader_compound
Apps					
Bikroy	1.978875	0.022593	0.48319	0.494218	0.332483
Daraz	**2.251205**	0.028073	0.416019	0.555908	**0.366761**
aarong	0.857627	0.122364	0.591775	0.285864	0.108646
ajkerdeal	1.634075	0.040522	0.522186	0.437293	0.246782
aleshamart	1.180505	0.071075	0.488314	0.440612	0.190553
bdshop	1.451327	0.050053	0.506265	0.443681	0.237009
bdstall	1.30303	0.020424	0.633333	0.346242	0.264373
chaldal	1.173363	0.076589	0.604121	0.319296	0.170191
eorangeshop	0.805195	0.118268	0.580904	0.300823	0.138385
evaly	1.999769	0.051817	0.47529	0.472894	0.333833
othoba	**-0.81515**	0.166234	0.721762	0.112013	-0.13192
pickaboo	0.858083	0.102185	0.58471	0.31311	0.126372
priyoshop	0.087985	0.134172	0.628194	0.237635	0.011562
rokomari	2.123695	0.023397	0.565677	0.41093	0.350636
shwapno	0.28866	0.154701	0.619237	0.226072	**-0.00072**

Finally, the performance metrics of different models are shown in Table 7. The accuracy scores for the SVC, K-neighbors classifier, logistic regression, decision tree classifier, and random forest classifier were, respectively, 89.17, 84.08, 89.28, 86.93, and 89.42. All of the models correctly recognize users' review texts based on the findings; however, the Random Forest Classifier generates the best outcome. In addition, for the SVC, K-neighbors classifier, logistic regression, decision tree classifier, and random forest classifier, the ratio of true positives to all positives, which reflects the degree of validity of the findings, was 0.867, 0.814, 0.868, 0.854, and 0.874, respectively. The recall scores for the SVC, K-neighbors classifier, logistic regression, decision tree classifier, and random forest classifier are, respectively, 0.892, 0.841, 0.893, 0.869, and 0.894. In addition, when compared to other methodologies, our research found that the random forest classifier gives the best validity and completeness of data based on accuracy and recall values. The F1 scores for the SVC, K-neighbors classifier, logistic regression, decision tree classifier, and random forest classifier models were 0.877, 0.817, 0.877, 0.861, and 0.881, respectively, showing that the random forest classifier had greater influence efficacy than the others. Also, the random forest classifier demonstrated greater influence effectiveness than the others, with r2 values of 0.472, 0.160, 0.476, 0.377, and 0.488, respectively. The

findings above demonstrate that the random forest classifier is the most effective machine learning model for categorizing user app reviews.

Table 7. Performance of machine learning models

Models	accuracy_score	Precision	Recall	F-Measure	r2_score
SVC	89.167	0.867	0.892	0.877	0.472
K Neighbors Classifier	84.078	0.814	0.841	0.817	0.160
Logistic Regression	89.278	0.868	0.893	0.877	0.476
Decision Tree Classifier	86.930	0.854	0.869	0.861	0.377
Random Forest Classifier	**89.424**	**0.874**	**0.894**	**0.881**	**0.488**

APPLICATIONS

App developers must be aware of their users' emotions. Because there is such a significant amount of user-generated content, accurate techniques for assessing and identifying opinions are needed. Users' psychological views are a vital source of information that app developers may use to enhance their apps, and users can make quick decisions about whether or not to install apps. Our research will benefit both developers and users in Bangladesh by providing a foundation of knowledge on the sentiment of shopping app reviews. Moreover, This research will be extremely beneficial to professionals. It's tough to miss the business uses of sentiment analysis. Sentiment analysis in the workplace has the ability to change the way businesses operate. For a data-driven company to succeed, the ability to extract valuable insights from unstructured data is essential. Companies may have a large number of customer feedback collected in today's internet era, when enterprises are suffering from data overload (which does not always equal better or deeper insights). It is still difficult for people to manually evaluate it without making mistakes or bias. As a result, our research might be useful to a variety of enterprises, not only shopping organizations.

Additionally, users who are unsatisfied also provide lower review scores and write longer reviews, indicating that they are more likely to tell others about their unhappiness. As a result, when faced with a high number of complaints to investigate and respond to, app developers may choose to focus on the longer reviews in order to determine why consumers are unhappy with their services. They'd be able to respond to negative feedback more quickly, limiting the harm they may do to their company.

Finally, according to our research, the random forest classifier has the highest accuracy score for projecting user sentiment of shopping applications. As a consequence, while evaluating customer behavior toward their products and services,

shopping firms may be able to employ random forest classifier to achieve the best results. In today's competitive company climate, understanding customer behavior may be a vital success driver. This will help businesses establish new strategies while working in a fast-paced atmosphere. The study's results, which may be adjusted and applied to a number of challenges, might assist retailers as well as service sectors like banking and healthcare.

CONCLUSION AND LIMITATIONS

App reviews may be a vital, one-of-a-kind source of data for software engineering teams, representing the opinions and demands of real users. In the same way that people buy other things on the Internet, potential users study reviews before opting to download an app. Nonetheless, categorizing app user reviews for the purpose of obtaining helpful data for app software development is a difficult and diverse problem. A complicated mix of text pre-processing, feature extraction, and machine learning algorithms is required to categorize app ratings into specific subjects. Manually reading each review was previously not a practical technique. That is, when an app becomes more popular, it receives more reviews, making it more difficult to evaluate them. Automated feature engineering schemas such as machine learning methods capable of categorizing reviews and predicting user' ratings within very short time.

Due to the importance of app reviews, we employed multiple machine learning algorithms to analyze reviewers' attitude for Bangladeshi shopping apps in the current study. Initially, we used lexicon-based approaches like AFINN Sentiment and VADER Sentiment to analyze sentiment, and our findings suggested that the majority of reviews of shopping apps were positive. Using lexicon-based methodologies, we were able to identify the top ten negative and positive reviews, as well as the relationship between review text length, review rating, and emotion. According to our findings, 77% of reviewers have a good attitude about shopping apps, 20% have a negative attitude, and only 3% have a neutral attitude toward apps. We also discovered that users have more unfavorable sentiments than good ones towards the priyo shop, e-orange shop, othoba, shwapno, and aarong apps. Additionally, each app's Afinn and Vader scores revealed that the daraz shopping app had the highest Afinn score and the othoba shopping app had the lowest. Daraz had the highest vader compound score, while shwapno had the lowest. Finally, we observed that all five machine learning techniques (SVC, K-neighbors classifier, logistic regression, decision tree classifier, and random forest classifier) can accurately predict user review ratings, with random forest classifier providing the best results.

Our investigation has a lot of weaknesses. The output is deteriorated since the dataset used in this investigation is restricted. More study across various sites,

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such as the Apple App Store, Galaxy Store, and others, is required to determine the findings' generalizability. Future studies might collect and compare data on shopping applications from a number of sources.

Additionally, our findings imply that both supervised and unsupervised machine learning approaches may be used to classify reviews. However, temporal and location-based aspects have yet to be investigated, implying that evaluations from various geographical regions/cultures might influence attitude. In the future, it might be a study topic to pursue in order to improve the review categorization findings. Furthermore, evaluating the associated methodologies with a broader dataset of other nations may be interesting.

Finally, as a result, an illegal industry for fake app reviews has sprung up, with the purpose of providing services to help app developers boost their ratings and rankings in app stores. We did not use any fake app reviews approach to eliminate them in this study, but future researchers should do so to acquire more reliable results.

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APPENDIX-1. TOP POSITIVE REVIEW

```
sample = df.iloc[44827]['content']
print(sample)
```

This app is amazing.It works truly nice.That's the best online shopping app across not only the country in fact the world.I can buy or purchase things quite comfortably from here.It service quality is extremely up to the mark.Good Luck to the Daraaz company and i personally thankful to it because this service helped me to buy things especially from home during pandemic.This online shopping app is just a pure blessing in the field of e commerce sector.Anyway,Best wishes to it.

APPENDIX-2. TOP NEGATIVE REVIEW

```
sample = df.iloc[43830]['content']
print(sample)
```

Your app is home for scammers, too much fraud people looting money online and sending garbage in daraz bags, and you don't take any strict action against frauds. They show something in pictures and when the parcel arrive either it's empty, or filled with scrap or the product is not same as promised. You're promoting frauds and scams, people shouldn't buy anything from daraz.v poor team daraz. You're failed.

Chapter 3
Marketing in a Pandemic

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ABSTRACT

The COVID-19 outbreak has shocked the world and spins the economies around the globe; it is far more than a health crisis. Many businesses face difficulties in survival, and marketing will be the only approach to their recovery. As the pandemic affects every aspect of business and life, consumer behavior shifts dramatically; the change in behavior of consumers is not short-term in nature but it has long-lasting effects. However, within this uncertain and complex environment, businesses should rebuild their marketing mix and philosophy and showcase honest and transparent values to face this downturn phase with ease. Firms should focus on the fundamentals of marketing during the pandemic, go along with the trend of consumer behavior, bring clarity through their actions, and rebuild their products around consumer needs. Only then can they lead in this unknown environment.

INTRODUCTION

The Covid-19 pandemic is one of the biggest crises after World War II which affects every aspect of our life. We are getting used to living without the outdoors. Our businesses suffered a lot due to it but now it has changed the way we do business. The coronavirus has flipped the market upside down as it brought the whole world economy to a standstill. The pandemic affects the way we live, work, and shop and now it ushers consumer's attitudes, preferences, and buying behavior. To cope with

this change in consumer behavior, businesses put their efforts to satisfy the needs of consumers. And one of the main tools which help in achieving this is *Marketing*. This chapter throws light on how the Covid-19 pandemic affects the various aspects of marketing and its management.

Figure 1. Flow chart of marketing in pandemic
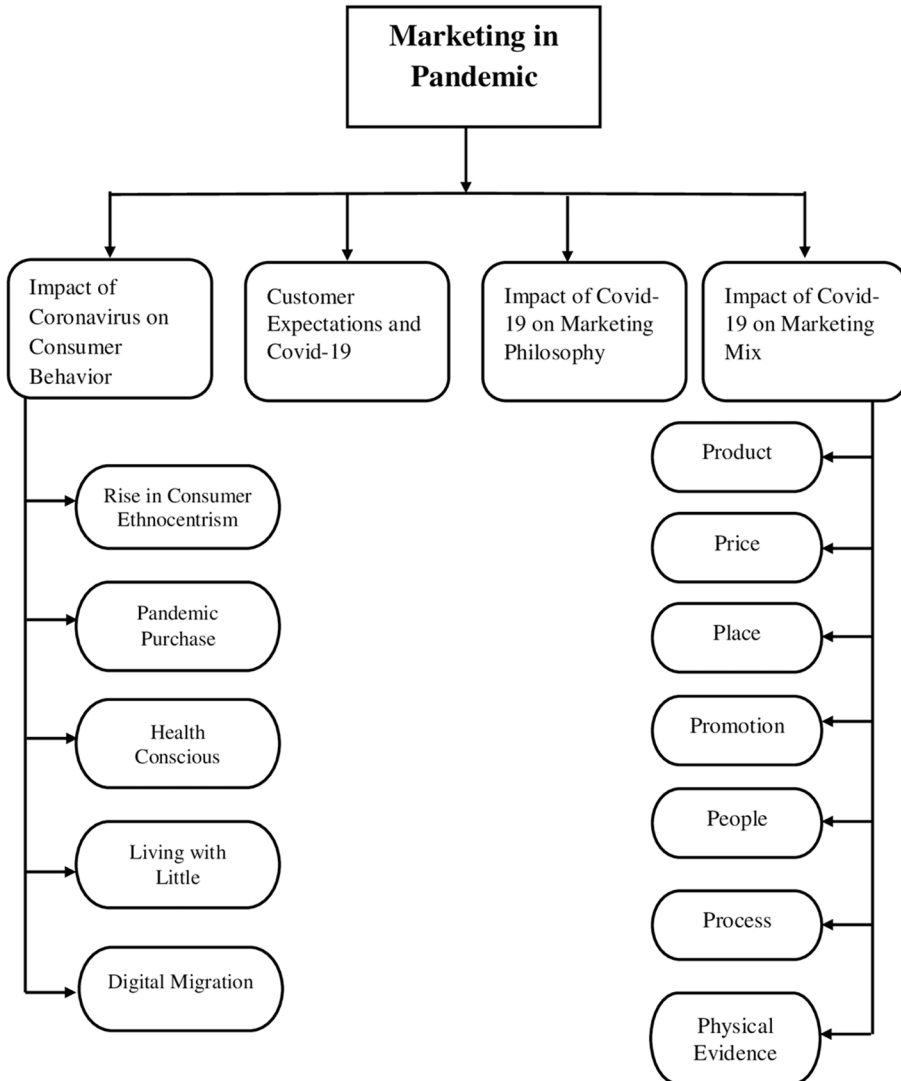
IMPACT OF CORONAVIRUS ON CONSUMER BEHAVIOR

The covid-19 pandemic has changed the life priorities, attitudes, and preferences of consumers, and also the imposition of social distancing is the main driver of change in consumer behavior. This shift includes the rise in new values, focus on self, family, health, digital solutions, change in spending habits, and all; this will last into the long term. As depicted in the figure 1, the main trends are:-

Rise in Consumer Ethnocentrism

It has been evident from various studies that consumer shows more ethnic values during the pandemic. Consumer ethnocentrism is the tendency of customers' preference to their local products over foreign products. It's the favoritism of consumers to consume domestic brands consumers have become more health-conscious and exhibit hygienic behavior to avoid infection, have changed their habits, preferring local goods. During the pandemic, the main problem is fear and panic which reduce the displacement of customers and affect the global supply chain, resulting in, increasing consumption of local products. As per the research of the National Australia Bank quarterly consumer sentiment survey, 43% of people show support towards local business (Robert, 2021). In India, policies like Atma Nirbhar Bharat and Make in India also inspired citizens to prefer local brands.

Pandemic Purchase

Covid-19 has disrupted nearly the routine and life of every person. It not only transforms the way we conduct ourselves physically but also our sentiments & our aspirations. According to Yougov, around 81% of Indian customers admitted that the pandemic has changed their shopping habits (Eger et al., 2021). Most of the Indian citizens exhibit panic buying i.e., to buy an unusually large amount of goods. The majority of Indian citizens stocked up items such as rice, flour, alcohol, medical supplies, and other items of basic needs. Spending on food increased marginally and on alcohol, it's even more. The main reasons for increased drinking were; Stress (45.7%), increase alcohol availability (34.4%), and boredom (30.1%) (Altaf, 2021). As per recent research, 350 crores, Dolo 650 tablet (paracetamol drug) has been sold since the outbreak of a pandemic, it will stack up this, it might be like 6000 times as tall as Mount Everest, the world's highest mountain (Laguna et al., 2020).

Health-Conscious

Covid-19 pandemic has made every person conscious about their own and their close ones' health. People start eating homemade food more and also intake of immunity booster drinks increased. The main reason behind this consciousness is that people recognize that Prevention is better than cure. Increase in consumer's awareness have led to rapid rise in demand for organic products. The government of India also played an important role in this, especially the AYUSH Ministry, which laid great emphasis on the personal health of every citizen, it issued guidelines, ayurvedic measures from time to time. As per recent research, 90% of urban consumers in India are agree to pay more for healthy food alternatives, 89% of consumers in urban India are becoming more conscious about their health and start eating more home-cooked food, and about 60% of Gen Y started practicing yoga, exercise, running and walking during Covid-19 (Madan et al.,2021). As per a recent McKinsey report, 79% of consumers say wellness & health of their own and that of their family is their priority while choosing a product (Shaun et al.,2021).

Living with Little

The main lesson taught by Covid-19 is *'Live simply'*. People start purchasing only necessities and save more, they start consuming homemade food. As per EY (Ernst & Young) future consumer index, 32% of consumers prioritize the "Affordability" of the product while purchasing pandemic (Becdach et al.,2020). As per them, their focus is less on brands and more on the functionality of the product; they want to live within their means and budget and to save more. Hence, their purchases are based on the need, affordability, and functionality of the product. Philip Kotler, the Father of modern marketing names this kind of consumer as ***life simplifiers***, who want to eat less & spend less, want to downsize their possessions, they prefer a minimalist lifestyle (Sahakian et al.,2021). As per him, it is the new normal lifestyle that many consumers prefer.

Digital Migration

The shift from physical to digital is one of the most important changes in consumer behavior. The pandemic caused a tidal wave of Digitization. With the increased adoption of digital platforms, people learned how to shift all routine activities like working, shopping, exercising, learning, banking, studying, and even socializing to digital platforms. As per Mckinsey's global consumer sentiment survey, consumers vaulted five years in the adoption of digital tools in a few weeks. In Latin America, nearly 13 million citizens made their first-time electronic commerce transactions

during the pandemic (Bruno et al.,2020). The valuation of the e-commerce market in 2021 was $ 4.89 trillion that's up from $ 3.3 trillion in 2019 i.e., a 48% increase in just 2 years. The total retail online sales went from 13.6% in 2019 to 19.5% in 2021 and the trend is expected to continue (Hwang et al.,2020). Not only online purchases but there's a rise in e-services adoption also. Banking, media, and entertainment are at the top among services. Stuck inside houses, people turned to digital screens to seek entertainment. According to a report, Indian over the top market is set to $ 3.22 billion by the financial year 2025 from $ 576.73 million in the financial year 2019 (Cristian, 2020). Telemedicine visits have also rapidly increased during the pandemic.

CUSTOMER EXPECTATIONS AND COVID-19

Customer's wants and expectations are always on the rise and pandemic has led the bar to go up. Customer does not only want a good product that fulfills their purpose and gives value for money but they want simpler and faster service, time to time interactions, and a good customer support solution system that fixes their issues in time. Customers also expect that brands go out of their way to deliver information during the pandemic. As per research, 89% of millennials and Gen Z expect brands to take action to help Covid-19 (Chaudhary, 2020). They also expect companies to show only those advertisements which make them feel safe and positive and give them a sense of normality. Hence, customers' expectations are on the rise during and post-pandemic, they want companies to hear them and to have emotional empathy towards them.

IMPACT OF COVID-19 ON MARKETING PHILOSOPHY

Marketing philosophy is that fundamental principle that guides a company to satisfy customers and achieve organizational objectives. Companies shift their philosophy from sales-oriented to customer-oriented to societal well-being in past recent years. And the current pandemic, escalate this trend of socially conscious values among companies. Companies engage themselves in Covid-19 related activities and demonstrate activism during the pandemic. These companies either have resources to do these things or can get benefits from the shift in demand due to pandemics. For example, the Tata group has had to spend INR 2500 crore for covid relief till now (Sengupta & Jha, 2020). Reliance Foundation is another example; it set up more than 1800 hospital beds for free treatment of patients suffering from covid in Mumbai and Jamnagar. It is also producing and supplying 1000 Metric Ton (MT)

of oxygen totally cost-free, accounting for around 11% of total medical oxygen needs of India. It also donated INR 556 crores to Prime Minister Cares Fund and other funds (Kavish, 2021).

As per Mckinsey, 61% of people state that how company respond during pandemic have a greater impact on their buying of brand of that particular company (Bruno et al.,2020). These kinds of endeavors connect with the credibility of brands and companies, if they do these, then it will not only count as their good deed but will also strengthen the word of mouth and customer's attachment towards the brand.

IMPACT OF COVID-19 ON MARKETING MIX

Covid-19 pandemic has affected dramatically the economy and firms throughout the world. Due to the pandemic, customers throughout the world have reassess their buying habits. Because of changes shown in consumer behavior, some firms survive and shine and some disappear from the market. Companies are urged to redefine their marketing mix as shown in figure 1 i.e., product mix, price mix, place mix, promotion mix, people, processes, and physical evidence at the time of the pandemic.

Product

Covid-19 pandemic have a great impact on product i.e., goods and services both. It urged the companies to redefine their product portfolio Examples include:-

- Asian paints introduce the 'San Assure' service, after the outbreak of the coronavirus. This is the sanitation service for home and commercial places. The company also launched anti-bacterial paint named 'Royal Health Shield', which also gained a lot of popularity during the pandemic.
- There is a rise in Telehealth services. Telehealth utilization is 38 times higher than before the pandemic.
- Luxury Brand (LVMH) Louis Vuitton switched production lines from producing perfumes to making hand sanitizers (Sheth, 2020).
- Foxconn, an electronic manufacturer, started to produce face masks (Sheth, 2020).
- Luxury Hotels in India like J.W Marriot offered paid quarantine services to mild symptomatic patients (Sheth, 2020).

At the time of the pandemic, it is a wise decision for companies to invest in research & development and to innovate in the time of contraction as consumers

are being more receptive during recession period; hence it's an opportunity for companies to work on a new product or redefine existing products.

Price

Price is the only element of the marketing mix which generates revenue. Volatile demand during pandemic creates several challenges for pricing. It has been badly affected due to a drop in production, insufficient logistics, and shortage due to panic and frenzy buying. There was a rise in illicit and unethical trade during the pandemic. For example, the price of cigarettes increases from Rs. 20 to over Rs. 120 for a packet of 20 cigarettes (Sean, 2021). Consumers have to pay a premium price for products like toilet paper, alcohol. There are a few companies that sell protective masks, hand sanitizer, and other similar items at inflated prices through the e-commerce giant, Amazon.com. Airfares also rise 30 to 100% against per pandemic level. Due to the rise in demand for edible vegetable oil during the pandemic as people were cooking more at home, prices of edible oil show an increase of more they 60% in a year. All these price changes are the consequence of the fluctuation of demand and supply.

The price should be used with great caution as a marketing tool during the pandemic as a consumer are more price-sensitive during a crisis. Companies should use temporary discounts, non-monetary discounts and avoid taking advantage of the customer by charging a premium price. Now, the company should seek opportunities to preserve and create products that offer consumers 'Value for money.

Place

There is no disbelief that Covid-19 greatest impact is on distribution. This crisis move people from purchasing from supermarkets, malls, showrooms, and shops. During the pandemic, marketing faced a big threat that how products will reach customers. Companies with their own online distribution channel are at upper hand over companies who are selling through retail stores. Firms that don't have their online distribution network use existing platforms like Amazon, Meesho, Podia, and others. An increase in demand for home delivery services helped Uber in flourishing as transport of food, medication, groceries, and personal hygiene products. Some retailers saw this opportunity and they either purchased or hired vehicles to deliver goods.

Pandemic also makes us realize how much dependent we are on foreign markets. For example- Restrictions in China lead to a shortage of chips all over the world. There are disruptions faced on supply of various finished & semi-finished goods and these disruptions could exacerbate inflation, which is at 40 years high (Xu et

al.,2021). In general, we notice a tendency to abbreviate the supply chain and to promote the 'Buy Local' initiative to reduce our dependency on foreign markets.

Promotion

The Covid-19 pandemic has changed the advertising, promotional expenditure, and media mix of companies. It forces firms to reevaluate their promotional policy. Changes in market and consumer behavior call for aggressive and innovative marketing practices. Covid has slashed the advertisement budget of businesses; some businesses stop spending on promotion to cut costs during the slowdown. As brands adapt and figure out how to rebuild their promotional policy, Government agencies closely monitor deceptive trade practices and aggressive marketing practices to protect vulnerable customers. Major changes bring by the pandemic in the promotion mix are as follows:

- As per Deloitte, online sales are more active than the holiday period. Social media feeds, Search engines and influencers are prominent ways for customer's to shop during the pandemic. Mobile wallets are behind email as a place to make a purchase (Mitja et al.,2021).
- Social media usage is on high during pandemic which leads to growth in the social media spending budget of companies to 23.2% in June 2020 from 13.3% in February 2020 (Moorman et al.,2021) .
- A rise in social commerce lead to a rise in the allocation of budget towards marketing through influencers, from 6.5% to 7.5% and it is expected to rise 12.7% in the next three years (Moorman et al., 2021) .
- Companies use new tools like Facebook gift cards, TikTok for business or Instagram reels which provides an opportunity to develop a unique connection with customers (Moriuchi, 2021).
- The effectiveness of search ads also increases during pandemics which leads to an increase in digital ad spend by 14.4% in 2020 (Moriuchi, 2021).
- Many companies use charitable sales promotion and cause-related marketing campaigns to align their product and services with social impact initiatives (Pham, 2021). For example, *Starbucks Foodshare - Feeding America campaign* (Gösser et al,.2021).
- Various companies use covid-19 as a publicity tool; they choose their advertisement as a way to showcase their stance and to publicize the steps they are taking to aid people during the pandemic. For example, *Dove – Courage is beautiful* advertisement that shows images and names of real frontline workers and it closes the ad with a note stating the donations made by the company to support healthcare workers (Yüksel et al.,2021).

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On whole, companies that go with the trend and form marketing strategy as per their customers focuses on value, honesty, transparency, authenticity, and social awareness during pandemic strikes the right tone and stay ahead of their competitors.

People

Customers and Employees are an important element of the expanded marketing mix because service is based on performance and one can't separate performance from the performer. The Covid-19 pandemic disrupted the employee, labor, and service market globally. The short-term impacts were severe i.e. millions of people lost their jobs, migration of workers during the pandemic, adjustment to work from home as offices were shut down. Jobs with the highest physical proximity like medical care, personal care, home support, education, transportation, travel and leisure, and others are most disrupted during the pandemic. Human relationship and contact is the core of some services like beauty and wellness services, pandemic has hit this sector very badly. As per Mckinsey, as many as 25% of workers may need to switch their occupations than before the pandemic (Lund et al.,2020). Hence, this element of the marketing mix is most impacted by pandemic-related disruptions.

Process

This element refers to the process by which service is delivered which includes the method, mechanisms, flow, and procedure. This is related to how the service is delivered, for which customer is paying. Poorly planned and implemented processes result in delayed and substandard service delivery, hence, unsatisfied customers. The pandemic restrictions have changed the process of service as now the processes are more dependent upon technology. There's more automation touch than personal touch in the processes. An organization wanting to maintain strong relationships with customers must 'humanize' its process and make it more 'customer-centric' (Sean, 2021).

Physical Evidence

Physical evidence refers to the environment where service takes place. It is everything customers see while taking service or while interacting with your business. Physical evidence can be traditional or modern i.e. virtual. Traditional physical evidence has been offered by brick and mortar outlets, covid has changed it in many ways like- retail outlets have distancing markers, cashier-less shopping, installation of sanitizing machines and implementation of glass dividers to protect not only the customers but also their employees, all these things are new normal of our lives.

Many businesses also changed their physical evidence from traditional to virtual, which include a website or mobile applications of shopping or service platforms (Caliskan et al.,2020).

CONCLUSION

The current pandemic teaches us a lot of things, many companies have a narrow vision of what efficiency means, they concentrate on the short term, but the pandemic has realized the need of being more sustainable and ethical during and post covid-19 period. This pandemic era has stimulated companies and researchers to investigate the relevant changes in consumer behavior. This shift has to lead the businesses into the unknown but it also opens up new opportunities for those businesses which adapt their marketing policies and marketing mix strategies as per the need and expectations of customers.

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Chapter 4

Developing Relationships, Personalization, and Data Herald in the Pandemic

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ABSTRACT

Marketing is a vital aspect of business, regardless of whether the business is big or small. Marketing is also obliged to update its systematics with the social or era or even the situation and conditions prevailing at the time. In this pandemic situation and condition, marketing has changed drastically. The era now in charge is Marketing 5.0: a world of mobile technology and global social interaction that can reach customers anytime, anywhere. Therefore, developing a personalized relationship with customers is also something that must be continuously developed along with the development of the era and the adjustment of situations and conditions. Customers want a new level of satisfaction with products and services that not only meet their basic needs but also complement their creativity and value by offering something more. Some are compliant with Marketing 5.0, which will provide a personalized experience. This study will address upcoming and important topics in Marketing 5.0. In other words, renewable marketing during a pandemic will be more focused on in the discussion in this study.

INTRODUCTION

The emergence of a new type of virus in Wuhan in 2019 which resulted in the impact of this pandemic triggered many changes in the lifestyle of all creatures on earth.

Starting from the tourism sector, industry, and all community activities that require socializing with other humans, all have changed. Especially in the business sector, as business people who must be ready to adapt to the conditions and situations that occur, they cause business people to turn their brains to cope with and find solutions to this sudden lifestyle change. in the business world, business people change their strategies from the aspects of marketing, operations, human resource management and their finances. The marketing revolution has just begun. There are still those who reject the basic idea, just as there will always be those who will resist change in business, government, or any other form of human institution. As the marketing revolution gains momentum, there will be more changes. The concept of the customer at the center will still apply; but businesses must adapt to changing tastes and preferences as well as wants and needs that have always characterized consumers (Keith, n.d.).

Automatically, in today's era all life can only rely on social media or online. All aspects such as education, entertainment and even marketing can only be done through gadgets. Previously, all senses could feel and act now only two senses, namely visual and audio. Therefore, marketing during a pandemic has undergone drastic changes that only focus on digital marketing. One aspect of life that is quite massively affected by the pandemic is marketing strategy. Many companies have switched to using digital marketing to promote and introduce companies and their products. In other words, digital marketing can be interpreted as the establishment and development of mutually beneficial relationships between producers and consumers. On the other hand, Heidrick and Struggles (2009) define digital marketing as an advertising strategy by utilizing the development of the digital world, where the product campaign does not need to be carried out directly but still has a significant impact on sales (Jelanti et al., 2018). This is also supported by the tremendous increase in affordable computing power now in a time of pandemic enabling today's direct marketers to retain as much relevant information about each customer as twentieth century mass marketers across the market have. This represents nothing less than a revolutionary change to marketing opportunities. Furthermore, the revolution is not over: computer power continues to get cheaper and marketing continues to become more sophisticated(Holder, n.d.).

Another important thing in running a marketing business is establishing good relationships with customers. This is one of the most impactful aspects of the COVID-19 pandemic. The back impact of establishing good relationships with customers is that our profits will automatically increase. Basically, marketing can be divided into several aspects, such as aspects of product needs and product wants. The split of these aspects has different conclusions and resolutions. Needs products can be promoted through an approach like Google. while the desire product can be promoted through different social media which most of its users are very attached to

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that social media. The role of social media in a time of pandemic is evident among the exchange of information. Prior to the pandemic, businesses were known to use social media marketing in two approaches, passive and active. With the pandemic and restrictions on traveling around the world, the use of social and digital media has seen a spike. In light of recent events, businesses are looking to use social media as a strategic approach in re-activating sales after lockdown restrictions in many countries. One example is the Burger King advert on Instagram encouraging people to buy food from other fast food companies to support businesses during the pandemic. This practice is corroborated by research findings that emphasize business-to-business cooperation (cooperation and competition) for mutual support during these unprecedented times. Another real-life example is YouTube, which also has worldwide video quality restrictions reporting to ease internet traffic during the COVID-19 outbreak as millions of people around the world are staying at home or working from home. This practice is supported by recent research that mentions how businesses are using social media more than ever as a way to cope with losses, make them more sustainable and sustainable. That being said, social media is one of the marketing tools that shows a surge in usage in 2020 (Inscription & Parahiyati, 2021).

Therefore, this study aims to find out how appropriate marketing is during the COVID-19 pandemic using a systematic review method. A systematic review is used because to produce a literature review that identifies, assesses and concludes or interprets relevant findings or previous articles. from well-known databases and best practices and reports to support findings.

THEORETICAL FRAMEWORK

The Business Pandemic

COVID-19 is a new type of disease that emerged in 2019. An infectious disease caused by the corona virus was discovered in Wuhan, China. Covid-19 recorded the highest infection and death rates compared to other coronavirus outbreaks such as MERS-CoV, SARS-CoV and Influenza (Liu, Gayle, Smith & Rocklov, 2020; Peeri, et al, 2020). At the beginning of its emergence, this disease shocked all creatures of the earth and as a result many researchers and scientists competed to create an antidote for this disease. This outbreak has been categorized as a pandemic by the World Health Organization (WHO, 2019). As a result of the WHO statement and the high positive COVID-19 diagram, all countries have implemented regulations to anticipate spikes from the diagram. Social Distancing, Work From Home, even social restrictions on a large or small scale. Therefore, the Covid-19 Crisis can be seen as a 'sudden threat', because the crisis develops suddenly and affects not

only the entire organization, but also all sectors of the economy. The impact of the Covid-19 pandemic outbreak on the global socio-economy can be acute, and recovery is critical to surviving the new normal. However, little is known about the challenges and processes by which small businesses respond during and after the outbreak crisis (Noor Fzlinda Fabeil1, Khairul Hanim Pazim1, 2020)

According to the study (Noor Fzlinda Fabeil1, Khairul Hanim Pazim1, 2020) The impact of this Covid-19 pandemic outbreak on the global social economy can be acute, and recovery is essential to survive with a new normal way of life. This is because it is associated with not much that business people know to respond to during and after the COVID-19 pandemic crisis. The impact of a crisis or disaster on a business enterprise should be of great concern to entrepreneurs as it affects the current and future performance of the business. Statistics show that about 75% of businesses without a sustainability plan will fail within three years after a disaster or crisis strikes (Cook, 2015). However, on the bright side, according to McCarthy (2003) in his study of crisis management of entrepreneurial companies, he stated that the crisis experience made entrepreneurs more rational and guided by planned behavior in making decisions. Therefore, the emergence of this pandemic is a new step, scheme, innovation and change in the business world. Marketing innovation through promotion and alternative pricing (Naidoo, 2010), alternative distribution channels (Yu-Lian, 2008), product re-engineering and the use of cheap and effective online campaigns (Bourletidis & Triantafylopoulos, 2014) is a breakthrough that is relevant to the era of globalization. renewable, namely marketing 5.0. In this case, entrepreneurs must be able to adapt and demonstrate their ability to innovate with survival mechanisms to manage the impact of the crisis on their business (Noor Fzlinda Fabeil1, Khairul Hanim Pazim1, 2020)

Marketing 5.0

In the business-pandemic problems that we discussed earlier, the new values and lifestyles that have emerged allow us to change eras from the 4.0 revolution concept to the 5.0 Society concept. These two concepts have not much difference. According to (Lena & Anatan, 2020), the industrial revolution 4.0 uses artificial intelligence while Society 5.0 focuses on the human component. In the Industrial revolution 4.0 it allows us to access and share information on the internet and aims to reduce total production costs because goods produced in mass quantities are also consumed because they are consumed by customer desires. Meanwhile, Society 5.0 is an era where all technology is part of humanity itself. Internet is not only for information but for living life. (Lena & Anatan, 2020). It can be concluded that in society 5.0, new values created through innovation will eliminate regional, age, gender, and language disparities. In this way, it is possible to reach a society that can enhance

economic development and find solutions to social problems such as the COVID-19 pandemic that we are currently facing (Dewi, 2021). Surely this will create a smart society, where the integration of the virtual world and the real world using cutting-edge technology helps various sectors, countries and regions to work together with one another in such a way as to achieve sustainable development goals. (Hysa et al., 2021).

By definition, marketing is a social process by which individuals and groups obtain what they need and want through the creation, offering and free exchange of products and services of value with others (Kotler, 2000, p. 4). Therefore, marketing innovation 5.0 is the application of human imitation technology to create, communicate, deliver, and enhance value across the customer journey (Dewi, 2021). One of the important themes in Marketing 5.0 is what we call next technology, which is a group of technologies that aim to emulate the capabilities of human marketers. These include AI, NLP, sensors, robotics, augmented reality (AR), virtual reality (VR), IT, and blockchain. The combination of these technologies is the enabler of Marketing 5.0.(Chatamas, 2021). So, the implementation of Marketing 5.0 is not only limited to back-office operations. However, Combined with technology it can help marketers in performing customer-facing activities.

As a result of this pandemic changing us to immediately implement marketing 5.0 quickly. Relevant to the statement that marketing is a restless, changing, and dynamic business activity (Bala & Verma, 2018). Business actors must be able to innovate by implementing new strategies in their marketing. Product promotion is one of the methods used by companies that aim to break the sales of products that have been produced. Promotion is a way to inform, persuade, and remind consumers directly or indirectly about a product or brand being sold (Irna Fitri, 2016). Therefore, by linking the pandemic and marketing 5.0, digital marketing is one of the most effective and efficient strategies implemented in a company today. In addition, the use of social media has become very important in the ongoing return of business after the SARS-CoV-2 virus pandemic, which requires restoration of trust through communication (Hysa et al., 2021). Digital marketing itself is an effort made in terms of marketing by using devices connected to the internet with various strategies and digital media with the aim that companies can stay in touch with consumers through online communication channels. (Andi Gunawan Chakti, 2019). In this case, digital marketing can be implemented by using platforms that suit their target buyers or also by joining relevant webinars. Social media is characterized by a high level of interactivity, using a wide and widely available variety of applications and communication techniques (Hysa et al., 2021). Copywriting and design are very important and vital in value communication in digital marketing (Burstein, 2021). Over the past decade many authors have acknowledged that the traditional demarcation between producer and consumer has become blurred and distorted as consumers

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take an increasing active role in the marketing process (Bloom, 2006; Cova and Dalli, 2008; Hoffbrand, 2007; Konczal, 2008). It is generally agreed that one of the main factors influencing this change is technological advances in the digital era supported by environmental nd social roles (Berthon et al., 2008; Christodoulides, 2009; Jeong and Jeon, 2008).

RESEARCH METHODS

This study used a systematic review. According to some authors, this systematic review is more comprehensive than a regular literature review. Although this method is often used by doctors. However, many scientists also use this method to find and select studies reducing bias by summarizing from previous findings and are more likely to come to reliable and accurate conclusions.

This study uses 10 literatures as a reference in the systematic review method. These articles have been selected which have the potential to provide substantial research results in the topic of this paper. The articles are shown in table 3.1 below:

Table 1. Journal reference marketing in pandemic

NO	Journal Tittle	Year	Writers
1	*The Impact of Covid-19 Pandemic Crisis on Micro-Enterprises: Entrepreneurs' Perspective on Business Continuity and Recovery Strategy*	2020	Noor Fzlinda Fabeil[1], Khairul Hanim Pazim[1], Juliana Langgat[1]
2	*Social Media Marketing as a Marketing Tools in COVID-19 Pandemics: A Systematic Review*	2021	Arum Prasasti[.1*] Cesya Rizkika Parahiyati[2]
3	*Social Media Usage by Different Generations as a Tool for Sustainable Tourism Marketing in Society 5.0 Idea*	2020	Beata Hysa [1], Aneta Karasek [2] and Iwona Zdonek [1]
4	*A new era of consumer marketing? An application of co-creational marketing in the music industry*	2013	Jordan Gamble and Audrey Gilmore
5	*The impact of the COVID-19 pandemic on business expectations*	2021	Brent H. Meyer, Brian Prescott, Xuguang Simon Sheng
6	*A Critical Review of Digital Marketing*	2018	Dr. Madhu Bala
7	*The Impact of Pandemic Crisis on the Restaurant Business*	2021	Arlindo Madeira [1,2,*], Teresa Palrão [3] and Alexandra Sofia Mendes [4]
8	*Marketing ManageMent*	2016	PhiliP Kotler, Kevin lane Keller
9	*Implementasi Digital Marketing Dalam Era Society 5.0*	2020	Desi Jelanti, Meta Nursita, Napisah, Khusnul Khuliqi, Nugroho Widhi Pratomo

Table 1. Continued

NO	Journal Tittle	Year	Writers
10	*Determination of Green Marketing Strategies Through Marketing Communication in the Business World in the Society 5.0 Era*	2020	Hayuning Purnama Dewi

RESULT OF THE STUDY

Based on the literature and findings or previous research that is used as a reference in this study. All articles have different definitions, results, and opinions. All studies explain that the existence of COVID-19 with the implementation of mass quarantine has greatly affected the business world. In a study that statistics have shown that about 75% of businesses without a continuity plan will fail within three years after a disaster or crisis strikes (Cook, 2015). Therefore, various strategies must be implemented immediately in order to overcome this dire risk.

The impact of COVID-19 has also spread to human lifestyles or changing eras. In the era of the pandemic, most people can only rely on technology. In this case, the impact also in the business world, especially marketing. In order to maintain good relations between companies and consumers, as explained by (Pongsakornrungsilp and Schroeder, 2009) that the level of involvement between companies and consumers is also referred to as a central aspect in joint marketing practices. Therefore, marketing must be able to directly adapt to its social environment. One of the marketing strategies during the pandemic is the use of technology, namely digital marketing.

In the definition of digital marketing, (Chaffey, 2013) and (Andi Gunawan Chakti, 2019) both stated that this digital marketing strategy is considered a very effective and efficient strategy because this strategy uses technology to carry out its activities. In the same sense according to (Song, 2001) this strategy is a powerful marketing vehicle to build a brand and increase traffic for the company to achieve success. Social media is also supported, which is a mass media used by all groups. Therefore, the impact of the pandemic is the existence of the latest marketing innovations and changes in marketing strategies, one of which is digital marketing.

CONCLUSION

This study concludes that in the application of era changes due to the impact of this pandemic, namely society 5.0 in the business aspect, it is often associated with environmental issues. Where all things or activities in business must be able to protect the environment and social well or often referred to as green business.

However, examining more deeply from green business in terms of marketing, digital marketing is also one of the strategies in implementing green business in the new era because of the impact of this pandemic. Based on several opinions regarding marketing during this pandemic, digital marketing is the most widely used marketing strategy during a pandemic like this.

RESEARCH IMPLICATIONS

This study offers some insight into how to market during a pandemic and its marketing strategies. This study can still be developed further regarding other marketing strategies during a pandemic and healing a business due to the impact of this pandemic.

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Chapter 5
Neuromarketing:
Emerging Trend in Consumer Behavior

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ABSTRACT

The concept of neuromarketing is emerging in recent years. It signifies the use of research on the brain in the managerial context. Gradually this concept gained popularity in academics as well as the practical world. Neuromarketing is an evolving interdisciplinary discipline that blends psychology, neuroscience, and economics. Neuromarketing is an essential change as it gives insight into the way the subliminal mind facilitates the buyers to make decisions. The chapter focuses on studying the influence of neuromarketing tools to understand the purchasing behavior of consumers. The enhanced application of neuromarketing methods for gauging preferences of customers and making purchasing decisions will be an added benefit for both consumers and marketers.

INTRODUCTION

Neuro-marketing was termed as a study in area of neuroscience. a component of marketing, an interconnection of perception practices, a methodical approach a subarea of neuroeconomics and a separate discipline. Basic purpose of neuromarketing is to examine the psychological effect of marketing strategies and advertisement. In

neuromarketing experiments, brand awareness and product preference have been associated with neuronic action. Neuromarketing is an acerbic-power new-fangled kind of keen marketing which practises approaches methods and understandings from the arena of Neuroscience for marketing resolution (Ariely, D.; Berns, G., 2010). A professor of named Read Montagu conducted an experiment among consumers of Coca cola and Pepsi. When the respondents were shown the brands, they preferred coca cola over Pepsi and when they were not aware of the brand, they chose Pepsi over Coca cola. This experiment was the very primitive experiment which tried to explain the relationship of neuroscience with preference of consumers.

The conventional definition of marketing states that it is an act which brings the marketers and potential buyers together and in a common platform and tries to understand and analyse the buying behaviour of a consumer. This definition was argued by Madan (2010) who stated that marketing is virtuously moneymaking and is engrossed in sale. This gave a base to add in this definition which says that one hand marketing deals with exhibiting the goods focusing on the stream of neuroscience (Morin, C. (2011). This concept was supported by several authors and added the term neuroeconomics to it. Their definition stated that neuroeconomics is a discipline which blends the techniques of neuroscience and explores the brain of the consumer focussing majorly on decision making and financial aspect simultaneously. Thus, we can conclude that Neuromarketing is a discipline which contracts with challenges pertinent to selling by creating application of techniques from mind study in managerial exercise.

The concept of neuromarketing falls in the mid of an individual's emotional and rational part which helps marketers to identify and record the emotional and rational stimuli to which the consumer will respond (Boxtel,Van A.,2010). Consequently, it has been able to be portrayed being as a subject of investigation that establishes a link among the disciplines of neuroscience and selling. It has the persistence of founding dealings among marketing stimuli, the portion of the brain where these stimuli will be administered and the functional values associated to the systema nervosum, with the intention these can be linked with cerebral, mental, and expressive progressions and can yield an understanding about the shopper (Butler, M.J.R. 2008).

Why Neuromarketing

Neuromarketing is a new function of the neuroscientific methodology to human behaviour in the marketing context. This contemporary discipline basically focuses on the brain of consumers and seeks to be very beneficial for marketers. There is various importance of neuromarketing to marketing studies.

Neuromarketing helps to understand the buying process of buyers as it makes use of high-tech resources in brain probing.

Neuromarketing helps to understand by what means consumers get to selections through the acquisition process. It has developed a standard knowledge to determine the possibility and non-possibility of buying choices.

Neuromarketing needs to be recognized as a means of defining businesses' marketing tactics. It creates possibility to discover promotion components that sparks positive sentiments. Adding up, it facilitates to steer clear of factors that ought not to be put forward in the communication, that bring about users' antipathy to the goods. It additionally facilitates with the assortment of auditory-graphic settings, as well as the scheduling and choice of suitable channels.

Neuromarketing additionally holds the capacity to recognize shoppers' requirements as well as build further valuable and pleasurable products.

Neuromarketing study involves in identifying which neuronic advancements are engaged in the mind for the duration of the administering of brand knowledge it also benefits in augmenting Branding strategies.

Neuromarketing is established by procedures that pursue to classify the brain areas stimulated for the duration of a marketing stimulus and the reasoning practices, neuromarketing has fantastic possibility to categorize the reasons of procuring conditions like compulsiveness.

Additional promising uses of neuromarketing incorporates the growth of additional efficient public promotions, for instance the reassurance of the usage of seat belts in vehicles or burning cessation.

Tools of Neuromarketing

1. EEG: EEG stands for Electroencephalography

This is a technique in which a ring or head covering is positioned in the scalp of the respondents. These bands have the electrodes which in turn will measure the brain activities which will be exhibited with response to different stimuli.

Advantages:
    This technique is widely available
    It is fewer insidious and not expensive
    Introduces larger authenticity in measuring of expressive patterns
    It features possibility of synchronization with stimulus
    The equipment used is portable
Drawbacks:
    It can simply pick up apparent electric indicators
    Relic free record is enormous task.

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Incapable to assist us recognize the methods liable for initiating movement in the complete brain.

Recording procedure is tiring

2. MEG: Refers to Magnetoencephalography

This procedure is established upon the extension and function of the hypnotic field generated because of neuronic movements, electrochemical waves amongst nerve cells (O'Connel, et al 2011). Equally, to electroencephalography, it has outstanding terrestrial resolution; nevertheless, its four-dimensional resolution.

Advantages

It is non-ionizing

The temporal resolution is very high

Magnetoencephalography is having high Spatial resolution

Drawbacks

The cost of application is very high.

It is confined to collecting movement in the side of the mind

3. Eye tracking

This technique is used to follow the eye positioning as its emphasis changes along the exterior of a visible trigger. Eye trackers are utilised in research on designing of a product design and software design in the field of neuromarketing (Fugate, D.L.,2007). The extremely prevalent approach of assessing eye change is through the application of a camera which marks the actions of the pupil.

Advantages

This approach is capable of determining the attention of purchasers 'the form of optical conduct of preoccupations of the stare, stretching of pupils, attention, and microfocus

The apparatus is transportable

It helps in assessing the consumers response time

Drawbacks

Not a neuroscience specific technique.

Difficult to conclude emotional states that are whether the states are positive or negative.

4. Electromyography: Popularly known as Facial recognition

This practice is still not principally castoff in neuromarketing. It involves assessing face muscle actions which is hardly visible with eyes. The conductors are positioned in the muscles of the mouth to confirm various types of feeling like joy, sorrow, disinterest, grief, etc.

Advantages

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It has high spatial resolution

This method is increasing integrity for purpose of evaluating several emotional outcomes to visible inducements, responses of flavor, aroma and hearing, human collaborations, and activities.

It is non-intrusive research method

Drawbacks

The electrodes placed on the face may impede certain facial actions.

Certain expressions may have double meaning, which undermines a normalisation of single expressions associated with emotions, limiting analyses of certain more precise emotional consequences

Can be manipulated by subject's basic changes and is bodily susceptible

5. Cardiovascular constraints

This technique documents the heart rate and its inconsistency, BP, communication among heart rhythms and beat change period to surmise emotive and awareness positions of the respondents.

Advantage

Contrasting other mental procedures, vascular movement is simple to examine

Drawbacks

Vascular movement might be a consequence of a variety of mental activities like enjoyment, excitement, reminiscence, etc. Thus, to successfully utilize this technique in the field of neuromarketing intensive study is required in this vicinity.

This is not a particularly related to neuroscience technique

6. Galvanic Skin Response

This practice assesses the actual inflammation triggered by a psychologically pertinent spur. The central nervous system is precisely linked with outcomes documented on respondents' hands.

Advantages

This is technique is Inconspicuous in nature.

It is easily accessible and affordable.

Drawbacks

It is not a neuroscience specific technique.

7. Voice pitch Analysis

This technique uses the modulations in the voice of the respondents with respect to the response of the stimuli and immediate effective responses to external stimuli is recorded.

Advantages

This technique necessitates oral reactions and audio soundtrack device

The respondents are minimum hassled by precise and uncommon investigational locations due to recording apparatus may not be evident or disturbing

Drawbacks

The method of concurrent fluctuations in tone, pitch remains yet unidentified since an emotional point of view owing that it is scarcely applied for neuromarketing study

This is not a neuroscience method

How Neuromarketing Works

Neuromarketing necessitates purpose of cerebral neurosciences in selling and marketing research. This utilizes a brain recording therapeutic expertise known as FMRI (Functional Magnetic Resonance Imaging) to examine flow of blood in the nerve cell movement of buyers while of choosing and purchasing a merchandise (Reimann, M.,et al, 2011). Still, it began as well as the treatment of neurosciences, more than the decades it acquired admission into the conventional practices of performing investigation.

Short summaries on three essential perceptions, emphasizing a quantity of critical marketing implications are as follows:

The brain of buyers gets two analog routes, one for philosophy and one for performing

The individual's unknowing 'performing' mind, the reminiscences of past physical stimuli (for instance advertisements, buying and ingesting involvements, word-of-mouth, etc), sentiments, rubrics of thumb, typecasts, epitomes, links, pictorial descriptions, unprompted behavior (for instance instinct or customary purchasing), predisposition and many other types of communication.

The individual's known 'philosophy' mind simplifies philosophy by remembrance to sort out vocal communications, to assess the cost-benefit of alternatives, as well as to prepare in the future (like organizing a shops' list of items that can be procured)

The 'performing' mind is rapid and effective and can do lots of things at the same time. Crucially, the 'performing' mind determines which of the billions of corporeal responses the head obtained will be collected in remembrance (Garcia, J.R.; Saad, G.,2008). To accomplish the same, the 'performing' mind must allocate magnitude and importance to these responses, as it will determine which prevailing reminiscences the latest recollections need to be coupled to.

The 'philosophy' mind, in difference, happens to be time-consuming and simply emphasis on single assignment at a moment.

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Not remarkably so therefore, to be profitable vendors normally must put together an influence on the 'performing' mind that is making the majority acquisition choices.

The mind is intended to prevent reasoning by applying shortcuts to get buying choices

The 'performing' mind impact continues much beyond. Receiving the plan towards assist us continue to exist around a unfriendly real atmosphere, the 'performing' mind put up with established momentum safeguarding strategies (Christophe Morin, 2011). As well as the mind – which is responsible for no more than three percent of mass of body results in twenty percent of the entire strength expended, the 'performing' mind appears just before putting together concentrated on discovering imaginative resolution cutoffs that remove the necessity aimed at discerning.

The cut-offs happen usually offered beneath the direction of behavioral economics as well as comprises of the ground along with a broad variety of opinions. Shoppers utilizing these cutoffs frequently demonstrate illogical conduct however even though this behavior could be illogical it is likely, for the reason that the mainstream of buyers resolve respond in related practices once a conviction is triggered, or a seller has prepared the verdict.

The seller's task is to outline the purchaser's brand remembrance

A seller requires towards capitalize hooked on creating a confident, psychologically powerful brand recall which is connected to a few or additional purchaser's aspirations (Plassmann, Hilke, Kenning, Peter, Ahlert, Dieter, 2007). Nevertheless, existing exercise happens to be frequently not supported through this notion. Particularly as soon as it happens to communal means countless vendors think they consume a victory on their needles when they watch at thousands, perhaps oodles, of 'likes', views, and comments pay no attention to the reality that these may convey to the advertising coverage instead to the brand itself.

It is crucial to guarantee at all touch points that the brand plays a significant, sensitively appealing role. If this does not happen the purchasers will get interested but this will result not result in purchase of product.

CONCLUSION

The subject of Neuromarketing stands for even now in the situation, nascent phase however is improving as well as intensive other investigations happening every time. The benefit of Neuromarketing remains of way conditional upon the advancement of Neuroscience. In assumption, that one happened that the manifestation of

neuromarketing as an exploration tool coupled with community's concern around the arena of science need to be intensified in modern eras. Along with additional findings regarding neuromarketing is performed and the outcomes publicized, the situation is promising which states that the additional enterprises desires meet the neuromarketing endeavors to come up with improved intended outcomes and more successful publicity. Consequently, neuromarketing works can improve the perception regarding numerous types of complicated purchasing habit. For instance, a few does not completely comprehend whatever kinds of "triggers" advantage entities to make application of the instinct around a variety of circumstances, however not in additional ones. The conception of whatever prudence before absurdity stages happen in intake assessments resulting in the improvisations. The improved knowledge of the mental capacity intellectual methods by way of the latest machineries reviewed in this study has the capability towards clarifying several of the key concerns which sellers ask regarding the solutions.

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Chapter 6

Role of Blockchain and Data Visualisation in Advertisement Lead Purchase Across Social Media

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ABSTRACT

Social media marketing, which has redefined the traditional 4Ps of marketing into the modern 2Ps, namely pipeline and personalisation, is a modern-day tool to build the brand, increase sales, and multiply the online traffic. This involves bringing out great content on social media profiles, paying attention and engaging followers, results, and managing social media advertisements. With the growing popularity, it can be presumed that social media promotions are one of the fastest and best ways to connect with your target group or as the marketeers call it, prospects. At the same time, blockchain social media can be defined as decentralized platforms that enable the development of applications and smart contracts. From a spend analysis standpoint, these advertisements give a lot of moneymaking freedoms and are an extraordinary method to upgrade your marketing outreach activities, especially the digital channels. This work visualises the spend nature of advertisements and investigates how blockchain technology can help to reshape the social media advertisement market.

INTRODUCTION

Social Media these days has turned out to be a daily aspect of people's lives. Users are spending more time on such platforms. At present, social networks are being used to the maximum worldwide by close to 3.6 billion people, and it has been forecasted that not less than 4.41 billion people are expected to be on social networks by the year 2025. Through their usage on these social media platforms, users create passive as well as certain active digital impressions. The data points generated through these digital impressions can prove to have a strong potential in the sphere of marketing to have an essential overview for understanding their experiences, behaviors, attitudes, and values, which creates scope for a pivotal aspect called social media promotion.

Analysts working on the social media data are in the continuous process of looking for ways and means to handle the enormous amounts of data and arrive at meaningful insights in real time. As advanced technology came into the picture and concepts like data mining, neural networks, cohort analysis, etc. took analytics to a different level, and access to automated options for managing data became available. They can now analyse data, trends, etc. and come up with conclusions and suggestions in quick time. Big data technologies and social media delivering predictive analytics are now being used by companies to stay ahead of the competition. With advanced social media platforms, it is now possible to handle complex analytics to deliver precise predictions, thus helping companies to be proactive.

Social Media these days has turned out to be a daily aspect of people's lives. Users are spending more time on such platforms. Through their usage on these social media platforms, users create passive as well as certain active digital impressions. These data points can prove to have a strong potential in various areas of research, thus having a key index in understanding people's communication pertaining to the social media, which is even more essential for understanding their experiences, behaviors, attitudes, and values. Social media can undoubtedly be considered as a part of many individuals' everyday lives. At the ever-growing level, users are spending more time on the social media platforms, hence curating an active as well as a passive digital impression through the interactions which they do with other social media users (Apuke et al. 2017). The data points that are generated have a strong potential for the research in multitude of domain areas, especially keeping an eye on the fact that understanding communication made by people on social media is more essential for understanding the attitudes, behaviors, experiences, and values. Blockchain technology, at the same time, enables the development of applications and smart contracts. The significant benefit of such platforms is that they offer end-to-end encryptions for every interaction enabling individuals to have more privacy and control over their information.

As the organisations are managing the shopper information to comprehend further bits of knowledge. Wellsprings of information related to data say rules, rules, procedure, organization are being directed moreover. A close by co-meeting with the business bunch and other assistance limits is similarly ensured to get the ideal results and assurance information is particularly gotten. Propelling experience by changing client data into more significant pieces of information. Social media marketing is to avail social media platforms to associate with your spectator to build your brand or trademark, increase sales, and guide website traffic. This involves bringing out great content on your social media profiles, paying attention and engaging your followers, analyzing your results, and managing social media advertisements. Primary platforms of social media are Facebook, Twitter, Instagram, YouTube, LinkedIn, Twitter, LinkedIn, Pinterest, YouTube, and Snapchat. Social media ads are one of the rapid and most effective ways to connect with your target spectators. These ads provide plenty of moneymaking opportunities and are a great way to enhance your digital marketing campaigns. A critical method used in internet-based media publicizing is to encourage messages and content that solitary customers will confer to their family, friends, and partners. This strategy relies upon verbal trade and gives a couple of benefits. In any case, it fabricates the message's extension to associations and customers that a web-based media manager probably won't have had the choice to get to regardless. Second, shared substance passes on a suggested guaranteeing when sent by someone who the recipient knows and trusts. Online media strategy incorporates the creation of content that is crude. This suggests that it stands apart to the point of being seen and grows the probability that they will lead an optimal action, such as buying a thing or offering the substance to others in their own association.

Social media promotion focuses on a particular fragment of the client base and is intuitive. Computerized showcasing is on the ascent and incorporates output advertisements, email promotions, and advanced tweets - whatever consolidates advertising with client criticism or a two-way cooperation between the organization and client. Web promoting contrasts from computerized showcasing. Web promoting is publicizing that is exclusively on the Internet, while computerized showcasing can happen through cell phones, on a tram stage, in a computer game, or by means of a cell phone application.

In the speech of computerized promoting, sponsors are normally alluded to as sources, while individuals from the designated advertisements are regularly called recipients. Sources much of the time target exceptionally explicit, obvious collectors. For instance, in the wake of broadening the late-night long stretches of a significant number of its areas, McDonald's expected to spread the news. It designated shift laborers and voyagers with computerized promotions in light of the fact that the organization realized that these individuals made up an enormous section of its

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late-night business. McDonald's urged them to download another Restaurant Finder application, focusing on them with promotions set at ATMs and corner stores, just as on sites that it realized its clients regularly visited around evening time.

Sponsors make viral substance that is planned to spread quickly between users. Social media exhibiting should similarly ask customers to make and share their own substance, for instance, thing reviews or comments. This is implied in the promoting industry as obtained media.

Brands are being proactive - an unquestionable requirement have fixing in the formula of information examination of the buyer's data. Recommended till now, information assortment, an indispensable cycle in the information investigation technique starts much ahead of time than the purchaser even thinks if. Characterizing SMART objectives, resolving quantitative inquiries on what and how to quantify, inquiry dealing with on using accessible data, the rundown doesn't end here. Choosing name and spot of the document to be put away, stepping with dates and notes and what else - all should be tended to at a beginning phase. Also as is commonly said, it's great to be on schedule than on schedule. These small but mighty ads make use of all the data users share on social media to offer highly personalized and applicable content, which ultimately enlarge conversion opportunities and introduces your brand to more potential customers. Social Ads are an incredibly fruitful and resourceful advertising channel that give us the ability to build determined campaigns on social media to meet a selection of different business goals at relatively cheap costs.

OBJECTIVE

At present, social networks are being used to the maximum worldwide by close to 3.6 billion people, and it has been forecasted that not less than 4.41 billion people are expected to be on social networks by the year 2025. When this forecasted number of social network users is compared with the forecasted global population for 2025 (8,184,437,460 people). This interprets that around 54% of the Earth's population is most likely to be using social networks by this year, which is 2025. Thus, it is an important source of data with a huge potential to increment both shared content as well as the number of users. The help of dynamic is a significant inquiry for supports, by giving snippets of data to help with responding to fundamental solicitations, for example, the best fit thing identifying with a specific market; ways to deal with uncover such thing in looking at show off; through which correspondence channels; with given fixations on time and for the picked cost; and built up by which sort of confined time and restricted time activity. Online media promoting endeavors partake in the advantage of drawing in a wide group right away. For example, a mission may address current and arranged customers, laborers, bloggers, the media, the general

populace, and various accomplices, for instance, untouchable reporters or trade social occasions. Nonetheless, these missions can moreover make preventions that associations probably won't have expected to oversee regardless.

For example, a viral video stating that an association's article causes clients to become debilitated ought to be tended to by the association, whether the case is substantial or false. Whether or not an association can figure the message out, clients may be more loath to purchase from the association later. Big Data itself maybe holds respect on the off chance that it is outfit zeroing in on taking out gifted information, appraisal has made as a critical guide to answer the difficulties of Big Data in Marketing. Considering everything, propelling evaluation game-plans are before long being spread all through affiliations endeavoring to benefit by Big Data courses of action. yet most executions are not yet accomplished to adequately exploit from such arranged Marketing-Big Data plans. Seeking inspiration from these studies, the unique objective of this study is to depict the role of blockchain in the field of social media promotion and concurrently, brings out insights of spend analysis in promotion lead purchase across social media platforms. The visualisation has been carried out using the modern-day tool Tableau, basis the available data set online. This work finally brings conclusion on board pertaining to some key parameters like Demographic segmentation, personalization, product significance, and advertising usefulness. Companion of the learnings from showcasing investigation hypotheses spreading over VALS Framework, Pareto Principle and so forth might be drawn with the optimised business models utilizing AI procedures that propose the most fitting deal or client communication among a scope of plausible contributions. An intersection is moreover oppressed in assessment of the impact, huge data, and on the on the web or in any case compromise, as analysts have featured testing in consolidating of every kind imaginable data and exhibiting assessment into publicizing decision and undertakings. To inspect how social media platforms are using demographic segment and targeting individuals to buy their products. They have divided segments such as age, gender, language. They run campaign separately according to their different segments. In this paper, identification of different segments' will be conducted followed by visualization with the help of Tableau Software. The primary questions that will be addressed are:

- Are Snapchats Ads are targeting you in your geographic location?
- How they segmented people and targeting them?
- At what time they are targeting. For e.g., prior to elections or online sales?
- What are 5 top companies that are paying for online advertisement?

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THEORETICAL PROCEDURE STEPS

Synchronous support behind this investigation targets breaking down the to and fro development condition of investigation in displaying assessment and survey the focal evaluation subjects, subjects of premium, disclosures, also as approaches for appraisal utilized. Firm by and large uses in publicizing dashboards, interpretive programming, and other propelling programming structures reach about $24 billion reliably, and liberal speculations have been made in gigantic information new associations in prior years. To meet the objectives, these steps were carried out to meet the desired goal:

Step 1: Data from social media
Step 2: Data filtration
Step 3: Data transformation
Step 4: Data mining
Step 5: Data visualisation

METHODOLOGY

The theoretical framework was inspired from the Knowledge Discovery in Databases process. (Fayyad et al.1996). The data analysis process consisted of four steps, as follows:

1. Data from social media: The data points have been primarily recorded between 1 January 2021 and 30 June 2021. This set of data comprised all those messages which included the social media advertisement data in the observation period, which was sent by the users to their social network.
2. Data filtration: Since this analysis was majorly confined to advertisement data, the set of words that did not include the relevant data were omitted.
3. Data transformation: Following to this, super-set of letters were checked, and duplicates were removed.
4. Data mining: Data mining is an important technique which was carried out on licensed Microsoft tools.
5. Data visualisation: Data visualization was carried out on licensed Tableau software.

DATASET

Snapshot of the dataset is appended in this image:

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Figure 1.

Exploratory Data Analysis

The first thing which is carried out is EDA, in order to introduce ourselves to a fresh new dataset. It is performed to make general monitoring about the data, summarize it, explore some basic trends, or uncover out of sight relations between variables. Data visualization tools like Qlik or Tableau help better steer in the new data and present EDA findings in a popular manner.

Preliminary Analysis

Before starting with EDA, it's inspected to check and explore the data for nulls, blanks, etc.

Bridge the Tableau desktop to the data source that hold the Snapchat Advertising data.

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Figure 2.
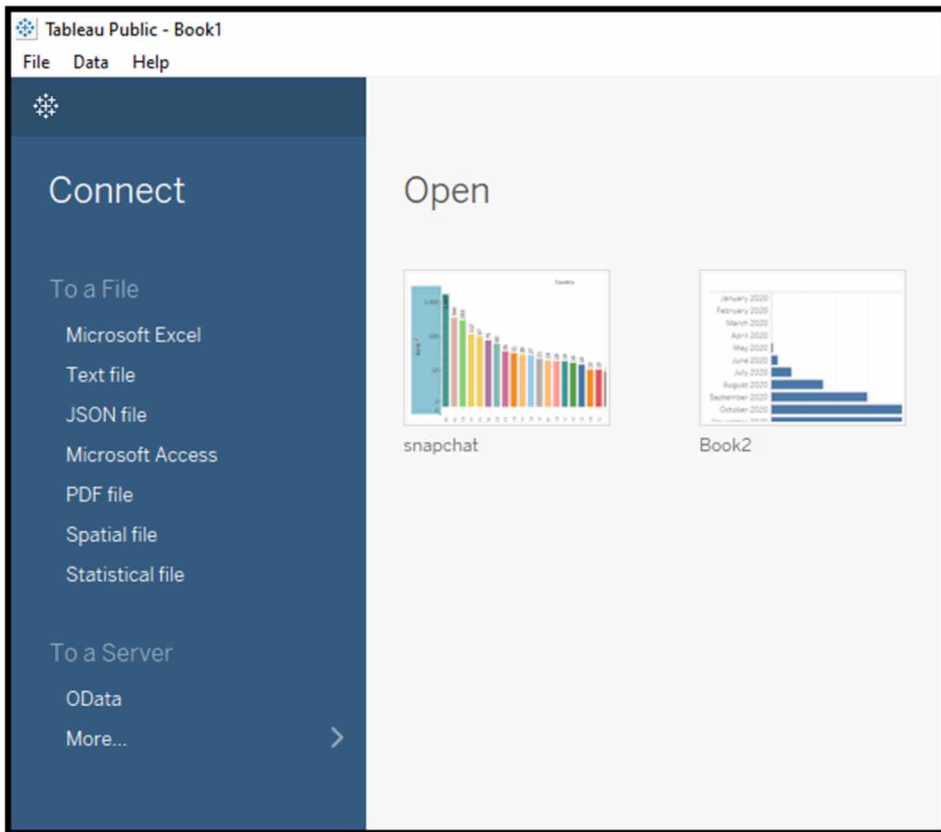
Once the data is connected, you can inspect it to identify the existence of null values. If required, the missing values can be strain out.

Data Cleaning

The data cleaning includes removal of all the rows which are not required. It includes:

- Removing null values in the fields.
- Changing the data type of the columns in the data source such as converting to string modifying date to years.
- Changing datatype to decimal to the whole number of columns.

Figure 3.

The image above shows that there are nulls in Calculation 1 and Calculation 2

Univariate Analysis

Univariate EDA deals with traverse and examined one variable at a time. Statistically, you can act for a variable's distribution using mean, median, or mode, graphically you can represent it with histograms, box plots, bar charts, etc. To start, drag the Number of Records measures to the Rows shelf.

Figure 4.
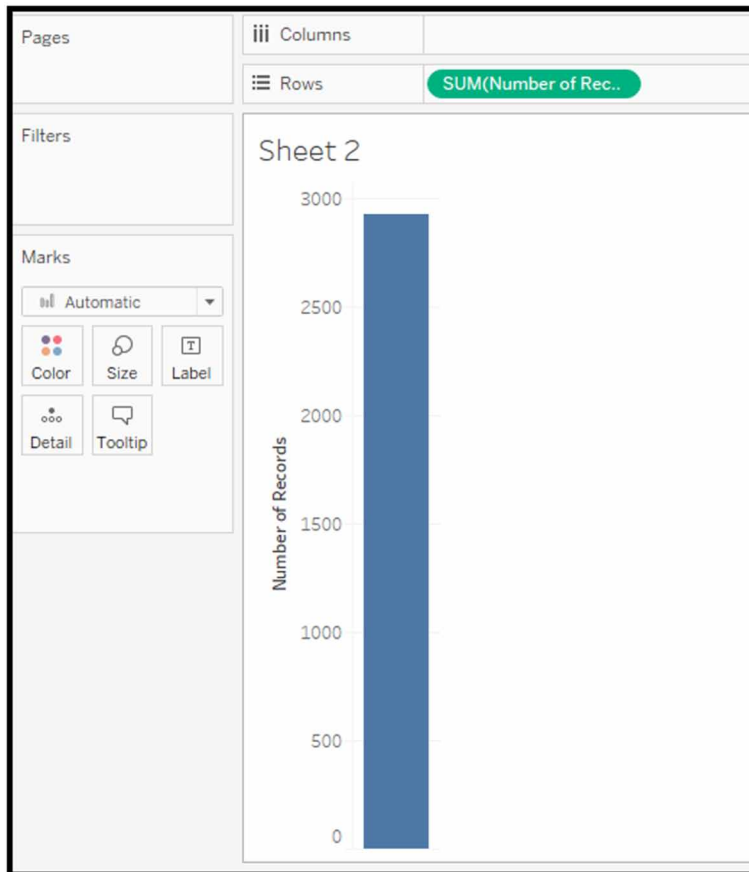
Bivariate Analysis

Two variables are analyzed together, in bivariate exploratory data analysis. A boxplot is used in this case to understand two variables, Number of Records and Language.

Figure 5.
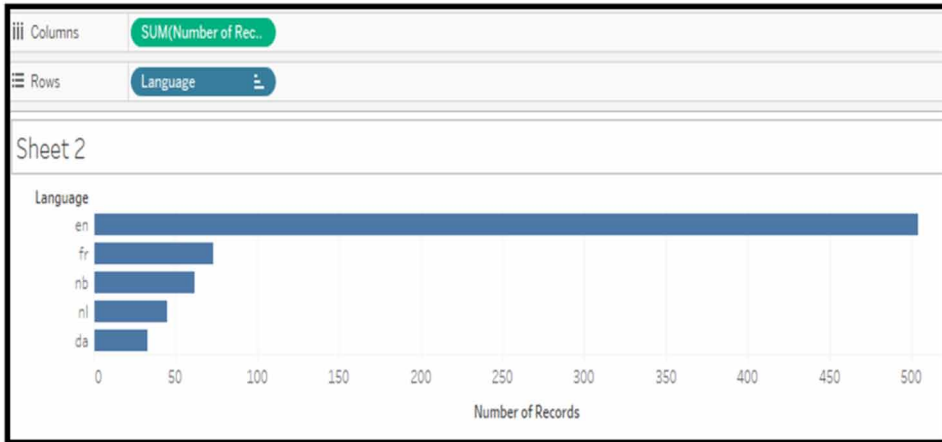
Multivariate Analysis

The objective of multivariate EDA is to inspect and explore more than two variables at a time. We have taken No of impressions in Ads, Country, and Ad Id.

Figure 6.

Data Visualization

Data visualization is the demonstration of data in a pictorial or graphical format. It qualifies the choice makers to see analytics dispense visually, so they can grab heavy

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concepts or identify new patterns. With interactive visualization, you can take the abstraction a step further by using technology to train down into charts and graphs for more detail, interactively interchange what data you see and how it's prepared.

Importance

Identify areas that need awareness or improvement.

Clarify which element influence customer behavior.

Envision data gives stakeholders, business owners, and decision-makers a better prediction of sales volumes and future growth

Data visualization takes the raw data, models it, and transport the data so that conclusions can be reached.

Figure 7.
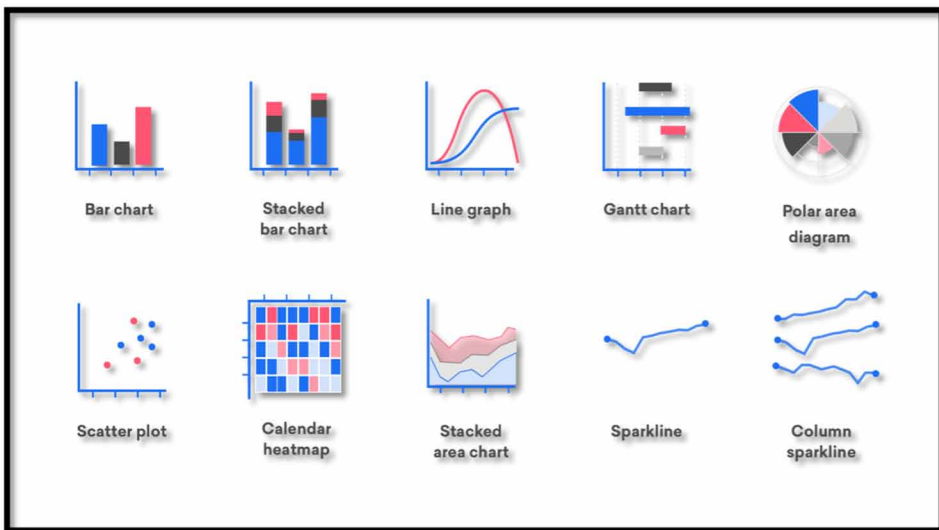
Visual Representation of How Ads are Targeting in Various Countries

Figure 8.
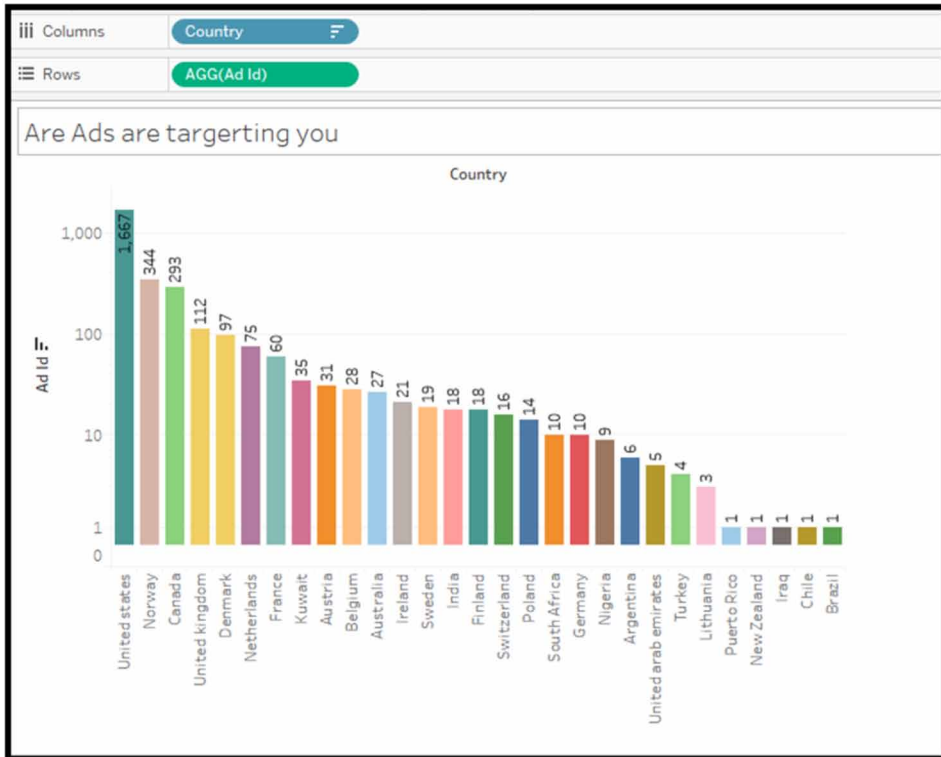
A bar chart is used when you want to showcase the distribution of data points or perform a contrast of metric values across different subgroups of your data. From a bar chart, we can see which groups are towering or most common, and how other groups contrast against the others.

The following Bar chart describes how many ads are targeting in various countries By Snapchat.

Highest ads are shown in United States and lowest in many countries such as New Zealand, Iraq, China and Brazil.

How is Advertising Targeting You?

Targeted advertising is a form of advertising, including online advertising, that is administer towards an audience with certain characteristic, based on the product or person the advertiser is promoting. These characteristics can either be demographic with a focus on race, economic status, gender, age, generation, level of education, income level, and implementation, or there can be a psychographic center of attention which is based on the end user values, personality, attitude, opinion, lifestyle, and interest.

Figure 9.
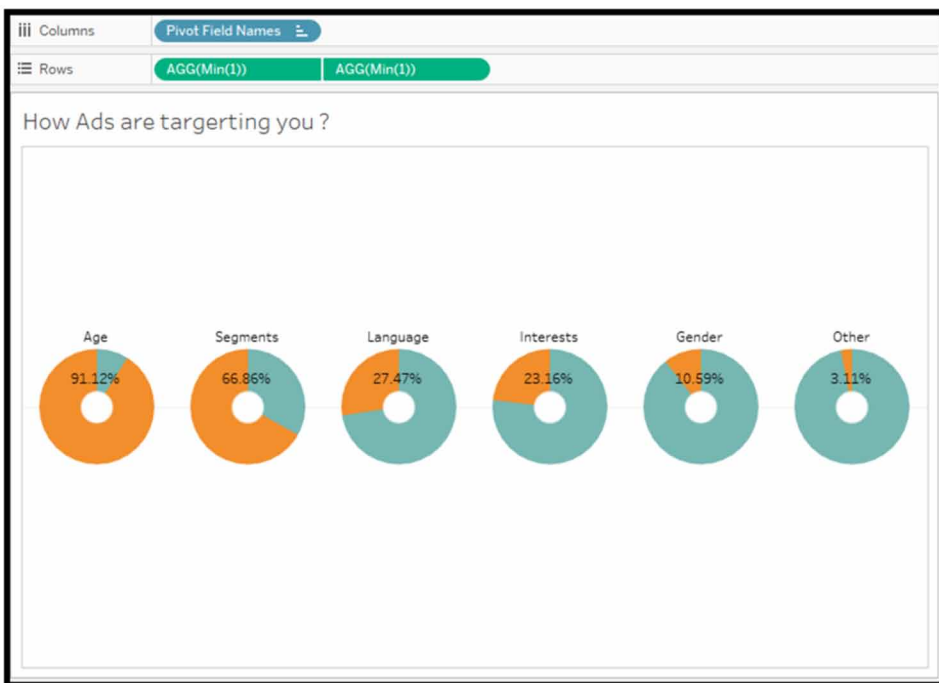
The following pie chart in the form of circle describes how snapchat is targeting us such as in the form of age, segment, language, interest, gender, others.

'Age' is visually represented as per the graph.

Figure 10.
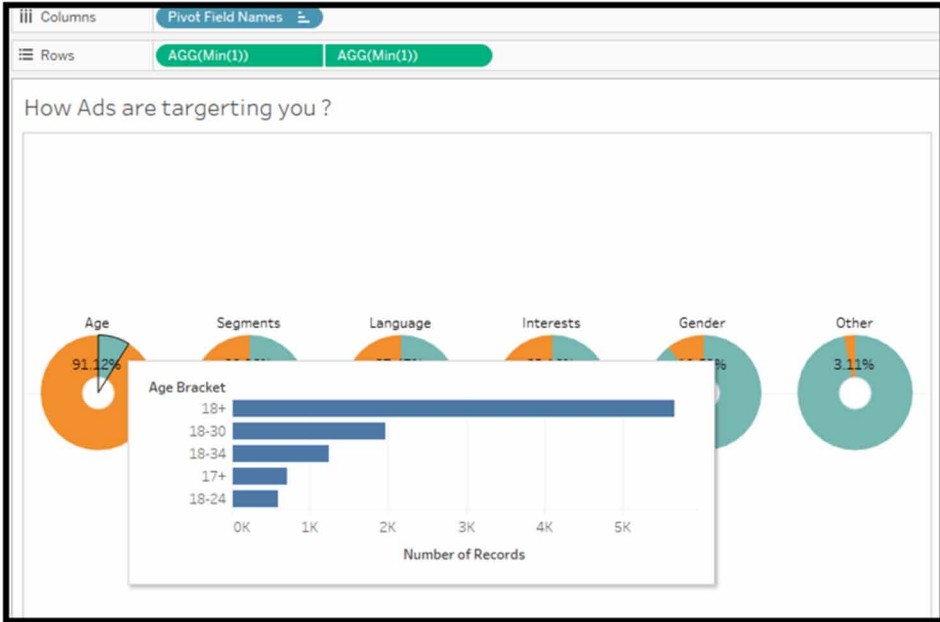
'Segment' is visually represented as per the graph.

Figure 11.

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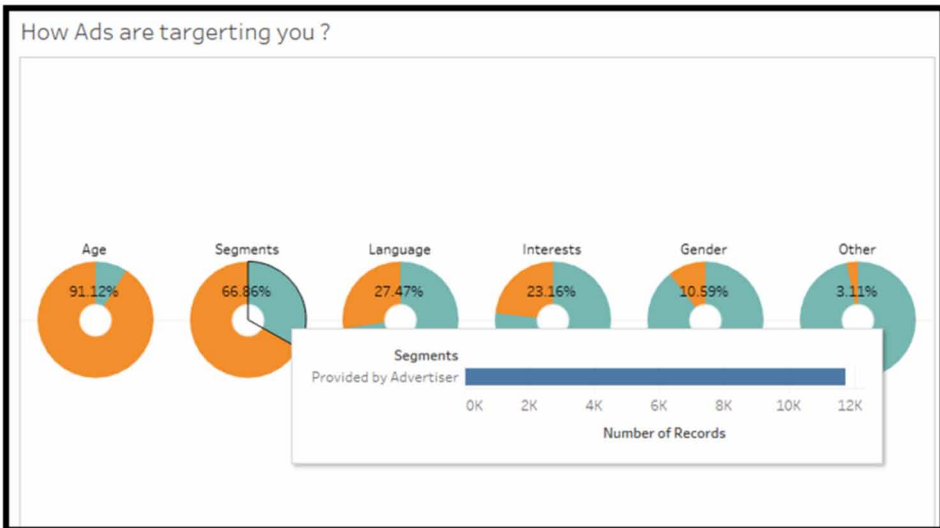
'Language' is represented as per the graph visually.

Figure 12.
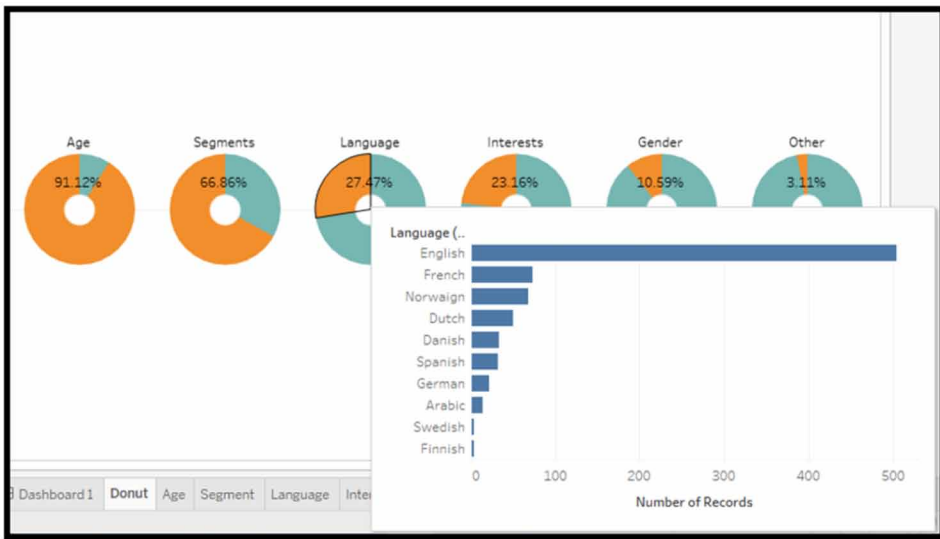
'Interest' is visually shown as per the graph.

Figure 13.
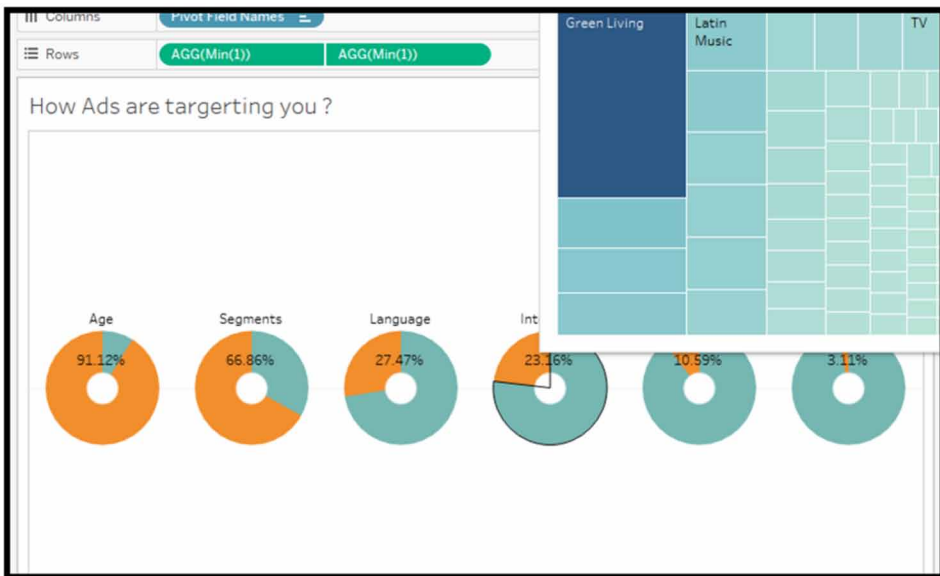
'Gender' is visually represented as per the graph.

Figure 14.
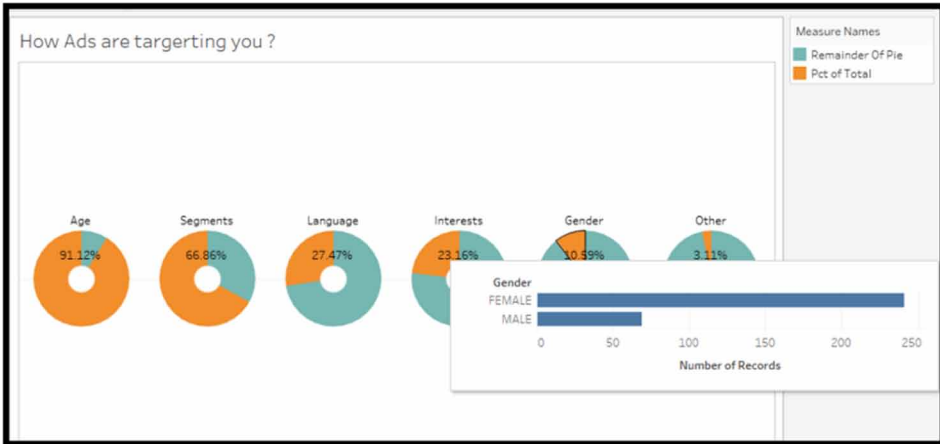
'Other' can be seen as this graph.

Figure 15.
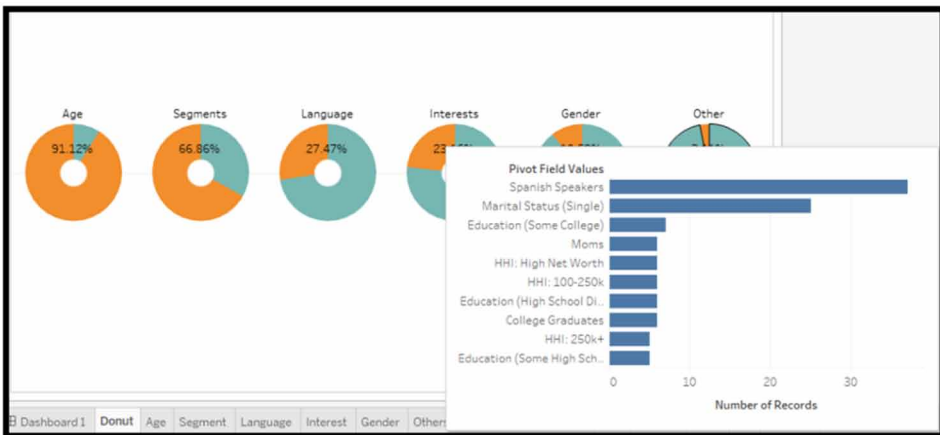
At What time Ads are targeting you: This important key parameter is represented as per the appended graph.

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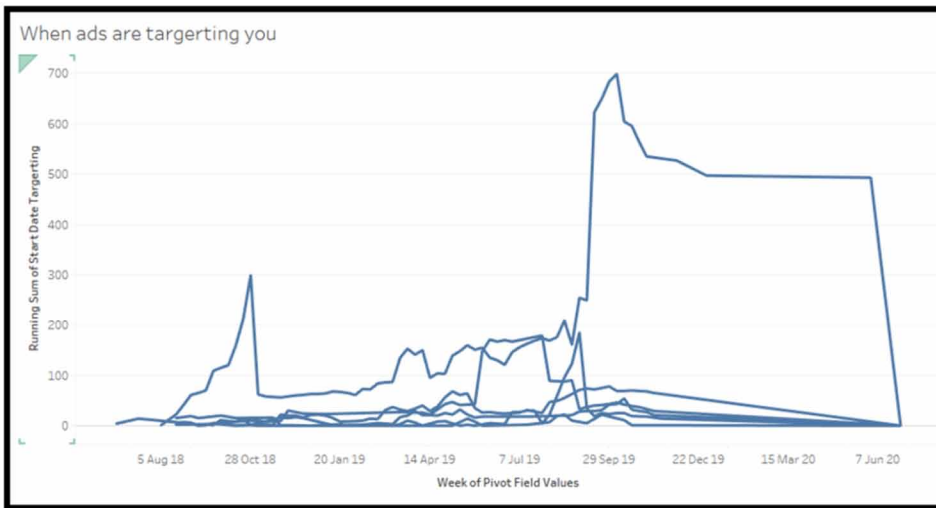
Figure 16.

Which Business Partner is paying for the Advertisement?

According to the dataset we have identified top 5 contributors of paid advertisement in the form of bar charts.

Figure 17.
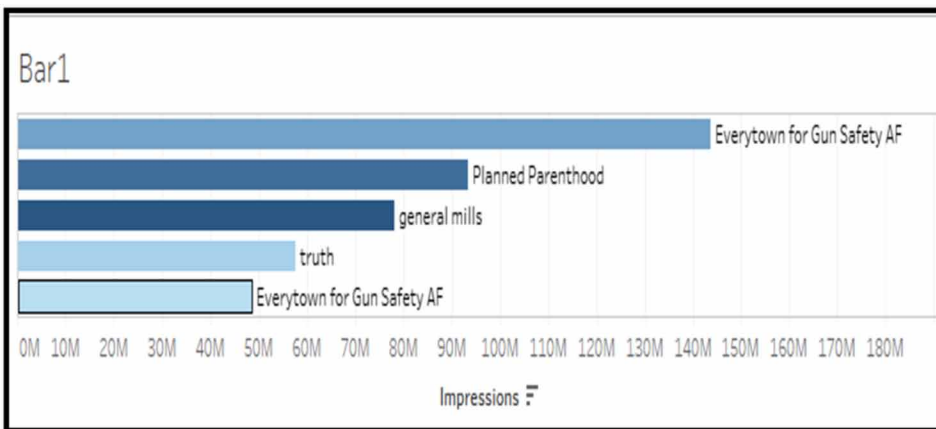
Dashboard on Tableau Public Software are presented vide these graphs.

Figure 18.
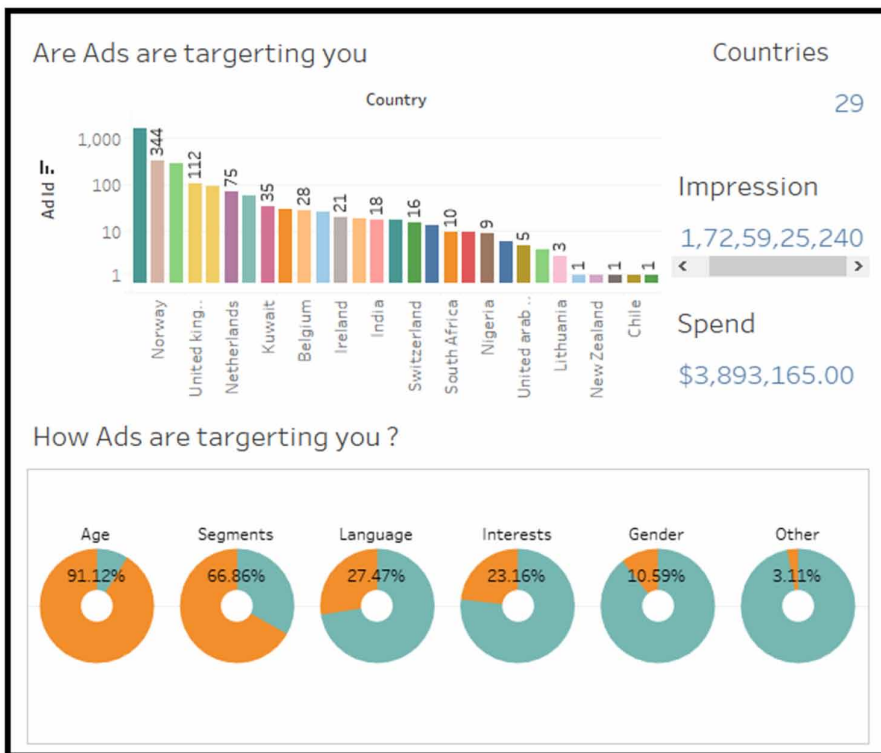
Figure 19.
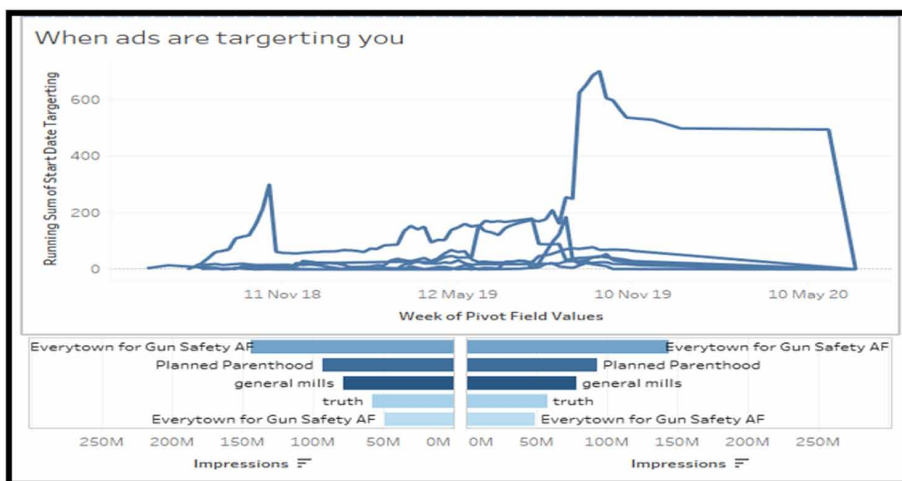
Online Dashboard Published on Tableau:

Figure 20.
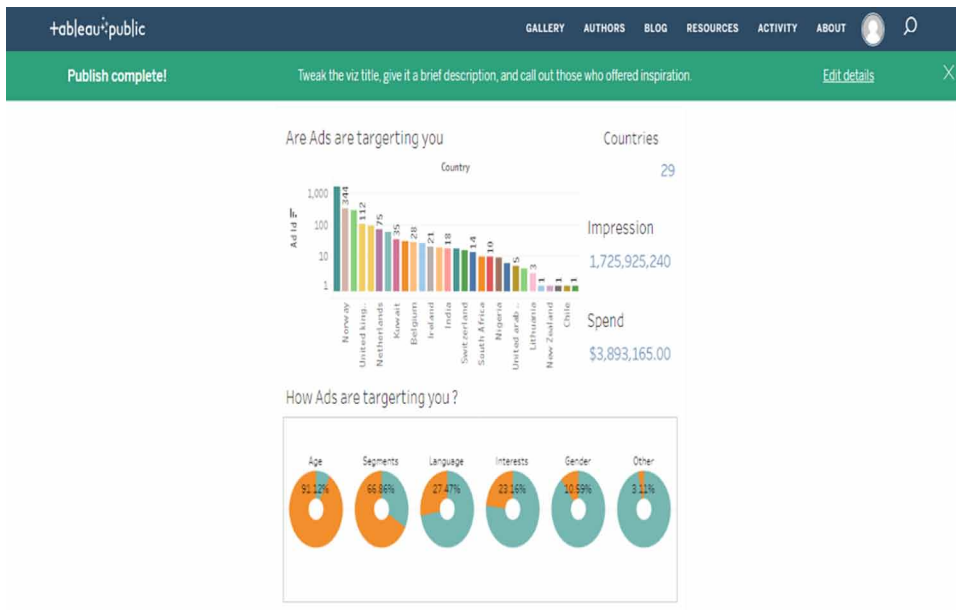
Figure 21.
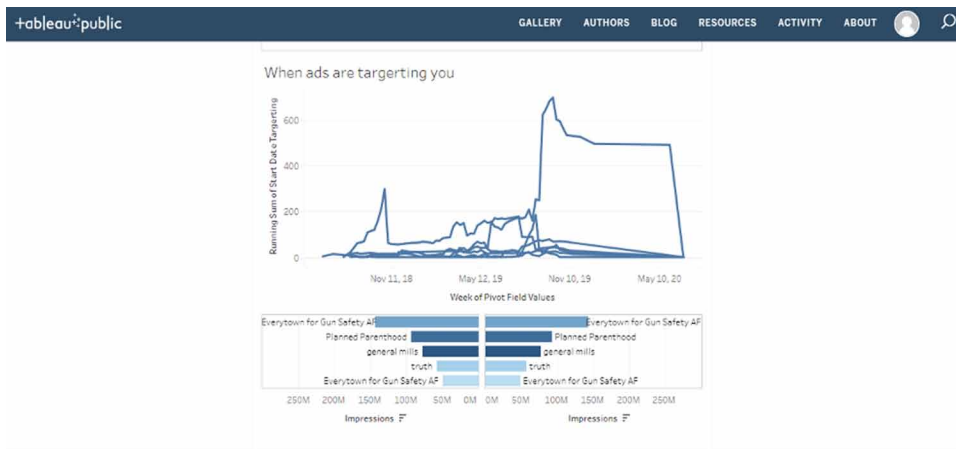
CONCLUSION

With 249 million daily active users, Snapchat is one of the most well-liked social networks on the planet, extraordinarily among millennials and Gen Z. Naturally, this makes the image-focused channel a great landing place for marketers trying to reach those in-demand demographics.

As generations evolve and technology develops, the development in the field of marketing and advertisements has been immense. No longer are businesses bound by the restriction of conventional marketing techniques. The old has been densely replaced by the new. Online marketing makes use of the internet and its wealth of resources for promotional, profile-raising determination.

Usage and analysis of website information to gain a better comprehension of patterns that materialize online is popularly referred to as web analytics. They can work out how productive their content is and what their most provocative stimuli are, while getting an idea of their users' online project and inclination.

In our data visualization we have segmented data available to us in form of demographic segment such as age, gender, interest, language etc.

Demographic segmentation benefits

Improved personalization

Improved product significance

Improved advertising usefulness.

Learning Outcome

Necessity of representing data into tabular form and register into the form of visualization on the top of it.

Visualization of Maps, Filters, Charts, Scatter Plots, Filters, Segmentations, Scatter Plots, Dashboards.

Importance of Data Visualization.

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Chapter 7
Demystifying the Role of Neuromarketing in Creating Value for the Marketers

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ABSTRACT

Marketing is not merely the advertisement for the consumers; instead, it is a physiological and psychological science that directly deals with the understanding of brain and cognitive decision making. This also raises an important question, How do we make buying decisions? Was that decision made on fact reason, consciousness, or logic? Through the concept of neuromarketing, marketers are able to see that consumers are making decisions unconsciously based on feelings, emotions, and intuitions. In this chapter, the authors intended to study neuromarketing as the science of consumer decisions and to unfold the new marketing markings and new signs of consumer decisions (i.e., to identify the role of emotions and institutions in shaping consumers' buying decisions). The authors would also like to study the gravity of paying attention to consumers' emotions, intuitions, and the unconscious mind. This chapter will add value in decoding the buy button inside the brain and how the future of branding is personal and knowing why you buy.

INTRODUCTION

Neuromarketing started because marketing does not work. The marketers must remember that every winning strategy has a life span, there is always copying you, and the dynamics of the platforms change all the time of the interaction. Thus the only way to survive in the market and have lasting success is to keep up with the changes. Thus, the marketers must value the skills of the best marketer i.e. to have persuasion, in order to proceed to sales of the commodity and to have prioritization and knowing when to say yes and no to the things whether to invest or not. 8 of every 10 companies are investing in social media, in the year 2021, among 39 percent plans to invest in the year 2021. Social media marketing establishes a direct relationship with social media and that to the creation of the marketing platform (Alsmadi & Hailat, 2021). The engagement of the potential customers with that of the brand's existence will only convert them into loyal brand associations.

Nowadays people are fascinated by the brain because now can record it we can record the activity of the brain. Neuroscience can be of great help as it can greatly help in customer profiling, this not only helps in creating a massive scanner that allows the brain to scan the activity of the brain (Alsmadi & Hailat, 2021; Brandt, 1988). Neuroscience is the science of the brain but a brain on its own is very useless, if you don't consider how the brain interacts with the world whether we are talking about your history, past experiences how we deal with all the humans the physical environment all these elements into play. This is what going to define your behavior not just in the moment but also what happened in the past and what we think our future (Morin, 2011).

If each one of us really understands our reptilian nature we might change the world. Talking about neuromarketing it is the science of the collective human decision. This includes neuromeres, psychometrics, and biometrics together to understand the behavior (Brandt, 1988). In traditional marketing, we ask the customers what do they want, and based on the responses we make products and build the strategy to market them, but they don't know actually what they want and this leads to the failure of traditional marketing (Morin, 2011). In neuromarketing, we do ask them what they want but we don't trust them, instead, we going to observe various physiological changes. The observation could be of various types say, facial coding, voice analysis, eye tracking, skin conductance test (Lie detector), EEG (Electroencephalogram), and also MRI (Cardoso & Ferreira, 2021).

For a really long time, media and promotion enterprises have depended on ordinary self-report reviews, analyses, and center gatherings to measure the needs, necessities, and mentalities of customers and crowds. As far as anticipating subsequent consumer acts in the commercial center, the consequences of these investigations frequently have been disillusioning (Mcdowell & Dick, 2015). The present business

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and economic situations force the requirement for new marketing procedures to guarantee organizations' endurance and advancement inside the worldwide system. The response is true, neurology and marketing recently met up in a wide scope of studies and have incited an interest, just as a craving for information, prompting the birth of 'neuromarketing' (Marcel, 2009).

The term neuromarketing arises in 2002 which is the blend of neuroscience and marketing (Orzan, 2012). Neuroscience is the investigation of the connection between brain movement and human cognition just as mental capacity. While neuromarketing is the device to recognize and find the client who looking for another one and convince them concurring their preferences detests their discernment and choices (Morin, 2011). It is fundamentally the apparatus to perceive customer conduct. Neuromarketing is a truly new discipline that joins lead mind science, monetary issues, and purchaser neuroscience (Susheela Devi B Devaru, 2018). In the most prominent sense, neuromarketing gives significant pieces of information into understanding customer lead, fundamentally helping sponsors with getting what works, and how doesn't respect influencing customers' purchasing decisions. This interdisciplinary methodology is empowered by the amassing information regarding how the mind functions and the expanded accessibility of neuroscientific techniques around the world (Shiv 2005).

LITERATURE REVIEW

'Neuromarketing is the utilization of neuroscience that notices the senses of humans and executes further showcasing systems as indicated by them. It concentrates on the reactions promptly and makes its strategies as per those reactions.'

Neuromarketing Advent and Evaluation

Neuromarketing arose as an extended field of examination on neuroeconomics (Popl, 2014). The introduction of neuromarketing, the use of neuroscience techniques, and bits of knowledge to marketing issues can be put around 2002. Over the most recent five years, neuroscience-based advertising research has created from an oddity to a broadly acknowledged examination apparatus. The Advertising Research Establishment (ARF) began to investigate the field in 2010 to decide the worth of these techniques for further developing commercial testing. According to Stipp (2015), an increment in interest in the biometrics and other neurological techniques was filled by progress in neurological science furthermore by mechanical advances in neuroscience techniques and apparatuses, at some point around 2010 as depicted

in fig 1. So, they were becoming more indisputable, more common sense, quickly, and more affordable.

Figure 1. Year-on-year growth (%) in marketing technology solutions

Growth in Number of Marketing Technology Solutions Available, Year-on-Year Growth (%), Global, 2020

Advertising and promotion	4.1
Content & experience	5.6
Commerce & sales	9
Social & relationships	13.7
Management	15.2
Data	25.5

Techniques to be used in Neuromarketing

Neuromarketing methods are considered as turning out to be progressively significant instruments in deciding what sorts of showcasing efforts and items appeal to a likely purchaser to expand promoting also impact buying conduct (Samuel & Prasanth, 2012). Neuromarketing uses contemporary methodologies like neuroimaging Functional magnetic resonance imaging (fMRI), magnetoencephalography (MEG), positron emanation tomography (PET), the electroencephalogram (EEG), galvanic skin reaction (GSR), and eye following and facial coding, among others to focus on the effects changing lifts can have on the frontal cortex, and how to use that information to upgrade an association's promoting procedure as per fig. 2. (I.L.D.S. Jordão, 2017).

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Figure 2. Neuromakreting Techniques implications

Optimization Marketing Communication

'Marketing is not what we want to give to the customer but what the customer prefers from us.'

The vision of today's companies is with the customer mindset that what the customer likes at first and what thing clicks in his mind first. The commitment of neuroscientific techniques can make to comprehension of promoting significant human conduct is probably going to be impressive. The upsides of physiological estimation for marketing have been noted for something like twenty years (Weinstein, 1984). Organizations utilize neuroscience for investigating the accomplishment of new promotional events. The scope of neuromarketing in relation with initially with product development and with marketing communication mix i.e. advertising, a new platform, at retail point of service (Digivate", 2021).

1.   Product development:

During the improvement of items in essential showcasing, consideration is paid to the formation of the bundling of the item. The quality choice of item bundling

straightforwardly brings about an increment in item deals and the best situating of the item brand inside the creation fragment. There is an extraordinary potential for the utilization of neuromarketing in testing products before they are put in available in request to further develop them based on the procured information. Ariely and Berns (2010). FMRI (a technique of neuromarketing) results showed that spaces of the mind connected to compensate framework and prosperity were initiated by-products that have procured notoriety as an image of status, extravagance, and social strength. (Hubert & Kenning, 2008). The texts also indicated that neuromarketing techniques are quite effective for pricing, sales, and promotion decisions. (Fortunato, 2014).

2.   Advertising:

Most neuromarketing practice has up to this point zeroed in on estimating the adequacy of publicizing. (Ariely and Berns, 2010). Zurawicki (2010) suggests neuromarketing gives information on three classifications of effects of promoting discernment on buyers. The first is the valence of the enthusiastic reaction, for example assuming that the subject sees the commercial genuinely or adversely. The second addresses the level of contribution (excitement), or the power of the sentiments experienced. The third portrays the level of contribution of intellectual cycles, remembering centering consideration for data in publicizing, or how they pass into memory. Neuromarketing assists organizations with distinguishing components that are neurologically captivating in a TV promotion. (Fugate2007).

3.   A New Platform and Retail Point of Service:

Customers experience more grounded passionate encounters when visiting a site from a mobile phone contrasted with visiting from a computer. This finding may accordingly legitimize focusing harder on correspondence on these stages, or a more prominent spotlight on cell phones when planning the promoting financial plan for web-based publicizing, particularly for organizations that underscore this correspondence channel (McRae, 2013). Guaranteeing a specific level of fulfilment all through the buying process is a higher priority than focusing unequivocally on the product itself. Neuromarketing concentrates on buyer conduct at the retail location (Luna-Nevarez, 2021; Morin, 2011). In doing as such, it addresses, for instance, the cycles by which the purchaser looks for items or the topic of what impacts his choice at the retail location (Bočková, 2021).

WHAT WILL MARKETERS LEARN FROM NEURO MARKETING?

Study says that our buying decisions are driven by something so subtle that we don't even notice. This raises many important; how do we make buying decisions? Are decisions based on consciousness, based on facts or the decisions are unconsciously based on feelings, emotions, and intuitions.

About a century ago companies in the western world ran into problems; consumers had everything they needed, so the companies came up with great ideas; that is to persuade people that they need more things (Bočková, Škrabánková, & Hanák, 2021). Even this includes the thing they didn't even know they needed and nowadays companies are studying your brain to get you to keep buying more stuff. This is called neuromarketing and people call neuromarketing marketing on steroids. These companies know us better than we know ourselves (Luna-Nevarez, 2021). The existence of the brand is nowhere but in the mind of the consumers. Hence, neuromarketing is all about a company's getting into your head.

Who are marketers? Simply put marketers inspire people to buy products and services. Moreover, marketers develop new products and advertising ideas along with new ways of communicating with their target audience in order to inspire them to make a decision. This can be possible after the incorporation of creativity, communication skills, and leadership. Market need to research the target audience to understand their needs and desires. With people (target audience) the marketers need to have empathy and curiosity as depicted in fig. 3 (Cardoso & Ferreira, 2021; Luna-Nevarez, 2021).

Figure 3. Social Media Data Pulled Ahead
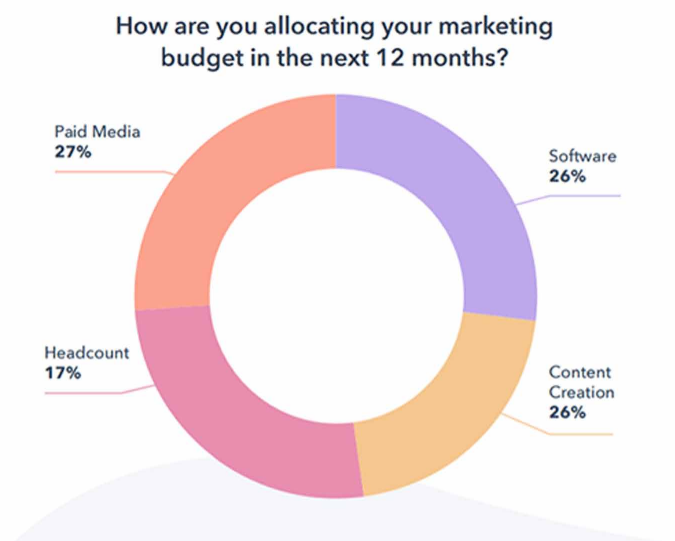
Along with it, marketers analyze competitive and company opportunities and by enhancing the strategical and analytical skills a company can improve the capability of the marketers. The compatibility of the marketers with the customers in order to inspire people to buy their products. In order to inspire they can summarise the activity on to the basic components of creativity, leadership, and communication skills. This will break people's thoughts to generate the empathetic and curiosity in the human mind (Cardoso & Ferreira, 2021; Remete, Bacali, & Srl, 2021).

Beyond Conversation: How to Talk and Sell to the Brain?

Things come in our world in the medium of the internet, social media, and print media. The interaction inference from various devices proves that people want to sell stuff to consumers. This phenomenon has abolished all the relevant concepts of placing of 4Ps of traditional marketing with that of the newly evolved concept of neuromarketing. The job of the marketers is to tell the stories and influence their ideas of selling the product of the company to the consumer.

1.   Marketers and Neuromarketing

The human brain is driven by basically three things when it comes to marketing or consumption of goods that is perception, attention, and memory. Every year in the Indian market almost 30000 new products are released, which means chances are if you looking for something, somewhere someone is selling it (Weber et al., 2021). But the fact is that about 80 per cent of these products are failed to sell. Instead of the company selling goods and products to consumers and spending a huge amount towards the marketing of that product. The amount company spends on marketing using traditional marketing methods. Neuroscience is the term for introducing the terminology of neuromarketing, this involves the integration with the traditional marketing methods with that of the neurons of the brains used for making decisions (Morin, 2011).

2.   Decoding the Consumer Mind

Applied neuromarketing can help a consumer in deciding actually what they want? What motivated them? What emotions do they experience? What drives their decision-making process? How do they make their decisions? As per Nobel Prize winner Kahneman, 2013 in his book *'Thinking, Fast and Slow'* he has divided the human brain into two systems:

His division of the brain is up to the two sides of the contextual brain into two systems; System 1 and 2, in the case of system 1 he postulates is the thought from the

subconscious mind. System 2 conscious thinking on the other hand is about working slow, robust, and is far more efficient it is all about high order thinking. Though he said that about 90 per cent of decisions we made in a day are from system 1 of the mind. As we talk about traditional marketing it depends on focus groups, services, and interviews all of it depend upon the responses received from the people. A traditional approach might be able to fetch the surface-level conscious responses but this technique fails miserably when it comes to subconscious responses (Alsmadi & Hailat, 2021; Touhami, Benlafkih, Jiddane, & Cherrah, 2011).

In the context of traditional marketing when trying to get responses you will get overly generic and positive responses and it is only because of the response coming from the conscious mind of the consumers. It takes ages for the marketing fundamentals to identify the impact of the responses from the subconscious mind. In fact, we as individuals are unaware of the responses of our subconscious mind and driving our desire in the first place (Cardoso & Ferreira, 2021; Fisher, Chin, & Klitzman, 2010).

The contradiction between the conscious and subconscious minds of an individual does not always match up. The purchasing of the consumer is so driven by the branding that they follow the bandwagon effect. After a certain period of time preferring that our brain start accepting it as a habit. Nowadays the bulky heavy machinery has been replaced by the handy portable device, the tracking of responses can be done anywhere while watching an ad, while interacting with the product and while simply shopping for the same (Chartrand, 2005).

3.   Neuroscience capability for social marketing

Basically, neuroscience is all about tracking the alpha and delta waves of the human brain. Through this, you are trying to understand that how anyone is having positive and negative thoughts about a product or making buying decisions. What neuroscience allows you is to basically quantify the emotions you see in real-time. It deals with the rational part of the brain and converting the same into quantifiable terms (Fisher et al., 2010). For a very long time, celebrities have had their paths on ads for the unavoidable reason of getting more attention and tend to get remembered for over a long period of time. Simply put, the ads having celebrities have more impact than that of an ad of having no celebrity. Along with that how much you like the ad depends significantly on how much you like an actor or an actress in that ad. The brand builder called this phenomenon the Halo effect, which means that the goodwill of the actor is being directly transferred to the brand itself (Brandt, 1988).

Hence, the marketer's job is to identify and get someone who is actually being liked by the people. But, hold on is the presence of the celebrity is actually helping the brand, or is it just the opposite. If the studies of the neuroscientist can be believed

the impact of celebrity over a product is more that is a brand has to fight for their presence with the presence of the celebrity. Hence there is always a competition of what captures more attention among both. Apart from establishing the image on the big screen, the marketers behind the brand are fighting for getting attention on the small screen. Studies suggest that if you are not getting attention on the bigger screen it is hard to get attention on the small screen i.e. digital advertising as per fig.4.

Figure 4. Explaining total time spent on ad including digital and mobile internet
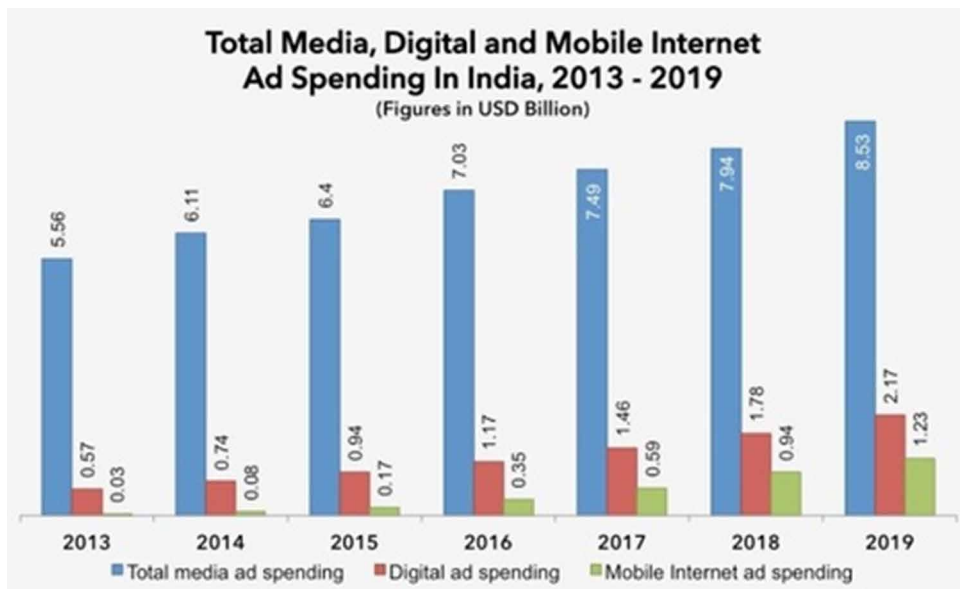
Companies nowadays spend more money on personalized digital marketing in order to attract more. Potential consumers while scrolling through social media take 100 milliseconds to identify that they are watching an ad. Around 400-500 milliseconds for a brain to identify the response for the ad and then a fraction of 1000 milliseconds to decide whether to watch that ad or not. To be noted is 3.4 seconds is the average time spent by an individual on an average. What if a consumer took a halt on your ad and stops by to watch it and the studies also suggested that, the stress related to slow or no internet is huge and remarkable. Studies suggest that even a slight delay in loading and buffering can lead to a 35 – 40 per cent increase in the heart rate which is huge. If stress responses are so high the brand is unlikely to create an emotional connection with the brand. Thus, the job of consumer neuroscience is to identify that what people want and most importantly why they want it? Marketers

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are making development in consumer neuroscience every single day as it paves the way for many exciting opportunities.

Emotions and Neuromarketing

Emotions play a significant part in guiding reactions to improvements and have been widely researched in the area of brain science, getting uncommon acknowledgement in the field of promoting (Consoli 2010). Feelings are omnipresent all through promoting. The impact data handling, intervene reactions to powerful requests, measure the impacts of showcasing stimuli, start objective setting, sanction objective coordinated practices, and fill in as finishes and proportions of buyer government assistance. However, we are simply starting to comprehend the job of feelings in marketing (Bagozzi, 1999).

The recall is a significant physiological component of the human learning process, where data is put away in the psyche as teamed-up hubs, making a semantic organization. Recalled information with a more grounded enthusiastic foundation will eventually prompt more noteworthy thoughtfulness regarding upgrades and increment correspondence impacts. (Vakratsas and Ambler 1999) Psychophysiological measures are more associated with brand recall. (Hazlett and Hazlett 1999).

In the present complex showcasing conditions, it isn't sufficient to promote in the customary broad communications. It is increasingly more significant that purchasers like, offer, and remark about the highlights of new merchandise and their encounters about another item, administration, promoting message, and TV shows in the online media. Subsequently, the significant inquiry is the thing that sort of messages will circulate around the web on social media. eg: Cadbury India is a subsidiary of Mondelez International studied the Indian market, it studied the emotions between a mother and a child and launch an ad namely bournvita race 40sec with a moto giving them the strength to prepare for tomorrow in which a mother makes her son a habit of victory, prepares him for tomorrow without supporting him. An ad that touches the hearts of every mother. The uniqueness of this ad is it is associated with the emotions of every mother. This expresses the significance that how important a customer's emotions are for marketing.

The main contention referenced depends on the understanding that neuromarketing attempts to view as a "purchase button" in the shopper's cerebrum, after which the buyer will purchase the items consequently. Defenders of this view contend that neuromarketing doesn't expect to illuminate about the item, yet basically to utilize feelings and other somewhat or totally oblivious cycles in the purchaser's psyche to convince them to purchase the item (Murphy 2008). Neural exploration shows that the brain's reaction to momentary wealth happens generally in the limbic framework, an area that administers feeling (Fugate, 2008).

Neuroscience has expanded our comprehension of viable advertising messages according to the online media perspective. These days it is feasible to utilize neuroscience to track down appropriate advertisements and showcase messages, which will become a web sensation via online media. (Falk 2013). Consequently, neuroscience has effectively uncovered the connections between neuropsychological cycles and behavioural results, yielding another comprehension of human behaviour. There are concentrates on which have shown that somewhat little gathering's (n = 30) brain actuation profile in the neuroscientific investigation can anticipate truly social possibility in a genuine setting. (Falk et al. 2015) neuromarketing is a discipline that applies neuroscientific techniques to investigate and comprehend human conduct corresponding to the business sectors and market trades. Buyer navigation is frequently made on an oblivious level utilizing feeling-based rating frameworks. Neuromarketing gives one of a kind understanding of this choice (Bočková 2021). Neuromarketing utilizes best in class assets in brain examining to comprehend the buyer purchasing process. Eser (2011), neuromarketing has extraordinary potential to distinguish the reasons for buying problems. (Senior & Lee, 2008). Understanding buyer activity is the most intermittent reason found in the writing investigated (Lee 2007).

All About the Buy Button

In neuromarketing, the term is concerned about the reactions of the consumer instead of trusting that is beyond the patterns of traditional marketing. There are almost 60 muscles that control our emotions which helps in displaying the emotions, tracking facial expressions. With the help of eye-tracking to figure out the exact, they are looking at the image in order to figure out their observations (Morin, 2011; Remete et al., 2021; Weber et al., 2021). Using voice analysis techniques they are not much concerned about the words they say instead they are concerned about the tone and pitch of their voice. Apart from this they also analyze the lie with the help of a skin conductance test, with the help of this they measure the heart rate, blood pressure, and also the electricity flows between the fingers. EEG (electroencephalogram) can also be used in order to measure the current of our skull and at the end, the marketers also have the option of an MRI technique that actually measures the oxygen consumed by our brain. All these methods are sort of analyzing techniques used by the marketers to reach the potential consumers and make them the end consumers (Cardoso & Ferreira, 2021; Remete et al., 2021).

Hereafter the journey of neuromarketing to applied neuromarketing started just by initiating by hitting the stimulus of the potential consumers by making them say 'yes'. As stated by Patrick Renvoise, the companies' sees there are three portions of the brain i.e. three selves of an individual the first being the neocortex brain, marketers

call this as a rationale self, the next layer is of the middle brain, i.e. your emotional self, and deep down below to that consumer have a reptilian brain and that's called instinctual self of the consumer. The marketers have discovered that the third part (layer) of the brain governs and impact of decision-making of the consumer. The marketers also understood that for them it is very easy to fool your reptilian brain around. The marketer and their team works on the stimuli divided into various types i.e. self-centered approach, to create contrast, by attacking tangibles, keeping clear with beginning and end, the emotional connect, and the visual impact (Cardoso & Ferreira, 2021; Luna-Nevarez, 2021).

RESEARCH METHODOLOGY

The present paper analysis considers secondary including surveys, press releases, published data in past, the government published data, and certified publications. Some of the sources include the google data repositories, GitHub data repositories, and HubSpot marketing statistics and purchase transactions of smartphones or related electronic gadgets. The study conducted under this chapter is considered from marketing statistics of Hubspot of the year 2021 along with the state marketing report (2021). This study has typically concentrated on the usage pattern of the digital platform by the potential consumers and the afterward impact of it. In the world of neuromarketing, there are no space and time boundaries, the marketing strategies might travel from one product to another. Thus, the challenges faced by the marketers while considering neuromarketing during interaction with the potential consumer is being discussed in the last part of the chapter.

THEORETICAL UNDERPINNING

Approaching Mechanism

There is a saying that 'there is no luck only marketing'. Among all the social media platforms the new age of marketing is all about connecting dots between data, AI, and neural marketing as depicted in fig. 5. This works as an application of neuroscience to marketing. Today brands cannot just predict behavior but they model it using AI with neuroscience, the way it can be done is by using ocean analysis.

Figure 5. Goldberg's five factors of personality (OCEAN)

The acronym ocean represents 5 different key core personality trends openness, conscientiousness, extraversion, agreeableness, and neuroticism. Ocean analysis can bring up a range of analyses say from racism to relationships it depends on the scale of openness. Thus, ocean analysis is very apt as per today's requirements and also predict accurately considering future aspects (Alsmadi & Hailat, 2021). Hence, combining ocean analysis can be helpful in analyzing tailored personality and bringing up the innovation in sense of neuromarketing. Coming out of 2020, has taught us so many positive looks to the future aspects in context to digital marketing. Each and every campaign in 2021 is related to a virtual element in almost all the aspects of the marketing and other interactions (Luna-Nevarez, 2021).

As per the Hubspot report of the state of Marketing, around 76 per cent of marketers have agreed to have running marketing campaigns now, out of the 36 per cent of them don't plan on starting in the year 2021. When asked about the primary goals for running campaigns 'Brand Awareness' being one of the prime components and the component of 'Increase Revenue' is least prior to them. All the marketing campaigns are now associated with social media and influencer marketing, rather than events or just downloadable content. This dynamism applies to every marketing channel like Instagram, YouTube, Clubhouse, LinkedIn, and Facebook, etc.

Cognitive Neuroscience Capacity:
Make it Visual and Emotional

Knowing the reptilian brain works at the beginning and at the end, the best the marketers can do is to make it clear and bring it in front. The patterns observed by the marketers are after applying a few basic steps; it starts with a diagnosis of the agony, followed by differentiating and demonstrating the gains and it ends with delivering the same thing. The years post Covid-19 have taught us about the significance of the appearance of the brand in front of the potential consumers (Dragolea & Cotirlea, 2011; Quartz, 2006). By establishing a direct relationship with the social media audience the marketers help in support, engagement, and in converting the potential consumers to the consumers as per fig.6. The various techniques followed by the marketers is social listening, using hashtags, and introducing them in the live video. Among all these techniques 62 per cent are being concentrated by the availability of social media. Instagram is the most common tool and prioritized platform by marketers followed by Facebook, Twitter, and YouTube.

Figure 6. Indicating the connection of neuromarketing and cognitive thinking

It's all about making decisions the word given to it is 'emorational' of the potential consumers. This part of the brain is the new development seen by the neuro marketers, they try to connect the emotional and rational part of the consumer with that of the decision they are making. Are they really our potential consumers? Can they afford this? Is it worth it? All these statements require the rationality of the consumers. However, it is not always the case there is the category of impulsive customers as well, and they really can't express liking, buying, or purchasing a product. Thus, the parameters of the Cognitive capacity of decision making is significantly involved in the process of neuromarketing (Remete et al., 2021).

The Value Addition: Neuromarketing and Traditional Marketing

Neuromarketing is reshaping traditional marketing. Since digitalization took place the pattern of picking up of platforms, audience and interference is shifted to digital mode (Brandt, 1988). Traditional marketing is about displaying it in newspapers, broadcasting it in radio-television advertising. Neuromarketing on the other hand is introducing marketing with that of the science of the brain, mostly targeted to fetch visual attention. As per the study, visual presence has more impact on the human brain, followed by numerous interactions and popups caters to the same (Fisher et al., 2010).

Marketers are investing in content marketing more than ever before. More than 80 per cent have opted for the content marketing post-Covid-19 penetration. Out of which 28 per cent are ready to plan on newly investing techniques. The optimum way to measure the success of your content marketing is to start analyzing and comparing it through content marketing. Video in the form of the media used by almost 65 per cent of the marketers, followed by graphs, infographics, and case studies (Alsmadi & Hailat, 2021; Bočková et al., 2021; Luna-Nevarez, 2021).

CONCLUSION

For years doctors and scientists have tried to unlock the mysteries of the human brain. Which areas control different mental functions, and how it is all wired together to generate our subjective psychological experience. For the past decade, neuroscientists have approached the brain like map-makers, charting and its activities within well-defined boundaries. Neuromarketing is about marketing without advertising. The most convenient way of building a brand or selling a product has all about traditional marketing.

Neuromarketing is really integral to old marketing strategies which have been utilized for quite a while. It is one more method of assessing and estimating factors

that, as of recently, were out of reach. A large portion of our conduct is directed by our unconscious piece of the mind. This is the essential justification for why it is defended to utilize neuromarketing to have a superior understanding of shopper conduct. Still, it is insufficient to purport that neuromarketing is a buy-button to the marketers, Neuromarketing is only an instrument to concentrate on the connections and cooperation between the market, items, and the clients.

Nyoni & Bonga, (2017) on the contrary the main contention referenced depends on the understanding that neuromarketing attempts to view as a "purchase button" in the shopper's cerebrum, after which the buyer will purchase the items consequently. Defenders of this view contend that neuromarketing doesn't expect to illuminate about the item, yet basically to utilize feelings and other somewhat or totally oblivious cycles in the purchaser's psyche to convince them to purchase the item (Murphy 2008). Marketing specialists should utilize neuroimaging to affirm, reconfigure, or work on our customary speculations of buyer conduct (Fugate, 2007).

Neuroscience offers advertising scholastics and professionals a thrilling new window into the fundamental mental cycles and exercises experienced by their target markets when presented to explicit sorts of showcasing boosts, and thus it holds incredible potential for propelling advertising hypothesis and practice. This study can be used as a starting point for the exponential growth of neuromarketing propelled for reviewing a potential customer. Some really serious parameters have to be taken into consideration for neuromarketing. The present big challenge is to brush up on the criteria for considering neuromarketing in the new aegis of neuroscientists.

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Chapter 8

Developing Customer Engagement Through Artificial Intelligence Tools:
Roles and Challenges

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ABSTRACT

Technological advancements improve the knowledge potential of business and help in building interactions with the customers. Artificial intelligence is drastically changing the way businesses used to engage with the customers by extracting and analyzing tremendous data generated through customer interaction. However, this area is not much explored in academic research. Hence, this study aims at understanding the role of artificial intelligence in enhancing customer engagement. It also deals with artificial intelligence tools used for engaging customers, challenges in using artificial intelligence for customer engagement, and the future of artificial intelligence in customer engagement. This study depends on secondary data that have been gathered from various sites, journals, books, and other available e-content. This study has implications for marketers in enhancing customer engagement and for academicians as it contributes to the literature on the role of artificial intelligence in developing customer engagement.

INTRODUCTION

In recent years, the emergence of digital transformation has resulted in a revolutionary shift in the business paradigm. In today's digitized world, the amount of information created by humans and machines far outnumbers human capacity for absorption, interpretation, and complex decision making based on that information (Sujata et al, 2019). AI is critical to the digitalization process because it can process large amounts of data (Bag et al, 2021) and has the potential to transform how businesses interact with their customers.

Every company desires to develop customer engagement through its marketing efforts as it leads to various favourable outcomes for its business. Data gathered from interaction with customers act as customer's voice. Earlier, it was difficult to collect and aggregate such data but with the introduction of Artificial intelligence it is easier for businesses to analyze customer related data (Perez-Vega et al, 2021). Figure 1 depicts the relationship between artificial intelligence and customer engagement.

Figure 1. Relationship of artificial intelligence and customer engagement

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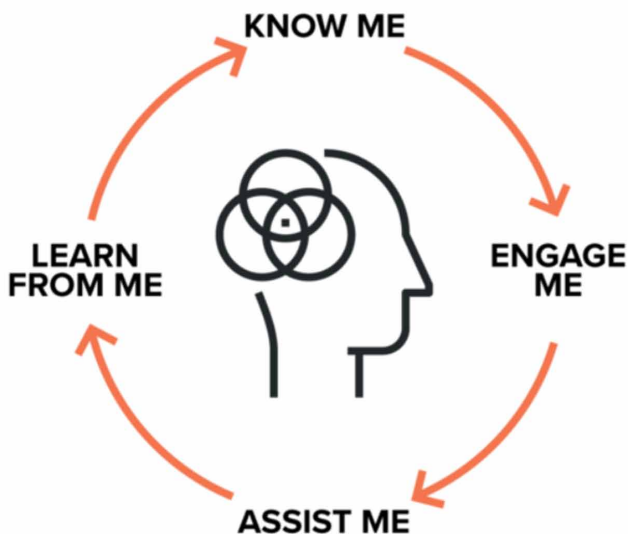
LITERATURE REVIEW

Kumar et al (2019) explored the role of AI in developing a personalized engagement marketing strategy. AI technology enables firms to utilize customer information to provide tailored products and services. AI technology can facilitate real-time learning and help managers improve customer value proposition over time. Strategy of providing curated products provides increasing value to customers thus leading to customer retention and sustainable competitive advantage.

Schrotenboer (2019) highlighted that AI has capability to improve customer journey and marketers must understand how such advancement impacts customer experience in this dynamic environment. Recommender systems can improve customer personalization and Conversational agents can improve customer engagement. Customer experience along the customer journey can be enhanced by them individually or collectively.

Prentice & Nguyen (2020) demonstrated that both service experience with employees and AI impact customer engagement and loyalty, only few dimensions produce unique variances in the consequent variables. Results revealed that customers prefer employee service, both service experiences have partial mediation effects on customer loyalty and Emotional intelligence has moderation effect on customer engagement.

Prentice et al (2020) investigated the impact of Artificial Intelligence on customer engagement in the context of the hotel industry. Findings show a link between AI service indicators, service quality perceptions, AI satisfaction and customer engagement. AI preference has a moderating impact on information quality and satisfaction.

Kishen et al (2021) determine the impact of artificial intelligence deployment on customer management strategies in the context of the retail industry. This research looks at personalized engagement marketing, agility in the supply chain (Robotics), and customer management practices using AI tools. Lack of knowledge about AI tools, ethics and privacy concerns are major impediments for the growth of artificial intelligence deployment in retail.

Sung et al (2021) demonstrated that the quality of AI (i.e., speech recognition and synthesis via machine learning) associated with an augmented object increases MR immersion associated with spatial immersion, MR enjoyment, and consumers' perceptions of novel experiences. Collectively, these increase consumer engagement, and improve behavioral responses like purchase intentions and intentions to share experiences with social groups. Findings also revealed that interactive AI and MR technology create additional opportunities to improve consumer engagement.

Bag et al (2021) empirically tested and confirmed that using Artificial Intelligence tools have an impact on user engagement and conversion. Furthermore, conversion

results in a satisfying user experience. Utilizing AI not only engages consumers but also motivates them to buy impulsively.

OBJECTIVES AND METHODOLOGY

The study aims at achieving following objectives:

1. To study the artificial intelligence tools used for engaging customers.
2. To study the role of artificial intelligence tools to enhance customer engagement.
3. To identify the challenges in using artificial intelligence technology for customer engagement.

To achieve above mentioned objectives this study utilizes secondary data that have been gathered from various sites, journals, books and other available e-content.

ARTIFICIAL INTELLIGENCE TOOLS USED FOR ENGAGING CUSTOMERS

A variety of AI tools can be used at different touchpoints to interact with customers. Few among them are:

- *Voice Assistant*

Voice assistants not only allow hands-free operation of digital devices but they are capable of interpreting human speech, responding to spoken commands, and can quickly impart the information that customers expect. Voice recognition is used in interactive voice response (IVR) systems, which function as a virtual digital assistant. It allows customers to use the power of voice across a variety of platforms. With the advent of intelligent IVR platforms, today's customer seeks more platforms and opportunities to interact solely through their voice. (Moriuchi, 2019)

- *Chat-Bots*

Chat-bots are AI-supported conversational software that replicates human behaviour. Business chat-bots are activated through textual queries rather than speech. Businesses use chat-bots on various platforms to interact with their customers. Chat-bots respond to conversational tone and fulfill information requests. Chat-bots have the ability to learn continuously and use that already stored information to give the

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appropriate answers to the customers. If used effectively, marketers can create desired positive impact on customers and keep them engaged with business. (Ho, 2021)

Figure 2. Chat-bots for customer engagement
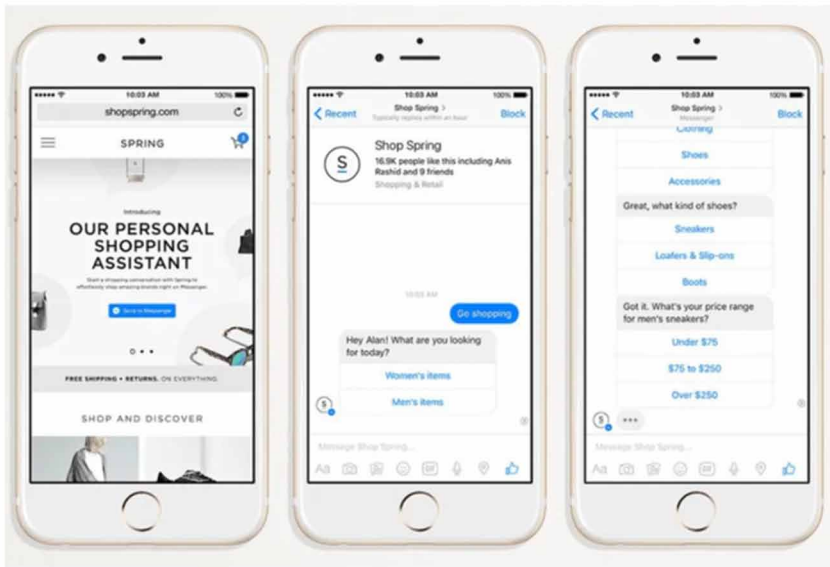
- *Sentiment Analysis*

The sentiments behind online conversation with customers are really valuable and reveal about customers' choices. Sentiment Analysis is a text-mining tool that captures customer sentiment from textual data sources such as social media posts, surveys, blogs, reviews, news articles, and other similar channels and then computes the sentiment score. With the help of sentiment analysis, businesses can determine customer's attitude towards the brand, and classify them as positive, negative, or neutral. Sentiment Analysis can also be used to minimize potential issues that can annoy customers and thus offer them a satisfying experience. The text-mining tool can assess emotions and assist in optimizing customer service to engage loyal customers. (Saragih and Girsang, 2017)

- *Facial Recognition*

Facial recognition can detect and match faces quickly and accurately from a database of digital assets. It can also identify a person's face even from an image.

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Facial biometrics can provide information about customers by recognizing their gender and age, counting unique visitors, and registering frequency of visits. Individual customer profiles linked to a digital facial database provide the best opportunities for personalized marketing. This tool can be used to evaluate a customer's response to ads and also assist customers in finding products that suit their facial structure like cosmetics, eyewear etc.

- *Natural Language Processing*

NLP is the process of converting human language into structured form that a computer can understand. Natural language understanding helps in interpreting human language to determine the customer requirement without worrying about challenges of slang, mispronunciation, and syntax. It widens the range of insights that businesses can gain about their customers and alters the way customers engage with brands. Furthermore, businesses can derive meaningful insights from what customers say in their own words and make more relevant strategies based upon these insights. (Liu et al, 2021)

- *Visual Search*

Visual search enables people to search through images instead of text. Customers can search for same or similar item using the picture they captured or found somewhere online. Software recognizes the object in the photograph and produces results based on that picture. Visual search offers convenience to customers and curated results as per customer requirement. Thus this tool enhances overall customer experience.

Figure 3. Visual search
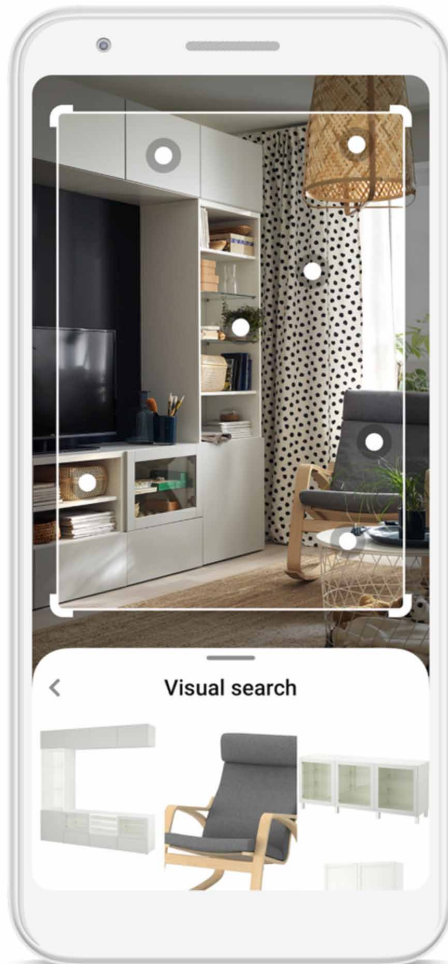
● ***AI-Driven Touchless Kiosks***

   With the integration of voice and gesture-control interfaces, AI-driven touchless kiosks are set to revolutionize the domain by understanding multifaceted customer requirements and adding personal elements that were previously lacking. Kiosks perform tasks with greater accuracy and efficiency while providing an engaging and interactive user experience to a large number of customers.

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ROLE OF AI TOOLS TO ENHANCE CUSTOMER ENGAGEMENT

Artificial Intelligence technology is recently adopted for engaging customers in a more interactive manner. It enhances customer engagement in following ways:

- *Personalization*

Customers expect hyper-personalized experiences from businesses while engaging with them, so businesses must hyper-personalize their customer service. AI tools can speedily and accurately detect patterns, behaviors, create customer profiles, and discover related information. Data science is at the heart of AI-powered personalization. It creates relevant and interactional communication based on behavioral and real time data. AI tools by analyzing, processing and delivering data, not only reduces the task of customer service representatives but also improves their ability to provide personalized and relevant responses. Thus, Data driven analytics and insights are rarely incorrect, provide a deeper level of customer understanding and can create novel touchpoints for businesses and marketers to engage with their customers. (Kishen et al, 2021)

- *Real-Time Support*

When it comes to interaction with customers, speed matters the most. Businesses should capture how customers are feeling about their service in real time using discrete emotions such as joy, love, surprise, anger, sadness, and fear, as well as cognitive responses conceptualized through customer evaluations (e.g., complaints, compliments, and suggestions). It is critical to collect real-time feedback because emotional and cognitive responses fade over time and details of the interaction are easily forgotten. Customers expect immediate responses that necessitate around-the-clock interactions. AI provides both speedy and high-quality output. Tools like chat-bots and text analysis enable businesses to offer faster solutions and meet the expectations of their customers. (Perez-Vega et al, 2021)

- *Consistent And Concurrent Engagement*

AI engages customers across channels in a consistent and concurrent manner. By combining all related information across real-time and asynchronous engagements, sales, marketing, service, digital and voice channels, human and bot; it makes customers feel engaged at any time and at any touchpoint. Integrating support AI into all channels can extend business visibility across the entire ecosystem.

- ***Effortless And Seamless Self-Service***

Improving self-service is one of the most effective ways to boost customer engagement. AI-enabled self-service and can be accessed 24*7 from anywhere at any time of day or night. This allows customers to get the answers when they need them, rather than waiting for availability of a customer service agent, which can shorten the time it takes to resolve issues. When customers require assistance, they do not want to navigate multiple websites and portals to find answers. One question and one click should bring the most relevant results to the top of the list, regardless of where that content is stored within the organization.

- ***Predictive And Proactive Customer Engagement***

Artificial intelligence tools can interpret and anticipate customer preferences. They not just tell what has already happened but they can predict what is coming next. AI recommends the best option to interact with customers by analyzing large unstructured data samples in a fraction of the time. AI tools outperform humans when it comes to data crunching. The more data it receives over time, the more accurate its prediction becomes, resulting in more precise insights. It assists in automating decisions regarding when and how to reach customers, when to use bot for interactions and when to use an agent. AI-enabled chat-bots can proactively start conversations with customers and deliver information.

CHALLENGES IN USING AI TECHNOLOGY FOR DEVELOPING CUSTOMER ENGAGEMENT

Undoubtedly, AI has evolved into a resource that no company can afford to overlook. AI technology appears to have enormous potential and sooner businesses adapt it for engaging customers, more beneficial it will be for them. Deploying AI tools may put some challenges in front of businesses.

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Figure 4. Common artificial intelligence challenges
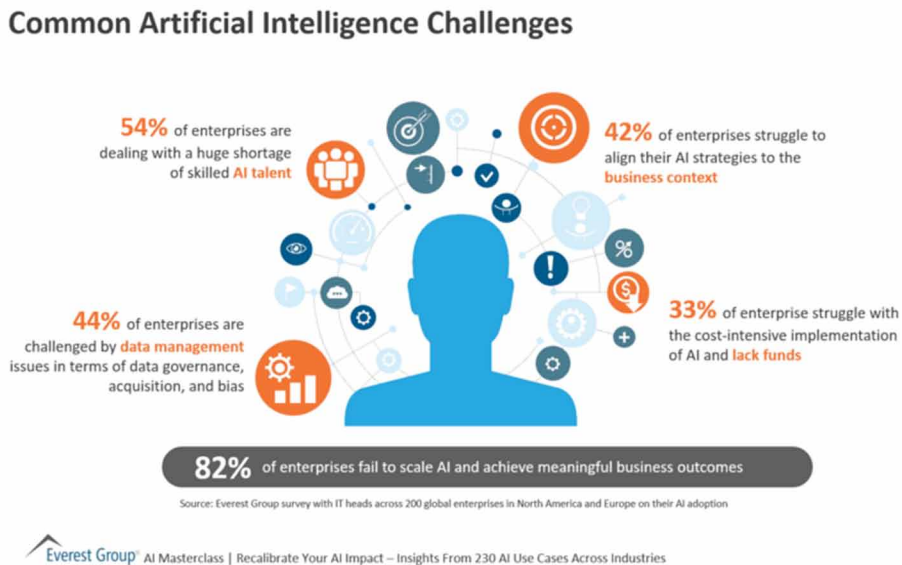
Lack Of IT Infrastructure

The majority of AI-based solutions have high speed computation ability. AI-integrated systems can run faster if the organization has good infrastructure and high-end processors. These high performing systems are difficult to set up and maintain. Businesses that intend to implement AI should have a stable and adaptable environment that is completely compatible with AI-based applications. (Khatri et al, 2021)

Requires Huge Budget

Another challenge is that businesses do not have funds for deploying AI technology. It requires advanced software and supported hardware that are costly to install and maintain. Requirement for substantial investment may hinder smaller businesses to get benefits from AI technology.

Dispersed Data

Currently, the most difficult challenge for brands using AI is that customer data is dispersed across numerous channels and disparate systems. Before AI can analyse

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the data, it must first be unified. Given the massive amount of data generated during the customer journey, many brands are utilizing a Customer Data Platform (CDP) to unify and analyse that data. CDP employs AI to help brands improve their profiles with customer scores, create more effective customer segments, and create new data visualizations.

● **Shortage Of Skilled AI Talent**

Existing pool of AI talent is insufficient to install and manage artificial intelligence tools and to interpret the results accurately. Before implementing this technology, businesses must train employees and make them sufficiently skilled to have better results. (Johnson, 2021)

● **Lacks Human Touch**

AI will never be able to replace human interaction. Customer service agents will always be needed to handle requests that the AI chat-bot cannot fulfil. A reasonable goal would be for the AI chat-bot to handle few requests and remaining handled by an employee as bots do not have ability to make social judgements. Sometimes customers may prefer employee service rather than bot services.

● **Privacy And Ethical Concerns**

Privacy and ethical concern is the biggest challenge in implementing AI technology. The ways in which data, which is the backbone of this technology, is collected, stored or analyzed may raise ethical concerns and may hurt the privacy of customers. (Khatri, 2021)

FUTURE PROSPECTS OF CUSTOMER ENGAGEMENT WITH AI

As customers are willing to interact digitally, professionals are interested in deploying AI tools for better engagement with the customers. It will extract critical user information from multiple channels to identify what customer requires.

Figure 5. Adoption of AI in future
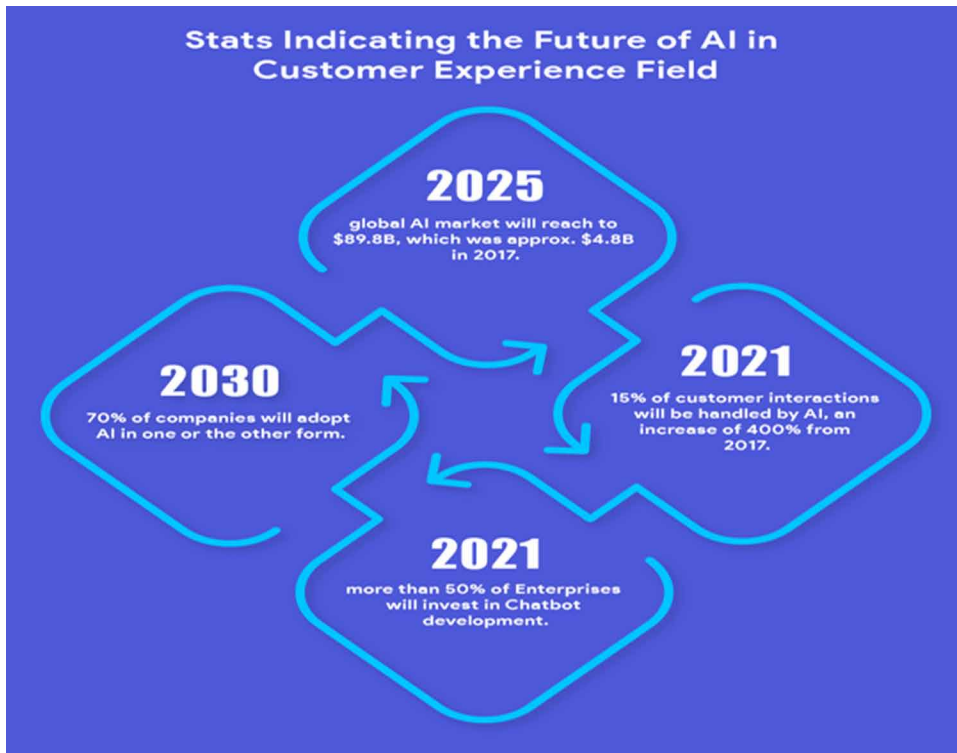
- With the advent of Omni-channel environment, physical stores and online channels can no longer be considered as different entities. Rather, both worked in a synergy. In future AI is likely to be integrated at every touch point to enhance its capabilities.
- AI technology will be used jointly with other technologies like augmented reality, intelligent routing etc. (Pangriya and Singh, 2020)
- AI cannot completely replace human services but will operate in conjunction with humans. It will automate routine tasks while encouraging humans to focus on creative endeavors.
- It will transform business-customer interactions from 'one click' to 'zero click,' providing the target user base with a seamless and timeless experience.

Above all, Artificial Intelligence will put an end to the practice of obtaining biased data to an end resulting in a better quality of information obtained.

CONCLUSION

AI plays a crucial role in improving customer engagement in terms of personalization, real time support, consistency, proactive approach and seamless self-service. A variety of AI tools can be used for this purpose such as chat-bots, voice assistants, facial recognition, natural language processing, sentiment analysis, visual search, touchless kiosks and instore robots etc. this technology have enormous potential but businesses may face some challenges while implementing these tools as there is lack of funds, infrastructure and required talent. Dispersed data and privacy concerns also act as hindrance in utilizing AI for developing customer engagement. Challenges are meant to be overcome and artificial intelligence is likely to be used for engaging customers in future.

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KEY TERMS AND DEFINITIONS

Artificial Intelligence: Artificial intelligence is the simulation of human intelligence in computers or robots that are programmed to make decisions and act like humans.

Chatbot: Chatbot is the software program that imitates the human conversation using AI technology.

Customer Engagement: Customer Engagement is the interaction between company and customers through each touchpoint to strengthen the relationship with customers.

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Sentiment Analysis: Sentiment analysis is the process of observing perspectives whether positive, negative, or neutral from written text in order to comprehend and evaluate reactions.

Touchless Kiosk: A touchless kiosk enables interaction without physically touching the self-service device.

Visual Search: Visual search is a technology that employs AI to allow customers to conduct online searches using an image rather than text or keywords.

Chapter 9
Blockchain Technology:
How will it impact the Marketing Domain?

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ABSTRACT

The entry of new technologies has upgraded the dynamics of various marketing strategies and enables it to tap a wider range of uncovered markets. In the present scenario, technology helps businesses to deeply penetrate the existing market and fetch more precise consumer information. It has much emphasis on increasing service quality, efficient management systems, and customer loyalty. In the 21st century, blockchain technology has the potential to upgrade business models across various industries. In this chapter, much emphasis has been given to how blockchain technology can potentially impact a firm's marketing strategies and present some of the applications of blockchain in the marketing domain. Applications of blockchain in marketing and its comprehensive discourse on integrating the applications of IoT system with this technology have also been covered in this chapter. It can be concluded that blockchain technology has a huge impact on a firm's marketing strategies. It will not only provide the features to consumers but assist many businesses to frame their strategies.

INTRODUCTION

The intensification of e-commerce platforms has ignited the growth of B2C commerce (business-to-consumer). The introduction of value creation processes has reshaped the organizational structures of such companies. Along with this, the entry of new technologies has upgraded the dynamics of various marketing strategies and enables it to tap a wider range of uncovered markets. Internet of Things (IoT) illustrates the latest technology that permits the clients to be coordinate with each other effectively and thus produce updated digitized services. This system provides various advantages to users and service providers. Along with this, the existing centralized mechanism introduces various issues that includes-security, transparency, data integrity one-point failure, and privacy. Such challenges are the obstacles in the upcoming developments in the area of IoT applications. Moving forward with the implementation of IoT into distributed ledger technologies (DLT) may be the correct option to settle such issues.

Here, Blockchain Technology is the most popular and common form of DLT. Based on it, blockchain applications provide a comprehensive range of innovative solutions to many business problems like security, efficiency, disintermediation, providing the immutability of data files, etc. The introduction of Blockchain Technology has engrossed the attentiveness of academicians, researchers, practitioners, and policy-makers all over the world. Due to the inherent characteristics of this technology, it will work in the future period effectively. It disrupts the way that business organizations deal irrespective of private and public sector (Pilkington (2016); Nowinski and Kozma (2017)). Most people believe that blockchain and bitcoin are the same things, but it's not the reality. In 2008, Satoshi Nakamoto has introduced the first decentralized currency, which is popularly known as Cryptocurrency (Nakamoto,2008). BCT is an innovative technology that exhibits a tremendous growth scenario within a short interval of time (Biais et al. 2019). It has enabled the creation of a new digital currency, i.e., the cryptocurrency which has shown an exponential rise in the recent past. This currency is in more demand as this currency has been the key subject matter for academicians, researchers, practitioners, and policy-makers for considerations in various topics, such as privacy (Reid and Harrigan, 2013), safety and security (Bauer and Hein, 2012), financial regulation (Peters and Panayi, 2016), and many more fields. Numerous research studies identified the potential of the underlying technology (Blockchain Technology) used in these cryptocurrencies for various industries (Crosby et al., 2016) that showcased the disruptive role of this new technology and its various applications in business model (Casino et al., 2019). Every domain is putting much emphasis on this particular technology and tries to implement it into their respective system.

Systematic literature reviews on blockchain technology applications in the management field show a different picture for marketing scholars. Most of the scholars have highlighted BCT applications in the e-commerce area (Konstantinidis et al 2018) and some have explained BCT for online social networks (Ismail and Materwala 2019). According to Wamba and Queiroz (2020), bibliometric analysis was run on 3507 documents and it has been found that bitcoin, security, smart contracts, and IoT are the most researched topics in this area and the limited number of studies in the marketing domain were also found in their treemap of keywords that was used in their study. Here, the Marketing domain could not be an exception. The use of the Internet, social media networking, information technologies related products and services have reshaped the way marketers interact with their customers (Belch and Belch, 2014). The use of IoT platforms or such technologies in their system creates a competitive environment for companies. The adoption of blockchain technology can lead to fast disruption in various ways and make it efficient to interact with ultimate consumers, manage 4P's of marketing (Product, Price, Place, and Promotion), provide better service quality, and redefine the marketing domain effectively. The majority of the literature concerning blockchain technology deals with the finance sector, cryptocurrencies, banking, and insurance. Despite its importance and potentials in the marketing domain, research and implications on this domain are still underdeveloped and are much focused on the financial applications of the technology. There is a huge opportunity in these areas. In 2007–08, a massive financial crisis took place at the global level and it resulted in a great fall in people's trust in the conventional banking system (Ehrmann et al, 2010). Then, will arise a strong need to develop technology-oriented platforms which can provide an alternative financial system to satisfy people's needs. Many passionate developers thus created a technology-oriented financial system that runs even in the absence of third parties. Satoshi Nakamoto proposed the digital currency named, Bitcoin (Nakamoto, 2008) which is based on the mechanism of the Peer-to-Peer (P2P) system of electronic cash and depends on cryptographic rules for running transactions effectively (Papadopoulos, 2015). This mechanism may include consensus mechanisms, hashing of the data, and encryptions using public and private keys (Münsing et al., 2017). It can solve a double-spending problem and establishes a new standard for digital transactions, that enhances the value system in the online business environment. All the transactions are time-stamped, systematically chained together, and are recorded in datasets known as blocks. A block has three parts-

- **Data** consists of transaction detail,
- **Hash** (usually alphanumeric code of your transaction), and
- **Previous Hash** (alphanumeric code of the previous block).

The architecture of Blockchain Technology has been shown below in figure 1.

Figure 1.
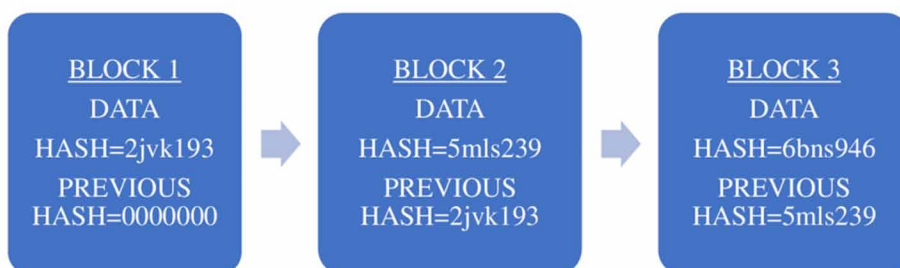
Here, Data contains the information required for the transaction, a hash is the representation of a Unique block ID and a Previous Hash represents the hash of the previous block in the same transaction. Due to this mechanism, if someone tries to amend data in any of the blocks, the alphanumeric value of the hash of the block will immediately change. In due course, users will have to update the hashes of previous blocks in the blockchain network, and which is not an easy job (Peters and Panayi, 2016). Hence, it can be observed that the data stored in a blockchain is authentic, safe, and secure. With its distinctive design, it is not possible to amend data on a blockchain network. With inherent features of decentralization and cryptographic hashing (Crosby et al., 2016), the previous transaction of any digital asset become unalterable, safe, and transparent.

Most scholars and practitioners believed that blockchain technology has been using DLT (Fosso et al., 2020). Actually, a digital ledger is a systematic collection and record of all transactions, which have been done by the different users of the blockchain network. This technology can be considered as an innovative method of authenticating assets that are being used in a blockchain transaction and can be further applied to various business activities (Ertemel, 2018 and Rejeb et al., 2020).

CHARACTERISTICS OF BLOCKCHAIN TECHNOLOGY (BCT)

Here, we shall discuss how the essential characteristics of BCT can fundamentally change the marketing strategies of the company innovatively. Research studies on various applications of blockchain technology specifically in the field of marketing activities are quite scarce. Despite this, the advantages of BCT are viewed as irrefutable

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(Ghose, 2018). On one side, blockchain technology is based on peer-to-peer (P2P) communication which upgrades the system by encouraging disintermediation, and on another side, it can also assist businesses to improve the quality of the data and facilitate its easy access. BCT has a full potential to assist consumer relationships by increasing the large extent of data, which provides transparency in information and improves and privacy.

- **Immutability-** This technology has the benefit that the data storage is immutable in nature. It cannot be altered by anyone. Once the data is inserted into a block then it is validated by each user (or miners) in the shared network. It also ensures the security of the transactions.
- **Privacy:** This technology consists of a systematic arrangement of various blocks which has a unique alphanumeric identification number, called Hash. Due to this arrangement, the privacy of the user's transaction has been maintained secured, and further, it is the wish of the users to share it with others (Tapscott and Tapscott, 2017). No third party is involved to control parties' credentials (Zheng et al, 2018).
- **Decentralization:** In the case of a centralized system, a client-server model is working at a central level and the server controls all kinds of information of any transaction. For instance, the Reserve Bank of India is the central governing body of the Indian banking system and controls every transaction. With this additional entry into this system, this model is susceptible to lots of threats. Blockchain Technology (BCT) has brought exhaustive changes into the existing picture. It is working on a decentralized mechanism that means it has no central authority. According to Tapscott and Tapscott, 2017, it maintains proper records of all transactions. In this network, each user can have quick access to the databases to validate the history of all previous transactions even in the absence of a third party. The use of distributed ledgers technology minimizes the chances of fraud (Rennock et al., 2018, Pereira et al., 2019).
- **Two Parties** - The advent of technology has completely enabled disintermediation and brought noteworthy differences in the company's system. Blockchain has adopted a peer-to-peer (P2P) network mechanism. It allows two parties only in the transactions. Hence, it does not require any third party for controlling the transactions and makes the transaction much faster and cheaper.

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THE IMPACT OF BLOCKCHAIN TECHNOLOGY ON MARKETING DOMAIN

Blockchain Technology is a panacea for all of the marketing worries. Digital marketing is a subset of marketing that utilizes the internet and digital media platforms such as mobile phones, computers, laptops, etc to promote product offerings. This technological development has changed the way businesses use it for marketing. It is easily adopted and incorporated by people and brands. People are increasingly using such digital devices in place of visiting physical premises. It provides a wide range of products to customers and saves their time as well. Digital marketing further extends its scope to non-internet media channels such as mobile phones, television, callback, and much more. The following figure 2 depicts the various factors which show the impact of blockchain technology on marketing.

Figure 2.

Impact of Blockchain Technology on Marketing

- Omission of Third Party
- Improving Transparency
- Prevention of Ad Fraud
- An Innovative approach to Share Rewards
- Optimization of Advertising Value Chain System
- Better Targeting
- Helps in Data Verifications
- Promote and Strengthen Loyalty
- Smart Contracts
- Enabling Loyalty Marketing Programs
- Social Commerce

Let us discuss how this technology impact the marketing domain.

1. Omission of Third Party

Blockchain Technology has eliminated the need for a third party or middleman. A third party is directly collecting users' data and then selling it further to other advertisers. Codes and Cookies are used to track the user's information all across the web. With the help of this technology, marketers could access the client's data straight away. Due to this technology, businesses can get quick access to their customers at least cost. They will assess the browsing history of customers for better decision-making. Before this technology, marketers used to collect information about their customers from various sources but now with this technology they can use the shared data by the customer, who has filled it willingly. Hence, it helps them to create customized ads and exhibit it to the audience.

2. Improving Transparency

Blockchain technology has a public ledger that allows transparency at each stage. With this technology, the companies can build trust among customers as building trust with the customer and making a connection with the customer is one of the biggest concerns in customer management. The easiest way to gain the trust of the customer is to provide transparency in the system. Blockchain places tremendous power on customers and provides them with transparent mechanisms. It reduces cost, prevents fraud, and speeds up transactions. For instance, Walmart has joined hands with IBM on a project that provides a transparent mechanism for its supply chain management process. Blockchain technology can be used to trace out easily the location of their customers' orders. Such practices enhanced the consumers' confidence in Walmart. Blockchain-infused Internet of things (IoT) infuses a higher level of security to prevent data forging by utilizing various characteristics of this blockchain technology.

3. Prevention of Ad Fraud

Due to fake clicks and paying for impressions, Ad fraud is becoming a serious problem nowadays. It is distorting the analytical data, which has a poor impact on their future strategic decisions. With the implementation of BCT, advertising companies can showcase the live view of all click-throughs. It is helpful for marketers to rent out the advertising space and deliver quality traffic to them. Companies like adChain, BitTeaser, etc have already disrupted pay-per-click (PPC) advertising by using it. Due to various features of blockchain technology like transparency, security, and

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decentralization, it will be convenient for social media marketers to purchase ad buys effectively.

4. An Innovative approach to Share Rewards

The distributed ledger technology (DLT) automates payments at any scale and the companies can send even micro amount payments to their consumers at any point in time. It has massive implications as it can be used for fund transfer. It helps the consumer to collect their rewards from companies irrespective of their size.

5. Optimization of Advertising Value Chain System

Adtech is considered one of the most focused areas for blockchain technology in the marketing domain. The management of digital ads is most important for acquiring the services from a transparent, secure, and public distributed ledger.

6. Better Targeting

Blockchain Technology helps companies to create search engines at a decentralized level, that helps marketers to outstretch their target audience. For instance, BitClave has utilized this technology to create its decentralized search engine. In addition, CAT tokens are being used to pay target people for presenting their personal information to the marketers. Enthusiastically, people click on these ads on BitClave and they are being paid for it. Hence, with the implementation of blockchain technology, companies can solve the issues of targeting people and consumer engagement and it will help them to enhance their customer base.

7. Helps in Data Verifications

Blockchain Technology can automatically gather, check, store, and update its databases with minor human intervention. It is the perfect platform to brainstorm new innovative ideas because it prioritizes data-driven marketing.

8. Promote and Strengthen Loyalty

Blockchain Technology helps companies to uplift the demand for their advertising. Businesses will now analyze whether their target audience can be able to watch their advertisements or not and thus controlling their inessential costs.

9. Smart Contracts

Smart contracts are quite similar to regular contracts, but the rules of the smart contract are administered in real-time. Such contracts eliminate the need for a middleman and save time and money. For example, BurstIQ, is a blockchain-based big data provider in the healthcare sector and helps doctors and patients to transfer their sensitive medical information smartly via using blockchain technology. These smart contracts develop various parameters about data sharing and its related information.

10. Enabling Loyalty Marketing Programs

100% loyal customers are very rare in real life. Tightening the bonds of loyalty with existing customers has become more important for every organization. Loyal customers purchase more products, cost less to organizations, get retained with the organization for a long time, and influence others to become customers with positive word-of-mouth. Loyalty focuses on the extent of the psychological commitment of the customers towards the brand. Loyalty can be defined as the probability that a customer will purchase a particular brand on any purchase (Keiningham, 2006). Gefen, D (2002) in his research has concluded responsiveness, reliability, and assurance dimensions of online service quality are quite important in enhancing customers' trust and loyalty. Technology plays a vital role in this area. With technological advancement, the collection of consumers' data in terms of their preferences, purchasing behaviors, purchasing styles and patterns, transactional history, etc. becomes easy, and effective loyalty programs have been tailored depending upon such analytics outcomes. In a competitive market, every company tries to ensure that their consumers exhibit loyal behavior for their products and services. According to Cvitanovic, 2018, they have been systematically managing their customers' data through various loyalty programs. These programs help to enhance brand loyalty and encourage customers to create positive word of mouth (Uncles et al., 2003). It may significantly beneficial for companies as it can generate sales and hence, profits. According to Blattberg and Deighton, 1996, many marketers have already implemented such loyalty programs in different industries. They continuously analyze to understand which strategy should be opted to reach the ultimate consumers and how such reward schemes would serve them in a better way. For example, mobile marketing develops a customer-specific paradigm that helps marketers to instantly communicate to their prospective members and make them updated with new loyalty programs. Database management software has been used and it allows personalized tracking of users (Buss, 2002). Similarly, the application of Internet-related services is reaching beyond the area and it has created an opportune environment for the ever-rising growth of loyalty programs for customers (Ha, 2007). According to Meyer

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and Benavent (2001), blockchain technology helps to provide the optimal solution for system inefficiency in such loyalty programs and that would result efficiently among various brands. In short, this technology has the potential to design a safe environment that is unachievable with the existing loyalty databases at a centralized level (Zhang et al., 2017). For instance, with the help of Blockchain technology, Sandblock and Loyalcoin are providing solutions to acquire and retain customers through various loyalty programs.

11. Social Commerce

Social commerce is a component of e-commerce that effectively utilizes online media and social networks that supports social interaction to assist buying and selling online. Blockchain has many applications in e-commerce such as fostering faster transactions, preventing online frauds, reducing transaction costs, and keeping users' data and identity anonymous. For example, decentralized e-commerce platforms like GAMB and OpenBazaar facilitate vendors to set up e-commerce stores and opt for them as decision-makers for their online stores.

Blockchain technology has the potential to make revolutionary changes as it can help marketers about designing, track, communicate loyalty programs to their consumers. A blockchain-based marketing system helps all involved parties such as consumers, marketers, IT managers, and operators to efficiently interlink with the system processes. All parties could work enthusiastically to better manage and improve the user's experience and to reach the untapped markets.

INTEGRATION OF INTERNET OF THINGS (IOT) AND BLOCKCHAIN TECHNOLOGY

IoT is referred to as a vastly growing network of objects which can exchange their data in a real-time basis via connectivity and embedded sensors. For example, lights, refrigerators, washing machines, cars, and many more devices can be connected to IoT. The Internet of Things (IoT) enables marketers to create different experiences in their buying journey as it collaborates digital and physical world. It analyzes customer buying habits and gains deep insights into customer buying behavior. The true power of IoT in the marketing world lies in the ability of marketers to optimally utilize consumers' data and think out of the box. Providing better services to your customer is a prime concern of every company. To achieve this objective, the service providers are working day and night to better understand their customers to retain them and provide them with a better experience through proper engagement. Many strategies have been adopted by companies to keep an edge on it. Better end-to-end

customer engagement and experience is another ball game in this competitive world. Here, IoT can play a significant role. There are immense benefits to organizations from IoT applications. Some benefits are industry-specific and others are across multiple industries. It includes- monitoring overall business processes effectively; generating more revenue; improvising customer experience; cost-effective and time-saving approach; maximizing employee productivity; integrating with other business models, and making optimum business decisions. Ultimately, the connected user is a prime source of data for performing marketing activities. The advent of Artificial Intelligence (AI) has been influencing the blockchain technology market and its integration with blockchain technology is considered the most advanced IT development taking place in history. The usage trend of AI is expected to gain prominence in the future with more concentration on network privacy, security, and users' experience by all technology firms worldwide. With this technology support, the personal information of customers has been collected by service providers through cookies to create custom advertisements for them and target the right audience.

The internet of things (IoT) is transforming manual processes into digital ones and a huge volume of data that can be utilized for analysis purposes to produce optimum results. IoT integration has proven to be invaluable and tremendous. Here, blockchain has huge potential in this revolution. It can enrich this technology by supporting a well-trusted sharing network, where data is immutable and reliable. Such integration will bring a huge revolution in the market. The application for blockchain and IoT can be seen in different organizations. For example, Blockchain and Supply chain IoT contracts can be compiled together for assurance in the effective quality of the supply chain management system. With the help of this integration, the movement of the goods from ultimate producer to retailer can be easily recorded and can be used for making better supply management decisions. Such integration can help companies to analyze their consumer buying habit pattern across various platforms. It will also help companies to get a better understanding of the buying history of the customer and interact with them more proactively on a real-time basis to better suit their requirements. For instance, in the case of a supply chain of foodstuff, a cold storage system is required to keep the product safe. IoT devices, like temperature sensors, can constantly diagnose the food temperature of stuff packages and immediately send data signals to a smart contract, which further inform all stakeholders on a real-time basis. Since these smart contracts are working on the top of the blockchain technology and prevent this data. In another case of leasing of Trucks, IoT sensors are being placed in leased trucks that can record all events on a blockchain and help the system to better manage fleet and also support billing practices. With these sensors, truck leasing companies can charge fees depending upon the torque of the loads instead of mileage. Due to the inherent characteristics of blockchain technology, its distributed ledger technology (DLT) supports a shared

database, decentralized can build a strong network of truth across all participants. They can verify their copy of the distributed ledger and all parties are working independently. Such integration helps the leasing companies for increasing their revenues and reduce costs.

CONCLUSION

Blockchain technology has the potential to make revolutionary changes as it can help marketers in many ways. Rapid technological growth of e-business has a significant impact on the better management process and has also reshaped the marketing discipline. Today, most of the brands are progressively using blockchain technology to grasp global outreach and thus penetrate the novel marketplaces. Besides, Internet has empowered marketers to reach their ultimate consumers via interactive media platforms. Along with this, consumers are more rational about available offers and make calculative judgments. Many companies got benefited from various techniques of data mining. Fetching the big data and analyzing it further to conclude consumers' preferences, is a big achievement in this era. In this chapter, several blockchain applications in the marketing domain have been presented and their impact on the marketing domain has been highlighted. The architecture and characteristics of blockchain technology have also been elaborated. Moreover, the technological competencies of blockchain technology have been demonstrated in this chapter which is important for the protection of consumers' privacy and raising their security in electronic transactions. In the end, it can be concluded that blockchain technology has a huge impact on a firm's marketing strategies. It will not only provide the features to consumers but assist many businesses to frame their strategies to tap the uncovered market and finally create a healthy marketing environment for consumers, marketers, brands, and other parties in the system.

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Chapter 10
Neuromarketing Approach:
An Overview of Future Market Research

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ABSTRACT

In the 21st century, marketing research has been oriented towards four components of consumers—physical body, mind, heart, and spirit—which contributes to the birth of new term, neuromarketing. Neuromarketing is an infant field of marketing science. It tends to help in measurement of physiological and neural signals of brain to gain insight into consumer motivations, preferences, and decisions related to market current situations. In simple words, it's the study of consumer responses in response to marketing stimuli. Human feelings, thoughts, actions are the parts of neural activities in the brain. This chapter sheds light on the neuromarketing approach to give an overview of it in respect to the future market. As it can easily reduce the uncertainty, it helps in studying consumer behavior and draws a brain map to predict and manipulate decision making.

INTRODUCTION

Neuromarketing is the application of neuroscience and cognitive technology to advertising. This could include marketplace studies that attempts to discover client wishes, motivations, and choices that traditional methods like surveys and cognizance

groups can't display. Neuromarketing can include the evaluation of precise advertising, advertising and marketing, packaging, content and so on, Karmarkar, Uma R (2011). To extra accurately recognize how clients react on the non-conscious degree. And, it may encompass making use of the knowledge obtained from neuroscience and cognitive technology studies to make advertising and marketing more effective without testing particular commercials or other materials. Choice making was once smooth. These days, clients are inundated with records. Even the handiest merchandise waft adrift on a sea of possibility. For example, over 50 brands of bottled water are sourced within the India alone. To make matters worse, inter brand consistency is implicit within the market for water most effective a lot variance can exist in a tasteless product, in the end. So, what makes a patron attain beyond Bisleri and grab Aquafina? There without a doubt isn't any honest solution. It could be the packaging, the shelving, non-public experience with the product, emblem reputation, or any aggregate of those variables Zurawicki L (2010).

Wading thru the sea of options to make a logical buy is more than tough; it's not possible. This rule can be applied to almost any product. As a result, consumers make almost all of their choices subconsciously, a way from aware reasoning. Still, a majority of entrepreneurs use conventional methodology (focus groups, surveys, etc.) to behavior their marketplace research. If we receive that client can't consciously express why they make purchase choices, why could we rely on what they say to inform our advertising and marketing and marketing efforts. Truly placed, neuromarketing is the simplest way to gather statistics directly from the source of human decision making: the subconscious Pradeep AK (2010).

The idea that each one human emotions, mind, and movements even awareness itself are just the products of neural hobby within the mind. For entrepreneurs the promise of this concept is that neurobiology can lessen the uncertainty and conjecture that traditionally hamper efforts to understand client behavior Postma (2012). The sector of neuromarketing from time to time known as customer neuroscience research the brain to are expecting and probably even control consumer behavior and choice making. Till recently considered an extravagant "frontier science," neuromarketing has been reinforced during the last five years by way of numerous groundbreaking research that demonstrate its capability to create cost for entrepreneurs, Javor A, Koller M, Lee N, Chamberlain L, Ransmayr G (2013).

History of Neuromarketing

Although the sector of neuromarketing within reason new, the preference to inspect the minds of people has long existed for decades. It's miles an emerging disciplinary area in advertising. It borrows tools and methodologies from fields which include neuroscience and psychology. If we hint the field of neuroscience as a long way

back, we can see that there have been scientific studies on the mind since the ancient Egyptians, Eser Z, Isin FB, Tolon M (2011).

The term "neuromarketing" introduced by means of exceptional authors in 2002 however studies within the subject can be determined from the 1990s. Gerald Zaltman is related to one of the first experiments in neuromarketing. In the past 1990s, both Gemma Calvert (United Kingdom) and Gerald Zaltman (US) had mounted consumer neuroscience businesses. Advertising professor Gerald Zaltman patented the Zaltman metaphor elicitation approach (ZMET) in the 1990s to promote advertising. ZMET explored the human subconscious with specially selected sets of images that cause a positive emotional response and activate hidden images, metaphors stimulating the purchase Graphical collages were constructed on the base of detected pictures, which lays inside the foundation for advertisements. ZMET speedy received recognition amongst masses of fundamental customers organizations including Coca-Cola, General Cars, Nestle, And Procter & Gamble. Zaltman and his pals had been employed through those agencies to analyze mind scans and have a look at the neural activity of clients. In 1999, he began to use Functional Magnetic Resonance Imaging (FMRI) to show correlations among client mind interest and marketing stimuli. Zaltman's advertising studies strategies stronger mental studies used in advertising equipment. Many studies and research on Neuromarketing are paid on and some are on the way, Vecchiato G, Kong W, Maglione A, Wei D (2012).

SCOPE OF NEUROMARKETING

The future potentialities of the emerging subject of Neuromarketing in India are very brilliant. According to the Boston Consultancy Organization from 2016 to 2025 the percentage of the prosperous and elite in the five household categories in India will increase from 8% to 16% whereas the proportion of the strugglers will drop from 31% to 16%, Fisher CE, Chin L, Klitzman R (2010). The elite and affluent classes will account for 40% as in opposition to the contemporary 27%. India with a massive population of more than 130 billion peoples is possibly to end up the most important customer market inside the global overtaking china inside the near future. Consumer Charge Index CPI in India averaged 114.67 Index Points from 2011 till 2017, reaching an all-time high of 137.60 Index Points in November of 2017. The cutting-edge 2.8 trillion $ GDP (2018) on the growth charge of round 7% is predicted to reach 4.6 trillion $ by means of 2025.

Neuromarketing has now not yet fully matured, but it has come a long manner in just a few years. Upcoming 5 to 10 years could make all the distinction. The prohibitive price will come down as generation improves and firms compete. Outcomes and actionable insights will develop greater reliable, valuable, and plausible. A few brushes

aside neuromarketing as vain due to the fact they see it as merely confirming what conventional advertising and marketing research already is aware of. Neuroscience and the technologies available to neuroscience and advertising and marketing maintain to broaden. This makes the affirmation of existing understanding look plenty like confirmation of the capacity for an extra developed and mature neuromarketing, Karmarkar, Uma R (2011).

An effective use of the period in between could be to determine out the inevitable ethical and regulatory questions such as information privateness and safety, specifically with the GDPR and ongoing facts breach scandals so fresh in our digital cultural reminiscence. The capability for neuromarketing to further innovate the digital transformation of business and increase what it manner to be an wise company is extensive. With an exponentially deeper understanding of your clients' needs, wishes, desires, intentions, and behaviors incorporated into your already sturdy consumer profiles, it's hard to overestimate the competitive benefit afforded by way of this new measurement of consumer insight, Schneider T, Woolgar S (2012).

Creating extremely good emotional experiences which are individualized on an unparalleled scale, in the correct and ethically transparent manner that pleases your clients whilst understanding, respecting, and aligning with their values and their expectancies – that's the potential of neuromarketing to usher inside the next generation of CX as the values and emotion economy maintains to conform. Overall, neuromarketing remains a nascent industry. A number of the organizations working in the space are a step at the back of the curve, which makes it hard for enterprise leaders to establish legitimacy. As the field progresses and technology evolves, neuromarketers will keep to demonstrate their ability to impact advertising efforts in unparalleled approaches and generate a higher ROI(Rate of Interest) than some other form of marketplace studies. Till the rest of the arena catches up, it's as much as entrepreneurs to determine which neuromarketing businesses are well worth the funding, Dimoka A, Banker RD, Benbasat I, Davis FD, Dennis AR, et al. (2012).

COMPARISON BETWEEN TRADITIONAL MARKETING AND NEUROMARKETING:

Because of neuromarketing research, marketers not ought to depend as closely on consumer self-reporting. For starters, it may be hard to get people to take part in surveys and awareness businesses. And even when there's lots of feedback given, the consequences may be biased or faulty. Neuromarketing bypasses conscious thinking and identifies computerized reactions that have a tendency to be ordinary across the populace. Contrary, because these findings are so generalized, there is nonetheless a want for traditional studies to understand audience in more detail.

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And despite the fact that customers' decisions may be significantly inspired by their subconscious responses, what they consciously think and feel still matters loads. Neuromarketing may be used to help our marketing messages enchantment to humans as a whole, whilst conventional methods assist us and hone our message for a particular target audience. We'll nevertheless want to do masses of trial and mistakes to look what without a doubt works on our audience, in our market, with our merchandise. Neuromarketing isn't a magic bullet. Honing in on an optimized advertising and marketing method will usually involve work. Neuromarketing goals to apprehend client behaviour, whereas traditional advertising and marketing studies attempts to understand a customer's decision-making process from an aware point of view, Lee NJ, Senior C, Butler MJ, Fuchs R (2009).

Karmarkar, Uma R (2011), Indicated that the hassle with traditional advertising studies is that relies closely at the patron self-reporting what they assume, sense and consider. Neuromarketing is a quite new marketing subject that enhances traditional research with records that cannot be received through different old strategies. We're blessed with neuromarketing and customer behaviour because it facilitates entrepreneurs to get better effects even as spending less money. Despite the fact that conventional marketplace research still has an area inside the global, neuromarketing gives a layer of intensity and perception that conventional market studies virtually cannot get entry to. Traditional market research relies on self-document methodologies which might be fraught with a number of biases that may skew the results. Let understand this through some key points with the help of an example. Consider, we've agreed to partake in a market research have a look at and also, we're standing in a grocery store with a researcher standing beside us with clipboard in hand. We choose up a product and they ask, "why did you pick that product?" a number of problems emerge if we strive to answer this query within a conventional market studies framework.

Reaction Bias

We are handiest human and there are a variety of things in an interview placing that can have an impact on our solutions. We will be stimulated with the aid of the interviewer and the environment we're in, the way the questions are phrased, or by way of an subconscious desire to be a "suitable" respondent and provide the interviewer with the answers you suspect they need to hear.

Self-Evaluation Bias or Self-Record Bias

This is our incapacity to assess our feelings and express our proper emotional kingdom using constant language and terminology. Feelings are so granular and

fleeting that we are very hard to become aware of and specific verbally. One man or woman's "satisfied" isn't similar to the next man or woman's "glad", and that leaves our response open to misinterpretation.

Researcher Bias

Traditional marketplace research is predicated closely on the translation of the researcher(s) and theoretical fashions both of which are often not medical. The end result is records that is left open to interpretation, and studies that cannot be without problems replicated nor blinded, nor controlled.

Hence, neuromarketing offers a number of methodologies that don't rely on the researcher's own interpretative frameworks and as a result are much less susceptible to researcher bias. Traditional research is just that, conventional, and the present day marketing global desires new and modern methods to better understand patron behaviour. Fortunately, neuromarketing is simply that present day studies that makes use of the satisfactory in purchaser neuroscience and biometric era to restriction bias in order that we will actually recognize human emotion and selection making.

IMPORTANCE OF NEUROMARKETING

Neuromarketing gives us the most direct path to knowledge and consequently changing a user's behaviour, which is the primary purpose of advertising and marketing. Through focusing at the behavioural sciences, we will bypass conscious biases and pick out automatic reactions that tend to be well-known across all people. In simpler words, neuroscientific research allows marketers to understand their audience better than the target audience can apprehend themselves. This results in better advertising procedures and expanded income. Neuromarketing is greater critical than ever because it's more and more tough for entrepreneurs to get their audience's interest in the first place. "Marketing is not approximately the products that we make however approximately the stories we tell" is a typically used quote in current neuromarketing era. The stories reaching the customers through commercials and soliciting must create an emotional chord between the product and the customers. Historically marketers and advertisers have used distinctive strategies of classified ads and product development projects. This involves large financial inputs and time length that in no way found its way to humans' reminiscence financial institution and persuades their choice making. Neuroimaging and neuromarketing techniques come to be an outstanding and feasible opportunity which could tweak the following technology of smart customers and exceedingly aggressive patron market. Neuromarketing technique is the modern and advanced tool utilized by advertising researchers to

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have a look at and understand the client behaviour styles. Neuromarketing makes use of slicing edge techniques in brain scanning to apprehend the nuances behind the psychological choice-making process of the patron, Ariely D, Berns GS (2010).

Nenad DH (2011) found that the measurement of the brainwaves may additionally ideally reveal purchasers' unconscious responses to advertising and marketing stimuli. By using neuromarketing we could definitely single out the element of an commercial that creates a feel-desirable effect within the minds and reminiscences of the customer. This may assist with the choice and timing of visible and audio features for an powerful commercial. This will affirmatively help inside the creation of manufacturers, emblem research and its impact on selection-making manner of the consumer. Neuromarketing opens avenues to examine and discover the reasons of compulsive purchasing issues and offers its ability use in effective advertising. Neuromarketing is a unique approach than can procure statistics above and beyond the extent of human cognition and notion because purchasing is largely a unconscious process.

TECHNIQUES OF NEUROMARKETING:

Simon H, Dolan RJ (1998) revealed that in modern-day day neuroscience, it's smooth to get confused over all the specific neuromarketing strategies available. At the same time as truly all of the strategies used in the subject may be valuable to marketing, it's top to apprehend the difference between them and the way they work.

See through our Consumer's Eyes with Eye Tracking

Eye tracking consists of measuring the attention motion styles of our research contributors. It's a tool that lets us to see our brand, store or commercial through the eyes of our customers. Due to the fact present day eye tracking equipment could be very light and transportable, it's feasible to create real time scenarios and register the natural eye gaze of customers. Except in-save possibilities, eye tracking can measure the eye-gaze of purchasers online as properly. For instance, it may be used to measure if product placement for the duration of television programs simply makes humans look more at a product.

Taking a Look within the Consumers' Brain: EEG and fMRI

If we need to realize a bit more about what human beings assume in preference to what humans see, there are some different strategies we ought to use. There are certain gadgets out there that we may also realize from a medical context that may study

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brain pastime, such as fMRI and EEG gadget. Those mind scanners are in recent times utilized by neuromarketers to observe people's brains with the intention to create eye-catching commercials, websites and packaging that press the consumer's buy buttons. That would sound a chunk unethical, but it's a ways less horrifying than it appears. Whether or not, if consumers like or not like a product, if they experience extra like drawing close or heading off a product, or in the event that they get excited or bored by a positive advertisement nonetheless, this is very beneficial records for the marketer. It may help them create merchandise that in reality speak to the purchaser, and it could help clients get merchandise that cause them to glad. Measuring those variables with EEG scans to analyze brainwaves presents superb temporal decision, that means that the results of a certain stimulus on mind hobby can be examine at extremely good pace. For instance, it is very useful to investigate which exact sequences in a business are viewed as positive and which of them are not. However, it lacks right spatial resolution, meaning the supply of the brain sign recorded by using the EEG is tough to discover precisely inside the mind.

It's all in the Smile: Facial Coding

There are also sensors that can be connected to the face and measure tiny moves of muscular tissues. When we display positive emotions, like smiling, we use particular muscle groups to gain this. The same principle applies to other emotions consisting of anger or wonder of path, a moderate expression of a faint smile does now not usually imply that a person is glad. However the point is, facial coding device can degree subtle, in many instances subconscious, reactions to stimuli that maintain information approximately how we feel about something. Even higher, it may predict what conduct will follow said expressions.

To Touch, Smell See and Hear: Sensory Advertising and Marketing

There are several varieties of sensory advertising, together with contact, sound, or smell, and that they purpose to steer a logo target market through sensory stimulation. With emotional merchandise like the ones bought in a style shop, a bit of excellent smells will give clients an entire new experience and will make merchandise seem greater exclusive and excessive quit.

Thoughts Tricks? Psychological Strategies

Mental strategies may be pretty subtle. A speak me example, even though perhaps more generally known in recent times, is that merely getting rid of the Dollar Sign,

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Rupee Sign listed for our products can increase our income. Seeing a Dollar Sign the European reader, a Euro Sign or an Indian Rupee sign subconsciously shifts humans' attention to loss and now not gain of route, we do get something we want in return for our difficult earned Euro's, Dollars or INR, but it's nevertheless a bit unpleasant that we're spending money within the first place. Doing away with the sign truly works too, as research have found that people spend considerably greater cash on products and food whilst a cash sign is absent. All the techniques discussed above offer useful and precious equipment and insights to neuromarketers. But not all strategies are effective in all contexts. The key thing is knowing whilst to use and put in force which techniques to put into effect at which, in which and were.

NEUROMARKETING IN PRESENT SCENARIO

Venkatraman V, Clithero JA, Fitzsimons GJ, Huettel SA (2012) suggested that neuromarketing is taking the sector via storm and has been used by almost every essential employer and college in a different manner or form. Inspite of the sort of sizable have an effect on at the advertising world, many people do not realize precisely what neuromarketing is, or how it can be used correctly. Below are the following fascinating examples of neuromarketing:

The Importance of Eye Gaze

It's miles antique news that advertisements that include humans are a whole lot greater effective than those that don't. Specially, pics and videos that include toddlers generally tend to draw longer and extra focused interest from ability clients. Advertisers have long attempted to boost income for child merchandise using close ups of cute baby faces with the help of eye tracking technology they've recognized that this alone isn't enough. Researchers discovered that when the little one seems face on, visitors will be a long way extra centered on the infant's face to the detriment of focusing at the ad content material. However, if the infant is directing its stare upon the product or textual content then the viewer will in reality cognizance at the advertising content material.

Using Effective Packaging

All of us know the sensation of being attracted to mainly hanging or attractive packaging. Advertisers have continually known that it's no longer usually what's internal that counts, but neuroimaging has managed to take this to a whole new degree. Brands inclusive of Campbell's and Frito-Lay have used neuroimaging

to reimagine their packaging. In studies, clients have been shown packaging with their responses recorded as fine, terrible or impartial. In addition, they have been interviewed substantially on the subject of shade, text and imagery. These studies discovered that clients had a poor response to shiny packaging, however didn't show a negative reaction to packaging whilst it became matte. Frito-Lay then went on to scrap the vibrant packaging, and flow on with the brand new, matte look.

Color is Key

Whilst selecting colors, undergo in mind that we'll be influencing how ability customer's sense. Colors can evoke a huge range of feelings, with research consistently displaying a link between positive colors and positive feelings. Making use of a color efficaciously may be a powerful advertising device. One of the maximum infamous examples is Coca Cola's ubiquitous use of the color crimson, but there are many greater corporations who have also used color to high-quality impact. Neuromarketing professionals focusing on shade and advertising and marketing have divided colors into subgroups as a guide to how they may be used efficiently. Cool blues, for example, are the go-to color if you wish to attract experts.

Ad Efficiency

For decades brain imaging became in simple terms the reserve of the instructional or the medical. Neuromarketing however, has tapped into the fantastic ability of MRI imaging to provide us insights into human conduct and patron conduct.

One instance of the way neuromarketing has made use of fMRI is to examine advertising campaigns earlier than freeing them to the general public. In a single unique look at, three extraordinary advertisements for the National Cancer Institute's cellphone hotline have been viewed by contributors. The ad marketing campaign that elicited the highest amount of brain activity in a specific vicinity, led to significantly better calls to the hotline. This novel technique is a new road for figuring out ad campaigns as a way to virtually interact the public.

Decision Paralysis

Sometimes, customer conduct studies goes against what we might also have formerly believed. A examine with the aid of Columbia University revealed that too many picks may also definitely be a deterrent for potential clients. Using unique styles of setups, they observed that shows containing a big range of alternatives were much less likely to get customers to forestall.

Evaluating Satisfaction

Emotion Response Analysis (ERA) makes use of EEG imaging to perceive the emotional reaction a man or woman has to a product, commercial and so forth. Our stage of engagement or emotional arousal in terms of a product is precious to the advertiser. If, for example, the patron stories excessive degrees of frustration in response on our product then there may be evidently an issue with usability we can wish to cope with. EEG may be used to assess patron satisfaction. In one study at EEG become used to evaluate satisfaction with a dermatological remedy. They located that consumer satisfaction correlated with activation inside the neural circuits concerned in evaluating facial beauty.

Loss Aversion

One thrilling locating used by neuromarketing is that humans actually don't need to lose out. People are just as concerned about what they may lose as what they could benefit. For that reason, "buy earlier than it's gone" techniques are rather effective. Whilst the opportunity choice is posed as a loss, clients are more likely to shop for. For that reason, an idea known as "framing" is extraordinarily crucial in neuromarketing. This technique is how advertisers present choices to purchasers in a way that makes them more likely to splash the cash.

Anchoring

The primary piece of facts our client gets is relatively vital. It may be the idea for any next decision making and set the tone for his or her shopping conduct. Neuroscientists have determined a flaw within the workings of the mind, and the way it reaches selections. As people, we're rarely capable of evaluate the value of something based totally on its intrinsic well worth, however as a substitute evaluate it with the encompassing options. A precious application of neuromarketing therefore, is to take gain of this "anchoring effect". If as an example, we're looking at two hotel rooms that are priced similarly but one offers a free coffee in the morning, we're much more likely to go with the free espresso. We can extra than in all likelihood no longer explore the nice of the rooms provided or any specific capabilities.

The Need for Speed

Neuromarketing is useful for detecting patron traits. Even as corporations frequently seek to have a feel of protection, pace and performance may be what clients are after. PayPal observed this by accomplishing a examine which determined that the

promise of comfort activated the brain greater than safety. They used these facts to transform extra shoppers to their online charge service by emphasizing their rapid charge device.

Revealing Hidden Responses

While checking out a new commercial, Cheetos used cognizance corporations and EEG to evaluate patron response. Suppose, in a particular advert, a woman played a prank on her friend through filling her white load of laundry with orange Cheetos. Cognizance corporations pronounced a dislike for the ad, but while an EEG examine turned into ran with the same members it found out that they surely preferred it. Participants within the awareness group have been afraid to voice the truth they determined the ad funny in case other participants concept they had been unkind. In this manner, neuromarketing can monitor hidden mind and alternatives.

Reward and Punishment

Even video game design has begun to use mental concepts inside the product design method, particularly the usage of reward and punishment on the way to make engaging games, and to hold humans gambling them. With the aid of increasing the praise provided by using the sport, the action may increase the ranges of dopamine (a neurotransmitter) in the brain. This neurotransmitter is related to pleasure and tremendous associations, that could boom the attachment to hold playing. Sport designers are actually even hiring psychologists to assist with recreation design, building mental concepts without delay into the sport mechanics.

Prototype Testing

At the same time as advertisements are obviously crucial to influencing consumer behavior, the design of merchandise themselves can also be instrumental. In a famous neuromarketing case, Hyundai used EEG to check their prototypes. They measured brain interest in response to special layout features, and explored which type of stimulation become most probably to bring about buying. The findings of this have a look at led Hyundai to change the exterior design of the automobiles themselves.

Setting the Right Price

The fascinating new piece of statistics being utilized by neuromarketers, is that rounded figures are much more likely to work along emotional choice making, while greater complex figures works higher while the logical mind is engaged. That is

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due to the fact complex numbers make the brain work harder, perhaps convincing it that the complexly priced product is the more logical decision.

Website Layout

Neuromarketing techniques are also being employed to tell how websites are designed. From color schemes, layouts, font size and past, neuromarketers are delving into our internet site possibilities. There at the moment are a few firm guidelines of thumb in relation to growing web sites. As an example, using certifications, testimonials and social widgets are positive to draw customers in extra than people who don't.

Memorable Headlines

Headlines are one of the first things the viewer sees so manifestly they want to stand out and be noticed. As a result, they were closely researched, with a new neuromarketing technique referred to as "Hippocampal Headlines" being coined. Researchers at College University London determined that when a acquainted word is slightly altered, our hippocampus is activated, and our attention is piqued. Many bloggers have used the example of purchaser and their marketing slogan "practice makes consumer".

LIMITATIONS OF NEUROMARKETING

Neuromarketing also suffers from severe handicaps and obstacles. An important downside of neuromarketing is the absence of credibility and trustworthiness of the statistics. Recently the term neuroscience is much popular in several fields of information. Only a few guides carried out with the aid of neuromarketing agencies and academics are currently to be had. Further the findings published via groups or advertising researchers can also be biased or stimulated. The instant and the state of affairs of the marketing stimuli received through an individual also can bring about differential processing of the stimuli. The concept of emotions and their affiliation with certain brain areas is a controversial concept. A key hindrance of neuromarketing is the difficulty of designing new experiments, the excessive cost and time thing, Fisher CE, Chin L, Klitzman R (2010).

But, it's critical to remember that variances in how individuals' manner facts and the constraints of testing could make it tough to generalize effects with certainty. Some limitations include:

- Excessive price in doing neuromarketing studies manner it is conducted with small sample sizes and often funded by way of organizations, that can introduce bias into the consequences.
- Due to the fact that brain technology is still evolving, there's now not a totally reliable way to attach the advertising stimuli to the feelings triggered.
- Reactions located in a lab check environment may be rather distinctive than they would be in an actual shopping for surroundings.

SUMMARY

It's secure to say that neuromarketing is disrupting the way we do research. It bypasses the biases and is going directly to the source, the unconscious. It provides granular insights that might in no way had been done through conventional marketplace studies. Further, neuromarketing provides some of methodologies that elicit a quantitative output of emotional and cognitive states on a according to per second basis. These consist of elements which includes emotion, reminiscence, interest, motivation and engagement; all of which might be poorly measured the usage of traditional methodologies, yet are important to understanding the consumer selection making system, Gang DJ, Lin W, Qi Z, Yan LL (2012).

Neuromarketing further offers an awful lot greater rigour as compared with traditional market research methodologies. It could now not replace these methodologies outright, however it without a doubt complements them and provides a degree of robustness to the exceptional and reliability of the outputs.

Neuromarketing is a brand new and evolving science which could assist marketers better apprehend customer conduct for you to improve their: packaging, pricing, logo positioning, merchandising strategies and new product improvement and so forth.

Neuromarketing gives exciting possibilities and gives new avenues to explore in the discipline of marketing. Neuromarketing strategies are at a totally early degree and guarantees a lot extra in the future. There is a extensive consensus amongst neuromarketing researchers that the field has to move an extended way and pass several hurdles before it is able to come to be a distinguished tool in the field of marketplace studies. Nevertheless neuromarketing creates more pastimes and is predicted to play a pivotal role within the particularly competitive domain of worldwide advertising. With the increasing availability of excessive stop era and devices neuromarketing is certain to gain extra in the longer run.

Lots of neuromarketing area has showed matters that we already knew either through commentary and revel in or via traditional advertising methods. Few studies were published, and the organizations which can be doing their personal studies.

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Both conventional and neuromarketing research can give us treasured perception into how human beings process information and make choices, consciously and unconsciously. As the science of neuromarketing improves, more reliable results should be available in the future.

However, statistics from both sources will continually want to be carried out thoughtfully and strategically, thinking of a corporation's unique target market, marketplace, merchandise and targets. In conjunction with this will be the want to test out best practices in unique conditions to see what's truely working.

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Chapter 11

An Assessment of Blockchain and Artificial Intelligence as Transformational Technologies in Marketing

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ABSTRACT

Marketing practice is changing in this era of digital disruption and revolutionary technologies. Transformation technology is a difficult task, but the adoption of blockchain and AI will make it easier. Regardless of the number of partners (internal, external, or both) participating in a given commercial transaction, a system in which numerous electronic parties can safely communicate, collaborate, and transact without human intervention is highly adaptive and efficient. The authors of this study propose a methodology for reviewing numerous situations of marketing through the use of transformative technologies and their relevant consequences for enterprise, consumer, and academic research to assess blockchain and AI as transformational.

INTRODUCTION

The era of digital disruption is happening in a business where the traditional business practices that we have witnessed for decades through non-digital technology and innovation are starting to evolve. Companies must be more creative and innovative to survive in the era of disruption. Many entrepreneurs are losing money and being forced to close their businesses because they are unprepared to deal with competition

in the age of disruption. Business owners must recognize the period of disruption and establish a strategy for surviving in a competitive market before it is too late. Rapid change is characterized by innovations that drive organizational systems and organizations to new heights during the disruption era. By paying attention to marketing's practical order, large firms may go out of business if they do not have the right plan in the face of increasingly advanced technological developments. For example, Ford's invention of the moving assembly line revolutionized mass manufacturing. The traditional hub-and-spoke model of large airlines has been disrupted by point-to-point airlines like Southwest Airlines and Ryanair. Nanotechnology and fracking (hydraulic fracturing) have also wreaked havoc on the chemical and oil and gas industries, respectively. Such disruptions, on the other hand, pale in comparison to the digital disruptions we are witnessing today in at least three dimensions: speed, scope, and scale.

Digital disruption is posing an existential threat to a big number of established businesses across a wide variety of industries. The average lifespan of S & P 500 corporations is expected to fall from 33 years in 1965 to around 14 years by 2026 (Flochari, 2016). According to a Forrester study, every company will be either a digital predator or digital prey by 2020. The fact that consumers are increasingly adopting digital technology-powered products and services that are cheaper, better, and/or faster supports Forrester's predicted outcome. (Evans, 2012). For instance, consumers are shopping more at Amazon relative to traditional brick-and-mortar stores, increasingly using Uber or Lyft instead of calling a traditional taxi service, switching from traditional broadcast television to streaming programs on Netflix, YouTube, and Amazon, and so on. Today, digital technologies are fast evolving and becoming streamlined, mobile, connected, and automated, thereby shifting the level playing field for firms. The challenge resides in each firm's ability to adapt proactively to the opportunities and difficulties that come with the present wave of digital disruption (particularly established enterprises, regardless of size). It comprises adopting digital transformation from the standpoint of marketing, with the overarching goal of providing a greater value proposition to the firm's clients. A set of important revolutionary technologies is at the heart of digital disruption. Several reviews of disruptive technologies that have the greatest potential to disrupt and revolutionize existing business models in general, and marketing techniques in particular, are included in this study.

THE MARKETING IMPACT OF NEAR-ZERO TRANSACTION COSTS

Financial transactions cost a lot of money presently. Retailers pay credit card processors 3 percent in payment processing fees regularly, while gas stations pay much more. Consumers pay transaction fees on payment platforms like PayPal, and vendors pay listing and sales fees on eBay and Shopify. All of these fees raise the cost of goods, which is usually passed on to customers. Due to the widespread usage of credit and debit cards, several retailers have established minimum purchase requirements to avoid having their profits eroded by fees. Even on microtransactions, blockchain technology provides for near-zero transaction costs. Financial institutions such as Mastercard and Visa now allow customers to transmit money in any local currency using a blockchain instead of a credit card, leveraging the technology's additional levels of security and transparency.

Furthermore, by eliminating intermediaries and connecting the banks on both ends of each transaction directly, most cross-border fees can be avoided. Marketers and advertising should be aware of the repercussions. Marketers nowadays frequently try to gain access to client data by paying third parties (such as Facebook) to provide it. However, retailers may be able to utilize micropayments to encourage customers to share personal information directly, rather than through an intermediary, thanks to blockchain. For example, a grocery store chain with a mobile app may pay people $1 to download the app and an additional $1 if they allow it to follow their whereabouts. The merchant can pay them a few cents or loyalty points worths of store credit every time they open the app and spend at least a minute on it, up to a limit per day. Similarly, when customers subscribe to email newsletters or join up for a rewards program, marketers can allow smart contracts (virtual agreements that eliminate the need for validation, approval, or verification by intermediaries). When users interact with commercial emails—or advertising, which brings us to our next point—micropayments are paid directly into their wallets.

Ending the Google-Facebook Advertising Duopoly

A comparable version can be used with internet site commercials via way of means of compensating purchasers for every web page view. In 2016, HubSpot posted a study displaying that a majority of Internet customers dislike most kinds of pop-ups and cellular commercials, and they spot online commercials as intrusive and negatively disruptive. A more and more commonplace reaction is to put in advert blockers. This fashion is having a first-rate punitive effect on the industry. It's predicted that by 2020, ad-blocking adoption will cost publishers $35 billion. The Blockchain-enabled era probably permits entrepreneurs to recapture a number of those sales with

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a different form of model: entrepreneurs pay clients at once for their attention—and reduce the Google-Facebook layer. We consider that the Google-Facebook duopoly in virtual marketing and marketing will quickly be threatened with the aid of using blockchain technology. While keyword-primarily based total seeks will now no longer disappear completely, it will become a whole lot less prominent. Eventually, people will manipulate their very own online profiles and social graphs.

Interacting with purchasers and might share the praise of advertisement publicity at once with them. In 2016, Google is stated to have generated a mean of $77.33 consistent with lively consumers through commercials. Of course, 73 represents the average of nearly 1000 active users. It is affordable to assume that Google brings in a whole lot extra than $1,000 for positive highly-valued demographics. Imagine the advertising opportunities whilst agencies can efficiently switch those values to purchasers through "willingly-consumed" marketing and marketing enabled by the blockchain era. Blockchain technology can also affirm advertisement transport and patron engagement; keep away from overserving, which angers purchasers and demotivates them from buying; and save you from following-me commercials that might be irrelevant (inclusive of those purchasers who have already made a buy of the company's or competitor's products).

Adapt or Risk Becoming Obsolete

As blockchain is going mainstream, all intermediaries will want to conform to their enterprise models. The choice chain might be structurally altered: Individuals could have extra control over how they percentage non-public facts and the way they spend their time interacting with advertisers. Spam and phishing scams might be stopped by their nature - the more spammers spam, the more unsustainable they become from a monetary standpoint. For groups, this can suggest better degrees of control over the first-rate of inbound visitors for all their advertising and marketing efforts, in addition to a much-wanted improvement in expertise about customers' behavior. On the other hand, publicity for commercials will now no longer be imposed without a transactional fee on every affected individual. Consumers will even have an incentive to publish a correct social profile online – detailing what they're fascinated by – because they may receive a commission for it. Marketers might be paying customers directly – no longer the social media center layer. When focused on excessive fee customers, the incentives might be better. The blockchain generation holds the ability for societies to be extra straightforward and empowered, while growing visibility, connecting parties, and profiting individuals from their contributions to transactions. Marketing and marketing and marketing are impacted through those changes. Finding methods to layout and enforce measures to make blockchain-associated variations must be a concern now not only for CMOs, but also

for all strategic, financial, and technological decision-makers. Operationally, groups can be capable of constructing new levels of acceptance as true with people, and in the end, connect their services and products with customers in a way and scale that would not be possible without blockchain. Marketing and generational leaders can leverage blockchain to reinvent their patron relationships. Early movement in this far-attaining generation will place groups within the high-satisfactory function to gain from what we suppose might be sizeable adoption.

UNDERSTANDING TRANSFORMATIVE TECHNOLOGIES

Simply defined, a transformative generation is any generation that evokes a major change. In this section, 2 leading transformative technologies in cyberspace that will fundamentally change traditional advertising practices.

Artificial Intelligence

AI is the functionality of computer systems to perform and mimic human-like behaviors along with perceiving, reasoning, learning, and problem-solving. In the next decade or so, AI is expected to have one of the most profound effects on remodeling each enterprise and business. Andrew Ng, one of the essential professionals behind AI, dubs AI as the "new electricity" to underscore the scope of its impact (Dean 2017). Eighty percent of businesses already use some form of AI in manufacturing (Teradata, 2017). Worldwide, AI spending is anticipated from $8 billion in 2016 to increase to $56.7 billion in 2021 (IDC, 2017). This represents an unheard of compound annual growth rate (CAGR) of approximately 50 cents from 2016 to 2021. Flashing learning is a subset of AI and, for the most part, represents the contemporary nation of the artwork of AI. gaining knowledge includes laptop systems (machines) that are designed (programmed) to research themselves using statistics rather than being given explicit commands to carry out a specific project in a specific way. In recent years, the abilities of device studying have witnessed a quantum leap with advances in computing energy, in addition to the availability of a massive quantity of wealthy statistics. The 'learning' in device gaining knowledge of may be extensively labeled as follows: supervised, unsupervised, semi-supervised, and reinforcement device studies (Neapolitan and Jiang, 2018. In recent years, advances in device learning have in particular passed off to deep learning strategies that include improvement of systems (neural networks) which are designed to mimic statistics processing just like the human brain.

Blockchain

A blockchain is a peer-to-peer dispensed decentralized virtual ledger. Think of blockchain as a Google doc, wherein only people with authorization are allowed to make contributions or get admission. All customers get admission to the identical report at the identical time, and any updates are seen and notified in actual time. Each access is referred to as a 'block' that carries a timestamp and the continuation of the blocks creates a 'chain', consequently the call blockchain (Kecskés, 2018). Any asset which includes money, land, assets or identification may be digitally represented on a blockchain. Blockchain structures are designed to be exceptionally secure. Each transaction is blanketed through cryptography, coding every block in a manner that guarantees resistance to changes or hacking (Kumar and Flallick, 2018). This lets customers depend upon the blockchain while not having to apply a centralized authority, which includes authorities or financial institutions, to affirm the exchanges (Conick, 2017). Centralized authority is prone to large-scale safety breaches or failures, even as a decentralized or dispensed ledger sends a replica to each member of the community, thereby offering greater safety (Gopal, Flartinez, and Rodriguez, 2018). As visible in Figure 1, with the conventional centralized approach to doing things, each transaction needs to go through a valuable financial institution, while with blockchain, a centralized financial institution will become redundant and pointless while all events are interconnected in the identical community. Each member within the community has visibility and communication for every transaction. The enterprise value-upload of blockchain will exceed $3.1 trillion via way of means of 2030 (Gartner, 2017).

TRANSFORMATIVE TECHNOLOGIES AND MARKETING PRACTICES

The aforementioned transformative technology has had and could continue to have a substantial effect on advertising practices throughout an extensive variety of industries. Regarding the overview of choosing AI, blockchain, and VR marketing applications. The scope of this paper is to conduct a thorough review of all marketing programs.

AI on Marketing

The early effect of AI on advertising has typically been felt within the following 4 major enterprise areas: sales, operations, client enjoyment, and customer insights (Everett, 2018). A sizable benefit of AI (over traditional statistical methods) comes from the advanced cap potential of AI algorithms to 'learn' from huge datasets (Grewal,

Flotyka, and Levy 2018). According to a Capgemini study, '79% of companies imposing AI generate new insights and higher analysis' (Stancombe et al. 2017). Supervised studying strategies are being hired by an increasing number of companies via means of advertising, and companies expect all elements of customer behavior, which includes client churn (Everett 2018). An exciting software application of AI is within the vicinity of customer support (Schneider, 2017). Companies are imposing an increasing number of AI-assisted chatbots that pick out purchaser inquiries and may at once offer a correct and well-timed response, thereby putting off the need for customer support telephony dealers and the related lengthy hold times (Nguyen, 2017). Seventy-five percent of companies using AI and device studies have succeeded in improving customer satisfaction by greater than 10 percent" (Stancombe, 2017). Unsupervised study algorithms for AI are additionally carried out throughout an extensive variety of advertising applications. Modern advice engines like Netflix and Amazon, search engine queries on Google, and superior methods to segment customers are all powered with exceptional velocity and precision by AI-primarily based algorithms that use unsupervised studying (FlcCracken, 2017; Neapolitan and Jiang 2018). Firms can use unsupervised studying to discover anomalies in customer behavior along with fraudulent and/or different outlier behaviors (Kose and Sert, 2017).

Blockchain on Marketing

Blockchain's potential to affect the exercise of advertising lies in leveraging the ability of blockchain for verifying transactions, monitoring shipping, making sure requirements of production, security, focused on virtual commercials, and decreasing enterprise operation costs (Conick, 2017). With the general growth in virtual consumption, companies and purchasers are prone to hacking and fraud. Blockchain's steady cryptography renders networks resistant to hacking, thereby supplying a great platform for sharing, storing, and shifting personal information. Currently, virtual advertising systems like Google and Facebook run virtual commercials and file advert metrics with the respective companies (strolling the advert campaigns). The Blockchain era can be used to confirm advert delivery, assuring that it is going to the centered clients and isn't always altered with the aid of click fraud, or bots, and is added at the maximum surest frequency (Ghose, 2018).

Mixed Reality on Marketing

Reality technologies remain fundamentally changing the way we interact with objects and navigate the environment and the way we access information and communicate with others (Bates-Brkljac, 2012). It blurs the line between the physical and virtual

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worlds while offering a superior customer experience, which is impossible to achieve in either a purely physical or virtual environment (Brito et al. 2018; Fleißner et al. 2017; Scholz and Smith, 2016). One of the most popular business applications in marketing is using mixed reality to offer a cost-effective way for customers to try a company's products before buying (Scholz and Duffy 2018). For example, the IKEA Place app allows customers to drag and drop any IKEA furniture suitable for measurement through the smartphone camera lens to see what the furniture looks like in their own home (Dasey, 2017; Flange, 2018). According to Gartner, "100 million customers will spend in augmented reality by 2020." (Pemberton, 2017). Companies create more immersive experiences by using projection mapping (or screenless mixed reality), which overlay images over physical settings and structures. This technology has been used to enhance the consumer experience at major events such as concerts and Olympic opening and closing ceremonies. Another popular usage of mixed reality technology is through head-mounted displays, such as flicrosoft HoloLens, which allow users to immerse themselves in the world of augmented reality (Flarvin, 2018). Customers at Lowe's (a prominent home improvement retailer in the United States), for example, wear HoloLens and then use their hands to move around the stacked equipment in the actual world, providing a great idea of how the area might look with the various products (Lowe, 2017).

INDONESIAN STARTUPS THAT HAVE IMPLEMENTED AI TECHNOLOGY

Startup Indonesia has recently begun developing, deploying, and providing services that are powered by AI technology. Some companies directly contribute to the handling of COVID-19, especially during a pandemic. Kata.ai is a conversational AI platform that uses Natural Language Processing (NLP) and natural language understanding (NLU). Small conversation and virtual assistants, answering questions, customized product offerings, and other services are available. Kata.ai also offers services that can be linked with a variety of communication apps, including WhatsApp. Telkomsel, BRI, and Unilever are among the companies that employ their services. Kata.ai also released a COVID-19 chatbot created in partnership with Facebook, BNPB, and the COVID-19 task group to help with the pandemic in Indonesia.

Using AI technology, Konvergen.ai makes data entering simple. Clients have seen a reduction in data entry and manual analysis as a result of this. OVO, Suzuki Finance, BCA, and other major corporations have partnered with Konvergen.ai. Nodeflux is a well-known startup company both regionally and internationally. This company has worked with several government agencies, including POLRI, BIN, and Dukcapil. Nodeflux is also a member of the Nvidia Metropolis Software

Partner program on a global scale. The NIST Facial Recognition Vendor Test was passed by Nodeflux in the United States. Pind.ai is a technology firm specializing in visual artificial intelligence, the internet of things (IoT), and software development. Clients are asked to improve the consumer experience using AI technologies such as visual computing, facial recognition, and machine learning, resulting in greater sales. Aside from that, they also offer services for big data development and analysis. Prosa.ai provides natural language processing services and artificial intelligence solutions for Indonesian. They offer quite many services, namely text & voice processing services, customer interaction analysis, business optimization, fraud detection, to image processing. During this pandemic, Prosa.ai also contributed to the development of chatbot services to convey information about COVID-19 and social media monitoring.Prosa.ai is an Indonesian company that offers natural language processing and artificial intelligence technologies. Text and speech processing, customer contact analysis, company optimization, fraud detection, and image processing are just a few of the services they provide. During the pandemic, Prosa.ai also assisted in the development of chatbot services to provide COVID-19 information and social media monitoring.

SOLUTIONS AND RECOMMENDATIONS

The solutions and recommendations that can be described in the face of the era of digital disruption and revolutionary technology in marketing practices can be seen from the implementation in Figure 1. Furthermore, As blockchain has become more widely used, all intermediaries need to modify their business models. Individuals will have more choices about how they disclose personal information, spending time dealing with advertising due to changing decision chains. (Figure 1)

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Figure 1. The implications of transformative technologies
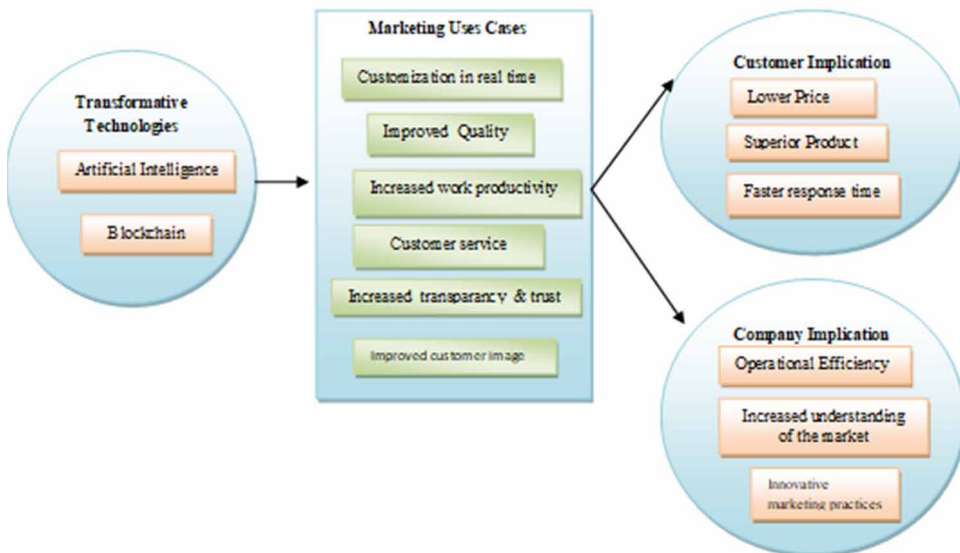
Implications for Consumers, Firms, and Academic Research

The transformative technology of AI, blockchain, and combined facts will change traditional advertising and marketing practices. Figure 1 illustrates a few examples of advertising and marketing use instances that presently leverage and/or will closely leverage the three aforementioned technology. Consequently, the adoption will result (or has resulted) in sizeable implications for customers and corporations. As proven in Figure described that three, the adoption of transformative technology will allow corporations to (a) acquire operational efficiencies with the aid of using lowering each price and time of doing business, (b) drastically enhance capacity to discover marketplace insights (specifically from big volumes of based as well as unstructured statistics which include text, images, and videos) and (c) develop progressive advertising and marketing practices which include progressive approaches to engage/ engage with customers and/or execute marketing projects which include communications and campaigns. Transformative technology will supply more fees to customers in phrases of (a) decrease price (attributable to price financial savings with the aid of using the respective corporation adopting transformative technology to enhance operational efficiencies), (b) getting right of entry to higher product/ carrier excellent powered with the aid of using virtual transformative technology, (c) faster reaction time because of streamlining/automation of operations which include

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customer support and deliver chain and (d) higher enjoy stemming from generation-assisted improvements which include AR. The implications of transformative technology on customers and corporations assist outline the schedule for destiny educational studies. Promising studies regions include (a) growing methodological improvements of system gaining knowledge of algorithms for fixing extra advertising and marketing issues and/or enhancing advertising and marketing ROI which includes growing explainable AI algorithms that can be of more fee to marketers, (b) experimenting with progressive combined fact programs to improve purchaser enjoy and engagement and (c) assessing innovative approaches for enforcing blockchain generation with the overarching objective of earning consumer trust.

FUTURE RESEARCH DIRECTIONS

Blockchain technology has huge consequences for marketing and advertising. However, according to The CMO Survey, only 8% of businesses consider the usage of blockchain in marketing to be kind or extremely important. The properties of blockchain – transparency, immutability, and security – make it reliable and trustworthy for a wide range of applications, including supply chain management, smart contracts, financial reporting, the Internet of Things, the management of private (e.g., medical) information, and even electrical grid management. Nevertheless, its transmission mechanism lowers transaction costs, allowing ownership verification and efficient exchange, and opens the door to real-time micropayments. It may enable payment frictions to be reduced, intermediaries to be eliminated, and customers to own and control their personal information.

CONCLUSION

Transformation technology is a challenging undertaking in general, but the integration of blockchain and AI will make it easier. A system in which several electronic parties may safely communicate, collaborate, and transact without human intervention is particularly adaptable and efficient, regardless of the number of partners (internal, external, or both) involved in a given business transaction. Companies that go through this transformation will be able to provide better user experiences, more uniform workflows, more efficient operations, value-added services, and opportunities for competitive advantage and differentiation. Further, Blockchain manages the stages and links where participants will share the same data source holistically, such as financial ties and transactions associated with each step, as well as compliance with government laws and corporate rules and processes. As a result, there is more

consistency, fewer costs and delays, higher quality, and lower risk. Blockchain and AI are compatible but there are several barriers in their path including 1. The only keywords for technological prowess are artificial intelligence and blockchain. Businesses must commit to selecting or developing an AI-powered enterprise blockchain solution to achieve greater adoption success; 2. There is resistance to change since many firm executives believe machine learning is simple to deploy. This, however, is not the case with blockchain. The existing solutions are more problematic when it comes to mixing AI with blockchain; 3. A substantial investment in enhancing the computing capabilities of AI-based blockchain solutions is a key barrier to the AI-blockchain combo. This is required to retain faith in the two's potential for integration.

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Chapter 12

Marketing Strategies in the Era of COVID–19

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ABSTRACT

The way consumers used to think about making purchases is totally changed in the period of COVID-19. Due to the coronavirus, consumers are less likely to visit a physical store to buy almost anything. Consumers are being forced to change their shopping behaviour. People are buying products online that they never have before. It could not have been possible if these e-commerce platforms were not available. One of these major platforms is Flipkart, which is grabbing a larger share of the e-commerce market. However, with the announcement of nationwide lockdown, everything came to a standstill at Flipkart. The company accepted the challenge and came out with practical solutions. This chapter analyses the strategies adopted by Flipkart and offers suggestions for other online/offline retailers to overcome this unfavourable time.

INTRODUCTION

With the mounting popularity of online shopping in this tech world, most of us were already enjoying the comfort of shopping at home. But with rising concern regarding COVID-19 infection many more got accustomed to online shopping. The way consumers used to think about making purchases is totally changed now. Due to the coronavirus, consumers were less tending to visit a physical store to buy almost anything.

Consumers were being forced to change their shopping behaviour. The retail industry consultants assumed that people were buying products online that they never have before and this behaviour could stick. If consumers could get even more comfortable with online shopping, e-Commerce adoption rates could increase faster than previously projected.[1]

Social distancing compulsions, massive smartphone base and reliable broadband galvanised e-commerce uptake beyond metros, deep into smaller cities and towns, bringing an element of 'trust in online commerce. As per a survey conducted by the Retailers Association of India (RAI), shopping malls witnessed 77% de-growth in the first half of June 2020, as compared to the same period last year. Lockdown relaxations did not prove to be of much help either. Meanwhile, the Indian e-commerce industry was estimated to grow 32.8% in 2020, higher than the pre-Covid projection of 29.7%. Physical stores, however, faced a blip as Indians opt to shop online in the wake of the Covid-19 pandemic. According to data analytics firm Global Data, offline retail sales in India are estimated to decline by 1.9% in 2020 over 2019, as against a pre-Covid estimate of 9.4% growth. Myntra CEO "Amar Nagaram" said the lockdown situation was unprecedented, and businesses too bore the brunt of the shutdown initially.
During this crisis time even the consumers needing only essential supplies like groceries are choosing to buy them online where possible. The pandemic brought about a "structural shift" in shopping behaviour with more and more customers and businesses relying on e-commerce. Players like Amazon and Flipkart as well as industry watchers noted that the need for social distancing and prioritising safety during the pandemic led to millions of people turning to e-commerce platforms this past year, not only in metros but also in tier III regions and beyond.

Amazon also saw similar trends as thousands of neighbourhoods Kirana stores and offline retailers also came onboard to leverage digital technology to reach customers' doorstep. A Grofers spokesperson said that amongst all new users on its platform in the last one year, 64 per cent were first-time online grocery shoppers, while 20 per cent were totally new to e-commerce. Flipkart witnessed new user growth of close to 50 per cent soon after the lockdown, with tier III regions and beyond registering the highest growth of 65 per cent during the 'Unlock' (July - September) phase last year. According to e-tailers. Demand has spiked in categories such as groceries, home office essentials like laptops and headphones, furniture, consumer electronics products, health and fitness products, household products, personal grooming products, apparel, toys and books.

But the things were not so smooth for e-commerce companies as they seem to be. These ecommerce companies were facing their own acute problems during peak covid period. The opportunities, however, came fraught with new challenges. The nationwide lockdown brought transportation of goods and movement of personnel

to a grinding halt. There were initial hiccups and e-commerce companies struggled to complete deliveries even as orders piled up.

Objective of the Paper

This paper attempts to analyse the problems faced by the leading e-commerce companies and the strategies they adopted to tackle those problems.

PROBLEMS FACED BY E-COMMERCE COMPANIES DURING LOCKDOWN SITUATION

E-commerce companies in India were struggling to step up during the COVID-19 pandemic as the country's chaotic lockdown poses further challenges on their ability to operate, with market leaders Amazon.com Inc. and Walmart Inc.'s Flipkart India Private Ltd. expected to suffer significant losses in 2020. Amazon and Walmart have bet big on India, whose e-commerce market grew at a compound annual rate of 36% from 2017 to 2019, the fastest rate among all major world economies in the past three years, and is estimated to have reached $40 billion in 2019.

Forrester Research estimated that the lockdown has resulted in about $1 billion loss in online sales in India as of April 14, 2020 in stark contrast to China and the U.S., where e-commerce has grown during the shutdowns. An extension by another three weeks prompted the company to slash its full-year outlook for the growth in the Indian e-commerce market to flat from its earlier projection of 5%.

Figure 1.

Share of various segments within total online retail market in India (%)

- Electronics 48
- Apparel 29
- Home and furnishing 9
- Beauty and personal care 8
- Books 3
- Others 3

As of April 18, 2020.
Sources: India Brand Equity Foundation; Jefferies estimates

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Figure 2.

Online market share within various retail segments in India (%)

As of April 18, 2020.
Sources: India Brand Equity Foundation; Jefferies estimates

- Online retailers operating in India were forced to suspend operations hours after the first 21-day nationwide stay-at-home order was announced.
- Due to a lack of clear guidelines, there was a mass exodus of employees in anticipation of further lockdowns.
- Most of Amazon's (more than 60) fulfilment centres across the country were reportedly shut for the first few days.
- In some states, delivery workers were not provided passes to make deliveries and some reportedly were even beaten by the local police for flouting the lockdown.
- By the time the confusion eased toward the end of March, e-commerce companies were staring at a huge backlog of deliveries, particularly for the essential items most sought after by consumers during that crisis.
- Many of the migrant workers that comprise a large portion of its staff left for their villages just as demand surged.
- Many ecommerce companies had not anticipated the 3-6-fold increase in demand and consequently they couldn't pick orders and deliver them in sufficient numbers to satisfy the customers.
- Chief among e-commerce companies' woes was the ban on the sale of high-margin nonessential goods, including electronic items key for work and study from home. Nonessential items account for about 90% of sales for Amazon India and Flipkart, and electronic items accounted for nearly half of all online sales in the country in 2019.

- According to a survey by online social community platform LOCALCIRLCES, after first lockdown the prime demand was for grocery item, but Indian consumers were still facing difficulties in ordering groceries online, although the situation had improved. Most of them had already turned to the neighbourhood kirana stores which were just a phone call away and have been far more effective in fulfilling customers' requirements.
- Amazon tried to tap into kirana stores with its grocery delivery app Prime Now to help with order fulfilment. But due to a lack of adequate access to inventory, the project failed and Amazon India had to fold Prime Now into its main services during the lockdown.
- Flipkart has tied up with Tata Consumer Products Ltd., Spencer's Retail Ltd. and Uber Technologies Inc. for grocery delivery during the lockdown. Still, analysts believe that the sector needs significant investment to ensure fast-moving consumer goods (or FMCG,) reach customers on time.
- Bottlenecks in deliveries have led to e-commerce and FMCG companies exploring several avenues, including kirana stores, as a means of reaching out to consumers, but these initiatives have had their share of challenges.[2]

Response to The Adversity by E-Commerce Companies

To ensure convenience for first-time shoppers, Flipkart introduced new capabilities to handhold them through the purchase journey with the addition of a voice assistant and vernacular interfaces in multiple languages.

The Principal Program Manager at Flipkart, Arvind Surendra stated that the supply chain, e-Kart, warehouse and hub operations, all came to a standstill due to the COVID-19 crisis. With the announcement of nationwide lockdown, the Program Management team at Flipkart faced the enormous task of bringing cross functional teams together in driving the solutioning, planning and launching of quick-fire solutions to over 250 million online shoppers, employees, and the entire Flipkart seller community, when everyone was confined to their homes.

The team has the following challenges:

1. to manage this unprecedented crisis from a program management perspective,
2. to meet short deadlines, to plan collaboratively when working remotely,
3. to ensure communication happens seamlessly across teams,
4. to ensure that teams integrate to work towards common and aligned goals; and
5. to accomplish all of this while working from home.

The team came up with the following solutions to minimise the effect:

1. **Leveraged Technology**- The team took it as a unique opportunity. Understanding the importance of communication in the critical time the team enabled and leveraged technology to stay connected with minimal interruptions. This helped teams at Flipkart to work and coordinate efficiently.

2. **Cashless. Contactless. Convenient**: Customer-centric thinking was the crux to their solutions. Every solution that the team came up with had one end-goal: To ensure that the customers' needs were met and that essential products get delivered to them as soon as possible. Analysing the situation, the Program Management team devised every solution centred on safety.

The Strategy Deployment Team at Flipkart focused on safe and contactless payment options for customers as the strict restrictions on cash payments for deliveries in red zones forced the team to think out of the box.

All orders that customers had placed before the lockdown, including those placed on the night before the lockdown came into force, were put on hold owing to payment restrictions. With the contactless payment model, the team first enabled customers outside of red zones to pre-pay digitally for their orders and ensured that they were delivered.

Once the authorities gave the green light for deliveries to resume in red zones, customer orders with essential items too were introduced to the contactless payment model and soon delivered. Contactless payments enabled a large part of the customer base to pay online or use other modes of payment that didn't require physical contact. Thus, customers could order essentials on Flipkart safely and adhere to government restrictions.

To navigate government regulations, The Strategy Deployment Team and the delivery team collaborated with Flipkart's compliance and legal teams. Their communication and teamwork helped them most. That came to their aid. The teams immediately understood the situation and came together to contribute, leaders too stepped in to ideate with and motivate their teams.

Their approach was to solve for all customers in metros, Tier 2, Tier 3 and even remote areas. The constantly increasing digital penetration and internet access in most places helped them a lot.

3. **Kiranas Go Digital:** To help meet increasing consumer demand for essential items during the lockdown, the team also onboarded more Kiranas (neighbourhood grocery stores) across India as a last-mile solution. Wishmasters and other delivery partners were instructed to pick up essential items from kiranas in the vicinity of the customer's address and deliver it to their doorstep. The extended collaboration ensured that even remote areas had access to

essentials and this continues to be part of a long-term plan to serve customers better (Andreas Darmawan,, 2021)

In addition, the Flipkart team also expanded partnerships with third-party logistics to help with infrastructure across the country and support eKart in the last-mile delivery of essentials.

4. **Grocery Lite program:** Program Manager along with product & engineering teams at Flipkart, worked on the Grocery Lite program with and enabled customers to shop for quality grocery products at affordable prices.

They had to expand their network to enable access for as many customers as possible. And to achieve that, many changes were required to the pre-existing processes. Everything from listing products online to delivering the essentials and payment models was revised (Ananya Bhattacharya, 2020)

Before the lockdown, Flipkart's grocery delivery model was functional in select cities only. But as the nature of the pandemic made even simple acts like stepping out for groceries increasingly risky, Flipkart expanded its grocery delivery model to reach more customers by relying on the larger delivery network and supply chain intended for regular products.

The urgent needs of customers amid the pandemic drove them to come up with many innovative solutions rapidly. All these solutions were fast-tracked and potential solutions were brought to the table and tested amid unprecedented deadlines. Once the engineers started working on viable solutions, the program management team ensured in keeping things on track towards delivery, and then team moved on to address the next challenge. They further integrated them into the "new normal" in how Flipkart serves its customers.

SUGGESTIONS

*   **Communication is the Key:** It is well known that communication is key for a marketer to be successful. During the period of COVID-19 the importance of communication was felt by everyone. Therefore, rather than hiding the problems with customers, it is better to let them know. Since in this critical time even customers have developed the understanding that some factors are out of human control. The e-commerce marketers need to be honest with the customers and inform them about the situation regarding any delays in order processing or delivery or shortage of staff, etc with proper communication channel (e-mail or message or call). Customers should be

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given assurance about the marketer's sincere efforts to solve the problem and the marketers are required to meet the desired expectation of customer. (Jennifer McAdams,2021)

- **Ensure safety within:** The popular saying that charity begins at home is now extended with safety begins at home. The marketers need to take every single precaution to keep their own team, their families and the wider community safe. They must take right action to prevent the spread of the virus. The health of those employees who come into direct contact with customers must checked regularly. Proper provisions for cleaning routines for all facilities and delivery vehicles daily must be maintained.

- **Time to Take Action:** It is not a time to sit back rather it is a time to take action. At this time the e-marketer are required to intensify their digital marketing efforts to drive consumers demand if they want to stay in business. In this adversity there is an opportunity to increase the customer's base. They must keep direct contact with their logistics partners to understand their capabilities and be ready to grab any possible opportunity and regularise delivery commitments.

- **Coronavirus Pandemic Pushing Big Offline Retailers Online:** Retailers must take this opportunity to enhance their digital presence and amp up their overall online shopping experience. For instance, retailers can depict a single clothing item on multiple models to show what it looks like on different body shapes and sizes. They can make use of AI-enabled tech to show how a particular apparel would look on a buyer.

Retailers can set up real-time consultation with stylists and experts, who can make recommendations, customise products, guide them through the process etc. Genuine and verified reviews would make the entire process a lot simpler. Moreover, delivery should be quick, exchange and return policies should not be convoluted.

- **Breaking language barriers:** The first 100 million online buyers in India have been largely homogenous – affluent, English-speaking, internet-savvy buyers from metros with ample disposable income. However, the next wave is far more diverse in terms of consumption patterns, geographical locations, languages and levels of disposable incomes.

With several users hailing from non-metro cities, vernacular interfaces have become the need of the hour. Nearly 30% of e-commerce platform prefer to browse in a regional language, a recent survey revealed. In the run-up to Diwali, Snapdeal made eight languages available, Amazon made six, and Flipkart - five.

- **Making transacting easier:** Behemoths Flipkart and Amazon have forged partnerships with banks for broader coverage of debit card EMIs, alliances with digital non-banking financial companies for no-cost EMI solutions, and boosting buy now, pay later offerings.

This is not going to help everyone, though. There is a large part of India that is still not online, a large part that still is unbanked, a large part that still does not use digital currency.

- **Improving last-mile logistics:** Whenever a customer orders a product from a rural or remote area, the e-commerce companies find it difficult to maintain the same efficiency and delivery speed as in urban areas due to the lack of proper infrastructure and difficulty in finding addresses. This has discouraged customers from rural areas to prefer offline channels over online. But innovation during the pandemic has supposedly fixed much of that. For instance, Flipkart has onboarded over 50,000 kiranas which will help manage a higher number of shipments during the festive season.

Similarly, over 100,000 Amazon-enabled local shops, kiranas and neighbourhood stores from across India are geared up to serve customers during this period. More than 40% of these sellers come from outside the top 10 cities.

Back to Store: With customers worried about the spread of infection and many now accustomed to online shopping, retailers must actively seek to attract customers.

This would not only include establishment of a robust infection prevention infrastructure, including enhanced cleaning, sanitisation and barriers, but also adequate marketing to abate any fears a potential customer would have and regain the lost confidence.

Ensuring hassle-free and hygienic trial rooms would be key. Contactless processing and digital payments would be yet another vital consideration.

All retailers will have to make their in-store experiences even more extraordinary for those who can visit in person. They have to give people a reason to visit that is so compelling, it justifies their exposure to health risks and overcomes the inertia of the behaviour's they adopted during the shutdown. The idea here is not just to stay afloat till the storm passes, rather to adopt a more proactive and innovative approach to the buying experience.

CONCLUSION

According to a report Indian e-commerce industry will grow 84 per cent to $111 billion by 2024 as it gains from demand created by the coronavirus pandemic's impact. The 2021 Global Payments Report by Worldpay FIS, a financial technology product and services provider, tracked trends in 41 countries to find that digital commerce accelerated during the pandemic.

Phil Pomford, managing director of Asia Pacific, Worldpay from FIS said that, "The Indian e-Commerce industry has witnessed a huge upsurge due to COVID-19 and there is substantial room for future growth." The report said India's e-commerce market will be driven by mobile shopping, projecting it to grow 21 per cent annually over the next four years. Digital wallets (40 per cent) followed by credit cards (15 per cent) and debit cards (15 per cent) were the most popular payment methods online in 2020.

E-Commerce capability is no longer limited to just traditional websites, and physical retail has blended with the digital world. The shop floor is now in the palm of our hands and consumers expect the same hassle free and convenient shopping experience whether they are purchasing in app, through their social feeds or in the real world.

The report highlighted that the Merchants would be well positioned to be successful, if they put customer experience at the heart of the checkout process. Those who position themselves with digital payments capabilities will be well-positioned to capture the next wave of growth in the retail and eCommerce market in India ."Post the pandemic, faster delivery, zero shipping charges, ratings and review information and broader selection will be the key drivers of e-commerce growth," said Sachin Taparia, founder and chairman of Local Circles.(Scalefast Team,2020)

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ENDNOTES

[1] https://www.forbes.com/sites/shellykohan/2020/03/06
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Chapter 13
An Experimental Investigation of Customer Engagement in Indian Retail Banking

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ABSTRACT

Customer engagement (CE) with brands has come to hold a major place in brand management research and practice in recent years, since it has been shown to result in increased firm sales, competitive advantage, and stock returns. Scholars have investigated CE's conceptualization, operationalization, and nomological networks in light of various theoretical viewpoints. Despite significant progress, the intellectual framework of the whole literature of CE scholarship remains shaky, as this chapter explores. Customer interaction may have originated in other fields, but then in today's crowded and fiercely competitive industry, it is especially important in marketing. Confidence, dedication, loyalty, and advocacy have all been identified as components of customer involvement. Co-creation was the second aspect that developed. The length of time spent working with the bank was a key element in determining the level of involvement and co-creation.

INTRODUCTION

The retail market in India is growing at a rate of approximately 20% per year and has a market value of US$ 500 billion. After agriculture, the retail sector is the second largest employer. The retail industry alone has created over 35 million job opportunities in the country. Financial services firms functioning in today's difficult market, from banks to insurance companies, face a fundamental challenge: acquiring and retaining customers efficiently and effectively. Customer engagement, defined as the strengthening of the customer relationship through numerous touch points, such as phone, online (email & web), personalised & transactional correspondence, and face-to-face interaction, can be used to overcome this problem. The payback for companies who execute well on consumer interaction is significant. Customer engagement has become an economic imperative, crucial for success and survival in the financial services industry as it fights to expand market share and enhance bottom line in a competitive business environment. Raising customer satisfaction, creating trust, fostering loyalty, and uncovering new business prospects are all components of the engagement puzzle. In recent years, the financial services business has seen massive transformations. Customers want better levels of service, and new government requirements complicate operational efficiency, security, and governance problems.

WHAT EXACTLY IS RETAIL BANKING?

Retail Banking is also termed consumer banking. As the name suggests, it is a part of the commercial banking system associated with the general public and individual customers. Retail banking systems aim to provide banking services like checking accounts, opening accounts, savings accounts, loans, debit cards, and more to the citizens. This system targets members of the general public and their personal needs of handling money. It excludes companies, businesses, and corporations that may need more complex banking solutions

Consumer banking is another name for retail banking. It is, as the name implies, a component of the commercial banking system that deals with individual customers. Retail banking systems aim to provide citizens with personal banking services such as checking accounts, opening accounts, savings accounts, loans, debit cards, and more. This system is aimed at members of the general public and their personal financial needs. It does not include companies, corporations, and businesses.

Banking systems first appeared in modern India in the late 17th century. Bank of Hindustan and General Bank of India were among the first banks to open in pre-independence India.

Several banks were established across the country in the nineteenth century. The Reserve Bank of India was established in 1935 to address the economic issues that arose following World War I. Only after independence did the RBI become India's central banking authority, under the Banking Regulation Act of 1949, which empowered the RBI to regulate, control, and inspect Indian banks. The first wave of nationalization of some of the 14 largest commercial banks occurred in the 1960s. In the 1980s, six more banks were nationalized as part of the second wave. Things began to change during the 1990s liberalization. The government granted a license to a few private banks as a result of liberalization. The major retail players in the private sector include Yes Bank Limited, Axis Bank Limited, ICICI Bank, IDFC 1st Bank, HDFC Bank Limited, Kotak Mahindra, IndusInd bank, etc. With the entry of private sector banks in the early 1990s, banks adopted a new approach to retail banking. Right from the start, they had the advantage of technology. These banks had a clear vision for retail banking and aggressively strategized for the creation of new retail markets.

The Indian banking system includes 12 public sector banks, 22 private sector banks, 46 foreign banks, 56 regional rural banks, 1485 urban cooperative banks, and 96,000 rural cooperative banks.

Banks are moving toward digital transformation, which promises improved customer experiences, lowered operating costs, and transaction costs. Meanwhile, internet and mobile banking are two of the fastest-growing trends in this industry.

The use of artificial intelligence and voice assistants to provide personalized and contextualized services is a technologically advanced innovation that is expected to change the face of banking systems. The system expects a more secure banking system with biometric technology and KYC.

Customer engagement has become a popular concept in recent years and is gaining traction among practitioners and academics, owing to its ability to influence customer behavior and as a viable retention and acquisition approach for developing and retaining a competitive edge. However, the essence of consumer involvement is still controversial; for example, whether customer engagement is primarily behavioral or includes affective and psychological elements is a point of contention.

As a result, it is critical to not just recognize the construct's value for a rising market like India, but also to seek more clarity in understanding it. The authors of this work attempted to review the existing literature on the subject before attempting to design an instrument to measure and operationalize the construct for the Indian retail banking sector.

STUDY OF CURRENT CONSUMER ENGAGEMENT IDEAS

Customer engagement (CE) is the behavioral expression of a customer's intellectual, emotive, and behavioral engagement (El Moutassim & Qmichchou, 2021), resulting in the formation of an emotional attachment to a brand or a product. Because of the revolutionary advancement of digital technologies, the banking industry is undergoing a spectacular transformation. Customers have greater power than ever before since they are informed of a wide range of options for the goods or services they require (Lin & He, 2020). Though CE has gotten a lot of scholarly attention in the last century, there hasn't been a lot of agreement on a metric to accurately evaluate consumer engagement because each researcher has developed their theoretical foundation for CE.

In comparison to competitors, customer engagement focuses on giving higher value to customers. This, in return, initiates a consumer engagement cycle, which leads to the development of loyalty and cooperation, as well as the development of psychologically rewarding and long-lasting customer connections (Sashi, 2012). Customer engagement develops as a result of regular contacts that reinforce a customer's emotional, cognitive, or physiological investments in a brand(Roy et al., 2018).

Co-creation is an important and influential outcome of consumer engagement that has recently received a lot of attention(Prahalad & Ramaswamy, 2000).

The retail banking business is a crucial service sector where client involvement takes on different definitions and so deserves to be researched in its own right. It was recognized that bank customers connect and stay with a bank based on their assessment of whether the bank is operating properly on a set of clearly and distinctly parameters (Parasuraman et al., 1988). Following India's nationalization effort, public sector banks recognized the importance of customer service and the necessity to focus on it for efficient customer management(Sondhi et al., 2017). Today, banks all over the world recognize the importance of better connecting with their clients to keep them in a market dominated by products and services that are essentially the same. Several banking institutions are putting forth significant effort to discover methods of recognizing client demands, as well as establishing and executing customer relationship strategies, to better interact with their consumers. As a result, investigations are being conducted and the results to explore the structure of consumer engagement in an attempt to comprehend which variables may be affecting customers the satisfaction of banking services and consequently, trying to identify the barriers and enablers to better participating and conversing with the bank (Kalaiarasi & Srividya, 2013). Few experiments have tried to comprehend how this exactly constitutes the construct, as well as how to describe and quantify it (Abror et al., 2019). As a result, the authors believe that it is crucial to first define

the scope of customer engagement before moving forward. This exploratory paper is the first step toward that goal.

METHODS FOR INCREASING CUSTOMER ENGAGEMENT IN BANKING

Following are how customer engagement in banking may be increased:

1. Use technology to get actionable data about consumers
2. Educate consumers
3. Offer targeted and helpful offers to customers
4. Establish and Enhance Relationships by Leveraging Trusted Relationships
5. Develop a high-quality engagement approach that spans all media.

Improving customer experience marketing would be a no for any intelligent financial institution, as it aims to enhance trust and promote consumer experience growth.

1. Use technology to get actionable data about consumers

Financial institutions can only offer customized products and services if they know what their customers need most, therefore gathering data to make informed engagement initiatives is essential. Furthermore, failing to personalize might backfire by making the customer experience seem incredibly fake.

2. Educate consumers

Leading with education to improve financial wellness can help financial organizations acquire loyalty, develop confidence, and offer products and services more effectively. Consumers have diverse requirements based on who and what they are, and the more individualized the instruction, the greater.

3. Offer targeted and helpful offers to customers

Customers in their late twenties and early thirties may benefit from combining an online course on the first homeowner training with a special loan offer, for instance. (However, this is unlikely to be the case for older folks; it's critical to match training and offering to the appropriate market demographic!)

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4.   Establish and Enhance Relationships by Leveraging Trusted Relationships

Giving businesses and large clients access to a bank at work program might help them to achieve new viewers through their respected workplaces. Customers and financial firms benefit from individualized training, appropriate deposit solutions, and attractive offers delivered through these workplace channels.

5.   Develop a high-quality engagement approach that spans all media.

Consumers interact with their financial institutions in a variety of ways, including attending offices, browsing websites, utilizing mobile applications, phoning agents, and communicating through chat/email. Delivering outstanding service throughout all channels improves the customer experience by demonstrating that financial firms are willing to meet customers wherever they may be.

Although there is no one magic bullet technique for increasing consumer engagement, each institution can benefit by concentrating on training and engaging with customers in a completely individual manner. Experience counts more than ever before, hence we can anticipate that the financial firms who place the greatest emphasis on delivering fantastic times now will be the most effective in the coming.

THE STUDY'S EXTENT AND OBJECTIVES

The following are objectives of this study:

1.   To provide a tool for measuring the construct of customer engagement; and
2.   To determine the amount of consumer engagement in the retail banking sector.
3.   To investigate the influence of various demographic characteristics in determining consumer engagement.

Research Methodology

The research was done on consumers in New Delhi. A retail banking customer with a legitimate bank account who carried out different operations on an interpersonal basis was the unit of study. Convenience sampling was used to conduct the study. A total of 205 questionnaires were distributed for the study, with 120 full questionnaires being utilized for the analysis.

Data Analysis

It is evident from table no 1 that out of 120 respondents, 71% were male and 29% female. Maximum respondents were of the age group of 36-45 years and they were from industries. As for as, their relationship with a bank is concerned 57% of respondents were having more than 10 years of relation with the bank.

Table 1. Analysis of demographic profile of respondents

S No	Variable	No=120	Percentage
1	Age		
	21-35 years	38	32
	36-45 years	42	35
	46-75 years	40	33
2	Sex		
	Male	85	71
	Female	35	29
3	Profession		
	Academicians	32	27
	corporate executives	55	46
	Adm staff	22	18
	Misc	11	9
4	Relationship with bank		0
	0-5 years	19	16
	5-10 years	33	28
	10 years and more	68	57

Table 2 displays data that can be used to estimate the degree of involvement among retail banking consumers.

Table 2. The degree of customer engagement and the descriptive data that go with it

Sno	Variables	No of Item	Score range	Alpha	x̄	σ	x̄ as %
1	Consumer engagement	14	0-45	0.92	29.39	7.308	65.34
2	co-creation	3	0-6	0.8	1.71	1.516	28.33

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According to Table 4, the mean score for consumer involvement was 29.39 out of the highest score of 45, equating to 65.34 percent of the greatest level of engagement. As a result, this figure suggested a fairly high degree of client engagement, and the banking industry can be justifiably pleased with its achievement. At this point, it may be good to emphasize that all these banking institutions are situated in the NCR, and most of the bank customers considered in the study were extremely well educated, as evidenced by the population profile. With a setting like this and consumers who are inclined to be forceful and unwilling to accept subpar treatment, the banks represented by this research must have done everything possible to provide great service to the customer.

Nevertheless, when the component of co-creation was considered, the findings were fairly dismal. Here's how customers reacted to the two-item co-creation metric:

Table 3. Two-item co-creation metric

Score	Frequency	%
0-1	53	44.17
2-4	65	54.17
5-6	2	16.66

Table 4 shows that the total mean score for co-creation was 1.71 out of a maximum possible score of six. This amounted to only 28.33 percent of the maximum potential score. This is a very poor grade by any standard, and the financial industry should take this fact seriously. When there is a high level of consumer involvement, it is assumed that this will be reflected in the level of its behavioral manifestation in the form of co-creation.

The Demographics Background's Impact

The background information about each respondent in terms of the different demographic factors was collected like age, sex, and period of relationship with the bank.

The role of each of these factors in influencing customer engagement was examined next. For testing differences based on age groups and gender, the independent sample t-test was conducted.

T-Test Analysis

To further investigate the association between age and involvement, the sample of 120 respondents was separated into two age categories with a cut-off value of 40 years.

The specialists we spoke with noted that once clients were '40 and over, with solid employment as well as family life,' they didn't make any substantial shifts in the bank with which they had been dealing for 10–15 years.

When the t-test results were examined, it was discovered that consumers aged 45 and up were much more involved with their banks than their younger colleagues (45 years or less). This distinction, nevertheless, was not represented in the co-creation component. When gender was considered, similar findings were discovered. Gender played no role in either consumer interaction or co-creation, and respondents of both sexes followed the same trend (Table 4)

Table 4. Evaluation of independent sample t-tests: consumer engagement level and demographic characteristics – age and sex

Age group	No	Consumer Engagement			Co-creation		
		$\bar{x}$	σ	t-value	$\bar{x}$	σ	t-value
22-45 years	66	27	6.75	-2.343	1.69	1.5	0.042
46-79 years	54	30	6.98		1.69	1.45	
Gender							
Male	80	29.35	7.51	-0.045	1.69	1.57	-0.009
Female	40	29.4	6.98		1.68	1.43	

● **Significant at 0.05 level**

Length of Association with the Bank

To some extent, the variable of the client's duration of affiliation with his primary bank may be regarded as an expression of customer engagement. As a result, one may anticipate a strong relationship between this characteristic and customer engagement and co-creation. This was indeed the case, as evidenced by the findings in Table 5.

Table 5. Analysis of the impact of customer interaction and co-creation on the length of connection with the bank

DV	Deg of Free	F	F sign	Ind Groups	Mean Diff	Sig
Consumer engagement	2121	5.723	0.03	<5/5-10 yrs	-4.906	0.032
				<5/>10 yrs	-5.812	0.003
				5-10/>10 yrs	-903	0.81
Co creation	2121	8.166	0	<5/5-10 yrs	-0.302	0.718
				<5/>10 yrs	.1.205	0.002
				5-10/>10 yrs	0.903	0.007

Further post-doc research findings indicate the following additional details concerning the relationship between client involvement and length of affiliation with the bank:

Customer involvement: There is no significant variation in customer engagement between medium ($\bar{x} = 29.7$) and longer-term clients ($\bar{x} = 30.67$). On either hand, the level of engagement of these two groups is much higher than that of customers with less than five years of expertise ($\bar{x} = 24.87$). According to this study, the key period for this bond to develop could be at least five years. After a retail banking customer has been with a specific bank for around five years, it can be presumed that he or she is fully involved with that bank.

Co-creation: while being engaged with a bank requires approximately five years, to become a co-creator appears to require approximately ten years. This is supported by the conclusion that, while there is no significant difference in co-creation between low ($\bar{x} = 0.97$) and medium ($\bar{x} = 1.25$) duration customers, each of these two categories varies from high ($X = 2.15$) duration customers (ten years or more). The correlation between customer pleasure and solid relationships Banks, brokerage firms, and insurance companies may create a memorable customer experience by following a step-by-step procedure based on the Four Cs: convenience, comfort, consistency, and customization. These four ideas can be utilized to engage clients in ways that make them feel like they have an active and committed connection with their financial institutions.

CONCLUSION

Customer engagement in the banking business refers to an individual's intellectual, psychological, and behavioral participation with a certain bank and the services

provided by that bank. This indicates a buyer-seller relationship, with the fundamental parts of this relationship being trust, pleasure, commitment, and support. According to the findings of this study, all four of these aspects must be regarded as dimensions of a single factor with an unusually high level of internal consistency and reliability (Cronbach's alpha =.93).

To complete the cycle of customer engagement, the customer must transition from a more passive reactive state of loyalty and advocacy to a proactive co-creator, and this factor is the one that will ensure the marketer a true competitive edge. Thus, one may argue from a theoretical standpoint that client engagement has both an emotional and a behavioral dimension. This must be investigated for its manifestation both separately and in conjunction with other related constructs such as contentment and loyalty.

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Chapter 14

Machine Learning and Artificial Intelligence:
The New Move for Marketers

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ABSTRACT

The current study looks at how marketing managers utilize machine learning and artificial intelligence to analyze large amounts of client data and develop effective marketing strategies. A qualitative research design was used in this study. With a total sample of 30 respondents, the study used purposive sampling since selecting the exact demographic participating in the study is subjective. The data for the study was gathered through in-depth interviews with the interviewees. The study found that marketing managers use ML and AI to disclose patterns and trends by incorporating them into decision-making algorithms. The findings of the study will be of great benefit to business managers and markers. To the authors' knowledge, prior studies verified how to analyze business data using AL and ML but did not demonstrate how organizations use the AL and ML approaches in practice. As a result, in the current study, they demonstrated how businesses use AL and ML in practice, especially for improving marketing strategies.

INTRODUCTION

Businesses undertake various marketing practices to promote the selling and buying of their products and services. They market their products and services by advertising, selling, and delivering products to customers and other businesses. Marketers rely on customers' data to develop an efficient marketing plan for their organization (Kumar, 2017). Customer data also provides the marketer with insights into consumer behavior. However, big customer data poses challenges to marketers, including difficulties and complexities in managing data quality, converting big data into valuable insights, and a lack of adequate data knowledge. These challenges hinder marketers from capturing and transforming big customer data into meaningful insight for the organization's benefit. As a result, organizations seek alternative options to analyze big customer data sets to gain insight into consumer behaviors. Machine learning (ML) and artificial intelligence (AI) are fields of computer science that enable businesses to use big data to develop learning algorithms and generate predictions that help marketers make insightful decisions. They also enable businesses to manage huge volumes of customer data. According to Huang & Rust (2020), ML and AI play significant roles in different sectors, including business to customer and business to business contexts. Currently, the two technological systems have gained popularity in the marketing industry. The use of ML and AI in marketing enhances efficiency, intelligence, effectiveness, and customer-friendliness.

Using ML and AI has revolutionized the marketing department. For example, ML improves customer experience and provides quick solutions and responses in real-time, thus transforming customer-facing services (Hossain et al., 2022). Additionally, chatbots answer customer questions, track and process orders, and resolve simple issues and complaints. Ml enables marketing managers to track customer purchasing habits and use the data to recommend related products and services. It also helps classify the customer base and develop targeted advertisements to increase sales. In the current competitive market, businesses use conversational ML and AI to improve their marketing strategies and engage customers using different social media platforms (Huang & Rust, 2020). As a result, communicating and interacting with customers improves brand image and value. Companies use ML and AI to identify market trends and predict future trends to make strategic decisions (Dimitrieska, Stankovska & Efremova, 2018). Consequently, predicting and identifying market trends helps companies reduce advertisement costs, avoid redundancy, and streamline expenditure. Therefore, ML and AI are new issues in the marketing sector that impact current and future marketing strategies.

Due to the changes in the contemporary world of business, organizations continue to face the challenge of managing increased data. Experts believe that machine learning or artificial intelligence-based data have revolutionized the entire concept of

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marketing and is the future of marketing. However, most businesses lack knowledge of the role ML and AI-based data can play in enhancing marketing strategies. Despite the different ways ML and AI can be used in marketing, business managers lack the knowledge to apply these two concepts. Past researchers have conducted studies about the application of ML and AI-based data in business. However, few of these studies have addressed how the concepts can be used in improving marketing strategies. As a result, managers have little understanding of how to use ML and AI to analyze large customer data sets and implement effective marketing strategies. Mostly, the current study is concerned with four vital research questions: (i) how marketing managers can implement insightful marketing strategies using ML and AI to analyze big customer data; (ii) how managers use advanced ML and AI (NLP, deep learning, semantic search) in making decisions; (iii) how social listening and sentiment analysis on social media can be used to target future campaigns; and (iv) how business managers can overcome the big data complexities posed by big data sets using ML and AI.

LITERATURE REVIEW

The technology involves using artificial intelligence and machine learning, which are the most adopted by many companies in the modern world. According to Canhoto & Clear (2020), the use of artificial intelligence and machine learning techniques has helped many organizations strategize on how to control data and achieve their goals. Despite the human ability to do the same analysis and make such programs, machines are the most perfect for performing such actions without fatigue and producing reliable data and results (Ma and Sun, 2020). Atitallah et al. (2020) argues that the ability of machines to work with restrictions by humans contributes to the enhanced hybrid system whereby there is the integration of human abilities and machines too. The manager can observe data and analyze it efficiently without doing many surveys or interactions with his juniors in the company. Despite machines replacing many people in their work-places due to technology advancements, they are more reliable in terms of performance than human beings. The use of artificial intelligence and machine learning enables the managers to compile data in quantities and make a quick analysis to develop strategies worthy of improving the organization and making it grow. In every organization, the main objective is to attain their goal and perform well; hence regular checkups of performance data are very useful to the managers to notice any slight change on depreciation or even appreciation of the company products. Regular observation and evaluation of business data help the manager develop a good strategy towards an achievable goal. The achievement can only be

achieved through consistency and efficiency in work, which can be achieved to the maximum by incorporating machine learning and artificial intelligence adoption.

Furthermore, due to population growth, production has been very high, covering many people in different environments. ML and AI have helped in handling large amounts of data in marketing and helped in the adoption of personalization of customer data, which has shown more improvement in the marketing of many products produced daily by big companies (Campbell et al., 2020). Human beings are enabled to analyze big complex data brought about by high production brought about by population growth in the world. As a result, AI and ML techniques have been adopted for efficiency in production. The machines can analyze, simplify and auto-update all the records kept by the company, hence giving the marketing managers easy work on evaluating the business success and setting business strategies that are refined and goal-oriented.

HOW ADVANCED ML AND AI (NLP, DEEP LEARNING, SEMANTIC SEARCH) AID BUSINESS MANAGERS IN MAKING DECISIONS

According to Mugrauer and Pers (2019), machine learning and artificial intelligence are very key analysis strategies when adopted in business management. Managers in an organization mostly adopt the system to increase production and management of business entities for better plans. The system has been mostly adopted by many organizations due to its benefits to managers in handling bulk data, analyzing, processing, and producing better and more reliable data. Benke and Benke (2018) give some benefits of using machine learning and artificial intelligence, like helping in decision-making in a business unit. Decision making in any managerial position is very crucial as it determines the next step of an organization, either positive or negative, towards the growth of the business. AI and ML strategize in giving out reliable and efficient data that can be used in making worthy while decisions that contribute to the proper management of an organization. Also, AI and ML help avoid the risks associated with human errors, which are found to happen when handling very big data hence can cause wrong results when depended on. Benke & Benke, (2018) argues that to error is human and hence compared to machines; machines, when given commands to apply the artificial intelligence with some restrictions, can give out more efficient and reliable data than human. Most of the time, humans grow fatigued due to the bulk of work and prolong working hours; hence they are not reliable in production compared to machines using artificial intelligence like robots. Unlike humans, machines can work for a whole day nonstop without any fatigue and assurance of delivery or production of good products. Chai et al. (2019) states that

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technology has a great impact on making a decision, especially when one has no other option rather than making a change. Machine learning and artificial intelligence have a very great significance in decision making for despite human beings who at some point may decide in favor of their feelings or their opinions, which may be biased, machines are unpredictable in their findings. They are always neutral (Syam et al., 2018). Hence the machines' data are more reliable and promising for improving the organization's growth. According to Saura (2021), the main data science goals us to extract familiarity from informational analysis to respond to particular research questions. Through data analysis, data science approaches enable the extraction of patterns from records to describe a question and formulate a hypothesis. Based on DS, it is significant to identify that, regarding detection patterns, human beings can note three perspectives or features of a product. Such attributes are also known as variables. Nevertheless, having DS patterns, various attributes can be identified simultaneously. Patterns noted with DS techniques assist in obtaining actionable insights implying what researchers and data researchers need to obtain from the patterns identified. Thus, according to Pitogo & Ramos (2020), based on contextual insight, it implies the pattern's capacity to provide meaningful information possible to assist in problem-solving. Based on organizational goals during the development of DM, various pattern types can be employed to modify such strategies and facilitate an organization's ability to interpret and structure fundamental attributes, variables, or features obtained from the organizations' database. In such a logic, the gathered data is significant from an organization's perspective since the conventional approaches focusing on social networks and digital platforms must be data-driven.

There has been an evolution of machine learning through Deep Learning (DL), expertise allowing individuals to modify the means of processing images and languages by computers. According to Saura (2021), DL comprises models of neural networks with many units and layers on a similar network. DL is the most recent kind of machine learning even though it is used in ML, among other forms.

Provided a real-time nature, volume, and velocity of social media streams, the clustering procedures used data streaming should be greatly efficient and scalable. Besides, the ever-changing state of data makes it hard to interpret the desired or the required cluster numbers in advance. It renders segmentation of clustering technology like k-median, k-medoid, k-means, an expectation-maximization (EM) algorithms-focused strategies inappropriate for analyzing real-time social media since the need prior clusters' familiarity in advance (Kolajo et al., 2019). Moreover, as a result of concept drift prevalent in social media streams, scalable graph breakdown algorithms are unsuitable due to their tendency to balance partitioning. Streams of social media should be evaluated dynamically to offer decisions at all times in a restricted time frame and space.

Hierarchical clustering, threshold-based techniques, and online or incremental clustering are much dominant in social media evaluation. According to Kolajo et al. (2019), various online threshold-focused stream clustering strategies or incremental approaches to clustering like Markov Random Field, condensed clusters, and online spherical K-means. Incremental strategies are being adopted and are appropriate for constantly generated data grouping through setting a threshold based on maximum similarity amongst the inbound stream and the already existing ones.

Previous studies on the use of ML and AI-based data in business have been undertaken by researchers. However, just a few of these investigations have looked at how the ideas may be applied to better marketing techniques. Prior research, to our knowledge, proved how to analyze business data using AL and ML, but did not show how firms really apply the AI and ML techniques. As a consequence, in the current study, we investigated how firms employ AL and ML in practice, particularly for boosting marketing strategies.

METHODOLOGY

Introduction

The methodology of the study highlights the study methods, approaches, sample size, sample selection, different types of data collection and the tools involved, data analysis, and the ethical considerations taken into consideration in the research.

Research Design

The study embraced a qualitative research design. Qualitative research design involves using a systematic approach to establish a deep understanding of a phenomenon (Roller & Lavrakas, 2015). The approach is formal, objective, and systematic to obtain information and gain a deep insight into a phenomenon in machine learning and artificial learning in marketing strategies. The research design was suitable for the research as it provided an insight into the various marketing strategies that are involved in machine learning and artificial learning and how they aid business managers in making decisions and establishing the prospects of business together with overcoming the challenges they encounter in their daily life in business.

Sampling

Sampling is important in research as it helps attain accurate results about a certain population (Etikan, Musa & Alkassim, 2016). The study adopted purposive sampling

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since it is subjective in determining the specific population involved in the study. The study samples various business managers who are currently using machine learning and artificial learning to gain an understanding of their importance and establishes the possibility that both machine learning and artificial learning help promote the business. The sample members were selected based on their experience of running a business and those who had incorporated the two learning parameters. A total of 30 businessmen and women were selected based on their ability to manage a business using machines and artificial learning.

Data Collection Methods and Tools

Data collection involves collecting and measuring information on the variables of interest in a structured and systematic manner to support and answer the research questions raised in the research and evaluate the outcomes of the research (King, Horrocks & Brooks, 2018). The research utilized in-depth interviews to acquire data from the interviewees. In-depth interviews involve unstructured and personal interviews, which are used to obtain information from the participants about their views, emotions, or views about a certain subject of the study research (King, Horrocks & Brooks, 2018). Personal interviews involve the interviewer and interviewee's direct conversation on the subject matter, and direct response rates characterize it during the conversation. The interviewers were trained to attain proper interviewing skills, essential in obtaining useful information from the interviewees. The use of unstructured interviews was essential for the research since it provides the flexibility of the conversation and, thus, critical information may be obtained compared to the other forms of data collection methods (King, Horrocks & Brooks, 2018). The research design was useful and convenient since the information could be acquired through texts, audiotapes, or videotapes, thus creating the method's flexibility. The data collection tools involved in the study include semi-structured questionnaires, which were used as the guide in interviews with both open and closed questions, giving guidance to the interviewers. The questions were formulated based on the research questions.

Data Analysis

The analysis of the data obtained from the study involved a coding approach, which entails sorting, labeling, and classifying data obtained from various data collection methods to establish the relationship between various variables (Elliott, 2018). The interview data was analyzed, and a relationship between the variables was discovered.

Ethical Considerations

Research ethics is important in research as it promotes the expansion of knowledge by instilling values that establish collaborative work, mutual respect, and fairness. Ethical considerations comprise values that establish the fairness and dignity of information and participants during the publication of information (Eden et al., 2018). The research used ethical considerations to ensure social and moral values were considered during the research study. The research issued consent to voluntarily selected interviewees, which informed the interviewees on the importance of research and data collection methods that were to be adopted in the research. The participants were given time to interrogate and enquire for clarifications based on the importance of the research.

The other ethical consideration considered in the research involved keeping the information about the individual participants confidential. All interviewees and interviewers signed a confidentiality agreement, which barred them from taking the information about the study out of the research context. To ensure confidentiality, participants' names and identities were not revealed during the study research processes, such as data collection, analysis, and writing of the findings. The study's privacy and confidentiality were enhanced by conducting interviews for each participant in a private and secluded area, which was limited to access by outsiders. The interview environment was made to promote privacy by using private rooms for each interview session, which were occupied by the interviewee and the interviewer only per interview session. Finally, the research study confirmed to the participants that the information obtained from interview sessions would only be utilized for the current study.

Findings and Results

This section presents the major findings of the study. The findings are presented according to the study research questions, showcasing the major themes uncovered during the interview.

Marketing Managers' usage of ML and AI in the Analysis of Big Customer Data and the Implementation of Insightful Marketing Strategies

There are several ways in which marketing managers use machine learning and artificial intelligence in the evaluation of big customer data and the execution of insightful marketing approaches. Based on the respondents' concerns, Figure-1 depicts how organizations are now employing AI and ML methods for various

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reasons. The study respondents disclosed that marketing managers use machine learning to accelerate big data analytics by uncovering patterns and trends. Mostly, marketing managers embrace decision-making algorithms. The participants also uncovered that through AI and ML adoption, marketing managers enhance all big data elements. The ML algorithms enhance the implementation process. The NLP-decision making, deep learning, and semantic search play a significant role in helping managers make constructive decisions. The study revealed that the NLP-decision approach embraces three of business managers' senses in the decision-making process, comprising auditory sense, visual sense, and kinesthetic sense. Upon the adoption of these senses into decision making, one is in a position to make better choices. As a result, decision support is an essential area where machine learning may assist firms in turning their vast amounts of data into useful insights. Algorithms trained on historical data and any other relevant data sets may assess information and go through various possible scenarios at a scale and pace that is difficult for humans to achieve, allowing them to give suggestions on the best course of action. In the corporate world, decision support systems based on artificial intelligence (AI) and machine learning (ML) assist management in predicting trends, identifying problems, and making faster choices. Because actionable information in the form of charts and other visualizations can be easily obtained using AL and ML techniques,

Figure 1. Businesses are using AI and ML for various purposes
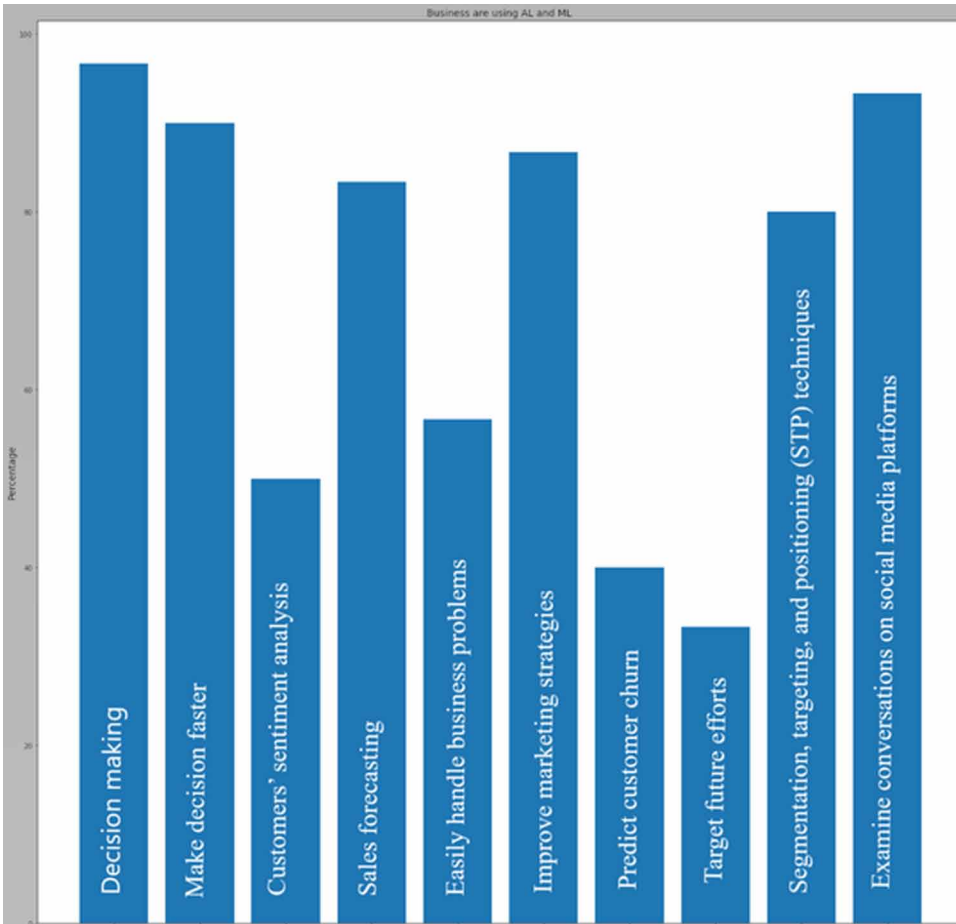
The research also found that business managers make decisions faster through deep learning technology because there are fewer manual data aggregation requirements and document studying. Much time can be spent on analyzing, processing, and acting upon the data. Concerning semantic search, the participants disclosed that it broadens the search scope and makes it quite easy to collect evidence from unorganized data. Tarallo et al. (2019) also demonstrated that manufacturers and sellers of fast-moving consumer products may benefit from machine learning approaches, including the most recent approaches such as Deep Learning, as well as a mix of several approaches used in demand forecasting models.

There are numerous ways in which business managers and marketers can use listening and sentinel analysis on social media to target future campaigns. Firstly, the interviewers revealed that marketers and business managers use listening and

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sentiment analysis to prioritize social media engagement. Through the engagement, the marketers and business managers ensure that they are dealing with the most important mentions first.

Secondly, the participants uncovered that business managers and marketers use listening and sentiment to gather data on sentiment patterns and trends and acquire a better picture of their reputation. The other way the participants disclosed the managers' use of listening and sentiment is to assist with potential crises. Sentiment analysis plays a significant role in looking out for potential crises. They also disclosed that, using web scraping tools, businesses collect customers' review texts and review ratings regarding their products and services from numerous sites and try to identify the customers' sentiment using ML and AL approaches. Some of them said that they also find the longer review texts using AL and ML methods to identify the real negative sentiment of customers. Ghasemaghaei et al. (2018) found that customers who are disappointed are more likely to submit longer evaluations because they are more eager to vent their frustrations to others.

Thirdly, according to the majority of respondents in this investigation, complex analysis, such as the effects of promotions, is better handled by AL and ML solutions. When compared to conventional statistical methodologies, sales forecasting was shown to be better, as evidenced by higher accuracy than earlier models, the ability to manage a larger number of data variables, and the ability to process enormous data volumes through the AL and ML models. Forecasting is a method of estimating future trends, possible disasters, and the general behavior of any topic based on previous data and occurrences. Forecasting may be used to forecast expenditure, income, and budget plans as probabilistic support for decision analysis. Forecasting is frequently used to tailor advertising and marketing efforts, and it has the potential to affect sales. Marketing data may be used in advanced AL and ML forecasting models. The survey participants also revealed that they employ AL and ML algorithms to increase forecasting accuracy and that they are steadily improving their data collection systems.

Fourthly, most of the respondents said that they are using AI and ML approaches to build better tech products and services. AI and ML are used in modern businesses to create goods and services that are tailored to the demands of customers. They provide marketing personalization, recommendation engines, text translation, chatbots, and other services to clients. Moreover, this study revealed that companies are using AL and ML to predict customer churn, which is very important for organizations to customize their marketing strategies. Customer churn refers to the number of customers who have stopped buying a company's product or service during a period of time (Amin et al., 2017). The churn rate may be calculated by dividing the number of customers lost over a certain period. The problem of client turnover

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has a significant influence on the business. It's a crucial metric for companies to consider while making decisions in the current production process (Lu et al., 2019).

Finally, respondents believe that all the used applications of AL and ML help them to improve their business and marketing strategies, convert data into revenue, examine conversations on social media platforms about their business and target future efforts, leverage ML/AI-powered information to help sales and marketing, overcome the challenges given by large data collections, deploy ML/AI-driven segmentation, targeting, and positioning (STP) techniques to produce more income and give insights for marketing choices, and distinguish between fake and genuine reviews.

Marketing Professionals use Machine Learning (ML) or Artificial Intelligence (AI) to Improve their Marketing Strategies

Machine learning, or artificial intelligence-based data, has revolutionized the entire concept of marketing. Currently, advertisers are in a position to associate directly with consumers. Marketers can design ad campaigns whereby messages are sent unswervingly to the consumers' inboxes. There are several ways in which marketing managers leverage ML or AI-founded data to inform marketing strategies effectively. First off, marketing managers leverage artificial intelligence-based data to offer content based on one's taste (Kietzmann, Paschen, & Treen, 2018). When a frequent customer visits the shop, the managers like it when one remembers their preferences and tastes and informs them of something they would admire. With a combination of video marketing and artificial intelligence, the managers manage to show the content to the viewer based on their past taste. Through YouTube, users can click on similar videos to those they have participated in (Kietzmann, Paschen, & Treen, 2018). Marketing managers can also use AI to keep customers who are about to leave by re-engaging them with alternate products.

Secondly, marketing managers leverage machine learning to inform their marketing strategies by utilizing AI-powered chatbots. Through the adoption of the AI-powered chatbot, a human-like conversation is replicated at the customer's convenience (Kietzmann, Paschen, & Treen, 2018). A chatbot is fed with information such as details of payment, refund, and return policies. In case a customer questions something beyond the scope of a chatbot, it gathers the details of the person and moves the particulars of the executive care executive. The third way marketing managers leverage AI data to reveal their marketing strategies is to create culturally relevant videos. They search for various video editor software and invest their efforts in coming up with videos specifically to attract potential customers. Cultural and religious inhibitions play a significant role in deciding one's taste, and brands are regularly compelled to create multiple videos with slight streaks for individuals of a

diverse region (Kietzmann, Paschen, & Treen, 2018). With an AI platform, the video becomes more flexible and is rooted in updated data, and the treks can be automated.

Furthermore, marketing managers leverage machine learning or AI data to fully enlighten marketing strategies using AI or ML to recover abandoned carts fully. Most of the abandoned carts' incidences occur because the buyer is not digitally well versed and may have clicked on the exit button mistakenly (Sterne, 2017). Through AI tools, the marketing managers can send an email to the registered user with details of the commodities on the left cart, requesting whether they would wish to reconsider their decision.

Marketing Managers employ Machine Learning and Artificial Intelligence (ML and AI) to Convert Data into Revenue

Machine learning (ML) or artificial intelligence (AI) is today's field of computing, useful in the decision-making process. It involves developing learning algorithms using data to generate predictions that are useful in making decisions. It is found helpful by companies in the management of the flood of data. Machine learning and artificial intelligence such as NLP, semantic search, and deep learning are useful in various industries, such as business and customer context. Both artificial intelligence and machine learning have been approved to hold great promise for making marketing more efficient, intelligent, customer-friendly, and ultimately more effective. ML optimizes the user experience and transforms consumer-facing services by providing quick resolutions and responses in actual time (Kumar, 2017). Chatbots that leverage natural language processing can give consumers the impression of conversing with an actual customer service executive in real-time. They can track, fulfill orders, and answer questions and also provide help to solve simple issues. Using ML marketing, managers can track customer spending habits and use the data to recommend related services and similar products. Also, they may use ML to classify the customer base and improve sales with targeted ads. Most companies are using ML/AI conversational marketing strategies to engage customers via social media platforms and native apps, improving their brand image and value. ML/AI allows brands to make strategic decisions by identifying market trends and predicting those trends within a short timeframe (Kumar, 2017). ML/AI has been seen as useful in reducing digital advertising costs, keeping the expenditure streamlined, and avoiding redundancy.

With the help of natural processing language (NLP), managers can analyze data and ask questions just like in search engines or digital personal assistance, which are cost-effective, thus enabling businesses to make more revenues. With the help of instant context and explanation apps in ML and AI, the smart insight feature helps one dig deeper into the visualization without manual effort and reveals the top

contributors behind values or variances. The business model being used by online retailers requires the customer to place orders after which the online retailer ships the product to the customer. With the help of deep searching and NLP, online retailers can predict what the customer requires and, assuming the predictions are of high accuracy, the retailer can transition to a shopping business model. This is because the AI can identify customer preferences and ship goods to customers without a formal order. with the option of the customer returning what they do not need. The shift can transform business models, marketing strategies, and customer behavior.

Marketers use Social Listening and Sentiment Analysis to Examine Conversations on Social Media Platforms about their Business and Target Future Efforts

Marketing has undergone many changes due to the diversity of the economy and technology in the world. The changing trend has made many marketers and consumers opt to use online channels to sell and access items and commodities. Successful marketers have applied social listening and sediment analysis skills to improve their market gains and know the effectiveness of their brands. The use of social listening skills assists marketers in making decisions about a particular brand based on market reaction. However, for a marketer to be sure of the result, he/she has to consider the highest and most active marketing platforms where the buyer's reasonable reactions are evident for the betterment and improvement of the brand. Marketers should use the data posted on platforms to analyze the most popular products and brands on the market (Ducange et al., 2019). Listening helps the marketer make the right choices about the brands, embrace the change needed, and adopt new marketable brands to be competitive in the market. Integration of social listening skills with sediment analysis helps the marketer improve future campaigns for a brand in the market. Customers' reactions make the marketer consider buyers' interests and choices in a move to satisfy their market demand, which makes the brand end up out-competing others in the market.

Besides shining in the market, the marketer builds high-quality products and market content, which attracts many customers to that specific brand. Interaction with customers creates a very good bond in the market, which improves the marketer's communication skills to handle his/her clients in business. The efficiency and effectiveness of messaging in online platforms assist buyers in quickly understanding the brands available in the market, and the most appealing brand to customers is always considered. Effective communication and listening skills enable marketers to create very appealing programs and forums that attract customers from a wide range of backgrounds. Even successful partners from different companies will be interested in trading together to improve their companies (Ducange *et al.,* 2019). Due

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to competition from other marketers who are selling the same products, influencers play a key role in marketing products. Influencers help create distinct and specific marketing programs that distinguish the brand from other competitors' brands, hence creating the reason for them to fetch more customers than other competitors' brands even when they are the same. The customer handling process and good communication strategies with the customers make the marketer stand out from other marketers and attract more customers to the brand. Social listening and sediment analysis help the marketer avoid guesswork about the customer's feelings about the trending products in the market.

Marketing Managers utilize ML/AI to Model the Marketing Mix

With the help of ML/AI and the chatbot, which converses with humans via a live chat interface, marketing strategies have been transformed. A chatbot is a brand's website that facilitates sales and finds information. Sophisticated chatbots are powered by artificial intelligence (AI) and machine learning (ML), which use natural language processing to generate responses and conversations that are more complex. ML/AI and chatbots use several ways to improve the customer experience, thus transforming marketing strategies. Through a seamless live chat where the customer engages with a chatbot, the learning curve for customers to engage with the chatbot is practically unreal since most chatbots use natural language processing methods. Companies can analyze customer questions and deliver a response that meets customer needs. Also, with the 24/7 customer service in the chatbots, the transformation allows customers to get answers to questions at any time without waiting for emails or voicemail. Also, with the smoother journey, chatbots help customers gather information about the product they wish to purchase, the method they wish to use in purchasing, and how they want it to be shipped. Also, the transformation has been less stressful in the operation of the chatbots and ML/AI in handling customer support calls from overseas operators to automated telephone menus.

Based on Augmented Reality (AR) and Virtual Reality (VR), they turn out to be more prevalent in marketing, permitting products to engage customers, craft experiences and inspire dialogue through more interesting approaches. Besides, marketing is currently driven by the wants and needs of consumers. When new expertise is available, consumers want products to provide practices that use it. It implies that it is significant that products go along with new technological advancements to satisfy consumers' anticipations and provide the finest possible experiences. That is why vendors regard how Augmented Reality and Virtual Reality can be integrated into marketing strategies. Considering the reality that these skills already disrupt sectors, being unable to implement them leaves an organization lagging behind its competition (Inkeroinen, 2020). Virtual reality for marketing

implies that many individuals perceive that VR is fundamentally for gamers, requiring massive technological investment to liken such virtual experiences. However, it is not the case. Smartphone access implies that average consumers can enjoy VR. VR marketing allows firms to connect the disparity between action and experience. Thus, VR can provide digital experiences rather than physical ones, thus promoting goods and services. VR can also be used to cover those in development.

AR for marketing is a current trend in sales and marketing strategies. It enables products to provide consumers with a distinctive opportunity to tap on their smartphones. With the aid of mobile devices, AR provides another device in driving sales and promoting a brand's value. It is beyond novelty and a new gaming frontier. It is basic to marketing and sales innovations in the future. Integrating AR into industries upgrades the experience offered to consumers, resulting in high sales and business opportunities (Inkeroinen, 2020). Products can use AR to enable consumers to try brands before purchasing, with augmented buying experiences being dominant.

Marketing Managers utilize ML and AI to speed up the Process of Labeling and Categorizing Items

In Product categorization, e-commerce firms sourcing products from multiple sellers' experience difficulties appropriately categorize them. It is through machine learning that retailers can categorize and tag products more effectively. For instance, products such as shoes could be branded various names in various languages by sellers. AI-based procedures can precisely identify and analyze the correct classification of the merchandise. Fundamentally, there should be an implementation of a simple multinomial occurrence principle Naïve Bayes theory using Laplace smoothing on simply the title specification. It should be accompanied by high accuracy. In the process of data preparation, the data applied for categorization should be provided by a particular company, which stimulates the process of pre-categorization of product data. Stimulated data should only be used throughout the work.

A set of data should be comprised of a specific set of columns and rows in each data set. The column needs to consist of a combination of numeric values and values (Wirojwatanakul & Wangperawong, 2019). The data on such categories should be in text form, in terms of a type name. If conducted in such a way, the case of missing values may be rare. Rather than removing a complete row having various absent values, the approach of replica substitution can be chosen among other methods. To choose the approach of using the available data for machine learning, employees in a particular firm, operating on manual categorization, need to be consulted since they have an improved understanding of such data usage. Due to the diversity in the various data set, I would be impossible only to use some features, thus each feature must be used. To accomplish the finest possible results and the most precise

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categorization based on machine learning, the data must be processed to discard data directly not associated with a particular item. It could be, for instance, dates and IDs. If the values are incorporated, they will increase additional and imprecise measurement in machine learning, thus reducing the finished product's precision.

Based on price tagging, various organizations have dynamic pricing principles depending on customer demands for a given service or product. Artificial intelligence can take dynamic pricing to a whole different level. The use of machine learning to analyze customer data patterns such as approachability to offers, purchasing proclivity, and so on. The most accurate price is identified for all products. It assists organizations in computing the precise discount amount required for sales. Machine learning's power lies in the reality that advanced algorithms can learn data patterns rather than be explicitly programmed (Chun et al., 2021). It is also possible for machine learning principles to constantly incorporate new data and distinguish between emerging trends and new market demands. ML is a highly attractive tactic for retailers. Rather than using, for instance, aggressive common markdowns, they gain an advantage from predictive models, which allow them to identify the finest price for all services and products.

In the Digital Era, Marketing Managers leverage ML/AI-Powered Information to Help Sales and Marketing

More than 95% of industry experts believe that artificial intelligence and machine learning techniques will have a huge influence on the future of digital marketing and its performance. Combining a skillful workforce with machine learning, which is based on smart automation and artificial intelligence, will be the future of marketing in the digital era (Huang & Rust, 2021). Machine learning and artificial intelligence contain different components that create powerful knowledge to support sales and marketing differently. Chatbots for great user experience, increasing the volume of dark social sharing, personalization of marketing at scale, and micro-moments are some of the main drivers provided by ML and IL, which will greatly influence marketing. Currently, ML and AL's level of impact in marketing and sales shows that the future of sales and marketing lies with ML and AL.

ML and AL-based sales and marketing are quite different from the traditional forms of marketing, as traditional marketing is based on limited insights into the purchasing behaviors of the target audience. AI and ML, on the other hand, are equipped with information about customers, such as their purchasing habits and patterns (Sterne, 2017). The information provided by AL and ML about the customer will be of great help in supporting marking in the post-digital era. The knowledge powered by AL and ML will support sales and marketing by making effective risk predictions and interventions. Using information such as customer behavior and buying patterns,

the business will make more effective marketing predictions. Through this, the business will enhance its sales because of the use of effective marketing strategies. Besides, through AL and ML-powered knowledge, the business will enhance sales and come up with more effective marketing strategies because of the enhanced predictive data modelling.

Moreover, AL and ML-powered knowledge will support marketing in the digital era by providing real-time content through chatbots and other models. The power knowledge will be of great help as it will assist the markers in increasing the target customer audience, attaining enhanced customer experience, and improving customer satisfaction. Machine learning languages will play a big role in supporting sales and marketing, helping to reach more customers. Machine learning-based marketing and AL aim to enhance the customer's understanding and provide intelligent solutions (Dimitrieska et al., 2018). Based on this objective, AL and ML-powered knowledge will support marketing and sales by enabling businesses to position themselves better by coming up with effective strategies. This knowledge will also be important in increasing the relevance of the targeted market. With the support and knowledge provided by ML and AL, the business will effectively exploit any market opportunity, thus increasing their sales.

Marketing Managers employ ML and AI Approaches to Overcome the Challenges Posed by Large Data Collections

Big data possesses many complexities that make it difficult to manage data since the modern world functions based on information. In this case, many files are created, processed, stored, and distributed. Therefore, the complexities include great data volumes, a clear process on how to manage data that is not available, and the challenge of how to access and integrate data. Machine learning can solve these challenges and AI in various ways, such as helping in the process of data aggregation (de Santiago & Polanski, 2020). Aggregating data is related to collecting large amounts of information, analyzing, packing, and then presenting it as a report with statistical analysis. This is intended to provide important information in a short form, which makes it easy to make quick decisions. When the data is integrated into a short form, the information provided is reliable since it is derived from sufficient data. Big data refers to large sets of processed and analyzed information to reveal trends, patterns, and associations that mostly relate to human interactions and behavior (de Santiago & Polanski, 2020). Artificial intelligence allows all the data to be processed and analyzed computationally with limited chances of making mistakes that would be obvious if the same were carried out by hand. The process takes years when done manually. Machine Learning takes the information that is analyzed and makes decisions based on it. Another technique is AI, and machine learning helps

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in the identification of unnecessary data. Apart from analyzing, summarizing, and categorizing, AI is used to eliminate unnecessary data. Repetitive files containing the same information and files that do not contain useful information based on the input directions are identified and eliminated. This helps in limiting the chances of confusion brought by large file volumes that could be stored separately or erased.

Artificial intelligence and machine learning help in sorting and storing data more efficiently. The way AI approaches data sorting is the most reliable and biggest way it can manipulate and maximize the value of data for easy access and efficiency when used (Wang et al., 2020). When using manual work, it takes years to sort, categorize, and distribute. AI and machine learning are used to create a neat organizational system that can be carried out automatically with a reachable and clear structure that is unbiased to personal preferences. It can also be used as a standard practice that allows access to data easily regardless of the data type being managed.

To Produce more Income and Give Insights for Marketing Choices, Marketing Managers Deploy ML/AI-Driven Segmentation, Targeting, and Positioning (STP) Techniques

The business should rely on ML and AL to generate more revenue and make more effective marketing decisions. STP, which is ML and AL-driven, can achieve business in achieving enhanced revenue generation and in the process of decision-making. AI assists the business in enhancing data collection procedures. The collected information is important in analysing customer consumption and experience. Through the collected data, companies can determine the customers' attitudes, thus making marketing decisions that fit the market. Algorithms like AL and ML, which are based on STP, can be used to identify and analyze competitors, which enables the business to gain competitive advantages. For instance, machine learning can identify where marketing structures are more stable, allowing for good marketing decisions. Moreover, STP, which is ML and AI-driven, helps in enhancing sales and helps businesses predict market and customer trends. For instance, businesses use AL for predicting marketing gaps and predicting future customer orders (Huang & Rust, 2021). Through this, businesses can improve sales and make effective marketing decisions. Businesses can also make effective marketing decisions through automated text analysis, which is applied in consumer research.

Using feeling AI, it is easy to understand the customer's needs and wants. In this case, understanding customers involves emotional data analysis on the sentiments, preferences, feelings, and preferences of the customers. Feeling AI does a great job of understanding the needs and wants of customers since it has a greater capability of dynamic data analysis compared to doing market analysis (Huang & Rust, 2021). Marketers can use Feeling AI to evaluate and explain whether the customers are

happy with the products and why they are happy in the case of the existing customers. The preferences of existing customers are more stable. The company is already in possession of the past and current transactions, which helps provide insights into a deeper understanding of the customers.

Marketers can also use AI to understand potential customers based on what they want and why they are happy with their competitors or outside options (Huang & Rust, 2021). It is difficult to predict needs and wants because emotional data is scarce, and thus marketers face a challenge in understanding them.In marketing practice, AI has been used to discover and reach new customers.

AI has been used to understand customers' sentiments expressed on social media, including discourse patterns and the implicit and explicit language they use. This is what is analysed and processed by AI to understand the responses that are given by the consumers in their own languages.

Marketing Managers utilize Machine Learning and Artificial Intelligence to Distinguish between Fake and Genuine Reviews

Machine learning techniques and artificial intelligence enable marketing managers to detect and differentiate fake reviews from genuine ones. In their study, Elmurngi and Gherbi (2017) examined the effectiveness of various supervised machine learning algorithms, including support vector machines, K-Nearest neighbors, decision tree, and naïve Bayes in the detection of fake reviews. The authors found that the support vector machine helps detect fake reviews and classify texts. Additionally, naïve Bayes classifies and differentiates fake reviews from genuine ones. Similarly, Shivagangadhar, Sagar, Sathyan, and Vanipriya (2015) indicate that logistic regression, support vector machine, and naïve Bayes algorithm helped detect and differentiate fake reviews from genuine ones. In connection with machine learning techniques, artificial intelligence helps organizations develop systems that use language processing methods to detect unusual writing styles, formatting, and text patterns. As a result, the system helps the IT and marketing teams detect the reviews' authenticity and differentiate fake ones from genuine ones. Additionally, Hajek and Barushka (2019) supervised machine learning techniques that help companies detect fake reviews automatically. Therefore, organizations' marketing managers require implementing machine learning techniques and artificial intelligence systems to detect and distinguish fake consumer reviews from genuine ones.

Discussion

In this section, the findings are discussed in detail. Firstly, concerning marketing managers' usage of ML and AI in analyzing big customer data and the implementation

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of insightful marketing strategies, the study found that marketing managers use ML and AI to disclose patterns and trends by incorporating decision-making algorithms. ML and AI intelligence assist in the identification of trends and patterns by fostering the drawing of a trend line that is used to identify the trends and different patterns. The study also uncovered that marketing managers use ML and AI to execute insightful marketing strategies by adopting ML algorithms. According to Roh et al. (2021), machine learning algorithms are critical in collecting, analyzing, and integrating data. Through the adoption of machine learning algorithms, marketing managers succeed in the execution of insightful marketing strategies.

Concerning how business managers benefit from advanced ML and AI in decision making, the study found that the NLP-decision approach embraces auditory sense, visual sense, and kinesthetic sense, something that makes decision making quite easy. Many business managers are embracing deep learning technology. The research revealed that business managers make decisions faster through deep learning technology because there are fewer manual data aggregation requirements and document studies. Much time can be spent on analyzing, processing, and acting upon the data. The participants disclosed that it broadens the search scope and makes it easier to derive evidence from disorganized data regarding semantic search.

Additionally, the researcher disclosed that business managers and marketers could utilize sentiment analysis and listening to prioritize social media involvement. Through lots of social listening tools, one can filter the unread or novel mentions through sentiment.

Furthermore, the current study also revealed that businesses are using a variety of AI and machine learning techniques to increase forecasting accuracy and are attempting to collect more data. Traditional sales forecasting has a reputation for being an inaccurate and time-consuming process. This is changing in the new era of AI and ML. Companies can better estimate their sales by utilizing these developing technologies. AL and ML are used to estimate future demand for businesses. Demand forecasting is one of a company's most important decision-making chores. For demand forecasting, raw market sales data is first gathered, and then future sales/product demands are anticipated using the collected data. This forecast is based on information gathered from a variety of sources. The AL and ML technologies analyze data from many modules to determine goods and commodity demand on a weekly, monthly, and quarterly basis.

Moreover, the study findings disclosed that business managers and marketers use listening and sentiment to gather data on sentiment patterns and trends critical in targeting future campaigns. Utilizing social media sentiment analysis in any PR crisis assists managers in an organization to measure overall body performance. In social media, it is regarded as a platform where individuals establish communication and share sediments and information in marketing circumstances. Patterns noted with

DS techniques assist in obtaining actionable insights, implying what researchers and data researchers need to obtain from the patterns identified. With their distinguishing state of being interconnected, egalitarian, dynamic, and cooperative organisms, there has been a generation of three fundamental shifts in the market. According to the study's results, businesses utilize AI and ML to anticipate customer churn, produce better tech goods and services, and optimize marketing tactics.

Finally, we demonstrate how marketers are leveraging AL and ML applications to improve their business and marketing strategies, convert data into revenue, examine conversations on social media platforms about their business and target future efforts, leverage ML/AI-powered information to help sales and marketing, overcome the challenges posed by large data sets, and deploy ML/AI-driven segmentation, targeting, and positioning (STP) techniques to generate more revenue.

Applications of Research

The findings of the study will be of great benefit to business managers and markers. In the current study, we demonstrated how businesses use AL and ML in practice. Business managers will use the information to understand how to apply ML and AI to analyze large customer data sets. Through the use of this information, a business manager will implement marketing strategies that are more effective in improving sales. On the other hand, marketers will use the findings to gain knowledge on how to convert data to revenue by implementing different strategies that are supported by ML and AI. Traditional sales forecasting has a reputation for being a time-consuming and inexact approach. Using AL and ML, emerging technologies may help businesses better forecast their sales. Currently, most businesses are employing AL and ML to forecast future demands accurately. Our findings will be useful to organizations that do not already use AL and ML to forecast future demand for their products and services. Aside from that, our research makes a major contribution to the literature on AI and ML in marketing and business. Although prior research used AL and ML to evaluate business data, the current study demonstrated how firms employ them in practice.

CONCLUSION

Marketers rely on customers' data to develop an efficient marketing plan for the organization. Customer data also provides the marketer with an insight into consumer behaviour. With changes in the contemporary world of business, organizations have to deal with big customer data. However, the data poses different challenges to the business manager as they cannot manage the data and convert it into valuable insights

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effectively. These challenges hinder business managers from using customer data to come up with the most effective marketing strategies. Due to the challenges of managing big data, organizations have different measures to manage the data. ML and AI, which are concepts in computer science, are concepts used by managers to manage and use large amounts of customer data. The paper is aimed at examining how marketing managers use ML and AI to analyse large customer data sets and implement insightful marketing strategies. The study found that marketing managers use ML and AI to disclose patterns and trends by incorporating them into decision-making algorithms.

Besides, the study found that business managers and marketers could utilize sentiment analysis and listening to prioritize social media involvement regarding the third research question. Moreover, AI and ML help companies all over the world scale their operations and improve their scalability. Artificial intelligence technologies and a variety of machine learning algorithms have exploded in popularity in the business analytics field. A large amount of AL and ML growth has resulted from factors like expanding volumes, accessible data availability, cheaper and quicker computer processing, and affordable data storage. As a result, companies may now benefit from a better knowledge of how to employ artificial intelligence and ML in their systems from our study.

Limitations of the Study

There were several limitations to the study. The first limitation that the study faced is the lack of enough secondary sources of data about the application of ML and AI. In the past, only a few studies about applying ML and AI concepts have been conducted, which posed a challenge to accessing the data to be used. Another limitation of the study was time constraints, as the respondents used in the study were located in different regions. Conducting the interviews with respondents was a challenge because of the factor of location.

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Chapter 15

A Bibliometric Analysis of Green Tourism Based on the Scopus Platform

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ABSTRACT

In this study, a review of green tourism research is conducted. Using bibliometric analysis, existing and emergent research clusters were identified for epistemological investigation in the study. The field of eco-friendly tourism and other research areas incorporating similar areas such analysis aids in the identification of major subjects, interrelationships, and collaboration patterns. The visualization of similarities is used to create a graphical map of the green tourism study field (VOS). From 1987 to 2021, this source code analysed bibliography from 163 Scopus-indexed research publications. This graphical map reveals the contributions of writers and countries through time, as well as their collaboration and publication trends. This chapter provided major research concepts that have been analysed, as well as shared spaces of current study interest and potential research projects.

INTRODUCTION

Green tourism is regularly used to associate for balancing approach towards tourism development that improves local cultural features, operates under community control, gives employment, and maintains economic benefits within local communities. In truth, the preceding concept is frequently misapplied, because economic gains can sometimes be lost to local communities. The tourist industry, for its part, utilizes the term "eco-tourism" to convey a message to visitors about energy conservation, avoiding coastal pollution, and so on.

Tourism

World Trade Organization (WTO) has divided tourism into three categories: - I. Tourism in the United States: It is made up of citizens who are travelling within their own country. This type of travel does not necessitate any formalities.

Inbound tourism refers to visitors from outside the country. Global tourism refers to people of a country travelling to another country. These three fundamental types of tourism can be combined to create three other types of tourism. First lined with Internal tourism refers to both domestic and international travel. Domestic and outbound tourism are two types of national tourism. Inbound and outbound tourism are two types of international tourism. (Tourism Industry Global Scenario, 2020) It is estimated that the Travel &Leisure industry contributes about 3.6 percent of global GDP and about 10.3 percent indirectly. More than 77 million people around the world are directly employed by this industry, which accounts for about 3% of the global workforce. It is one of the world's most important economic contributors. Market trends show that long-haul vacations and trips to neighboring countries are on the rise as well as trips to rural and ethnic areas for health and wellness, as well as trips to spiritual and eco-friendly destinations.

LITERATURE REVIEW

A method for determining the efficient correlation between air pollutants in data from cities and neighbouring locations was proposed via (Lili, 2021). In spite of the strategic study's efforts to use tourism to significantly reduce poverty, macro-level poverty alleviation is still poorly understood. Products and markets must constantly expand to meet mature tourism objections. Frequently the exact leisure firms are accused of primarily utilising the term "green" for marketing purposes.(Yfantidou et al., 2016)

There is detrimental impact on the transportation, resource development in business, as well as, to some extent, the geographic structure of the market town (Wu et al., 2021)A study confirms the need for and importance of forming a new global economic school aimed at sustainable development. A component model of green economy is proposed to capture the green economy's essence and content. (Ospanova et al., 2022) If effort-dependent revenue-sharing compels local inhabitants to participate in conserving, then this is an example of a community-based preservation approach based on a bio-economic model as asserted by (Prihayati & Veriasa, 2021).The systemic connections between eco-friendly experience education, green experience motivation, clean experience value, and green experience advantages were investigated (H. Chen et al., 2019). Model of the interactions between attitudes toward the environment its attractions, social & individual norms regarding non-polluting responsible behaviour, control beliefs, intentions and the desire to pay for such trips using the theory of planned behaviour was confirmed (Nowacki et al., 2021).There is a framework for developing green energy tourism strategies and policies that incorporates the necessary technological aspects for creating a smart city and a stylish and comfortable tourist destination (Lu et al., 2021). (Zhang & Chan, 2021) determines tourist purchase intentions of green products under the destination experience scenario, using the extended theory of planned behaviour (TPB).

This study examined the joint eco-tourism supply chain problems of nature spot and travel agency (Ma et al., 2021). For unified, decentralised, and revenue-sharing scenarios, they utilised Stackelberg differential game models to seek dynamic equilibrium solutions of the GTSC members using Pontryagin's maximum principle. Based on the scenarios and the analysis of the tourists' sustainable tourism experience, the wholesale ticket price and the sharing ratio on the GTSC's optimal decisions and performances (Park et al., 2021) concluded that it is necessary to improve settlement fulfilment and persistence, people who live in the county should have more chances to talk to each other, get decent public relations systems in or out of the county, have more officials, enhance transport services in the county, and increase capacity and prices of meals. (Jiao et al., 2021)enlightened policymakers relying on size, intensity, and duration of variation & town variation allowing them to appropriately measures to promote nature friendly tourism development (Patti, 2017) discussed the factors of enhancement in the field as a respected and valued in order to build a model in the form of policy suggestions, as indicated in the new model. The bulk of respondents appreciated visiting urban green infrastructure and used it for workout sessions, playful, meeting people, and learning about the life and traditions of the city we were going to when we went there(Terkenli et al., 2020). (Ben Jebli et al., 2019) pointed out that renewable energy, tourists &FDI all help to reduce emissions, whereas trade and economic growth increase them. As a result, increasing foreign direct investment, supporting the use of renewable energy especially green tourism,

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are all effective climate-change policies for this region.(J. Chen et al., 2018)added a basic perspective on emerging path towards sustainable procurement in tourism and other service industries already constrained by the production framework. Tourists who stay in hotels in Bangalore have a huge impact on their urge to use environment conscious services and products, that's from an experiment (Ramchurjee, 2014) that used the intercept approach of analysis. When it comes to educating their visitors about the importance to be ecologically responsible, green hotel operators/managers must do so constantly.

Governments are responsible in encouraging the implementation of cleaner technologies in the tourism sector and presenting various options for achieving sustainability in developing countries(Yfantidou et al., 2016). A two-step approach for collection of river islands and model building for flood forecasting for the separation of eco-friendly tourism destinations was outlined by (Kuldeep et al., 2016). The output from this approach will be extremely useful for government authorities in regulating the economy. (Dunk et al., 2016) handled key challenges and improved retention in tourist certification systems, resulting in long-term growth. The purchase (i.e. booking) intention of eco-accommodations is influenced by different levels of communication appeals, message sources, and societal norms. (Zanon & Teichmann, 2016) explored the role of various combined promotional transmissions in elucidating the apparent disparity in sustainable consumption. As per (Kvasova, 2015), openness to experience, social competence, extraversion, and psychopathy have all been positively associated with pro-environmental tourist experience. Ecotourism's major goal is to explore and preserve all aspects of natural resources such as beautiful landscapes, local flora and wildlife, while respecting ecosystems, even helping to restore, in a cooperative manner (*Brophy: Ecotourism: Practices, Benefits and Environmental... - Google Scholar*, n.d.).

OBJECTIVES OF THE STUDY

With the following questions in mind study's maingoal is to show the current state of non-polluting tourism literacy. The study's scope is determined by the answers to the following questions: The following questions were framed:

RQ1: What are the existing publication patterns in green tourism in terms of timeliness, journals and disciplines and authors?

RQ2: Which countries are publishing more research articles on the theme of green tourism?

RQ3: What are some of the most influential literature and empirical themes in this field?

RQ4: What are the research gaps and topics that need to be explored further?

Methodology

A bibliometric trial section of the report delves into the productivity of individuals, nations' resources& collaborations.VOS was generated via usingboth co-citations& co-words,authorships, geographical distribution, word frequency, bibliographic couplings along with mapping.

Study Parameters

There are 5 themes of 'eco-friendly tourism, 'clean tourism, sustainable tourism, 'nature tourism, environmental tourism, 'ozone-friendly tourist' and non-polluting leisure which were studied.Quantitative research output measurement was also used to evaluate mentioned topics. The criteria used in analysis are stated in Table1

Table 1. Study parameters

Sr.no	Research Elements	Category	Content
1	Elements	Articles, investigations, Book Reviews	No. of Publications & their types
2	Contribution	No. of Authors citations	Dominance of the writer in the field
3	Top countries	Name	Nations publishing more no. of papers
4	Count of papers quoted	The sum	How many times the research work has been cited
5	Study Acknowledgements	Mean	Average number of references per article
6	Most acclaimed publication	Title	journals with more work on this field

Data Extraction

Authors, journals, and citations were some of the variables examined, which also incorporated information on keywords, scholars, and publications. Excerpts from the database were used to look for information. Most of the research literature on efficient and environmentally tourism can be found in the Scopus database.

Abstracts and citations to peer-reviewed literature from Elsevier, Emerald, Taylor & Francis, Springer, Informs and Interscience can be found in the largest database of peer-reviewed articles, Scopus. Author accessed the sustainable tourism studies that are referenced herein. It took some time to narrow the initial set of 246 results down to a reasonable total count after discarding papers from conferences,

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conference reviews, and papers written in languages other than English. Even after these few papers were deleted because they were not found in the line of the theme of the study So final count is 163 which includes Articles (149) Book chapter (11) Review (3) others (3)

Data Analysis

Figure 1. Number of publications between 1987-2021
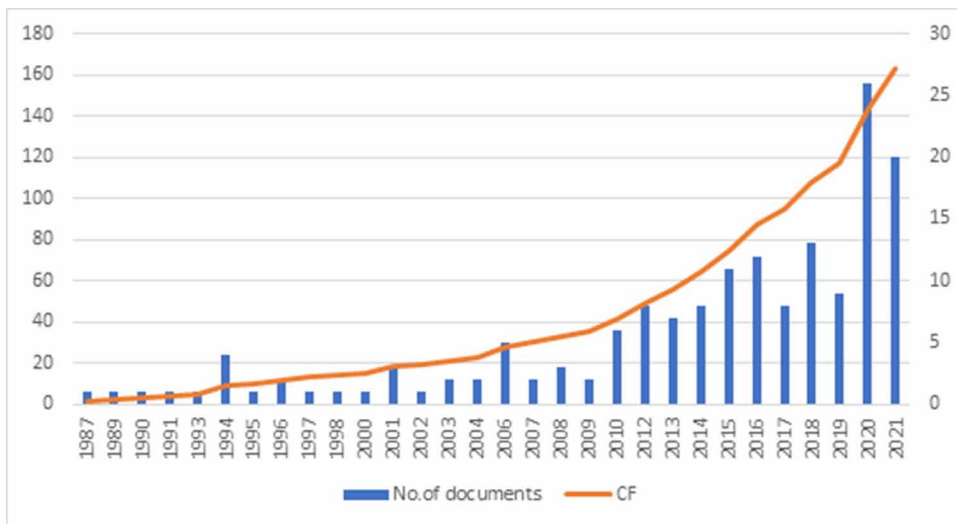
Between 1987 and 2021, the number of papers varied, but the concept gained too much traction in the eyes of researchers in 2015, 2016, 2018, and 2020. 62 papers were published during these years, out of a total of 163. As evidenced by the rapid increase in the body of literature, this upward trend in the graph indicates that green tourism is still a contemporary phenomenon.

Table 2. Top authors in field of green tourism based on scopus citations

Ranking of Author based on Scopus citations			
Ranking	**Author**	**Documents**	**Citations**
1	kirk d.	2	167
2	tzschentke n.	2	167
3	he p.	2	72
4	he y.	3	72
5	xu f.	2	72
6	kim s.-i.	2	64
7	dolnicar s.	2	63
8	dodds r.	2	57
9	joppe m.	2	57
10	nhamo g.	2	33

Table 3. Top manuscript as per citations

Document by	**Citations**	**TC per year**
tzschentke n. (2004)	136	8
murray m. (1997)	132	5.5
wurzinger s. (2006)	125	8.34
lynes j.k. (2006)	98	6.54
luzar e.j. (1998)	79	3.43
hiwasaki l. (2006)	77	5.13
ben jebli m. (2019)	73	36.5
he p. (2018)	60	20
wearing s. (2002)	57	3
kvasova o. (2015)	55	9.16
new l.f. (2015)	54	9

The next study criterion was to determine the most frequently mentioned journals, authors, and papers. The publication of articles in the top ten journals on green/eco-friendly/non-polluting tourism gave further insights. According to the number of documents in each journal, Table 4 lists the top ten. There appear to be a large number of papers on green tourism in a variety of academic journals.

Tourism Management is followed by Tourism Economics, Journal of Sustainable Tourism, and Sustainability (switzerland) with a total number of publications of 9 each; First in terms of citations for articles in the topic of tourism management is the journal Tourism Management, which has 239 citations to its name. Table 2 shows the citations and number of publications each author has made in this field based on their Scopus citations. Table 3 provides an overview of the most cited papers in the field. The names of the authors and the total number of citations and citations per year are included.

Table 4. -Top ten publishing journals contributing to the area of green tourism

Ranking	Journal Name	Number of Documents	Scopus citations
1	Tourism management	5	239
2	Journal of travel research	3	224
3	Journal of sustainable tourism	5	196
4	International journal of contemporary hospitality management	2	163
5	Annals of tourism research	4	106
6	Sustainability (switzerland)	9	69
7	Journal of ecotourism	2	66
8	Tourism economics	5	61
9	Anatolia	2	43
10	Journal of policy research in tourism, leisure and events	2	42

Figure 2. Countries with highest number of publications in field of green tourism
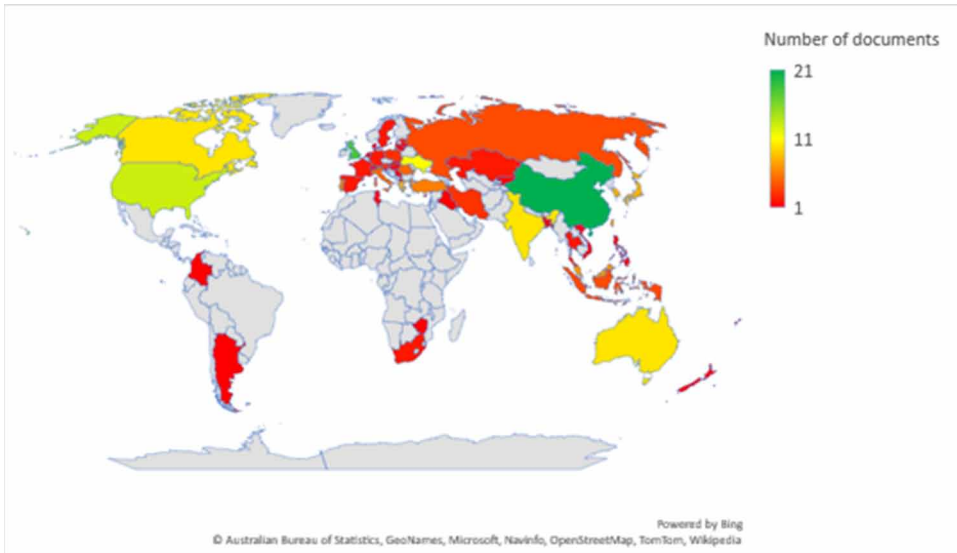
According to Map given in Figure2. Countries producing a greater number of documents are, China (21), United Kingdom (18), United states (13), Ukraine (11), Australia (10), Canada (10), India (10) followed by Greece, Japan and south Korea each producing 8 documents,Malaysia&Taiwan (7) each, Portugal

(6), Turkey (6) furtherHong Kong, Italy&Romania published 5 documents each. Publications in the field of green tourism vary by country, but only a few countries have a significant number of publications, with the majority of other countries having only one or two.

Additional information is provided in Table 5regarding the countries with the highest number of Scopus citations to their documents in the field of green tourism. United Kingdom was ranked first with a total of 659 citations for their 18 papers on green tourism, followed by Australia, Canada, the United States, Greece, China, Austria, Sweden, Portugal, France, and Malaysia. This demonstrates the popularity of these countries' publications. Evaluating the average number of entries for published articles in these countries reveals that Austria outperforms all other countries.

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Table 5. Total citations per country

Nations	Citations	Averagearticles Acknowledged
UK	659	36.611
Australia	345	34.5
Canada	277	27.7
United states	271	19.357
Greece	149	18.625
China	146	6.952
Austria	144	48
Sweden	130	65
Portugal	88	14.666
France	83	41.5
Malaysia	80	11.428

Figure 3. Emerging keywords

The network visualisation mode in the VOS viewer is used to show the most commonly discussed keywords linked with green tourism in Figure 3. Sustainable tourism, green tourism, sustainability, green economy, and sustainable development are only a few of the main terms or subjects in the sector.

The fact that some themes are still in the early stages of development and making headway despite the fact that their nodes are small indicates the existence of a niche market. Topics like sustainable tourism, ecotourism, and rural ecotourism are only a few examples, as seen in Figure 3.

CONCLUSION AND FUTURE RESEARCH

Green tourism is a relatively new concept that has piqued the interest of scholars in recent years. It is gaining popularity in emerging countries as well. Eco-friendly tourism has the potential to be one of the most fertile and significant areas of research in the field of sustainability. A surge in the popularity of green tourism since 2015, particularly in the last few years, has had an enormous impact on the literature on the subject. Finally, green tourism is a new field of study that is becoming increasingly relevant to academics. Developing and developed countries have a wide disparity in the number of people studying green/eco-friendly tourism, so cross-sectoral research is needed. An important limitation of this study is its focus on Scopus-indexed publications, which may be considered a limitation. The present research has examined the manifestation of the notion of green tourism, its prevalence throughout the world, as well as the variables and consequences associated with this type of tourism. Additionally, this review adds to sustainability research by unravelling the evolving literature according to numerous topics and trends, thereby establishing the state of scholarly work from its conception to the present. However, we highlight several gaps in the literature on green tourism, and suggest more study issues. RQ1 What ideas exist to explain the relationship between eco - tourism and the environment? RQ2 What is the relationship between green tourism and individual, psychological, and cultural characteristics across different generations of the population? RQ3 How can green tourism be universally promoted? RQ4 in a global context, how can green tourism be defined or understood? RQ5 What are the most effective initiatives in the context of green tourism for specific demographic groups?

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Chapter 16
Demystifying Neuromarketing:
A Bibliometric Analysis Using VOSviewer

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ABSTRACT

This study tries to decipher the role of neuromarketing in the myriad fields of business employing in-depth review of literature. This work thus proposes abundant acumens into important facets of neuromarketing in the business world employing a bibliometric investigation. The chapter presents an assessment of important neuromarketing enablers and their function in several business disciplines aimed superior business performance. The existing literature was classified based on a variety of bibliometric factors such as year, location, author, institution, and source related data. The literature is further classified based on keyword co-occurrence. The observed clusters indicate neuromarketing applications and execution problems in business. The complete overview, which spans the years 2000 to 2021, can help managers keep current on the uses of neuromarketing in many sectors. The chapter also identifies potential topics for neuromarketing research in several industry sectors to support neuromarketing adoption.

INTRODUCTION

Neuromarketing is a fusion of three mainstream areas namely; psychology, neuroscience and marketing. Neuromarketing's major goal is to research and

understand the subliminal mind of customers to make appropriate marketing decisions (Javor et al., 2013; Sebastian, 2014). This marrying of marketing with neuroscience might provide answers to multitude of questions, including how a product or brand, an advertisement campaign, or a marketing decision affects consumer's conscious and subconscious mind and hence buying behaviour (Oliveira et al., 2014).

Although Neuromarketing dates back to early 1960s when Herbert Krugman started employing pupil gauging and Galvanic skin response (GSR) techniques that assessed involuntary pupil dilation as a sign of curiosity and consumers' emotional responses to ad campaigns (Sutherland, 2007), the concept only hit to popularity when Ale Smidts formally introduced this term for the first time in 2002 and described it as a systematic study of human brain to comprehend customer behaviour in order to optimize and enhance marketing approaches (Boricean, 2009). He described how neuroscience instruments like the Functional Magnetic Resonance Imaging (fMRI) may be employed to appraise buyers' unconscious progressions like emotions, desires, and wants, as well as their responses to inducements like images and sound while making a buying decision.

The taste challenge involving Coke and Pepsi was one of the first manifestations of neuromarketing (McClure et al. 2004). The test subjects were asked to try Coke and Pepsi without knowing what they were tasting. The study examined the participants' brains using a neuroscientific technology called **Functional Magnetic Resonance Imaging** popularly known as **'fMRI'**, to evaluate their affinity for Coke all over Pepsi. The customers liked Coke over Pepsi before the test, however they preferred Pepsi over Coke during the blind taste test. According to McClure et al. (2004), Coke's advertising campaign was significantly better than Pepsi's, and it inevitably fooled customers into thinking they liked Coke. Almost everyone who took part stated they favoured Coca-Cola. Customers may convey something different, even if they have an unconsciously different expression in mind, according to the findings of the study (Babu and Vidyasagar 2012). One more well-known survey, done by Campb4ell; the Soup Company between 2008 and 2010, focused on how customers respond to Campbell soup's advertising and their impact on consumer buying behaviour. All of Campbell Soup's advertisements failed and never worked, especially in terms of increasing sales, according to the findings. They discovered that anytime consumers see a Campbell product in the supermarket, they are indifferent. As a result, the Campbell team chose to analyse consumers' buying choices using neuromarketing to examine cognitive and physiological responses. Among other notable neuromarketing research experiments, the Campbell soup campaign concluded that customers' thoughts are stored in their brains, and the brain recognises the demands and needs of the customers (Glaenzer, 2016).

Given the intense rivalry among existing and new product and service suppliers in the marketplace, marketers must shift their focus from extremely transaction-

oriented mainstream marketing attempts to neuromarketing strategies that existing research has proven to be more effective. Modern marketing efforts must be linked with subliminal processes in consumers' brains since neuromarketing research is based on human brain function and overlooks many conventional and contemporary marketing notions. In order to discover the fundamental concepts of neuromarketing and its applications, this study undertakes a bibliometric analysis discourse of scientific literature.

It is important to first understand neuromarketing as numerous definitions of neuromarketing have emerged as this concept shot to fame recently. Some researchers defined neuromarketing as "implementing neuroscientific processes to analyze, understand and predict consumer behaviour in markets and in marketing transactions" (Lee et al., 2007) while others described neuromarketing as "a discipline based on the marketing consequences of investigating the association of cognitions and feelings in consumer behaviour using neuroscientific techniques" (Javor, Koller, Lee, Chamberlain, & Ransmayr, 2013). While Garcia & Saad (2008) defined neuromarketing as the crossroads of customer behaviour and cognitive neuroscience, Hubert & Kenning (2008) and Senior & Lee (2008) defined it as the implementation of consumer neuroscience results to management theories and the analysis of the cortical precursors of social influence in an applied setting respectively. Researchers believe that neuromarketing also enables marketers to study, evaluate, and forecast consumer behaviour by gaining insights from individual cognitive activities (Perrachione & Perrachione, 2008). According to Nemorin (2017), Neuromarketing is a branch of marketing that aims for a profound level of manipulation based on intuitive reflexes.

As proposed by numerous researchers, human brain is a "black box" that conceals customers'' emotional responses and interests (Marci, 2006; Javor et al., 2013; Fugate, 2007), and neuromarketing gives marketers valuable insights that reveal and allow access to these otherwise elusive emotions (Ohme & Matukin, 2012). Some authors, on the other hand, emphasize upon the differences between the two fields. Neuromarketing was characterised by Fisher et al. (2010) as the basic application of neuroscientific discoveries to administrative processes, neuroscience was defined as a neuroscientific discipline that examines clients. As a result, neuromarketing can be defined as the application of neuroscientific methodologies to understand and analyse consumer behaviour in relation to markets and marketing processes.

Some researchers consider neuromarketing an outcome of amalgamation of two or more fields. Neuromarketing, as per the Senior and Lee (2008), is a marketing research discipline involving psychology, social sciences and field of econometrics. Page (2012) defined neuromarketing as intersection of neuroscience, investigational psychology, and experimental economics, whereas Hubert & Kenning (2008) related neuromarketing with customers' behavioural and cognitive neuroscience. An

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overwhelming number of articles, treated neuromarketing as a relationship between neuroscience and marketing, on the other hand (Fisher et al., 2010)

The popularity of "Neuromarketing" has advanced tremendously lately, and the plethora of alternative definitions necessitates for a thorough theoretical examination. Some of the key definitions or descriptions of neuromarketing as coined in extant literature are mentioned below:

Table 1. Review of neuromarketing definitions

Author	Year	Neuromarketing definition/description
Smidts	2002	Systematic investigation of the brain's activities in order to better understand consumer behaviour and improve marketing methods.
McClure, Tomlin, Vypert, Montague and Montague	2004	Measuring brain's responses could allow us to better decipher why brands add value to products
Kenning and Plassmann	2005	"The application of neuroscientific approaches to evaluate and comprehend economically relevant behaviour" is how neuroeconomics defines itself. Following this line of thought, neuromarketing may be described as the use of neuroscientific tools to examine and comprehend consumer behaviour in marketplace transactions.
Marci	2006	Consumer neuroscience is the study of subconscious level reactions to marketing and media content a using neuroscience tools and ideas.
Fugate	2007	Clinical data on brain functions and systems is used in neuromarketing and its predecessor, Neuroeconomics, to assist and describe what is going on inside the black box, leading to consumer behaviour interpretations.
Wilson, Gaines, and Hill	2008	The authors define NM as a field of study that employs neuroimaging to try to decipher how consumers make certain purchase choices and why.
Ciprian Marcel, Lăcrămioara, Ioana, & Maria	2009	Neuromarketing is to comprehend how brain examines the consumers' behaviour and as well as the discovery of the elements influencing the choice, is what neuromarketing is all about.
Fisher, Chin, and Klitzman	2010	Neuromarketing is a broad term that refers to marketing that is based on neuroscience research. It's difficult to pinpoint the academic underpinnings of neuromarketing as a discipline. At the moment, it's uncertain whether neuromarketing counts as an academic topic, and if so, how it differs from neuroeconomics.
Kenning and Linzmajer	2011	A subtheme of customer neuroscience that emerged as a result of neuroeconomics' creative approach. Consumer neuroscience looks into issues of consuming and marketing using neuroscientific methodologies and discoveries.
Plassmann, Ramsøy, and Milosavljevic	2012	Consumer neuroscience seeks to create neuropsychologically reasonable theories to explain customer behaviour by incorporating neuroscience models and techniques with behavioural theories.
Javor, Koller, Lee, Chamberlain, and Ransmayr	2013	Researchers argue for a nomenclature that differentiates neuromarketing from customer neuroscience as a scientific approach, rather than addressing it as a scientific process.
Koc and Boz	2014	Authors coined psychoneurobiochemistry to describe a group of frequently investigated aspects in the fields of psychology, neuroscience, biology, and chemistry.
Solomon	2016	Neuromarketing is described as applying neuroscience in marketing research that relies on cutting-edge medical procedures to examine customer behaviour.
Nyoni and Bonga	2017	Neuromarketing is described as the use of neural approaches to help comprehend consumers' thinking with the goal of locating 'purchase switches' in the brain to create marketing and promotional campaigns that are more successful and efficient.
Nemorin	2017	Neuromarketing is a type of marketing that strives for a high level of manipulating based on instincts.
Ramsoy	2018	"Neuromarketing" refers to the analysis of physiological and brain signals to gain understanding of consumers' intentions, preferences, and behaviours, that can help motivate creative ad campaigns, product designing, pricing, and other marketing areas.
Alvino	2019	The main goal of neuromarketing is to gain deeper understanding of the neural links of feelings, attention, reminiscence, and decision-taking in ad campaigns
Alsharif, Salleh, Baharun and Effandi	2021	NM's main purpose is to learn more about the brain connections of feelings, concentration, cognition, and decision-making in advertising campaigns.

Despite the writers' differing viewpoints, it is easy to see that some neuromarketing concepts are congruent. As evident from the above information, some of the most recurring themes related to Neuromarketing described neuromarketing as a measure of neural activity; a research method to decipher consumers' behaviour; a domain pertaining to neuroscience; a contemporary marketing instrument; a correlate of consumers' feelings and mental states; a commercial procedure to analyze physiological and intellectual aspects linked to the nervous system; and a way of portraying behavioural patterns in images. The origin of the word "neuromarketing" shows the connection between the subject of research and cerebral function. The origin of the word "neuromarketing" shows the connection between the subject of research and cerebral function. Numerous writers in the area also reaffirm this association.

However, there is no dearth of studies on Neuromarketing research, a lacuna of bibliometric analysis of studies dedicated to decipher the applications of neuromarketing in business is quite evident. Majority of existing research focuses upon demystifying the concept of neuromarketing in general while the complex area describing the applications of neuromarketing in business domain such as consumer behaviour, consumer decision making etc. still remains partially uncovered. This study takes up a bibliometric approach to extract valuable information on applications of neuromarketing in business from research publications published between 2000 to 2021. The purpose of this study is to conduct a literature evaluation to answer the following research questions:

RQ 1: Categorization of existing literature on applications of Neuromarketing in business founded on bibliometric parameters such as year, region, author, institution and source

RQ 2: A review of applications of Neuromarketing in Business verticals

RQ 3: A review of challenges and future areas of research in neuromarketing

METHODOLOGY

To address above mentioned research questions, bibliometric analysis was of research papers published between 2000 to 2021 was conducted. This involved extracting articles of relevance from Scopus database. Scopus was selected as a source of bibliometric data as it is one of the biggest curated abstract and citing sources databases, with worldwide reportage of science publications, conference papers, and texts that uses a very stringent content evaluation, selection and re-evaluation by an unbiased Content Selection and advisory committee to ensure only the best quality papers are catalogued. Furthermore, Scopus' rigorous quality control methods constantly evaluate and enhance all data items. Scopus provides complete authorship

and institutional profiles, which are derived from powerful profiling algorithms and expert curating, providing highest quality precision and recall. Scopus has been used as a high-quality bibliometric source of data for large-scale analysis in research evaluations, research ecosystem studies, scientific policy assessments, and university rankings because of its reliability. Search query "neuromarketing" was used to identify and select pertinent articles from the Scopus. The publications in field of neuromarketing from 2001 to 2020 have been presented in Figure-I as follows:

Figure 1.
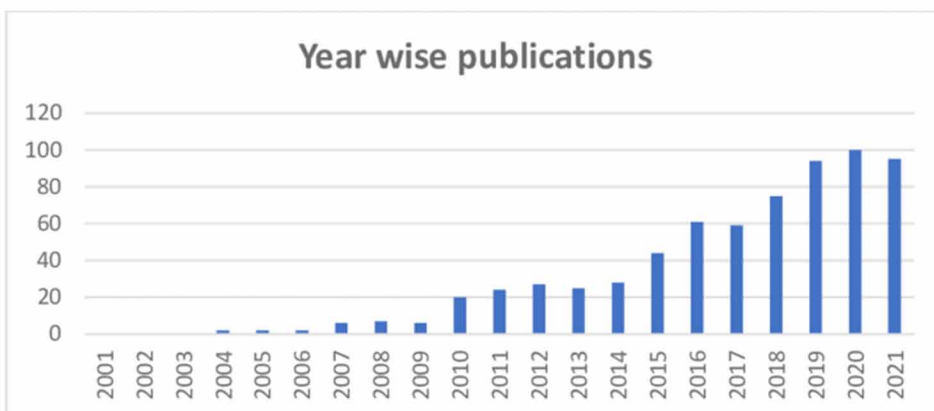
677 publications were extracted based on abstract, title, and relevant keywords. Since the study focuses upon the business applications of Neuromarketing, it was necessary to select only those studies that could help achieve the stated research objectives in context to business applications of neuromarketing. Working in this direction, PRISMA framework was followed to select relevant studies (Moher et al., 2015). PRISMA framework includes four stages namely; identification and recording of studies using database search, screening the recorded studies, proofreading and establishing the eligibility of studies, and final selection of studies. A schema of the PRISMA methodology followed for article selection is presented below in Figure-II:

Figure 2.
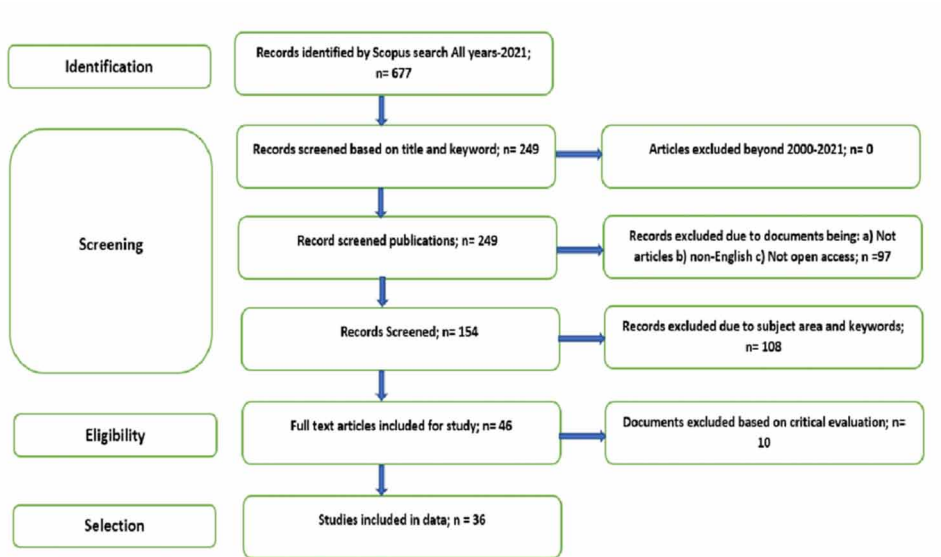
The activity led to the final selection of 36 articles which were analyzed to achieve the stated objectives of this research. Author keywords, citation, and bibliographical data of 36 journal articles was exported to VOSviewer programme. VOSviewer is a tool which was used to create the bibliometric maps in this study. VOSviewer is a software for creating, visualising, and analysing bibliometric networks. Networks in VOSviewer consist of authors, journals, organizations, and individual publications. These networks may be viewed with VOSviewer at fast speeds and scales that are impossible to achieve with manual approaches or other software. Text mining features in VOSviewer allow it to create network mapping of co-occurring keywords based on abstracts and body text of research publications.

ANALYSIS AND DISCUSSION ON RESULTS

Countries and Academic Institutions

As visible from the following, approximately 75 percent of publications aiming at deciphering the business applications of Neuromarketing were published in six counties namely; United Kingdom, Lithuania, Spain, Brazil, Netherlands, and Switzerland. Most of the publications (8; approximately 22%) belonged to

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United Kingdom and were affiliated with University of Cumbria, London School of Commerce, University of Surrey, Oxford University, University of Warwick, University of Birmingham, University of London and Staffordshire University. Second country to have contributed 5 publications (approximately 14%) was Netherlands. These publications from Netherlands were affiliated with University of Amsterdam, Erasmus University, Leiden University, University of Groningen and Radboud University Nijmegen. United Kingdom and Netherlands were followed by Spain and Lithuania (4 publications each) and Brazil and Switzerland (3 publications each). The pertinent details of the most productive countries in terms of publications on applications of Neuromarketing business are shown below:

Table 2. Countries and Academic Institutions

Country	Publications	Affiliated Institution
Netherlands	5	University of Amsterdam
		Erasmus University
		Leiden University
		University of Groningen
		Radboud University Nijmegen
Spain	4	Universitat Autònoma de Barcelona
		Universitat Politècnica de València
		University of Alicante
		Pablo de Olavide University
		University of Seville
		University of Madrid
		University of Cadiz
		Universidad Complutense de Madrid
		Universidad de A Coruna
Lithuania	4	Vilnius Gediminas Technical University
		Vytautas Magnus University
United Kingdom	8	University of Cumbria
		London School of Commerce
		University of Surrey
		Oxford University
		University of Warwick
		University of Birmingham
		University of London
		Staffordshire University
Brazil	3	Universidade Federal de Minas Gerais
		Pontifícia Universidade Católica de Minas Gerais
		Universidade Estácio de Sá
		University of Sao Paulo
Switzerland	3	Universite de Neuachatel
		University of St. Gallen

Foremost Researchers in Business Applications of Neuromarketing

The results of bibliometric analysis showed five most authoritative writers with publications on applications of Neuromarketing in Business. Five most prolific writers in the field of Neuromarketing were identified to be from 4 nations namely the Netherlands, Switzerland, Sweden and Lithuania (based upon number of publications and citations). There was a total of 12 publications by these writers. These top five writers' 12 publications were cited 176 times. Information below lists the writers' names, as well as the number of publications, citations, affiliations, and countries of publication as follows:

Table 3. Foremost researchers in business applications of neuromarketing

Authors	Documents on Business applications of Neuromarketing	Citation	Total Publications	Total Citations	Affiliation	Country
Ale Smidts	2	54	53	3383	Rotterdam School of Management, Erasmus University	Netherlands
Tanja Schneider	2	43	22	207	School of Social Sciences and Humanities at the University of St. Gallen.	Switzerland
Steve Woolgar	2	43	55	5739	Linköpings Universitet, Linkoping	Sweden
Viktorija Grigaliunaite	3	18	16	61	Vytautas Magnus University	Lithuania
Lina Pilelienė	3	18	21	84	Vytautas Magnus University	Lithuania

Ale Smidts, in his research on neuromarketing has attempted to establish the importance of ad-evoked sentiments in determining how people react to advertising. His research using EEG demonstrates how excitement is expressed in the brain and then utilizes this expression to evaluate excitement in response to advertising. His research also tries to decipher the link between the excitement and external metrics of advertising efficacy. His research also deployed fMRI to obtain new visions into the brain processes behind how consumers select from a list of offerings. Tanja Schneider and Steve Woolgar's work majorly focuses upon methodological difficulties of carrying out empirical neuromarketing research including identification and characterization of this field, access negotiation, and building relationships with participants and informants. Viktorija Grigaliunaite in her research has investigated the feasibility of using non-invasive techniques such as eye tracking studies to understand brain's electrical activity to evaluate advertising efficacy. Her work also aims to better understand the impact of point-of-sale ads on customers' visual attention. Research conducted by Lina Pileliene is especially useful for FMCG companies since it gives suggestions for selecting female celebrities in the advertising campaigns using neuromarketing research. Her research also implies that in order

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to attain advertising excellence, modern marketing operations need be synchronised with subconscious processes in clients' brains.

Journals and Publishers with most Publications

Below presented are the top 5 journals and publishers that published majority of articles on business applications of neuromarketing. As can be seen clearly, Journal of Economic Psychology published 2 documents with 8 citations followed by Journal of Neuroscience, Psychology and Economics, Scientific Annals of Economics and Business, Revista Brasiliera de Marketing and IBIMA Business Review with 2 document each and with 2 documents and 24, 17, 4 and zero citations respectively. Following illustration also shows the pertinent details of publishers associated with the selected journals:

Table 4. Journals with most publications

Journals	Number of publications	Citations	CiteScore	Publisher
Journal of Economic Psychology	2	80	3.4	Elsevier
Journal of Neuroscience, Psychology, and Economics	2	24	1.8	American Psychological Association Inc
Scientific Annals of Economics and Business	2	17	1	Alexandru Ioan Cuza - University of Iasi
Revista Brasileira de Marketing	2	4	1.02	Universidade Nove de Julho, Brazil
IBIMA Business Review	2	0	0.7	IBIMA Publishing

Keyword Analysis

Keywords are founded on the idea that they provide a sound rational basis for explaining the content of documents, keyword analysis is an excellent analytical technique for exploring themes in marketing or any literature, and it has recently gained prominence (Wang & Chai, 2018). Bibliometrics employs four analysis methods: Burst word monitoring, co-word clustering, co-word frequency, and co-word association. Keyword co - occurrence assessment was also used in this study since it was judged an effective way of addressing research trends on business applications of neuromarketing by examining current papers.

Significantly, co-word assessment is performed by examining keywords that occur together. The strength of the link between two keywords is expressed in terms of value that shows their association (Goyal & Kumar, 2021; Saha et al., 2020). Link strength reflects the number of times two specific keywords happened to

occur in the same publication. The entire number of times any two keywords have been used in a search is represented by the number of these links. In this study, the author keywords co-occurrence evaluation included 179 keywords. However, many of these keywords were used only once. 158 of the 179 keywords were used only once. To achieve the best outcomes, it was decided to rename the keywords as per the broad theme. After this approach, the number of keywords was reduced to 21. The modified 21 keywords were then loaded into VOSviewer, which used 5 as minimum frequency of occurrence to map the collected literature. The keywords, their frequency of occurrence and link strength is mentioned below and a network visualization of the same is presented in Figure-III:

Table 5. Keyword co-occurrence analysis

Keyword	Frequency of occurance	Link strength
Neuromarketing	26	135
Consumer behaviour	11	62
Advertising	10	62
Marketing communication	9	14
Neuroeconomics	7	58
Marketing	7	13
Consumer choice	5	26
Market research	5	26
Non profit advertising	4	4
Exploratory research	4	26
Consumer neuroscience	3	7
Pricing	3	24
Advertising effectiveness	2	6
Emotion	5	47

As discussed before and evident from the keyword co-occurrence analysis, neuromarketing has come up as a propitious and ever-growing field with enormous and broad applicability in business verticals such as consumer and marketing research, consumer behaviour, marketing, brand management, and advertising and integrated marketing communications to name a few. Next section, based upon the keyword co-occurrence analysis, deliberates upon major business areas that Neuromarketing is enabling marketers. A brief discussion on most commonly repeated keywords as

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business verticals where Neuromarketing is being used has been produced below in Figure-III:

Figure 3.
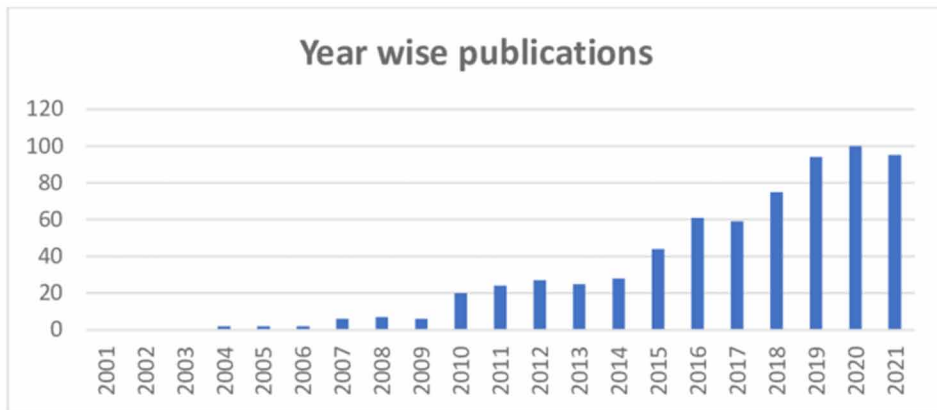
Marketing and Consumer Research

Over the last decade, approaches and understanding from the study of neuroscience have grabbed a lot of interest and consideration in the fields of consumer behaviour research, thus resulting in this blended concept called neuromarketing. Neuroscientist and the Nobel Prize winner in Physiology, Eric R. Kandel once clearly said that the biggest challenge of 21st century is to understand human mind in biological terms. This is probably because, unimaginable number of jobs in this global market economy depend upon understanding consumer behaviour and persuading human brain to use and buy things marketers want them to consume. To be able to achieve this outcome, it is of extreme importance for marketers to be mindful of how human brain works, what excites human brain, what it likes and what it doesn't or how it decides to buy or to reject amongst almost uncountable number of goods and services on the offer. As discussed in the previous sections, putting it simply, Neuromarketing is any market research related activity that incorporates methodologies, tactics, or ideas from neuroscience (Genco et al. 2013) to decipher or predict consumer behaviour by understanding how it works and gets affected by marketing stimuli. The often cited but debunked notion that there exists a "buy button in the brain" certainly sparked the fervent argument in the mainstream marketing literature that was fuelled up with the advent of concept of neuromarketing. This notion refers to the search for a fictional part of the human brain which, when triggered, could influence subsequent

customer behaviour alone without consumer becoming cognizant of it. Consumers' mind may be classified into four categories, as per Martinez (2012), writer of 'The Consumer Mind', namely; what they think, say, feel or do. It was also emphasized that "customers contradict their own thought process, claiming what they want but end up doing what they actually feel," which is a fundamental element and a major flaw of mainstream marketing and consumer research. As a result, Martinez claimed that neuromarketing can enable and empower marketers to obtain more accurate and objective data from and about customers than traditional marketing research methods like getting questionnaires filled and conducting interviews. According to Martinez, the most effective strategy to use neuroscience in marketing research is to integrate qualitative, empirical, and neuroscience research together, as they work synergistically and support each other, giving the most comprehensive information about consumer behaviour possible. It is an effort to discover how, when and where human brain responds to marketing and promotional stimuli, as well as to quantify their influence. Neuroscientific techniques are used to investigate customer buying behaviour, decision-making techniques, emotions in buying decisions, and marketing phenomena by examining the fundamental neurobiology.

Advertising and Marketing Communications

Neuromarketing has also emerged as a mainstream research tool to investigate advertising effectiveness on target customers as it combines consumer buying decision-making with neurology (Morin, 2011). Neuromarketing is rapidly gaining credibility and recognition among advertising professionals because everything depends on customers' desire and ability to express what they feel when they are subjected to an ad campaign. Traditional approaches for evaluating and forecasting the success of significant investments made in multimillion dollar ad campaigns have a limited impact. Neuromarketing, on the other hand provides cutting-edge techniques to directly investigate human brains without requiring cognitively demanding or conscious inputs by customers.

Further, advertising has gotten more sophisticated and demanding in today's ultra-competitive world. As a result, marketing research must adapt to this new business world regime in order to attain advertising greatness (Alvino et al., 2020). Businesses have started adopting and using concepts and technologies of neuroscience such as the fMRI to investigate customer conduct (for example, decision-making) based on marketing and advertising stimuli. Results reveal that majority of mental processing takes place unknowingly or involuntarily, and that this contributes significantly to decision-making (Ruschendorf, 2020). The bulk of studies look at how advertising affects attentiveness, feelings, memories, and decision-making. Neuromarketing research, for example, looks at how people perceive, interpret, and

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react to advertising (Cha et al., 2019, Morillo et al., 2016). As a result, neuroimaging approaches have been developed to investigate, comprehend, evaluate, and describe consumer behaviour, affective processes such as feelings and sentiments, and cognitive processes such as attentiveness and memory in relation to ad campaigns. There are a variety of ways to assess physiological reactions to advertising campaigns, but still only 3 non-invasive techniques under the scope of neuroimaging for monitoring and mapping neural activity are well accepted namely, electroencephalography (EEG), fMRI and magnetoencephalography (MEG). Because each of the three scanning practices are non-invasive, they can be employed in marketing research without any harmful impacts. As a result, they account for the majority of research reported in the recent five years.

Consumer Behaviour

Emerging customer behaviour and attitude study methods, according to Dinu et al. (2010), should make a contribution to decision making using information to enable this process to determine actual motives for the buying that should trigger a massive tumult in the businesses, causing them to concentrate their research on deciphering and unearthing the drivers of customer behaviour even more. This means that advancing knowledge across many key areas to trigger a synergistic interaction between neuroscience and consumer research and not only consumer decision making, but also how consumers connect, engage, and act in the current marketplaces and organizations, is critical for any marketing initiative to yield results (Lee et al., 2007). Neuromarketing research aims to look into different parts of the brain while being exposed to marketing inducements in order to discover and describe the linkage between how consumer behave and the neurophysiological system. It is feasible to simulate neural activity underpinning particular human behaviours by means of knowledge of human brain anatomy, as well as understanding of the physiological functioning of brain areas. Experts can draw comparison of distinct brain area activations during a certain task using neuroimaging technologies, allowing them to construct models that can not only capture the nuances of human choices but also identify the common discrepancies between consumers' thinking patterns and their behaviours.

Decision Making

One of the most important problems in marketing studies is to decipher how consumers deal with diverse product options depending on their own unique perceptions of advantages and costs. The prefrontal cortex (PFC), which is positioned at the front of each cerebral hemisphere of the brain, plays a key position in the fundamental

methods of human judgement. Numerous neuromarketing researches employing neuroimaging tools (Tremblay and Schultz, 1999; Daw et al., 2006), show that orbitofrontal cortex and ventromedial prefrontal cortex are the areas involved in decision-making activities by weighing the pros and drawbacks of numerous solutions and their potential outcomes. Importantly, orbitofrontal cortex is linked to the assessment of trade-offs and the anticipated capacity of results in terms of meeting one's requirements. It is crucial in determining correct consumer behaviour, particularly in unforeseen settings (Elliot, Dollan and Frith, 2000).
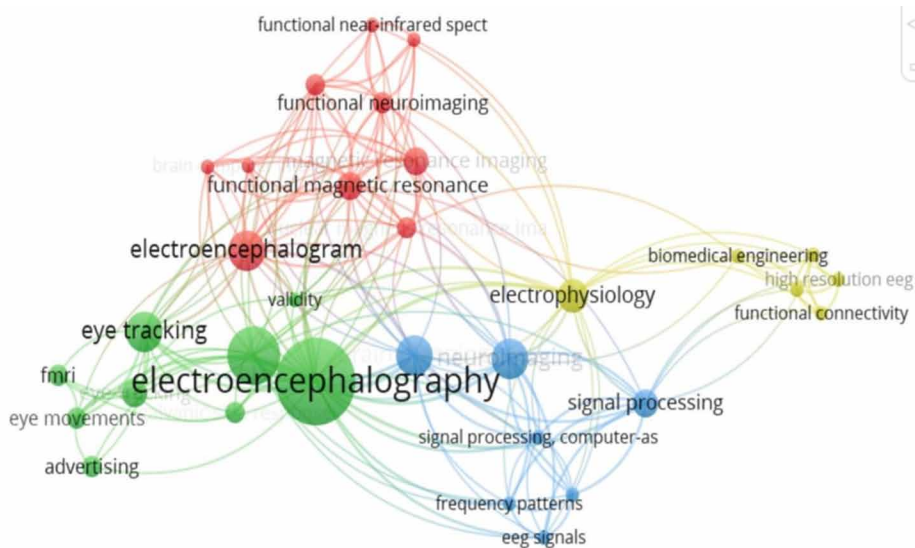
Tools of Neuromarketing

Because neuroscience technologies are both technologically advanced and expensive, researchers and marketers should thoroughly examine and understand their marketing goals before employing them. A separate section on some of the most popular tools of neuromarketing has been presented here. According to pertinent literature, researchers should grasp the roles of each instrument, how it functions, how to analyze and apply statistics to consumer research. The bibliometric analysis of selected studies also yielded some of the most used tools of neuromarketing. Illustration below shows most used tools of neuromarketing:

Table 6. Tools of Neuromarketing

Neuromarketing Tool	Frequency of occurrence	Link strength
Electroencephalography	29	59
Eye tracking	13	20
Neuroimaging	9	42
Functional Magnetic Resonance Imaging (FMRI)	8	47
Magnetic Resonance Imaging	3	5
Galvanic Skin Response	3	7
Functional Neuroimaging	3	17
Infrared Devices	2	11
Steady state visually evoked potential	2	9
High Resolution EEG	2	9

Figure 4.

The following sections deliberates upon some of the most commonly discussed tools of neuromarketing extracted from the keyword co-occurrent analysis.

Neuroimaging

Neuroimaging is a branch of study that employs imaging technology to investigate the structure and functioning of the brain, with non-invasive brain images created. It looks into a variety of processes such as cognition, information processing, and brain changes as a result of medical problems.

Electroencephalography (EEG)

Among the most commonly occurring neuroimaging devices in the selected articles was found to be electroencephalography. Electroencephalography (EEG) is a brain activity measurement technique used in neuroscience. It is a common technique used to measuring cognitive functions like computations in order to predict customer behaviour. EEG takes measurements from electrodes put on the scalp's surface. It records the activities of neurons in a synchronised manner. It detects significant activity voltage from brain locations near to the skull in particular. The EEG measuring instrument has the appearance of a swimming cap. It has electrodes (sensors) that communicate the collected brain activity and is snugly affixed to the head. EEG only records synchronised and massive brain activity, such as: long-term focus

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on a specific sequence of events, such as following a tennis ball during a match; performing difficult computations which requires concentrated thinking; detecting strange happenings and arousal; a state in which brain becomes attentive, such as when one is astonished or scared by a magic trick or a terrifying movie.

Functional magnetic resonance imaging (FMRI) and MRI

FMRI was yet another tool found occurring very frequently in selected studies. FMRI is a non-invasive method that uses large magnetic fields to identify biochemical alterations in the brain by measuring the amount of oxygen in the bloodstream, with active brain regions producing stronger signals than inactive brain regions (Morin, 2011; Murray and Antonakis, 2019). It also has good spatial precision and reasonable temporal resolution (Burle et. al.,2015). Furthermore, it employs 3D technology to collect and analyze brain waves and exhibit them on a screen, aiding researchers and scientists in measuring brain's responses to ad campaigns, such as emotional and cognitive (Cherubino et. al., 2019), where fMRI is used to determine the impact of advertising on purchasing decisions (Shi et. al., 2017). FMRI and MRI scans both use the same basic atomic physics concepts, but MRI scans image the anatomy while FMRI scans display metabolic activity. As a result, the MRI scans yield three-dimensional reconstructions of anatomy.

Eye Tracking

Eye tracking is being used in a growing number of research to assess human behaviour. Eye tracking is a tool for analysing visual attentiveness and aiming to link visual attention to customers' cognitive and emotional responses, according to Santos et al. (2015). Eye tracking is a form of neuroscience method that measures a participant's responses indirectly rather than directly. (Connell et al., 2011; Huang & Kuo, 2011). Eye tracking studies give more accurate data than self-report, according to Connell et al. (2011), and can be valuable in ad campaign creation and evaluation, idea testing, brand logo and packaging designing, internet marketing campaigns and micro-site design, or in-store promotion. According to Santos et al., (2015), Data from eye tracking studies can be applied to marketing applications such brand image, customer profiling, new product development, pricing considerations, location decisions, integrated marketing communication decisions, and social marketing research. Such research is intended to investigate respondents' eye movements in response to marketing messaging.

Galvanic Skin Response

The Galvanic Skin Response, often called as skin conductance, is a method for measuring the temperatures and electrical conductivity of the skin, which fluctuates based on the skin's moisture content. Skin conductivity is a technique for detecting and quantifying psychological and physiological arousal. Its most prevalent application is in lie detection technologies. Galvanic skin response is also used to determine the pulse rate. The degree of excitement or anxiety that the person feels in reaction to particular triggers is shown by the changes in the pulse. This technique can be used while evaluating the impact of advertising appeals ranging from commercial ads to social advertisements.

Challenges of Neuromarketing

To understand the challenges and controversies associated with neuromarketing, in-depth analysis of selected articles was conducted. This section discusses some of the challenges and ethical dilemmas associated with this growing field of neuromarketing.

As per Oliveira et al. (2014), neuromarketing can determine whether a person simply enjoys a product or service and has a genuine urge to buy it. It is feasible that, in the future, We'll be able to forecast whether or not a buyer will buy something based on the influence it has on neuronal activity. Neuromarketing is a science-based way of expanding awareness of everyday events and their impact on customer decision-making, resulting in improved product efficacy and matching customer needs and wants (Lindstrom, 2008). Despite all of the advances in neuroscience and neuromarketing research, the field still has some practical limitations, such as the diversity of methodologies used (Solnais et al., 2013), which makes it difficult to generalise the findings and make them as meaningful and substantial as traditional scustomer research findings.

Yet another important factor to consider, and one that seems to be impeding the wide advancement in consumer neuroscience research, is the ethical concerns surrounding studies and the way they are undertaken, both on sample, customers and their freedom of choice, and for academic institutions and corporates (Fisher et al., 2010). Ethics In fact, public concern about neuromarketing has risen steadily over past decade, prompting debate on a number of moral concerns not only in society, but also in scientific bodies and the press. For example, when the press and media have focused on the possible risks of NM in terms of advertising and marketers locating a "purchase button" in people's minds and analysing their personal thoughts and feelings in order to influence their buying decisions, in addition to mind control, The violation of privacy and the resulting threat to freewill are the key concerns presented in this line of moral research issues. This debate is sparked by the prospect

of getting private details using neuromarketing methods, which enable marketers to find more powerful ways of influencing customer choice without requiring the customer to be in charge (Wilson et al., 2008).

Oliveira et al. (2015) point out various moral questions in neuromarketing methods, including the goal (private welfare or societal wellbeing), organizational type (for-profit, public, or non-profit business), and industry (impact on public health, education, etc.). According to Fisher et al. (2010), a circumstance that eventually inhibits the progress of research in the neuromarketing sector is the failure of corporations using this technique to publish their findings in order to maintain the competitive edge. Nevertheless, it is evident that publishing these findings in the scholarly literature would be extremely beneficial. There's also the issue of using proprietary technology to analyze data gathered by neuroimaging technologies, which leads to the challenges with replication studies, owing to a lack of evaluation and comparison of previous findings (Perrachione and Perrachione, 2008).

The progress on ethical issues may also help to explain neuroscience's and its equipment's potential to read people's minds (Logothetis, 2008). One of the primary worries about the advancement of neuromarketing is the possibility that research in this field will uncover the 'buy button' in customers' minds, allowing companies to devise ad campaigns that will be almost impossible to resist to customers because they will readily access the subconscious or unconscious mind of consumers (Lee et al., 2007). Researchers argue that cognitive neuroscience is more inclined to consider a 'purchasing behavior' than a 'buy button' in comprehending how various brain activities interact to make a decision to buy or to reject an offering.

Areas of Potential Research

Apart from bibliometric analysis presented above and challenges associated with neuromarketing, a special attempt to review the future areas of application of Neuromarketing was also made.

It's all about Trust

For years, marketing has been more sensitive to the issue of trust. While consumer trust in firms and products is critical, marketing research has examined trust on multiple levels. Joint ventures, alliances, and even business-to-business transactions are all interorganizational transactions that rely on human trust. In recent years, neuroeconomic investigation has begun to look into conceptions of trust that goes beyond logic (King-Casas et al., 2005). The study of trust can benefit from neuromarketing research. First and primarily, in spite of the importance of belief in marketing interactions on a variety of stages, there are still debates over the nature of

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trust (Geyskens et al., 1998). Neuroimaging can provide a lot of useful information in this case. According to research, the "caudate nucleus", which is commonly active while learning about stimuli–response relationships, is implicated in experimental activities that need trust (King-Casas et al., 2005). Is trust, however, just a clear response to a pleasant stimulus that is repeated, or is there more to the concept of trust? Is the trust a customer claims to have in a vendor, or a customer claim to have in a product, similar in kind and area of activity in the brain to the trust a person states to have in family and friends? What will be its implication on consumer-brand relationship studies? Investigating and comprehending such concerns regarding the very nature of trust may lead to a better understanding of the antecedents of brand trust or trust in general, as well as a better understanding of how businesses may establish trust with consumers and partners for win - win outcomes.

Pricing Decisions

Pricing is an important strategy that businesses use to promote their products and to ensure return on investment. In line with this, numerous marketing studies have looked into the effects of pricing on customers (Bijmolt et al., 2005). Despite the abundance of academic know-how, companies appear to employ little of this knowledge when determining prices, resulting in unsatisfactory outcomes for both customers and businesses. Understanding the dynamics of pricing is critical for businesses to make the best decisions possible, and it is also useful in a wider sense. Almost all pricing research at this moment is behavioural in nature, relying on "assumptions" about what happens when people get pricing information. In fact, it appears that price is a natural fit for neuroimaging research. Examining the temporal and spatial aspects of brain activity, for example, may assist marketers understand why '$4.99' is perceived as significantly less expensive than '$5.00.' Do people truly disregard the last two numbers, or are they considered differently or at a later period – for instance, just when making thorough decisions to comparing two products at different price points? Do time or other factors have an impact on how prices are processed? Furthermore, neuroimaging appears to have the potential to provide significant understanding of the nature of pricing data.

Business Negotiations

Negotiations are essential in marketing because exchange is a crucial concept. Consumers, for example, are frequently forced to negotiate prices or other perks with marketing personnel, particularly when purchasing large-ticket items such as vehicles, real estate, and other similar items. Negotiation, on the other hand, is an unpleasant experience for many customers, to the point where some businesses

specifically state that they will not negotiate (Trocchia, 2004). Regrettably, the previous research currently gives limited insight into the fundamental mechanisms that underpins negotiating behaviour, as well as how others judge different negotiation approaches (Trocchia, 2004).

Neuroimaging studies, on the other hand, have already begun to look into bargaining behaviour. Evidence demonstrates that emotions, as well as rational cognition, has a significant impact on negotiation behaviour, particularly when deals are perceived to be unjust (Sanfey et al., 2003). In the area of marketing, research like this appears to be useful in determining when, where and how customers (as well as organisational actors) are likely to allow their feelings trump their logic while bargaining prices or other transactions. This could eventually help customers get a better price and lessen the number of times consumers regret a purchase. According to other (fMRI) studies, persons who participate in a cooperative trade are more likely to display activity in areas related to comprehension of others' intents (McCabe et al., 2001).

Expanding such studies with newer multi-modal methodologies could help us better understand why people cooperate or don't cooperate, even in instances where it's ideal to cooperate.

Business Ethics

Neuroimaging is expected to contribute to marketing ethics in a variety of ways. To begin with, studies into advertising effectiveness – which have created so much disquiet in neuroscientific communities – can offer more than simply locating the aforesaid 'purchase button' in the brain. In reality, determining which aspects of an advertisement are crucial to product knowledge, attitudes, and assessments, as well as if these differ for different groups, should lessen companies' dependence on "blank instruments" such as shock techniques, or sexual imagery. This might also help understand how different advertising campaigns impact different viewers and can help taking away the negative aspects of advertising to not negatively impact the vulnerable viewers like children. The application of neuroscience to marketing could also pave the way for a better understanding of how people create, store, recall, and relate to information like brands in everyday life. Furthermore, it may be feasible to determine whether particular parts of commercials and marketing activities, such as excessive consumption, have detrimental consequences.

CONCLUSION

Bibliometric analysis of 36 publications published between 2000 to 2021 and focusing upon the business applications of neuromarketing revealed that University of Cumbria,

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London School of Commerce, University of Surrey, Oxford University, University of Warwick, University of Birmingham, University of London and Staffordshire University from United Kingdom were some of the universities associated with highest number of publications (22 percent) highlighting the applications of neuromarketing in business processes. United Kingdom as the most productive nation was followed by Netherlands with majority of neuromarketing research published in University of Amsterdam, Erasmus University, Leiden University, University of Groningen and Radboud University Nijmegen. Ale Smidt from Rotterdam School of Management, Erasmus University, Tanja Schneider from School of Social Sciences and Humanities at the University of St. Gallen, Steve Woolgar from Linköpings Universitet, Linkoping, Viktorija Grigaliunaite and from Lina Pilelienė from Vytautas Magnus University were the most productive and authoritative writers in neuromarketing's business applications. Bibliometric analysis also showed that IBIMA Business Review, Journal of Economic Psychology, Journal of Neuroscience, Psychology, and Economics, Revista Brasileira de Marketing and Scientific Annals of Economics and Business published by IBIMA Publishing, Elsevier, American Psychological Association Inc., Universidade Nove de Julho, Brazil and Alexandru Ioan Cuza - University of Iasi respectively were the top journals to publish neuromarketing's business applications on Scopus.

Keyword co-occurrence analysis revealed most commonly occurring themes in the selected 36 publications. This allowed understanding how neuromarketing was helping revolutionize the areas such as marketing and consumer research, advertising and marketing communication, consumer behaviour and consumer decision making. This also helped understand major tools of neuromarketing. Neuroimaging tools such as EEG, FMRI, MRI, along with eye tracking and Galvani skin response were some of the most commonly discussed tools of neuromarketing.

To understand the challenges and controversies associated with neuromarketing, in-depth analysis of selected articles was conducted. It was found that despite all of the advances in neuroscience and neuromarketing research, the discipline still has some practical limitations, such as the diversity of methodologies used (Solnais et al., 2013), which makes it difficult to generalize the results and make them as purposeful and substantial as the findings of traditional customer research techniques. Another significant element to consider, and one that appears to be inhibiting widespread progress in consumer neuroscience research, is the ethical problems surrounding studies and the methods used to conduct them.

Study also deciphered future research areas including exploring role of neuromarketing in understanding dynamics of consumer trust. Investigating and comprehending rising concerns regarding the very nature of trust using neuromarketing may lead to a better understanding of the antecedents of trust in general, as well as a better understanding of how businesses may establish trust with consumers

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and partners for win - win outcomes. Understanding pricing and its impact on consumers appears to be a natural fit for neuroimaging studies. Understanding the dynamics of pricing is critical for businesses to make the best decisions possible. At this point, practically all pricing research is behavioural in nature, relying upon "assumptions" about what happens when people receive pricing details leaving room for neuromarketing research to enhance marketers' understanding of pricing. Areas such as business negotiations and business ethics can also be benefited from advancements in neuromarketing and must be taken up as future course of studies.

LIMITATIONS OF STUDY

The research attempted to minimise the shortcomings in its approach; yet, this work has limitations that provides opportunity for future research. The study concentrates on obtaining papers from the Scopus that have were published during 2000 to 2021that ignored books, chapters, conference proceeding and notes making this study not completely bias-free.

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