Premier Reference Source

Multidisciplinary Perspectives Towards Building a Digitally Competent Society

Sanjeev Bansal, Vandana Ahuja, Vijit Chaturvedi, and Vinamra Jain

IGI Global
PUBLISHER of TIMELY KNOWLEDGE

Multidisciplinary Perspectives Towards Building a Digitally Competent Society

Sanjeev Bansal
Amity University, Noida, India

Vandana Ahuja
Jaipuria Institute of Management, Ghaziabad, India

Vijit Chaturvedi
Amity University, Noida, India

Vinamra Jain
Amity University, Noida, India

IGI Global
PUBLISHER of TIMELY KNOWLEDGE

A volume in the Advances in Human and Social Aspects of Technology (AHSAT) Book Series

Published in the United States of America by
IGI Global
Engineering Science Reference (an imprint of IGI Global)
701 E. Chocolate Avenue
Hershey PA, USA 17033
Tel: 717-533-8845
Fax: 717-533-8661
E-mail: cust@igi-global.com
Web site: http://www.igi-global.com

Library of Congress Cataloging-in-Publication Data

Names: Bansal, Sanjeev, DATE- editor. | Ahuja, Vandana, editor. | Chaturvedi, Vijit, DATE- editor. | Jain, Vinamra, DATE- editor.
Title: Multidisciplinary perspectives towards building a digitally competent society / Sanjeev Bansal, Vandana Ahuja, Vijit Chaturvedi, and Vinamra Jain, editors.
Description: Hershey, PA : Information Science Reference, [2022] | Includes bibliographical references and index. | Summary: "This book explores multidisciplinary perspectives towards building a more digitally competent society investigating how new business models are emerging and the need for organizations and individuals to develop the right mindset to embrace digitization whole heartedly and learn to leverage the same for personal and organizational advantage"-- Provided by publisher.
Identifiers: LCCN 2022012061 (print) | LCCN 2022012062 (ebook) | ISBN 9781668452745 (hardcover) | ISBN 9781668452752 (paperback) | ISBN 9781668452769 (ebook)
Subjects: LCSH: Information technology--Social aspects. | Organizational change.
Classification: LCC HM851 .M857 2022 (print) | LCC HM851 (ebook) | DDC 303.48/33--dc23/eng/20220506
LC record available at https://lccn.loc.gov/2022012061
LC ebook record available at https://lccn.loc.gov/2022012062

This book is published in the IGI Global book series Advances in Human and Social Aspects of Technology (AHSAT) (ISSN: 2328-1316; eISSN: 2328-1324)

British Cataloguing in Publication Data
A Cataloguing in Publication record for this book is available from the British Library.

All work contributed to this book is new, previously-unpublished material. The views expressed in this book are those of the authors, but not necessarily of the publisher.

For electronic access to this publication, please contact: eresources@igi-global.com.

Advances in Human and Social Aspects of Technology (AHSAT) Book Series

Mehdi Khosrow-Pour, D.B.A.
Information Resources Management Association, USA

ISSN:2328-1316
EISSN:2328-1324

Mission

In recent years, the societal impact of technology has been noted as we become increasingly more connected and are presented with more digital tools and devices. With the popularity of digital devices such as cell phones and tablets, it is crucial to consider the implications of our digital dependence and the presence of technology in our everyday lives.

The **Advances in Human and Social Aspects of Technology (AHSAT) Book Series** seeks to explore the ways in which society and human beings have been affected by technology and how the technological revolution has changed the way we conduct our lives as well as our behavior. The AHSAT book series aims to publish the most cutting-edge research on human behavior and interaction with technology and the ways in which the digital age is changing society.

Coverage

- Human Development and Technology
- Gender and Technology
- Information ethics
- Technoself
- Technology Dependence
- Cyber Behavior
- Human Rights and Digitization
- Activism and ICTs
- ICTs and human empowerment
- Human-Computer Interaction

IGI Global is currently accepting manuscripts for publication within this series. To submit a proposal for a volume in this series, please contact our Acquisition Editors at Acquisitions@igi-global.com or visit: http://www.igi-global.com/publish/.

The Advances in Human and Social Aspects of Technology (AHSAT) Book Series (ISSN 2328-1316) is published by IGI Global, 701 E. Chocolate Avenue, Hershey, PA 17033-1240, USA, www.igi-global.com. This series is composed of titles available for purchase individually; each title is edited to be contextually exclusive from any other title within the series. For pricing and ordering information please visit http://www.igi-global.com/book-series/advances-human-social-aspects-technology/37145. Postmaster: Send all address changes to above address.

Titles in this Series

For a list of additional titles in this series, please visit: http://www.igi-global.com/book-series/advances-human-social-aspects-technology/37145

Technological Influences on Creativity and User Experience
Joshua Fairchild (Creighton University, USA)
Information Science Reference • © 2022 • 305pp • H/C (ISBN: 9781799843542) • US $195.00

Machine Learning for Societal Improvement, Modernization, and Progress
Vishnu S. Pendyala (San Jose State University, USA)
Engineering Science Reference • © 2022 • 315pp • H/C (ISBN: 9781668440452) • US $270.00

The Digital Folklore of Cyberculture and Digital Humanities
Stamatis Papadakis (University of Crete, Greece) and Alexandros Kapaniaris (Hellenic Open University, Greece)
Information Science Reference • © 2022 • 361pp • H/C (ISBN: 9781668444610) • US $215.00

Analyzing Multidisciplinary Uses and Impact of Innovative Technologies
Emiliano Marchisio (Giustino Fortunato University, Italy)
Information Science Reference • © 2022 • 275pp • H/C (ISBN: 9781668460153) • US $240.00

Handbook of Research on Applying Emerging Technologies Across Multiple Disciplines
Emiliano Marchisio (Giustino Fortunato University, Italy)
Information Science Reference • © 2022 • 548pp • H/C (ISBN: 9781799884767) • US $270.00

Handbook of Research on Digital Violence and Discrimination Studies
Fahri Özsungur (Mersin University, Turkey)
Information Science Reference • © 2022 • 837pp • H/C (ISBN: 9781799891871) • US $270.00

Opportunities and Challenges for Computational Social Science Methods
Enes Abanoz (Ondokuz Mayıs University, Turkey)
Information Science Reference • © 2022 • 277pp • H/C (ISBN: 9781799885535) • US $215.00

Handbook of Research on Promoting Economic and Social Development Through Serious Games
Oscar Bernardes (ISCAP, ISEP, Polytechnic Institute of Porto, Portugal & University of Aveiro, Portugal) and Vanessa Amorim (Porto Accounting and Business School, Polytechnic Institute of Porto, Portugal)
Information Science Reference • © 2022 • 665pp • H/C (ISBN: 9781799897323) • US $270.00

IGI Global
PUBLISHER of TIMELY KNOWLEDGE

701 East Chocolate Avenue, Hershey, PA 17033, USA
Tel: 717-533-8845 x100 • Fax: 717-533-8661
E-Mail: cust@igi-global.com • www.igi-global.com

Editorial Advisory Board

Table of Contents

Preface ... xv

Chapter 1
Applying Internet of Things (IoT) and Blockchain Technology to Improve Traceability in Pharmaceutical Supply Chain: A Review of the Benefits and Challenges ... 1
Wenqian Shao, Cranfield University, UK
Syed Imran Ali, University of Huddersfield, UK

Chapter 2
Role of Social Media in the Indian Banking Sector ... 31
Aastha Sawhney, Amity Business School, Amity University, Noida, India
Vandana Ahuja, Jaipuria Institute of Management, Ghaziabad, India
Poonam Sharma, Jaipuria Institute of Management, Noida, India

Chapter 3
Museums in the Digital Age: Hybrid Museum Experience ... 51
Gamze Ergin, Mimar Sinan Fine Arts University, Turkey

Chapter 4
Can Multiple Channels Coexist? The Case of the Indian FMCG Sector ... 70
Swati Bhatnagar, New Delhi Institute of Management, India
Rajan Yadav, Delhi Technological University, India

Chapter 5
Validating the Potency of Attitude in Predicting Intention to Purchase Non-Deceptive Counterfeit Branded Products ... 87
Tushar Prabhakar, University Business School, Panjab University, Chandigarh, India

Chapter 6
Public Sector Disinvestment in India: A Narrative Review and Future Research Directions ... 105
Priyanka Chadha, Manav Rachna University, India
Rajat Gera, K. R. Mangalam University, India

Chapter 7
Can Digital Transformation Be a Solution for Maternal Health? 118
Rachita Ota, Amity Global Business School, Bhubaneswar, India
Supriti Agrawal, Amity Business School, Amity University, Noida, India
Sushree Sangita Ray, Amity Global Business School, Bhubaneswar, India

Chapter 8
Assessing E-Services: Satisfaction and Repurchase Intentions Among Viewers of Video Streaming Services 143
Silky Gaur, GIMS, Greater Noida Institute of Management Studies, India
Rahul Gupta, Amity University, Noida, India
Jaspreet Kaur, Pearl Academy, India

Chapter 9
Employee Engagement Strategy: Building an Engaged Workforce during COVID 19 with Special Reference to Manufacturing Sector in India 157
Swati Chawla, Amity University, Noida, India
Puja Sareen, Amity University, Noida, India
Sangeeta Gupta, Management Education and Research Institute, India

Chapter 10
A Study on the Impact of COVID-19 on Street Vendors in India: With Reference to Vijayawada City, Andhra Pradesh, India 174
Srinivasa Rao Dokku, PVP Siddhartha Institute of Technology, India
Rajesh C. Jampala, PB Siddhartha College of Arts and Science, India
P. Adi Lakshmi, PVP Siddhartha Institute of Technology, India

Chapter 11
Health Workforce Talent Management in a Post-COVID-19 Digital Age 189
Divya Aggarwal, Amity University, Noida, India
Vijit Chaturvedi, Amity University, Noida, India
Anandhi Ramachandran, International Institute of Health Management Research, India

Chapter 12
Media Mediation on Academic Advancement for Youths' International Mobility Pursuing Higher Education 208
Md Tariqul Islam, BRAC University, Bangladesh

Chapter 13
Transforming Universities for a More Competent Society: Digitalization and Higher Education 230
Petek Tosun, Kadir Has University, Turkey

Chapter 14
Competitive Edge Building in Business: An Approach Through Ethical Marketing Practices 248
Charul Chaturvedi, SAGE University, Bhopal, India
Debesh Mishra, KIIT University (Deemed), Bhubaneswar, India

Compilation of References 262

About the Contributors 304

Index 309

Detailed Table of Contents

Preface.. xv

Chapter 1
Applying Internet of Things (IoT) and Blockchain Technology to Improve Traceability in Pharmaceutical Supply Chain: A Review of the Benefits and Challenges 1
Wenqian Shao, Cranfield University, UK
Syed Imran Ali, University of Huddersfield, UK

The combined application of IoT and blockchain technology helps organizations to better track and trace items in the food, manufacturing, and logistics supply chains. Evidence shows that the characteristics of blockchain such as decentralization, distributed ledger, consensus algorithm, data immutability, and data security has brought various benefits to supply chains. Specifically, the pharmaceutical supply chain has a high requirement of maintaining medicine quality, trust, and traceability across the supply chain. Hence, a thorough review on the topic is necessary to understand the scholarly work in this area. The study uses a systematic literature review (SLR) to extract data from Scopus database for the period 2017-2020. Fifty-six articles were reviewed. The descriptive and thematic analysis revealed various insights into themes, methods, benefits, challenges, and blockchain architecture in achieving traceability across the pharmaceutical supply chain.

Chapter 2
Role of Social Media in the Indian Banking Sector 31
Aastha Sawhney, Amity Business School, Amity University, Noida, India
Vandana Ahuja, Jaipuria Institute of Management, Ghaziabad, India
Poonam Sharma, Jaipuria Institute of Management, Noida, India

With the upsurge of innovation, transformation, and digitization in the Indian banking sector there has been a paradigm shift in banking operations. The evolution of mobile banking, internet banking, and facilities like ATMs have altered the way consumers use banking facilities. The Indian banks are racing to upgrade their tech infrastructure and digital products to service clients quickly and effectively during the post-pandemic era. Social media provides vivid opportunities for consumers to have access to information and avail banking services 24 hours a day, across temporal and geographical borders. Marketers need to develop new customer-centric strategies to deal with the high expectations of the digitally empowered consumers and deliver a personalized, immersive experience to remain competitive. Also, customers need to be made aware of how individual banking brands can benefit them and help enhance better returns on their financial investments. Banks can further enhance trust and credibility using digital platforms which in turn will trigger their growth.

Chapter 3
Museums in the Digital Age: Hybrid Museum Experience...51
Gamze Ergin, Mimar Sinan Fine Arts University, Turkey

This chapter examines the transformation of museums into a hybrid space. In this context, a fully digital contemporary museum in Paris, Atelier des Lumieres, has been chosen as a case study. The research aims to answer the following questions: What is the historical process of change in artworks and museum spaces through technical reproduction? What are the factors that shape the museum experience? What is the hybrid museum? How does the museum space and experience transform with digital technological representation methods? The theoretical framework investigates the technological development of museums with a comprehensive literature review. In addition, the study creates a theoretical construct for the hybrid museum experience by examining the changing museum experience with the effects of digitalization. Atelier des Lumieres was investigated for its characteristics of the hybrid museum experience by field research. As a result, the study offers alternative solutions to increase the hybrid museum experience.

Chapter 4
Can Multiple Channels Coexist? The Case of the Indian FMCG Sector...70
Swati Bhatnagar, New Delhi Institute of Management, India
Rajan Yadav, Delhi Technological University, India

As markets mature, businesses adopt the multiple channel strategy to compete head on. With the intention of acquiring new markets and new customers, this strategy appears good and logical. However, if implemented in haste without a business model and proper orientation, can this multichannel strategy be beneficial in the long run? The press articles are rife with news of inter-channel competition and its consequences in different sectors. This case is set in the context of the fast moving consumer goods (FMCG) sector in India where the facts and figures are pointing to a disruption in the distribution network. How should distributors of different trade channels coexist? This case is developed from a general trade distributor's point of view on the challenges he faces and attempts to examine what should be the way going forward. Essentially, how should managers manage multiple channels? This question in channel literature has been commonly advised as a future area of research; it is unfortunate that still not much work has been done in this area.

Chapter 5
Validating the Potency of Attitude in Predicting Intention to Purchase Non-Deceptive Counterfeit Branded Products...87
Tushar Prabhakar, University Business School, Panjab University, Chandigarh, India

This study examined the effect of attitude towards counterfeit branded products on purchase intention for such products. It also investigated the difference in the attitude and purchase intention of past buyers and non-buyers of counterfeit branded products. Data were collected from a sample of 133 respondents, using snowball sampling technique. The results of structural equation modeling (SEM) indicated that attitude positively predicts counterfeit purchase intention. Demographic variables had no effect on either of the two constructs. Additionally, the results of an independent sample t-test revealed that past buyers of counterfeit branded products had more favorable attitudes and higher purchase intention towards such products in comparison to non-buyers. The findings provide useful practical insights that can be leveraged by the manufacturers of genuine branded products to combat counterfeiting.

Chapter 6
Public Sector Disinvestment in India: A Narrative Review and Future Research Directions 105
Priyanka Chadha, Manav Rachna University, India
Rajat Gera, K. R. Mangalam University, India

The chapter is a narrative review of the empirical studies conducted on Indian PSE's post disinvestment. Eighteen papers were selected through a process of search and exclusion to meet the criteria specified and results synthesized under four inductively derived themes. The review shows wide variability in performance outcomes of PSE's post disinvestment. The Indian Government has not followed a transparent process or framed a policy for disinvestment, which would gain public confidence. The process of disinvestment is driven by political expediency. Future research directions are proposed.

Chapter 7
Can Digital Transformation Be a Solution for Maternal Health?.. 118
Rachita Ota, Amity Global Business School, Bhubaneswar, India
Supriti Agrawal, Amity Business School, Amity University, Noida, India
Sushree Sangita Ray, Amity Global Business School, Bhubaneswar, India

Due to ineffective management, the attainment of the maternal health goals by the primary healthcare in the state of Odisha turns out to be a great challenge. Hence, it is imperative for the government to come up with various interventions with an effective implementation of the digital solutions to bring down the fatalities during pregnancy and childbirth. The researchers through this study have attempted to identify the variation in the usage and accessibility of maternal and child healthcare services among the marginalized groups of Northern and Central Zones of Odisha and have also highlighted the impacts of the digital transformation and their subsequent challenges. The researchers have utilized a mixed approach for the attainment of the objectives. Based on the findings of the study, the policymakers and health strategists may focus on improvising the management of the maternal health resources and facilities meant for the maternal healthcare across the masses to bring down the maternal mortality and morbidity rate of Odisha.

Chapter 8
Assessing E-Services: Satisfaction and Repurchase Intentions Among Viewers of Video Streaming Services.. 143
Silky Gaur, GIMS, Greater Noida Institute of Management Studies, India
Rahul Gupta, Amity University, Noida, India
Jaspreet Kaur, Pearl Academy, India

The demand for video streaming-based services (VSS) has increased immensely due to their comprehensive content, instant playback, flexibility to watch, and affordable costs. People have access to entertainment with a simple click at their convenience which wasn't possible on traditional television platforms. With companies ready to wrestle for a more significant market chunk, focusing only on price strategies might be a deficient perspective for the future. By enhancing e-service quality, a company can make its loyal base of customers leading to profitability. This study focuses on the quality of e-services relevant to VSS with its satisfactory and repurchasing impact on the client. Responses come from a questionnaire designed and distributed among Indian consumers using video streaming services. SPSS technique is used for result formulation. Implications for marketing managers and the scope for future research are proposed.

Chapter 9
Employee Engagement Strategy: Building an Engaged Workforce during COVID 19 with Special Reference to Manufacturing Sector in India 157
Swati Chawla, Amity University, Noida, India
Puja Sareen, Amity University, Noida, India
Sangeeta Gupta, Management Education and Research Institute, India

Considering the pandemic situation caused by COVID-19, the majority of Manufacturing companies in India have declared work from home until 2021. The pandemic has disrupted both the private and professional lives of people working in the Manufacturing sector, which has impacted the employee's attitude toward work. Therefore, the study is conducted to extract all the employee engagement factors that can actually improve the employee's performance during pandemic. Factor analysis has been applied on a sample of 200 respondents, and the factors significantly influencing the engagement of employees are organization's commitment, job safety and security, employee satisfaction, opinions and stability, and set goals and objectives.

Chapter 10
A Study on the Impact of COVID-19 on Street Vendors in India: With Reference to Vijayawada City, Andhra Pradesh, India 174
Srinivasa Rao Dokku, PVP Siddhartha Institute of Technology, India
Rajesh C. Jampala, PB Siddhartha College of Arts and Science, India
P. Adi Lakshmi, PVP Siddhartha Institute of Technology, India

The COVID-19 pandemic has led to a dramatic loss of human life worldwide and presents an unprecedented challenge to public health, food systems, and the world of work. The economic and social disruption caused by the pandemic is devastating: tens of millions of people are at risk of falling into extreme poverty, while the number of undernourished people, currently estimated at nearly 690 million, could increase by up to 132 million by the end of the year. This chapter analyses the impact of COVID-19 on livelihood of street vendors in India. The study was conducted in Vijayawada City, Andhra Pradesh, India. The study considered 100 street vendors covering all types of street vendors like food vendors, flower vendors, vegetable vendors, etc. Analysis of the data showed that COVID-19 had a significant impact on the street vendors in the selected cities. During COVID-19, street vendors' revenues, profits, savings, number of customers, and working hours have dropped significantly. At the same time, household spending, debt per provider, and healthcare costs have increased significantly.

Chapter 11
Health Workforce Talent Management in a Post-COVID-19 Digital Age 189
Divya Aggarwal, Amity University, Noida, India
Vijit Chaturvedi, Amity University, Noida, India
Anandhi Ramachandran, International Institute of Health Management Research, India

The increased usage of digital technology at the workplace is in turn impacting the utilization of human resources in every sector. Technology has proven to be an effective boon in addressing various healthcare issues as evidenced during the recent pandemic. The pandemic has also impacted the healthcare providers and professionals in the way they work, their work-life balance, and their physical, financial, social, and mental wellbeing. While many health workers have lost their lives, those alive have been affected emotionally and have started to change their careers to non-healthcare sectors. With the existing shortage in the health workforce in India, there is a need to ensure the availability of an adequate number of healthcare professionals who are highly motivated and properly trained (aka talent management). This chapter draws on factors affecting the retention of a talented health workforce, influence of the pandemic in the changing healthcare paradigm, and increased adoption of digital technologies to assist human resource managers in developing holistic talent management in the upcoming years.

Chapter 12
Media Mediation on Academic Advancement for Youths' International Mobility Pursuing Higher Education 208
Md Tariqul Islam, BRAC University, Bangladesh

In this globalised world, students' international mobility pursuing higher education is considered important for the future policies and practices of both host and sending countries. This chapter explores young Bangladeshi students' decisions about overseas higher education by outlining the linkage between the factors related to education and media. The chapter follows a qualitative research methodology and an inductive data analysis approach. Data were collected through semi-structured interviews from purposively recruited 18 research participants studying in two Australian universities. Findings show that media informed the research participants about global education, culture, technology, and economics. Thus, they have become interested in developing the identity of the global citizen through mobility. Drawing upon the theorisation of Bauman and Appadurai, the author illustrated the politics of neoliberal consumerist dreams and desires that the academic environment and media create among young Bangladeshi students to be physically mobile to seek higher education in Australian universities.

Chapter 13
Transforming Universities for a More Competent Society: Digitalization and Higher Education..... 230
Petek Tosun, Kadir Has University, Turkey

Digitalization has transformed the higher education sector. It is a significant factor that shapes the future of higher education. Universities are the primary institutions that must ensure the relevancy and actuality of their curricula and provide high-quality education programs by utilizing new methods and technologies in the rapidly changing environment. Business administration, a popular program for undergraduate and graduate students, must evolve with the dynamic education environment shaped by digital learning alternatives. The management programs must respond to the rapidly changing needs of the labor market, students, and society to provide students with the relevant skills. The chapter presents a literature synthesis, summarizes the new trends and priorities in designing and managing higher education, and points out practical implications and future research directions for higher education managers and researchers.

Chapter 14
Competitive Edge Building in Business: An Approach Through Ethical Marketing Practices.......... 248
Charul Chaturvedi, SAGE University, Bhopal, India
Debesh Mishra, KIIT University (Deemed), Bhubaneswar, India

In today's competitive era, organisations adopt several practices to gain a competitive advantage. But the question that arises is: Are these practices based on the morals and values of our organisation? Thus, ethical practices are the solution to it. So, it becomes the moral responsibility of managers or the top management to adopt such practices, and therefore, companies must make social responsibility an integral component of every marketing decision. This chapter highlights the importance of using ethical marketing practices to gain a competitive edge over rivals. The chapter also highlights about importance of the responsible behaviour of producers towards society.

Compilation of References 262

About the Contributors 304

Index 309

Preface

The advent of added information and communication related technologies have defined a new world of literacies. It may range from Internet to Artificial intelligence, robotics, 3D printing of even online gaming. These technologies have opened an entire new world showing reflections in different societal aspects and related skill sets to be significantly necessary.

In recent past digital competence has become a buzzword for effectual existence in the knowledge world, referred by different names Digital competence, Digital literacy, skills used in different terms in academic and industry this multi-faceted term is amongst one of the prominent 21st century skill. The relevance of Digital competence not limited to geographies but is a global perspective, in any discussion understanding development perspective for knowledge society this has been understood as one of the prominent skills needed for a knowledge society.

With a macro perspective to say that it has a political perspective as well as it reflects beliefs and desires of future requirements across wherein with evidential support and reason technology is an opportunity to shape tomorrow's future. It is amongst the most recent and contemporary concept referred by multiple terms, CT skills, information skills, media literacy skills, skills needed for participatory culture, more of social skills rather than individual skills, even in some of the most cited researches there are recommendations to keep the term and aspect more dynamic understanding its necessity and OECD suggests that governments should make efforts to identify and categorize the required skills amongst which Digital competence gains high attention to be even incorporatedin improvising educational standards.

Thus, both academically, policy wise and country wise the topic has relevance to build future competent society. Policy papers by OECD, EU, or UNESCO there has been a frequent discussion and debate in giving right space and length to this necessary aspect. Digital competence founded on common skill like ICT use of computers to retrieve store, produce and collaborative through internet the necessary information.

Certain aspects that make sense when Digital Competence includes:

Digital Literacy

A concept used frequently to digital competence is digital literacy, a person's ability to perform any task more effectively in a digital environment wherein digital referring to anything represented in numeric form and literacy referring to ability of reading and interpreting media through data, images gained from digital environment. It is thus a combination of technical-procedural combination of cognitive, social, emotional, social, and technical skills. Other factors that facilitate this component is digital practices and culture. This sets a fundamental aspect ensuring learning in appropriate domains. The literature talks about five different kinds of skills- Photo- visual skills, reproduction skills, socio emotional skills, branching skills and information skills other added skills including real time thinking skills.

Literacy Skills for 21stCentury

Related to digital literacy is another important aspect which Jenkinson and all gave in two hundred important skills that makes sense whenever we are talking about digital competency it includes important like

a. The capacity of problem solving supported by technology
b. The performance aiming at improvisation and developing alternatives
c. Simulating to interpret and creating such models which are helpful in the real-world process.
d. Creating and building on collective intelligence that helps to collaborate knowledge and compare towards achievement of common goals
e. Networking skills which are one of the basic tools which can be supported by technology
f. Right negotiations which are facilitated across diverse communities in multiple perspectives developing and following alternative norms.

Digital Divide

Another important factor that has gained attention is the digital divide which refers to understanding the concept of digital competence and digital skills which can be investigated effectively it has been deeply emphasized and improvised by the social and cultural and cultural circumstances along with the competence in the digital different kind of resources available digital competence needs to be of higher quality which can be in contacts to type of consumers and how it can be helpful for personal creation and development. This has wide usage both in research and educational perspectives. It includes various perspectives like media literacy digital skills information literacy of computer sciences media education. Even OECD launched a framework for assessments to include new competency domain. This included three important areas:

a. Using the tools collaboratively and interactively
b. interacting in multifarious and heterogeneous groups
c. building empowerment and autonomous work attitude

Related Key Competence

The other related key competence includes:

a. Right usage of language symbol and text which used for computational language mathematical or in other multiple situations.
b. Using the knowledge and information in a recognizable pattern so that appropriateness and quality of information in form of knowledge can tapped effectively.
c. Interactive usage of technology which individuals can use in their daily life also and utilizing the potential of ICT to transform the ways in which different sectors and functional areas.

d. European Union has used some key competence important for creating a knowledge based digitally competent society like ability to communicate in different foreign language along with mother tongue, learning to learn cultural awareness and expression sense of entrepreneurship numeric competence.

Thus, there is a need of defining what in terms of digital competence needs to be developed so that right from critical thinking two analytical thinking it can include a wide facet of application which can be implemented in explicit form for enhancing more creativity collaboration improvising learning and exploiting personalized learning in a more cushioned manner.

There has been number of studies conducted to understand the right set of skills when we talk about digital competence as per the study conducted by the assessment and teaching of 21st century skill project ATC-21 in 2009 created by different organizations of repute including Microsoft Intel and Cisco found new ways and approaches for assessing the application of digital competence skills. The major categories included four important aspects

Ways of thinking, Ways of working, Tools for working and Living in the world supported by these technologies. Ways of thinking included how skills like creativity and innovation critical thinking learning to learn and metacognition can be used. Ways of working included understanding and working on correct communication and collaboration tools which may include different individuals to work commonly tools for working included the correct and appropriate information literacy. Living in the world included how the developed application and technology can be used locally and globally to live in the world weather for career progression life progression personal and socially responsible behavior this aspect also included how the technology can be applied to transform or reform awareness and competence poor professionals as well as in routine usage.

Thus, digital competence is even if an emerging concept is highly related to development of technology not only limited to search as aspect or academic literature but as said with political expectations also as it decides the future. It includes variety of competence and basic abilities required in different sectors ranging from media technology information sciences etc. This will involve professionals to consist of basic technical skills for utilizing the digital technologies appropriately followed by using it for more relevant and meaningful waves and to critically evaluate these technologies for bringing changes or improvisation at right time and most importantly developing a motivation to participate in the so-called digital culture.

Based on 2006 the recommendations given by European union on key competence, digital competence has been acknowledged as one of the important competences for lifelong learning. Digital competence amongst key competence can be defined as an important trait like - confidence employability leisure participation in society language skills elevated level of awareness social skills and active participation by all the members are being understood as important traits to be digitally competent both in theoretical and application sense.

Thus, this book, *Multidisciplinary Perspectives Towards Building a Digitally Competent Society*, is an honest attempt to bring forth a contemporary and comprehensive understanding on Digital competence and developments in multi sectors and functions with a Business, political. Societal, Economic, and ethical perspective ranging from manufacturing toservice industry.

UNDERSTANDING ON DIGITAL COMPETENCE

There have been different models and frameworks which helps to understand the need of digital competence as not only a technical skill supportive tool but an important part of different facet of life. The basic framework includes encompassing crucial factors like information management collaboration communication and sharing technical operations ethics and responsibilities creation of content and knowledge, evaluation and problem solving. This list includes different competence areas which are important when thinking of digital competence.

Digital competence as defined by European Parliament and the council of 2006 includes confident and critical use of Information Society technology for work leisure and communication using computers to retrieve versus store produce present and exchange information and communication participate by right usage of Internet and technology it just reflects foreseen knowledge with applications even including risk of Internet and online communication and ensuring creativity and innovation on the same hand it also includes legal and ethical principles behind the use of collaborative tools.

Based on the comment definition it can be categorized on following aspects learning domain, tools used competence areas, modes, and purpose. Understand that different modes or process applications based on digital competence should be effectively efficiently appropriately critically creatively ethically and effectively be applicable to ensure its long-term sustainability. Irrespective of the purpose with which they are applied they should adhere to these basic components so that the frame of digital agenda scoreboard the digital competence quotient or skills can be effectively used with corrective outcomes this in actual relates to collaborative networking.

DIGITAL COMPETENCE AND DIGITAL ECONOMY FOR SUSTAINABLE DEVELOPMENT

We are all witnessing globally that the entire world economy is transforming at its fastest speed supported by new digital technology which has with an obvious implication based on agenda 2030 of sustainable development. Elevated level of digitalization in both economies as well as its implications reflect in the society which help in creating very technology for handling global developmental challenges. Doubtless to say that it may create digital disruptive outcome but will be catapulting the future inclusive development.

There has been exponential growth in collaboration of machine information digital data supported by Internet this is an obvious outcome of upsurge growth of data analytics artificial intelligence cloud computing and varied digital platforms which are upcoming consistently. This has made access to data and the ability to use the wonderfully termed digital intelligence to ensure competitiveness of organization. Ranging from producers to exporters the dependence on data analytics at levels of operations and the ways in which the process has been digitalized gives a strong reason on how digitally competent societies are moving ahead for a more futuristic perspective ensuring environmental appropriate resource utilization objectives. This has application in grid perspectives ranging from shipping retail banking human resource management marketing operational perspective and in every domain. The role that transports transformative power off data for varied purposes ranging from economic financial and social interaction plays for multiple stakeholder's business people government and society will help in utilizing right technologies to seize opportunity for emergent growth and to avoid risk at various levels. This will also help to bridge the gap between different developmental growth off country thus reducing inequalities and divide.

Right from mid 1990s they have been different definitions of digital economy for digital competence and thus for building digitally competent society are in hike. In the early years of 1990s and even late 1990s this was simply understood as adoption of Internet and the possible impact of this own economy but right from mid of two thousand increasingly the Internet economy has grown strength and the collaboration between the digital technology and business outcome has gained lot of attention with process being referred as digitalization. The major concept of digital economy includes the basic concepts also called as core ones which include the most important innovations like core technologies which support infrastructures to grow and secondly digital and information technology which lies on core digital methods of whose application includes digital platforms mobile application which is best affected by elevated level of innovation address breaking upsurge contribution in economies and related sectors. There has been also augmented set of digitalizing sectors in terms of products and services under ecommerce like in finance media transportation which requires elevated level of digitally skilled workers consumers buyers which are consistently contributing towards growth of digitalized economy.

Digital economy can be compartmentalized under few aspects the role of ICT networks the data infrastructure in terms of data centers and of course the cloud infrastructure and the digital platforms along with the digital devices and applications. It is appropriate to say that even the evolution of digital economy is in line with different frontiers technologies whether it is software oriented technology with popular names like blockchain data analytics and artificial intelligence or whether they are user centric devices like smartphones to wearables to even some highly customized oriented hardware like IoT robotics and cloud computing a very rapid advances in these type of technologies which are popularly called as converging technologies have enhanced and enabled a surge in capacity as well as also helped in cost reduction in terms of data storage and data transmission. Thus, digital innovation and eruption has paved a multi-facet way for sustainable development. The Chapters contributed from authors of repute across the Global geography have brought together a unparallel platform for understanding Digital competence and its implications in a true form. There are Fourteen Chapters in this Book that have collated research-based findings, theoretical underpinnings, futuristic perspective towards this required area. The pharmaceutical industry is one of the strongest support systems for any country, understanding the rising expectations and demand the role of technology and digital competence to scale is to meet stakeholders' interest.

Chapter 1, titled "Applying Internet of Things (IoT) and Blockchain Technology to Improve Traceability in Pharmaceutical Supply Chain: A Review of Benefits and Challenge," authored by Wenqian Shao and Syed Imran Ali, through a systematic literature review, discussed relevant developments and updates on innovative technology that pharmaceutical practitioners are using. There has been an advent of technologies like radio frequency identification (RFID), near field communication (NFC) tags, quick response (QR) codes and barcodes which have made accessing the real time information and decision making quite easier. Since the introduction of blockchain technology, there has been a novel solution to IoT based problem and has immensely benefited the supply chain stakeholders. The authors have suggested a strong background about evolution of pharmaceutical supply chain rule of Internet of Things technology. Different stakeholders view of IoT has similarity to blockchain technology. The inter relationship is justified in this chapter, as it helps in decentralizing the power structure based on cryptography. It indicates that it can assist pharmaceutical supply chains based on a systematic literature review. The chapter discusses relevant literature on rule of IoT and blockchain application in pharmaceutical supply chain followed by descriptive analysis of this literature and what are the different benefits in challenges of IoT and blockchain in attaining traceability. The chapter included studies which have mentioned about the benefits of IoT and blockchain and the challenges related to it are highly relevant. Thematic analysis suggests that there are different solutions which have been proposed to solve the supply chain issues but no one solution can be fitted to the supply chain problems, as there are many requirements ranging from regulatory to industry. Previous researchers have indicated design of different instruments like smart contract mechanism, consensus, algorithm assessing, falsified and substandard drug QR codes to identify counterfeit medicines. RFID help improve the traceability and visibility of pharmaceutical transportation network etc. The Chapter suggests that's transparency is especially crucial factor where in monitoring the quality weather of employment status location is a must this can also help in monitoring inventory optimization and early warning alerting. Application of blockchain and IoT also help in bringing cost effectiveness. There are challenges also to improve the traceability which are process transformation and system integration so in terms of challenges they can be related to scalability security coverage of data collection and integrating theory into practice. This chapter provides new insights into the schemes of IoT blockchain and their relationship with pharmaceutical supply chain because the quality if medicine is most important what is to be delivered to the customer the pharmaceutical supply chains depend upon the kind of environment monitoring and validity of prove and counterfeit products. This chapter further discusses, different insights into the architecture of blockchain which includes technology nodes, organization nodes, and work nodes. Based on this systematic literature review the chapter helps in solving the privacy and safety issues which can be improved by application of these tools and maintain traceability for supply chain. Thus, these innovations in blockchain technology are applicable in pharmaceutical supply chains as a support system for the government and for public. It will help in tracing the drugs and minimizing the usage of counterfeit drugs.

Chapter 2, titled "The Role of Social Media in the Indian Banking Sector," authored by Aastha Sawhney, Vandana Ahuja, and Poonam Sharma, brings contemporary implications of social media in Indian Banking Sector. The chapter begins with comprehensive background on the transforming and innovative changes the Indian banking sector is witnessing with the advent of a new era of payment banks and finance banks. The focus of the chapter is on regulatory mechanism of Reserve Bank of India (RBI). It highlights RBI's focus on monitoring different banking products offered by various banks to generate better revenues, role of digital payment and commitment of government to digitalize banking services like equity banking and strategies to enhance customer experience management for competitive positioning. The chapter further highlights the significance of social media marketers facilitated by supportive role of Internet availability of gadgets and social media to make these services more competitive. The authors comprehensively discuss the opportunities for social media marketers in the banking sector ranging from sharing promotional information with consumers, providing information, and educating them,l istening to their grievances, and increasing trustworthiness of banks. The chapter explains with number of examples from private and public banks different facilities and initiatives been taken with a customer centric approach like State Bank of India. Inviting consumers to link SBI Cap Securities DEMAT and Trading accounts. HDFC bank giving 50% cashback on booking fee with credit and debit cards. The chapter further highlights different functional benefits of social media marketing in banking sector starting from consumer engagement population and brand identity. The chapter further throws light on emerging growth of mobile wallet companies payment platforms and social media like Paytm, Mobikwik an Citrus pay. Thus, the chapter with an inclusive approach discusses how digitalization, e-commerce and social media has allowed customers for quick information access and 24/7 banking services available across geographies and telephone personalized experience to remain competitive.

Chapter 3, “Museums in the Digital Age: Hybrid Museum Experience,” authored by Gamze Ergin discusses the application of digital technology like virtual reality, augmented reality, mixed reality, artificial intelligence, projection mapping, CD printing and application of same for museums. In present times, wherein technology has revamped systems it brings unique and special experiences for having an immersive, inclusive, and interactive museum which is beyond boundaries having the best digital applications. The author discusses different initiatives and application of digital technology applied in digital production and exhibition techniques which are used in museums and in archiving beyond the only role of photography. Transforming the identity of museum, a challenging task where physical and digital space must be integrated in the architectural transformation is discussed in the chapter. The first initiative taken includes Malraux Museum Walls which came with digitalization and Internet. Museums continues to design activities virtually. Digitalization also has its impact on the perception of art that visitors get to enjoy. The authors discuss that history of digitalization in museum is as old as 1960 known as digital museology that has helped the museum to maintain their participatory culture. Contemporary Museums are places that encourages smart social media applications based on user experience that can provide museum archives, exhibitions, and tours. Innovation and culture heritage uses digital tools like Augmented reality. 3D visuals in real space thus matching the state of artworks makes a complete experience. The author suggests a comprehensive model based on engagement, interaction, communication, virtual galleries, digital sensory tools to revamp the contemporary museum. Thus, the chapter contributes to giving a new look supported by digital technology for viewers in terms of space and preservation of these rare institutions.

The fourth chapter, titled “Can Multiple Channels Coexist? The Case of the Indian FMCG Sector,” authored by Swati Bhatnagar and Rajan Yadav, highlights a very important and common challenge that marketeers today specially in terms of distribution are facing is multiple channels. Across the market multiple channel adoption is a new move but in deficit of a proper business model matched with effective orientation the sustainability and outcome of multi-channel strategy will be challenging. The purpose of business today is to enrich different segments of customers in a fragmented market in terms of distribution through more than one channel thus multiple channel adoption is not a choice but necessity. Technology has brought lot of disruption and FMCG sector also has seen the impact wherein more than 150 to 190 billion Indian consumers have the capacity to spend 40 to 45 billion are digitally influenced by FMCG. The chapter highlights the background and growth of FMCG sector which is growing at compounded annual growth rate of 27.86% by 2021 and in India being dominated by big players like Hindustan Unilever Procter and Campbell etc. The chapter explains the major segments in FMCG sector ranging from household healthcare to food and beverages and focuses on role of distribution channels its relevance and new developments right from use of Omni channel retailing or role of mobile channel social media and integrating channels in online and offline retailing. It discusses about different channel conflicts and how multi distribution channels have gained attention along with its benefits and demerits. The chapter further throws light on managing the multiple distribution channels, different initiatives been taken to create a space for themselves whether in e-commerce or through website for better customer experience. Another, interesting part of the chapter includes different issues, problems and grievance of distributor which is related to channel literature theories also. The chapter discusses different benefits of creating e- marketplace and disruption which has come in this area in FMCG as a part of their business models and profit margins. This chapter gives useful recommendations looking at distribution 4.0 for disruption and restructuring as inevitable and plan for 2030 which is growing at scaling heights supported by number of factors whether it is internet penetration, growth of digital payments or expansion in the logistics infrastructure.

With growing consumerism role of technology in shaping attitude of customer in terms of buyer and non-buyer towards counterfeit products, Chapter 5, titled "Validating the Potency of Attitude in Predicting Intention to Purchase Non-Deceptive Counterfeit Branded Products," authored by Tushar Prabhakar, brings the attention of the customers towards counterfeit products. Counterfeit products are unauthorized application of genuine products, and it has detrimental impact on economy. It has created more than one lakh crore of losses wherein the genuine brand manufacturers suffer loss of billions of dollars in sales revenue, through the study the author has brought to attention the role of theory of reasoned action in an idiosyncratic context. The study aims at understanding attitude in purchasing such products. Authors highlight positive association between purchase intention and counterfeit products. Past buyers of such products have different attitude in comparison to non-buyers. Based on statistical analysis it was found that the attitude and purchase intention of buyers and non-buyers of counterfeit products varies wherein buyers repeat such purchase behavior more than the non-buyers. The study explored role of attitude in intention to purchase. The study make sense for manufacturers to detect counterfeit branded products.

The sixth chapter, titled "Public Sector Disinvestment in India: A Narrative Review and Future Research Directions," authored by Priyanka Chadha and Rajat Gera, is about a very important aspect of public sector disinvestment in India based on narrative review and suggested future research directions. The authors based on empirical studies conducted in Indian Public Sector Enterprises post disinvestment have selected nineteen papers based on certain exclusion criteria to understand the approach of post disinvestment. This chapter opens with a background of independence era where in public sector enterprises included railways post Telegraph and ordinance factory which were exclusively maintained by government post-independence. The authors further discuss about different approaches of disinvestment ranging from conditions wherein the majority stake is retained by the government which is 51% of management control secondly the government retains less than 51% and thirdly complete privatization where in the complete control for the company is given to the private company. The authors prepared a narrative review of literature and identified nineteen important papers, further conducted study in four major areas by selection of database article their classification, systematic process of PRISMA was followed. The chapter highlights important antecedents that PSU disinvestment should consider. The authors highlight that in mixed economies like India microeconomics and macroeconomics justifications are important factors. Different strategies of public sector restructuring reform, commercialization, management contracts and joint ventures along with leasing have also been discussed. The chapter also highlights crucial factors that determines the performance outcome of this disinvested PSU'S like stock market listing, productivity improvement, equity sold, profitability, dividend pay-out ratio. Thus, results indicated that both disinvestment and privatization in the Indian subcontinent were weakly correlated. Some of the familiar challenges or problems in the public sector enterprise disinvestment also are being discussed which have majorly political and financial necessity rather than economic and managerial consideration. These issues involve areas like selection of PSU disinvestment, the method of valuation to be used, insufficient competition, different modalities of disinvestment, enormous difference between the amount generated and value methods, relationship between privatization and political factors. The authors highlight that most of the studies have mentioned about a positive effect of disinvestment whereas it is vice versa in some of the study this topic gains special attention as there is a lack of comprehensive study in context to different aspects of adopting a right method and policy.

The seventh chapter, titled "Can Digital Transformation Be a Solution for Maternal Health?" authored by Rachita Ota, Supriti Agrawal, and Sushree Sangita Ray, highlights important aspect of implementation of digital transformation on improving maternal health in Odisha. The chapter highlights a significant issue which is maternal mortality ratio that in India has decreased to 113 percent in the period of 2016 to 2018 from the ratio of 122 in the period of 2015 -17 as per report of WHO. The chapter highlights challenges and conditions of maternal mortality ratio in a state like Odisha which show a 14-point decline in maternal mortality rates against the national average of 10 points though has decreased from 150 per 1,00,000 life birth in 2016 -18 to 136 but still there are many gaps which can be purposefully filled if the healthcare system is digitalized to make the facilities and services reach to maximum people. Digital health should be an important aspect when talked about health priorities because it can provide an ethical safe secure and sustainable future. It cannot be solely confined to technological expenditure but also depends upon what kind of organizational culture and participation is there whether at state level or at organization level. Primary Health care services is the first point of contact when talking about health infrastructure. Primary Health care facilities in Odisha are intended to provide basic healthcare as well as for emergency assistance. The healthcare infrastructure and service level are comparatively worse than the national average at Odisha with 30 districts segregated into 3 administrative zones northern central and southern the marginalized tribal dwellers found in northern and southern region there are poor health service conditions indicating towards health inequity which may be due to inconsistent compensation, working condition, training. This requires an immediate digital intervention. Other different initiatives being taken to meet the demands like program monitoring applications, citizen centric application Tele Medicines, Geographic Information System' for map-based data processing and user-friendly data visualization which helps in improving maternal and child health care center. It talks about different digital innovations to improve health service delivery including electronic health records, telemedicine, and m- health. The findings of the study which was conducted in Odisha in 10 different districts to understand different components of maternal and child health care services found that there is a marginal difference in the opinion of respondents when it comes towards health care facilities even if there are different initiatives taken at central zones still there are many challenges which can be met by digitalizing the health care services right from Primary Health centers to setting right infrastructure in all the 3 components of international safety library and postnatal care, this will help to bring down the maternal mortality and morbidity. Thus, it is high time for implementing digital solutions to fulfil the inadequate resource gap in healthcare supported by digital technology a scalable system which can support multi users with clinical protocols will be a solution for challenges.

The eighth chapter, titled "Assessing E-Services: Satisfaction and Repurchase Intentions Among Viewers of Video Streaming Services," authored by Silky Gaur, Rahul Gupta, and Jaspreet Kaur, brings another important application of Digital competence in e-services. This chapter discusses the increasing role of Video based streaming services. Understanding the comprehensive content flexibility to watch and affordable cost that has been made possible due to digitalization and supported technology in media which was absolutely unavailable at conventional television platforms, the chapter based on empirical findings aims at understanding quality of e-services which are relevant to video streaming service and the satisfaction along with repurchasing impact on the client based on a structured questionnaire designed and distributed amongst the Indian consumers. The study was analyzed by SERQUAL model to check the role of response time to assess how fast an organization respond to customers query and ability to address issues, second factor which is consumer perception of secured communication, 3rdfactor being the tailored communication which is the ability to customize information to suit individual customer requirement, visual appeal relating to the aesthetics of the website and fifth innovativeness which refers to customers understanding of a website level of uniqueness and creativity. The study aimed at assessing the impact of all the five factors leading to satisfaction and resulting repurchase intentions. Based on convenience sampling the data was collected from customers that use different video streaming services in India, statistical tools like regression analysis it was found that Netflix was the top pick amongst 133 respondents. Further the study based on the objectives indicated that response time shares a positive effect on customer satisfaction and repurchase intentions. Similarly, trust was also found to be sharing a positive impact on both be factors. Tailored communication also shows positive effects on customer satisfaction and purchase intention along with visual appeal and innovativeness. Thus, all these five factors are important attributes that affect the customer satisfaction and repurchase intentions. The study has added a new aspect to service quality in streaming based on WEBQUAL model of a service quality. It is applied to the video streaming services in India. Thus, with a marketeer's approach if these five attributes are considered to improvise customer satisfaction and repurchase intentions it can be of immense help.

The ninth chapter, titled "A Study on Factors Influencing Employee Engagement: Building an Engaged Workforce During COVID-19 With Special Reference to the IT Sector in India," authored by Swati Chawla, Puja Sareen, and Sangeeta Gupta, discusses impact of COVID 19 on employee engagement strategies. Technology has been a facilitator and support during COVID 19 pandemic with reference to IT sector in India. There were varied challenges of working online and thus it was a challenge for organization to rethink about their employee engagement practices for employees for working remotely. The productive time reduced by 2% due to poor collaboration as well as lack of team spirit, people not able to interact and collaborate thus the authors tried to highlight most innovative employee engagement strategies used during COVID-19 pandemic supported by digital methods to keep the employee engagement of remote workers to the mark. The chapter discusses important research in form of literature review about different theories of employee engagement and its connection with leadership. The role of employee commitment and its impact on organization policies etc. The chapter focuses on understanding the important key factors that influence the employee engagement during crisis, how far the employees kept themselves motivated and engaged and strategies of overcoming challenges for remotely working employees.

The quality of rewards and benefits played a key role as per the study in the employee engagement which was a combination of both monetary and non-monetary awards. Career development was another factor which was most important. Politics and the kind of political climate deeply affected individual engagement and the kind of behavior they reflected since if not managed properly it leads to stress and burnout. Thus, based on the study discussed in this chapter the important attributes that affected employee engagement included factors ranging from job security to organization politics, learning and development opportunities, psychological and employee wellness programs that were given from time to time facilitated by digital gadgets during remote working.

As we talk about building a digitally competent society, inclusion from all stratums of society is significant. In this context, Chapter 10, titled "A Study on Impact of COVID-19 on Street Vendors in India: With Reference to Vijayawada City, Andhra Pradesh, India," authored by Srinivasa Rao Dokku, Rajesh C. Jampala, and P. Adi Lakshmi, explains the impact of COVID-19 on street vendors in the chosen geographic area. The authors aim at understanding the pre and post impact of COVID-19 on street vendors. The vendors belong to weekly markets, that were closed one week before lockdown was announced and they were not permitted to operate whether it was women street vendors or others. The authors based on qualitative interviews, tries to bring to attention the hardships faced by the women street vendors as well as difficulties faced by other vendors due to lack of mobility and restrictions imposed during the lockdown. The study aimed at understanding how these street vendors are suffering due to COVID-19 for employment and how it changed their business activities during this period. The authors identified one hundred respondents who were doing business on Vijayawada streets. Based on analysis, authors found that majority of the respondents had received only single dose of vaccination and some of them had completed second dose. Majority respondents were aware about the guidelines given in COVID-19 and were taking all necessary precautions to avoid the spread of this pandemic. The vendors were not using sanitizers on a regular basis were more vulnerable. Due to lack of information, they were not aware with different government schemes which were available to street vendors. They found that majority of the street vendors did not have identification cards and they were indebted to unorganized sources of which the lenders were charging extremely high interest rates. The study conducted directly indicates the significance of creating a digitally competent society specially for the people at stratum for whom lack of information access and unawareness makes quality of life more difficult.

Understanding the strong role that Digital Competency plays for building a society health and wellbeing comes first. It is thus important to understand the talent management of hospital workforce especially in post Covid times. The eleventh chapter, titled "Health Workforce Talent Management in the Post-COVID-19 Digital Age," authored by Divya Aggarwal, Vijit Chaturvedi, and Anandhi Ramachandran, focuses on the acceleration at which the digital technologies are revolutionizing and advancing for health care. The massive usage of digital technology in every sector specially in the healthcare sector is specifically important. There is already a shortage of health workforce in the country and availability of health care professionals needs to be professionally trained motivated, thus managing the talent after hospital workforce becomes significant. Health care is one of the major sectors both for revenue generation and employment opportunities and it is expected to reach 372 billion dollars by 2022 driven by private and public investment and government initiative of digital advancements. The outcome of this is clear by India being ranked 10th in the medical tourism index amongst top forty-seven destinations in 2020-21 and there are solutions ranging from pharmacies Tele-consultation to diagnostics video conferencing which are available. Talent management in healthcare is important for identifying key positions internally within the organization and planning succession for these key position in hospitals and at specific leadership roles. To manage this digital talent management system act as a support. Adopting right digital tools for health care delivery at effectual pace is important along with infrastructure, trained workforce the dependence is also on IoT advanced analytics, sensors cloud services, artificial intelligence, tele medicines, remote monitoring and robotic functions which helps in benefiting multi stakeholders. Digital health in form of accessibility and for monitoring has revamped the healthcare infrastructure. There are number of digital gadgets based on artificial intelligence and machine learning tools to check sugar levels blood pressure oxygen level calories sleep pattern and thus help in self-monitoring mobile phones also have same facilities. Huge investments and mergers are revamping the healthcare ecosystem of the country. Data analytics for preventive diagnosis and preventive medicines, use of robotics for surgery and assisted living along with telehealth and telemedicine to collaborate and monitor remotely add strong aspects that strengthen healthcare administration. Use of digital technologies has improvised post pandemic challenges and within humanitarian angle motivated healthcare professionals to be more efficient and manage talent effectively.

The twelfth chapter, titled "Media Mediation on Academic Advancement for Youths: International Mobility Pursuing Higher Education," authored by Md Tariqul Islam, is on a very significant and globally important topic which is role of media mediation on academic advancement of youth specially for students who are looking for international mobility for higher education. The chapter highlights the role of screen mediated communication matched with the characteristics of globalization in the process of mobility facilitation. The mobilities right from physical travel of people, physical movement of object, imaginative travel of places and through media images along with the virtual travel of people is taken into consideration as a theoretical perspective. The chapter focuses on young Bangladeshi students' mobility motivators and the influence of cultural practices in local and international job markets. This chapter in a comprehensive way highlight how the educational factors motivate young Bangladeshi students to seek qualification from Australian universities and the role of global media to make them motivated. The chapter further discusses the inter relationship between education mobility and media based on different previous research. Findings of different research indicate within neoliberal ideology the higher educational institutions have been facing severe financial pressure and competition to attract and to keep the international students happy. The role of media has understood its importance both for local and international students seeking the broad scope and competition in the global education market. It is evident that mass media and ICT have strongly influenced students' perception for their movement to a particular university. Based on studies conducted at different universities in Melbourne for eighteen young Bangladeshi students studying in selected Australian universities the findings were suggested. It was based on individual interviews. The findings indicated that there is a strong influence of media on young people right from choosing their pseudonyms to assure confidentiality and it also reflects their perception. The motivational factors that student found includes- English medium schools following overseas curriculum, secondly lot of facilities available when it comes to comparison with local university along with global rankings and investing resources money and time in globally high ranked universities. Another important factor which the author found was the number of courses offered by University Grant Commission of Bangladesh which is very low in comparison to other overseas universities. Thus, availability of different options which the students look through media has a strong role to play in affecting their decisions. There is another crucial factor which is availability of job focused programs and the ranking of the university which matters most for students since these are highlighted strongly in university promotion programs. In nutshell the resource availability, ranking, and recognition of academic institutions played a key role as a push factor for determining the decision for higher education. The other factors which the study highlighted included role of education agent, satellite television, internet affecting the mobility decision. Thus, these mobility perturbations can be understood as by-products of new globalized world.

Digitally competent society depends on type of education provided. Chapter 13, titled "Transforming Universities for a More Competent Society: Digitalization and Higher Education," authored by Petek Tosun, highlights the importance of digitalization in higher education sector. The study primarily focuses on the role universities are playing in updating the curriculum and providing high quality education programs by adoption of technology keeping in view the changing dynamic environment. Lot of changes witnessed by the recent pandemic has also shaped the future education and the university authorities are aiming towards giving online educational services at its best keeping in view the learnings from past followed by the aim of National Education Policy. It has its own benefits as it reduces the importance of physical location and making information available to all. This will help education to adapt radical changes in line with the disruptive innovations happening every now and then. Along with academic programs, digitalization has helped in providing massive open online courses keeping in view socio economic development and enhancing the employability quotient. Higher education is considered as an investment and the employability is dependent on the kind of skills a graduate possess. This has also transformed the role of traditional teachers to facilitators of learning by flipping the classes with the help of active learning principles matched with technology utilized in class discussion, pre learning material, video text and different activities which makes learning enjoyable and outcome centric. This also helps in making the future managers more comfortable to work in remote environment and immersive hybrid structure as they have learned in online learning. In all functional areas, digital skills are required like mathematical modelling, strategic planning scenario, building optimization, determining quantitative modelling, recruitment support or strategic business profitability calculation. The chapter provides deep insights into benefits of providing lifelong training to professionals and managers, planned internships to develop unique skills, role of vocational schools and universities in different areas from healthcare management to tourism in collaboration with different sectors and how to keep teaching authentic and engaging. The authors highlight the importance of digitalization facilitating lifelong learning via different platforms acting as alternatives. The chapter highlights the significance of development of human resources and management of organization effectively by adoption to digitalization to make societies competent.

Understanding the relevance of ethics in business, Chapter 14, titled "Need for Ethical Marketing Practices to Gain Competitive Edge in Business," authored by Charul Chaturvedi, Debesh Mishra, highlights the significance of ethics in marketing to keep competitive advantage. The chapter begins with a background of ethical marketing. The chapter by secondary literature review explains the reasons for adopting ethical practices and contemporary trends in organization for adopting these practices. The chapter highlights that different research have been conducted in ethical marketing in relation to implementing legal, stakeholder, moral perspective, and all highlight that product related, price related, place related, promotion related ethics are important to survive in the market and help in building an effective society. The authors based on previous research highlight the difference between ethical and unethical marketing giving the support of different theories of ethical marketing ranging from utilitarian theories of rights and theories of justice. Further, the role of ethical marketing issues with a global perspective understanding the world as an open market is being discussed. Important conditions necessary to understand role of ethics includes -awareness of formal organization goals, correct distribution of resources, personal intentions and code of ethics which affects the future of any organization. The findings of the chapter have implications for different companies who have understood the relevance of ethically oriented marketing practices for effective customer value proposition. Digitalization has made knowledge sharing true. The distinctiveness of this book lies in its multi-perspective approach towards the most significant topic shaping the global future. With the diversity of implications and strategies discussed in different chapters, the book will serve as a necessary resource for academicians, researchers, and practitioners.

Well defined editorial board matched with a stringent review process ensures quality of the content, The perspectives presented from different authors across the global context makes it comprehensive and diverse. We are thankful to all contributors and Board of Editors for their time, energy, and inputs.

Sanjeev Bansal
Amity University, Noida, India

Vandana Ahuja
Jaipuria Institute of Management, Ghaziabad, India

Vijit Chaturvedi
Amity University, Noida, India

Vinamra Jain
Amity University, Noida, India

Chapter 1
Applying Internet of Things (IoT) and Blockchain Technology to Improve Traceability in Pharmaceutical Supply Chain:
A Review of the Benefits and Challenges

Wenqian Shao
Cranfield University, UK

Syed Imran Ali
https://orcid.org/0000-0002-6553-8210
University of Huddersfield, UK

ABSTRACT

The combined application of IoT and blockchain technology helps organizations to better track and trace items in the food, manufacturing, and logistics supply chains. Evidence shows that the characteristics of blockchain such as decentralization, distributed ledger, consensus algorithm, data immutability, and data security has brought various benefits to supply chains. Specifically, the pharmaceutical supply chain has a high requirement of maintaining medicine quality, trust, and traceability across the supply chain. Hence, a thorough review on the topic is necessary to understand the scholarly work in this area. The study uses a systematic literature review (SLR) to extract data from Scopus database for the period 2017-2020. Fifty-six articles were reviewed. The descriptive and thematic analysis revealed various insights into themes, methods, benefits, challenges, and blockchain architecture in achieving traceability across the pharmaceutical supply chain.

DOI: 10.4018/978-1-6684-5274-5.ch001

INTRODUCTION

With the development and update of innovative technologies, pharmaceutical practitioners have applied various technologies to better manage the supply chains. The technologies such as Radio Frequency Identification (RFID), Internet of Things (IoT), Near Field Communication (NFC) tags, Quick Response (QR) code, and barcodes have brought convenience to the way one can track and trace real-time information for effective analysis and decision making (Sharma et al., 2020). Although, IoT-based supply chain systems leave a series of security issues at different levels, such as jamming adversaries, privacy violations on cloud-based IoTs, and insecure software (M. A. Khan & Salah, 2018). The introduction of blockchain technology by Nakamoto has provided a novel solution to IoT based problems. The decentralized structure of blockchain makes it less vulnerable to data immutability and security issues are solved by storing data in the form of blocks by mutual consensus of supply chain stakeholders (M. A. Khan & Salah, 2018).

Applying blockchain technology in cold chain management such as pharmaceuticals can help supervise and trace the supply chain, especially the products chain, information chain, and financial chain. It also maintains a high level of traceability in the cold chain and guarantees an effective way to call back when a quality problem is found across the supply chain (Hosseini Bamakan et al., 2021). However, they also argued that the application of blockchain had left new challenges (Hosseini Bamakan et al., 2021). Therefore, this study aims to find the potentiality of blockchain technology and review its benefits and challenges by applying IoT based blockchain systems to improve the traceability of pharmaceutical supply chains.

BACKGROUND

Pharmaceutical Supply Chain

Cold chain management has a priority position in the context of the pharmaceutical supply chain (Hosseini Bamakan et al., 2021). A failure in controlling temperature will lead to a heavy 'health threat and sources of economic loss' (Vivaldi et al., 2020). The cold chain is operated in a strict environment to meet the temperature/humidity requirements in various packaging and across the supply chain that is from manufacturers to patients (Vivaldi et al., 2020; Cold Chain Federation, 2020).

Internet of Things (IoT) Technology

The IoT technologies allow logistics and supply chains to establish a real and virtually connected network to 'identify, connect, adapt, localize, track and monitor to improve the efficiency (Golpîra et al., 2021). RFID and other technologies collect data in the traditional IoT-based supply chains, and cloud-based datasets are used for storing supply chain data (Golpîra et al., 2021).

Stakeholder's View of IoTs

The functions of IoTs in the supply chain have gained appreciation and support from IoT stakeholders. In academia, Khan & Salah (2018) found huge potentiality and a promising perspective of the IoTs in the supply chain. In the business, HUAWEI and DHL planned a business corporation on the IoTs and supply chain (Wei, 2018). DHL gave a positive attitude to IoTs and logistics that ‘Digitalization isn’t just a vision or program at DHL Supply Chain; it’s a reality for us and our customers, and it’s adding value to our operations on the ground’(Wei, 2018). Also, HUAWEI gave a positive attitude to IoTs and cooperation amongst stakeholders (Wei, 2018). In the field of the consultant industry, Boston Consulting Group (BCG) thinks that IoT is a fundamental component in the new industrial transformation to deliver higher efficiency and value to customers (BCG Global, 2021).

Blockchain Technology and IoT

Blockchain technology was born with Bitcoin by a person named Satoshi Nakamoto. Several characteristics of blockchain technology such as decentralization, anonymity, and tamper-proofing have motivated the interest of researchers (Satoshi Nakamoto, 2021). The study of blockchain technology provides a possibility to minimize the traceability issues that remained in the traditional IoT-based pharmaceutical supply chains (Hosseini Bamakan et al., 2021).

The application of IoT and blockchain technology for achieving traceability also appears in other industries. For example, Bumblauskas et al. (2020) explained that blockchain technology could help the food industry to become more transparent, safe, sustainable, and efficient. Cao et al. (2020) stated that applying IoT and blockchain technology in the steel manufacturing industry can increase the efficiency, and information transparency and improve the tracing process of the quality of products. Furthermore, Rejeb (2018) suggested that IoT and blockchain technology can benefit the whole modern supply chain. Feng et al. (2020) argued that there are some similarities between the food industry and in the manufacturing industry that can contribute to the pharmaceutical supply chain.

Justification of Research

The whole industry is eager to find a more transparent solution. Blockchain technology’s decentralized power structure and its underlying logic based on cryptography indicate a probable improvement for IoTs management and the pharmaceutical supply chain. Therefore, an extensive literature review is required to analyze the application of IoT and blockchain technology in the pharmaceutical supply chain context.

AIMS AND OBJECTIVES

The study aims to find the potentiality of blockchain technology and review its benefits and challenges by applying IoT based blockchain systems to improve the traceability of pharmaceutical supply chains. The study follows a Systematic Literature Review (SLR) to conduct a comprehensive search of the literature on the topic. To address this a set of objectives are established.

The four main **objectives** of the chapter are:

Objective 1:
Identify and review the relevant existing academic and practitioner literature related to IoT and Blockchain applications in the pharmaceutical supply chain
Objective 2:

Produce a descriptive analysis of the evolution of the literature and the issues identified.

Objective 3:

Undertake a detailed review of this literature to identify the benefits and challenges of IoT and Blockchain in attaining traceability in pharmaceutical supply chains

Objective 4:

Provide insights into the main themes, methods, findings, and models which have been developed in the material examined.

METHODOLOGY

A Systematic Literature Review (SLR) method is adopted to address the objectives. SLR is a clear, and repeatable methodology for locating, reviewing, evaluating and synthesizing the existing relevant studies on a specific topic comprehensively (Tranfield et al., 2003). Stages of SLR are identification, selection, assessment, synthesis, and reporting findings are the key steps as discussed by Tranfield et al. (2003) and K. S. Khan et al. (2003).

Process of Systematic Literature Review

The systematic literature review is conducted using five main steps (Figure 1), which are explained as follows:

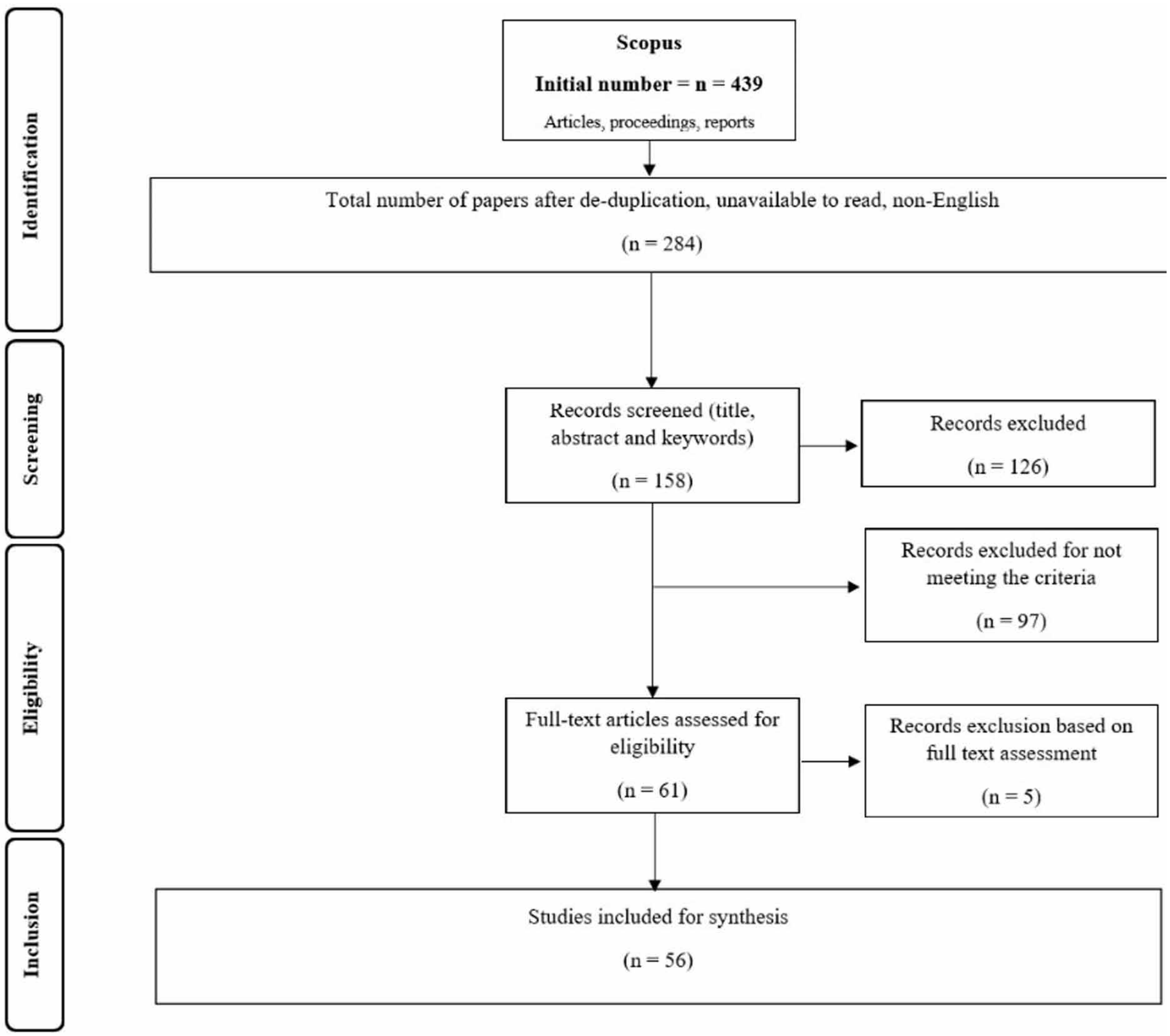
Search Protocol

A search protocol can verify the SLR results and ensure the final range of references. This study will review and research two questions:

RQ 1. What are the main applications of IoT and blockchain technology for achieving traceability in the pharmaceutical supply chain? and

RQ 2. What are the benefits and challenges of IoT and blockchain technology in its application in the pharmaceutical supply chain?

Figure 1. Article selection flow diagram



Data Bases Selection

The research process mainly uses the SCOPUS dataset. SCOPUS is one of the most extensive online dataset in the world (Martín-Martín et al., 2018). SCOPUS provides and 'identifies emerging trends' and 'enhance visibility' functions across the literature (Elsevier, 2021). Falagas et al., (2008) mention that SCOPUS provides 20% more content than Web of Science. SCOPUS also provides more consistent search results than Google Scholar. Martín-Martín et al. (2018) found that Google Scholar can cover 95% of citations in Web of Science and 92% of citations in SCOPUS but not all, which means that SCOPUS has a broader range of sources.

Keywords and Search Strings

The SCOPUS search had three stages. First, the Boolean logic operators, OR, AND, NOT, to find all bibliographies (Denyer & Tranfield, 2009). The search term considered the difference between US English and British English. Also, it considered the possible abbreviations of the words: 'Internet of things' that can be expressed by 'IoT' or 'IoTs'; 'blockchain' can also be expressed by 'block chain'; 'pharmaceutical' can be expressed by 'pharma'; 'supply chain' can be expressed by 'demand chain'. Then, it is also considered 'cold chain' because the cold chain has a high priority in the pharmaceutical supply chain (Hosseini Bamakan et al., 2021).

To accurately search on the key strings, the search keywords will be:

1. ("pharma* supply chain" OR "pharma* demand chain" AND "traceability")
2. ("IoT" AND "pharma* supply chain" OR "pharma* demand chain")
3. ("Blockchain" AND "pharma* supply chain" OR "pharma* demand chain")
4. ("Blockchain" AND "traceability" AND "IoT")
5. ("agriculture" AND "traceability" AND "Blockchain")
6. ("cold chain" AND "traceability" AND "Blockchain")
7. ("manufacture" AND "traceability" AND "blockchain")
8. ("food supply chain" AND "traceability" AND "blockchain" AND "iot")

These eight series of search keywords resulted in 439 articles. The second step is to delete the repeating studies from the searched bibliography list which results in 346 articles. Also, further articles were deleted to which university don't have access, this results in having 288 articles. Then, further non-English articles were deleted, and this results in having 284 articles.

Third, to precisely research the topic and keep a high-quality SLR, hence more relevant articles from the search results are selected. The selection criteria include these key points:

1) the studies should mention the benefits of IoT and blockchain in the pharmaceutical supply chain in the content of traceability; or
2) the studies should mention the challenges of IoT and blockchain in the pharmaceutical supply chain in the content of traceability; or
3) it would be good if the studies provide relevant recommendations for IoT and blockchain in the pharmaceutical supply chain in the content of traceability. In other words, the search should provide analysis, and the keywords should be limited to the area: IoT, blockchain, pharmaceutical supply chain, cold chain, benefits, and challenges. Hence, the number of the rest records for this step are 158 records. To record the process, the search work is conducted at the end of November 2021, and the selection work is conducted in the next week.

Inclusion and Exclusion Criteria

After the first exclusion of the search results from the SCOPUS dataset, 158 records remained which are still too broad to be researched. Thus, the authors decided to use inclusion and exclusion criteria to be more focused on the topic within a smaller number of influential results (Denyer & Tranfield, 2009). Chartered Association of Business Schools (CABS) list 2021 is a ranking list that significantly contributes to the estimation of the quality of business and management studies by assessing the quality of published journals (Vidgen et al., 2019). The authors planned to use the CABS list to select quality journal papers, but they failed to do so because IoT and blockchain in the pharmaceutical supply chain is a new topic. It appears that lots of studies are in conference proceedings which are widely not included in the CABS list.

Instead, in this study SJR's H-index is used to select the quality of proceedings in the records. During the selection work, it is found that the SJR ranking has broader coverage than the CABS list. Also, research and evaluation have shown that SJR's H-index has high reliability in estimating the study quality (Mingers & Yang, 2017). In particular, H-index represents 'both journal scientific productivity and scientific impact, and it is also applicable to scientists, countries, etc.' ("Scimago Journal & Country Rank", 2021). Besides, the SJR ranking list is all about the papers in the SCOPUS dataset, which are matched to this study and the searching dataset ("Scimago Journal & Country Rank", 2021). Hence, considering that the quality of proceedings is lower than the quality of journals, this study excludes those articles whose H-index is lower than 40 to ensure the minimum quality. The total result in this stage is 106 records, including 70 records inside the SJR H-index ranking and 36 records outside. The 36 records that are outside of the SJR H-index will be directly into the two final selection stages to carefully read the contents.

The remaining search records are going to be selected by following the criteria, first, all the pass records for the next selection stage should focus more on the application of IoT and blockchain in the pharmaceutical and relevant supply chains, and the result is 61 records. Second, all the pass records for the next selection stage should contribute to the traceability work and relevant issues and exclude those not in the range. Therefore, at the end of the inclusion and exclusion stage, 56 records remained.

Data Extraction

The inclusion and exclusion criteria clarified the potential sources for the SLR in IoT and blockchain-related to traceability issues in the pharmaceutical supply chain.

In the final selection, the remaining records and eliminated records obey the criteria:

1) for papers in another supply chain rather than a pharmaceutical supply chain, their knowledge and findings should be related and contribute to the pharmaceutical supply chain.
2) papers should analyse the topic on the macro-level for the researcher to review the topic from the overall viewpoint to avoid unilateral judgement

Synthesis and Reporting

The data extraction stage was conducted in an EXCEL spreadsheet. In detail, the authors included all the essential points or potential factors in the spreadsheet for a systematic descriptive analysis to get a comprehensive picture of this topic. For example, the extraction spreadsheet includes the author's name, author ID, document title, year of publication, Source & document type, Publication Stage, Open Access, pages, reference, DOI, website link, institution, abstract, keywords, records type and publisher and so on. The extraction and analysis stage aims to point out the similarities and differences in selected records and find new points that may be ignored in the previous selection stages.

A descriptive analysis will present a widely broad and emerging topic in the current society. The analysis and identification of the benefits and challenges of IoT and blockchain in traceability in the pharmaceutical supply chain can be discussed based on the IoT application structure, and the involvement of blockchain can be seen as a problem solver and improver in IoT networks. Thus, it will conduct a thematic analysis to analyze the benefits and challenges of IoT and blockchain-based traceability systems in particular pharmaceutical supply chain traceability.

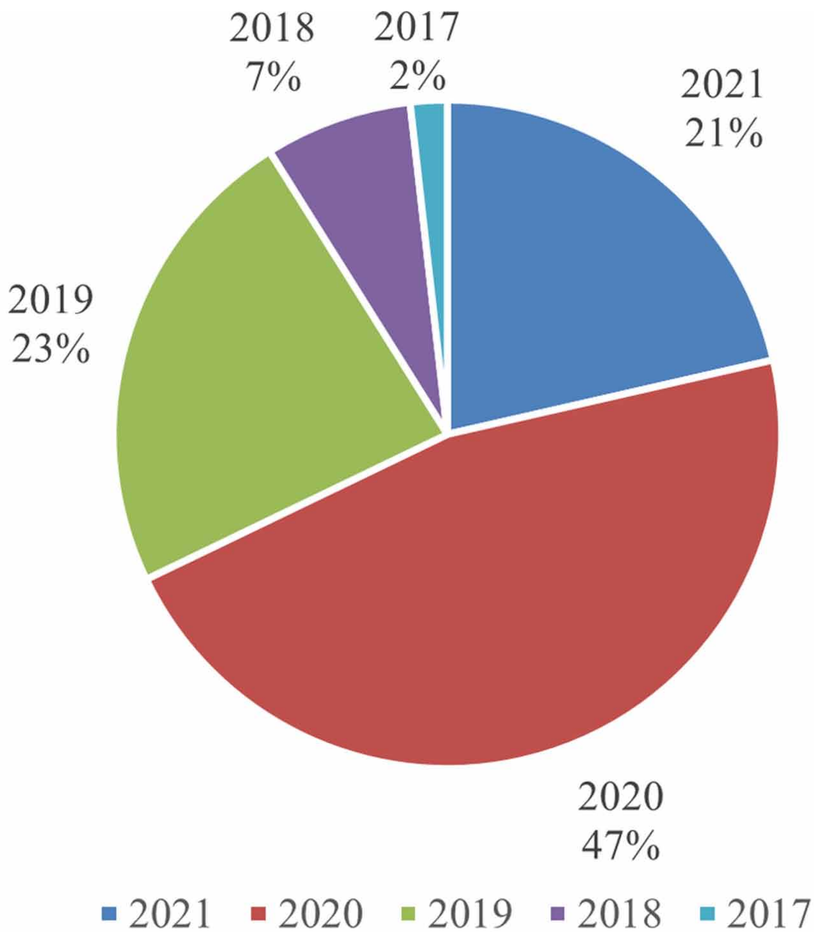
Descriptive Analysis

In this descriptive analysis section, detailed findings would be provided. This section covers 7 characteristics of the articles i.e., the year of publication, paper type, the geographic distribution of articles, study method, quality assessment, subject area and keyword.

Year of Publication

Figure 2 shows the percentage of articles published per year. The data shows that the highest number of articles were published in 2020, which is 47%, followed by 2021, 2019 and 2018 with 21%, 23% and 7% respectively. In 2017 only 2% of the articles were published. As can be seen in Figure 2 that in recent years the interest in the topic is increasing both in academic and practitioner research.

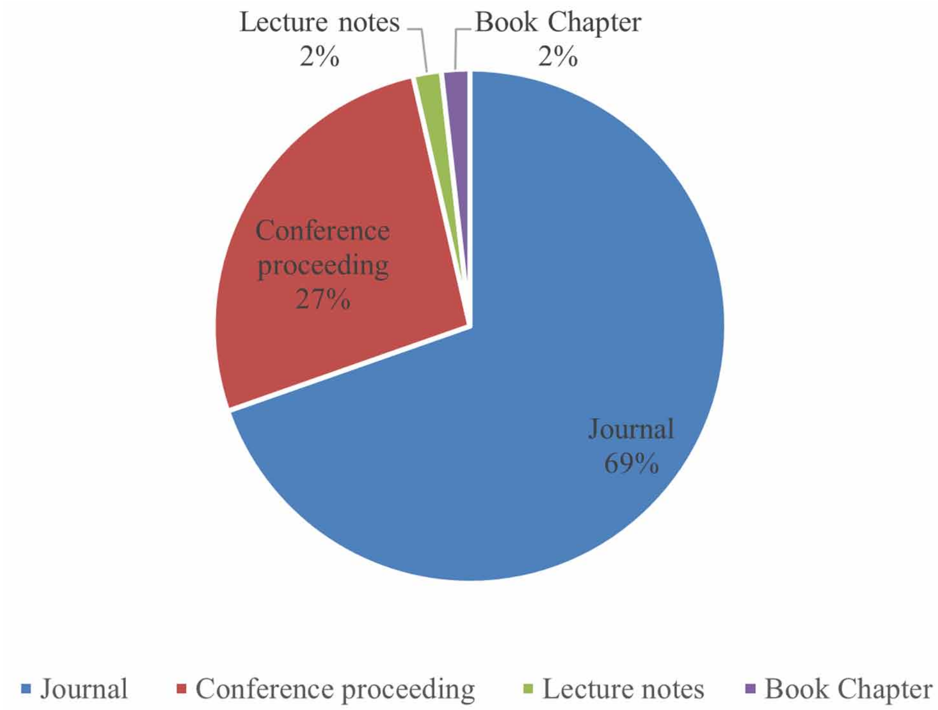
Figure 2. Year of publication



Paper Type

Figure 3 describes the counts of each article type of the selected records and shows each article types' of proportion of a total of 56 records. It shows that 56 records consist of four types: journals, Conference proceedings, Book chapters, and Lecture notes. In detail, the majority of the 56 articles are journals accounts for 69% overall. A large part of journals ensures the basic quality level of the SLR. Moreover, the second majority of sources are from conference proceedings, with 27%. A small part of the conference proceedings adds new insights to academic journals from the aspect of industrial views. Besides, book chapters and lecture notes own a tiny part of the total, which each occupies 2% of the total.

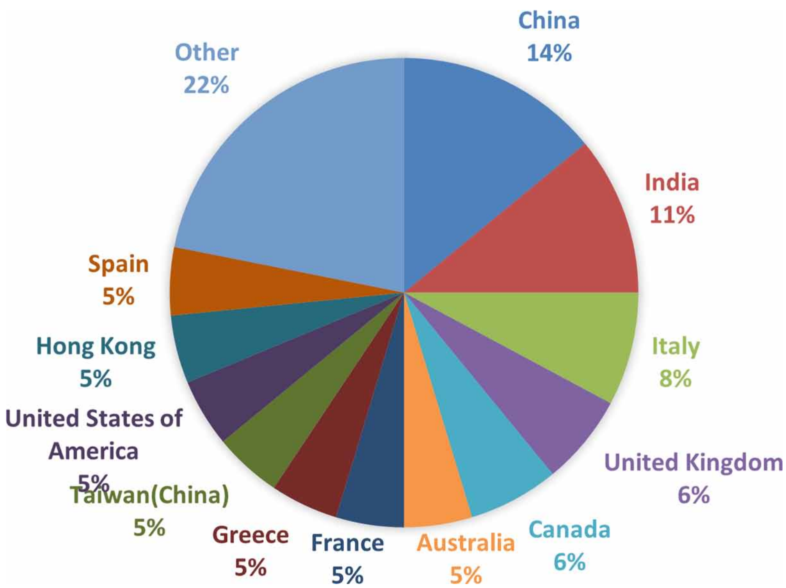
Figure 3. Paper Type



Geographical Distribution of Articles

To record the geographic distribution of authorship, the researchers have analyzed the origin country of the contributor's organization. This study abolishes the idea of analyzing the origin country of the contributor because, according to the analysis, groups or organizations are the main contributors in IoT and blockchain in the supply chain. In the analysis, we have counted each appearance of organizations as one time with no repetition in one record. In detail, all 56 articles are from 32 countries or institutions. Figure 4 shows that India and China are the two most significant contributors in this field, which appears 14% and 11%. Italian scholars also make a comparative contribution to the topic with 8%. UK institutions and Canadian institutions both contribute 6%. Besides, these countries, other regions such as Australia, France, Greece, Taiwan, the United States of America, Hong Kong, and Spain have contributed 5%. Other institutions in various countries have contributed 22%.

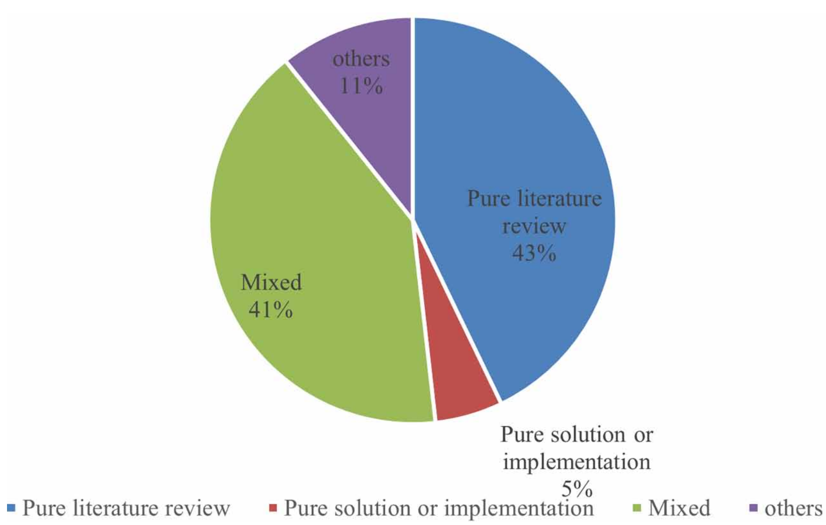
Figure 4. Geographical distribution



Study Method

The study methods for this research are found to be of three types: pure literature review, pure solution implementation, mixed type (implementation research) or others. Figure 5 shows the results of the category. The pure literature review (43%) and mixed type (41%) are the two main dominant study methods. The pure literature review provides a review of literature on pharmaceutical supply chains. Implementation research provides theoretical ideas and proposes blockchain-based traceability architecture that is 5%. Others account for 11% of the total.

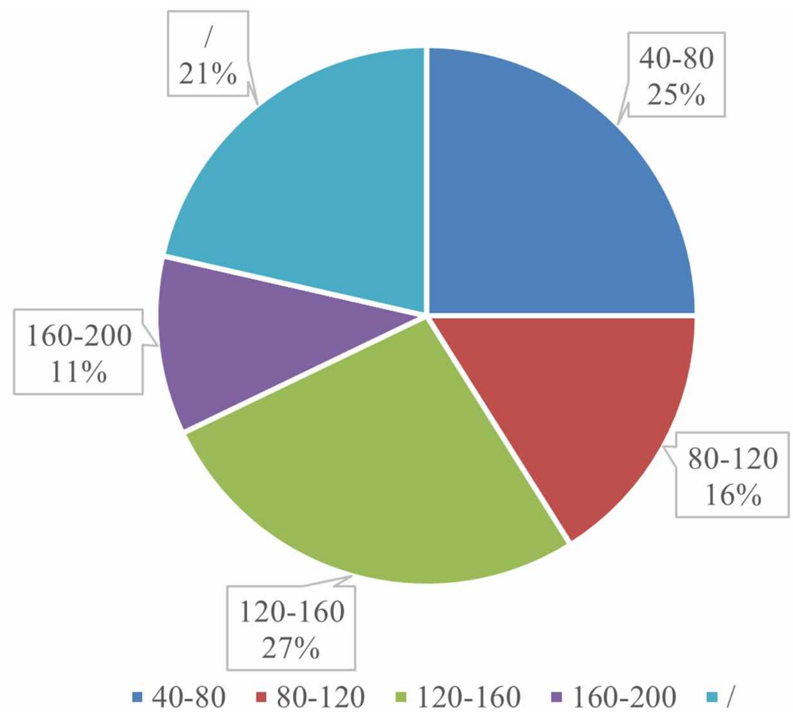
Figure 5. Study method



Quality Assessment

The quality assessment is done for the selected 56 articles based on the SJR H-index mentioned earlier in the methodology section. According to the statistics, the lowest SJR H-index is 40, and the highest H-index is 200. Figure 6 shows an overview of the characteristics of quality assessment. The pie chart shows that 21% lack an SJR H-index, making the quality assessment difficult. In the rest 11% have a relatively high score that ranges from 160 to 200. Also, 27% have an H-index score from 120-160. Records that scored by 80-120 account for 16% of the total. Besides, a quarter of records have a score between 40 and 80. Summarily, according to the chart, the distribution of each SJR H-index stage is relatively equal, but the records lack high H-index records that are higher than 160.

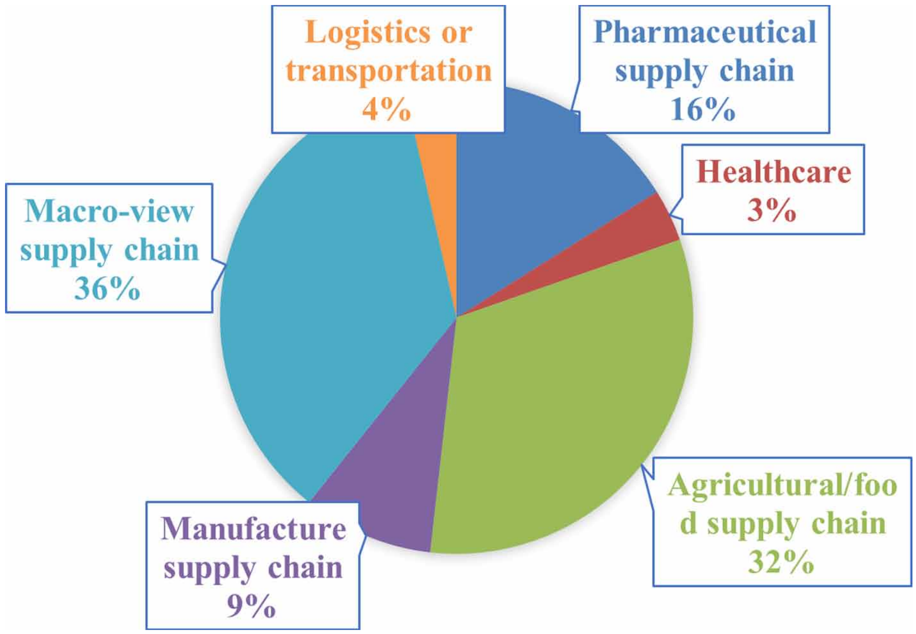
Figure 6. Quality assessment



Subject Area

Subject area analysis is categorized into two ways: first, it will categorize 56 records according to six specific supply chain areas: pharmaceutical supply chain, healthcare, agricultural/food supply chain, manufacturing supply chain, macro-view supply chain, and logistics or transportation. Figure 7 shows that a large part of the studies is from the macro-view of supply chains (36%), while the second large part of the topic is from the agricultural/food supply chain (32%). However, articles from the pharmaceutical supply chain did not account for the main part i.e., only 16%. The other three areas account for a bit of part of the total: the manufacturing supply chain (9%). logistics or transportation (4%) and healthcare (3%).

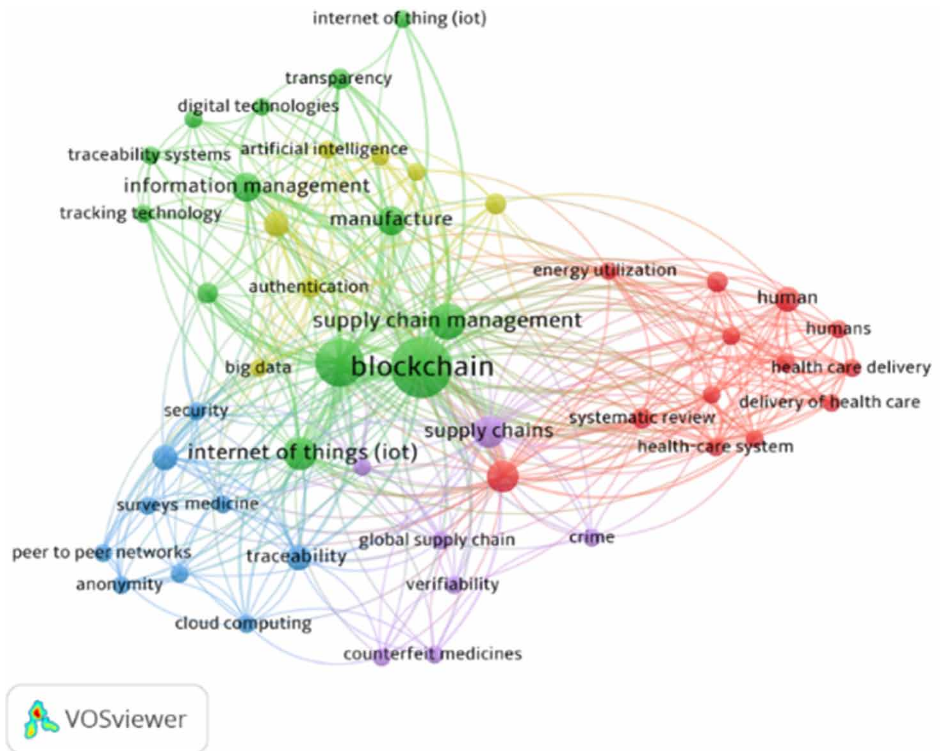
Figure 7. Subject area



Keywords

Keywords are analyzed based on the selected article titles and keywords used in those studies. Authors have used VOSviewer® software to clearly show the relationship among keywords. The relationship among 240 keywords is shown in Figure 8. Blockchain, IoT (Internet of Things), authentication, security, big data, and supply chain management are at the center of the relationship. The visualization also involves prominent keywords for systems and technologies such as traceability, tracking, information management, and artificial intelligence. The figure also involves keywords about functions, such as security, anonymity, and verifiability. Moreover, the key attributions of the studies, such as human, energy utilization, systematic review and health care delivery can also be seen.

Figure 8. Keywords



THEMATIC ANALYSIS

Blockchain technology has been a hot research topic for the supply chain practitioner when they have found its cryptographic-based principles and characteristics. Blockchain technology brings solid creditability to the supply chain operation in achieving trust, traceability, security, and immutability. For the pharmaceutical supply chain, establishing creditability and trust in the industry are the main things to ensure product quality, maintain a trustful industrial environment, and deliver high cost-effective products and services to patients at the ethical and moral levels.

In the previous research, different kinds of blockchain-based traceability solutions are proposed to address various supply chain problems. The thematic analysis will firstly analyze the traceability solutions in the context of the pharmaceutical supply chain and then, it will analyze blockchain-based implementation in terms of traceability. Fernandez-Carames & Fraga-Lamas, (2018) have concluded that no one solution fits for all types of supply chains.

The pharmaceutical supply chains have high regulatory requirements regarding product quality, medicine specific industry regulations etc. Botcha et al. (2019) mentioned that there are three main challenges in the traditional pharmaceutical supply chains, which are the theft of authenticated medicine, appearance of counterfeit medicines, and contamination of medicines during manufacturing, storage, or distribution. However, the traditional pharmaceutical supply chains lack an effective way to completely address the challenges. Thus, establishing a trustful traceability system has become a crucial thing to realize traceability. Furthermore, pharmaceutical products are often stored and transported in a cold chain, which provides certain requirements for complex medicine transport, including certain temperatures, humidity, PH value and sterile environment, etc. (Yang et al., 2018). Thus, collecting and safely storing data becomes the authority of establishing the trust-based traceability system.

Yang et al. (2018) provided a conceptual blockchain-based solution to improve traceability in the pharmaceutical supply chain. The system uses technologies such as RFIDs, barcode readers, weighing scales, temperature sensors, GPS trackers, etc., to allow end-users to audit and further investigate. The authors argued that the solution could add value to production scheduling, inventory optimization, early warning and automated prescription refill.

Singh et al. (2020) apply smart contract, QR code, bloXroute server (Raft algorithm), P2P network and lightweight cryptographic primitives, etc., to establish the blockchain-based solution for temperature monitoring and counterfeit pharmaceutical problem prevention. Suppliers, manufacturers, wholesalers, distributors, hospitals or pharmacies and patients are all considered users of the system. The system has data storage, data retrieval, data maintenance and payment functions. The study results have shown that the proposed solution could provide privacy and security. However, in the study three deficiencies were highlighted, which were memory limitation, energy constraints and safety issues.

Ahmadi et al. (2020) used blockchain and RFID to improve the traceability and visibility of the pharmaceutical transportation in which the raw material producers, manufacturers, distributors and pharmacies are involved. Ahmadi et al. (2020) have found many benefits in the blockchain-based traceability system, including privacy, security, credibility, and immutability.

Pandey & Litoriya (2021) have proposed a traceability system with QR codes to tackle counterfeit medicines for all users in the supply chain from factory to end patients. The assessment of the system includes a wider range of architectural key considerations such as resistance against a single point of failure, counterfeit medicine detection, diverted medicine detection, medicine shortage, ease of operations, involvement of stakeholders, transparency, privacy, security, and immutability.

Dwivedi et al. (2020) have designed a smart contract mechanism and consensus algorithm for a blockchain-based traceability system in the pharmaceutical supply chain, which is assessed to successfully satisfy the requirement of security, confidentiality, integrity, and authentication.

Sylim et al. (2018) proposed a traceability system and tested it in both Ethereum blockchain and Hyperledger Fabric blockchain platforms to detect falsified and substandard drugs among FDA, manufacturers, wholesaler, retailers, and the consumer. The involvement of the FDA as a regulation party gives the system more reliability and authority.

An Overview of Benefits: IoT and Blockchain Systems to Improve Traceability

The benefits of blockchain technology in the supply chain have been discussed by researchers such as Bodkhe et al. (2020) and Wu et al. (2019). This section provides four main dimensions including security and privacy, decentralization and authenticity, transparency and traceability, low cost and time efficiency. And the benefits of each implementation can be found in Table 1.

Security and Privacy in Blockchain

Through the analysis of blockchain-based traceability system architecture, it could be found that the high requirement of security is a key consideration in the pharmaceutical supply chain, food supply chain and other regulated industries. Security of data is a major concern in many traceability systems.

Wei et al. (2019) reviewed those digital attacks on traditional IoT systems such as Sybil attack, identify forgery, message spoofing, information stealing, physical damage and firmware replacement attack. The traditional IoT systems are easy and weak to attack when collecting data; thus require a strong digital environment to protect the workplace (Alotaibi, 2019).

Blockchain technology is based on the principles of cryptography, mainly using SHA-256 and asymmetric encryption, and has a strong security characteristic. Applying blockchain technology in IoT and supply chain operation means bringing security benefits as well. Establishing a blockchain traceability system can decrease the security problem in the cloud server and prevent any human change or digital attack in the database to ensure the accuracy of information. Asante et al., (2021) indicated that ensuring security can bring integration, privacy, and confidentiality benefits to the supply chains. The weakness of IoT in terms of data sensor and data collection can still exist but can be alleviated by blockchain technology by storing all information in time on blockchain. Further, Chanson et al. (2019) mentioned that addressing the privacy issue can help protect users' information. Sangeetha et al., (2020) emphasized the importance of privacy in the healthcare and pharmaceutical industries.

Decentralization and Authenticity

Considering the security requirements, stakeholders are not required to own the information database to prevent tampers, but the third-party cloud servers still bring risks in terms of power-centralization. Thus, decentralization is expected by stakeholders and consumers in the pharmaceutical supply chain to ensure fairness and authenticity of the data stored (Leong et al., 2019). Blockchain technology can satisfy the requirements according to the working principles.

Transparency and Traceability

Transparency and traceability are the basics of building trust (Sunny et al., 2020; Astill et al., 2019). Through the cooperation with IoT, the data is added to the blockchain in the form of blocks. All the supply chain stakeholders including manufacture, logistics, retailer, hospitals, pharmacies, patients and so on, are part of the blockchain (Feng et al., 2020). Blockchain technology assures transparency through a consensus mechanism which is robust and immutable.

In the pharmaceutical supply chain, a blockchain-based traceability system can monitor the quality of medicines, status and location, transport environment, etc. Thus, the transparency and traceability benefit can also build trust and further comply among all the stakeholders, including customers, in the pharmaceutical supply chain and prevent counterfeit drugs by allowing all stakeholders to monitor and supervise the medicine supply process. Also, traceability can optimize the supply chain, such as production scheduling, inventory optimization, and early warning/ alerting. Furthermore, traceability allows the supervision department to access and supervise the pharmaceutical industry and optimize the industry environment (Demestichas et al., 2020).

Low Cost and Time Efficiency

A whitepaper from Siemens indicates that food waste is a phenomenon in the food supply chain ("Blockchain in the Food and Beverage Industry", 2019). Implementation of blockchain technology in an existing working system was analyzed and was found that it does not cost a lot (Qi, Wang, Zhou & Mu, 2021).

Rather, it can save operation time and cost (Dwivedi et al., 2020; Grecuccio et al., 2020; Mhaisen et al., 2020). The low-cost benefit was analyzed, and it was noticed that supply chain cost and financial flow are optimized to save operational costs.

Table 1. Benefits and Challenges of Blockchain-based Traceability Systems

Reference	Characteristics	Benefits	Challenges
Yang et al. (2018)	Traceability, Reliability	Production scheduling, Inventory optimization, Early warning/alerting, Automated prescription refill, Feedback from the field	Exploration in lightweight network protocols, Lowering compute requirements.
Singh et al. (2020)	Privacy, Security	Not specifically mentioned	Memory limitation, Energy constraints.
Ahmadi et al. (2020)	Privacy, Security, Credibility, Immutability	Solution for counterfeit drugs, Privacy, Limit theft and diversion	Not specifically mentioned.
Pandey & Litoriya (2021)	Resistance against a single point of failure, Transparency, Security	Counterfeit medicine detection, diverted medicine detection, Medicine shortage detection, Ease of operations, and Stakeholder's involvement.	Cannot eliminate the consumption of unauthorized or ingenuine medicines by itself.
Dwivedi et al. (2020)	End-to-End Visibility, Flexibility, Inferred Trust, Control	Medicine tracking, Cost and time savings, Trust, low computation, and communication overheads	Not specifically mentioned.
Sylim et al. (2018)	Traceability, Record ownership, Incentivization	Accommodate, process, and respond to reports from the system and consumers, The FDA will be central to the verification process, typically paired with another participant with the authority to verify contract-specific information.	Cannot track falsified drugs that are distributed through routes outside of official distribution chains, Results from this study may not be reflective of actual performance.
Zhang et al. (2021)	Decentralization, Safety, Reliability, Tamper-proofing	Multi-stage tracking management of cold chain logistics, Enormously improves consumers' trust in aquatic food quality, Promote consumers' purchasing motivation, Improve the quality and safety of aquaculture, Establishes the effective mechanism for aquatic food source tracing, Increase the influences of the aquatic food brand, Optimizes transaction processing, Reduces costs and wastes, Improves accuracy for quality control; clarifies the responsibility, Reduces the errors of mislabelling, Optimizes the productivity, Improves the temporary inventory management, Increases the pick rates, Enhances consumers' purchase confidence, Improves the fast recalling and timely feedbacking, Enhances the reliability of traceability queries, Safeguards consumers' rights and interests.	Not specifically mentioned.

Continued on following page

Table 1. Continued

Reference	Characteristics	Benefits	Challenges
Balamurugan et al. (2021)	Safety, Quality, Traceability	Improve data transparency, enhance food safety, reduce manual operation, Hazard identification, Fault tolerance, Forged food detection, Diverted food detection, System management and communication, Food shortage detection, Workforce involvement, Effortlessness of operations, Involvement of suppliers, Eliminate the use of unauthorized foodstuffs or fraudulent foodstuffs itself	Inventory consignment tracking, Warehouse management, Anti-money laundering tracking system, and Personal identity security.
Jaiyen et al. (2020)	Not specifically mentioned	Farm activity and environment records, Soil quality evaluation, Food trace	Not specifically mentioned.
Grecuccio et al. (2020)	Integrity, Authenticity	Guarantee food safety, food integrity and food-authenticity, Low cost	Apply in soft or hard real-time embedded systems.
Haroon et al. (2019)	Efficiency, Transparency, Traceability	A large amount of product information for consumers, Allow warehouses to manage inventory more effectively.	Not specifically mentioned.
Tsang et al. (2019)	Adaptability, Efficiency, Reliability	Fuzzy food quality evaluation	Lack of study on food authentication.
Lin et al. (2017)	Not specifically mentioned	Guarantee food safety, Self-organized, open and ecological environment	Not specifically mentioned
Chen et al. (2020)	Not specifically mentioned	Realise information freedom, Information symmetry, Information transparency, and Decentralization.	Technical deficiencies in blockchains.
Casino et al. (2019)	Efficiency, Responsiveness, Food quality, Trust, Resiliency	Increased visibility, Security, Operations automation	The model addresses a relatively simple FSC network, Scalability.
Eryilmaz et al. (2020)	Safety, Reliability, Efficiency	Trust, streamlined dispute resolution, Eliminating redundant tasks.	Not specifically mentioned.
Kuhn et al. (2021)	Immutability of the data transparency	Data Immutability, Transparency, Holistic and timestamped transaction	Writing restrictions ensure data sovereignty, scalability limits or the possibility of attacks.
Shahzad et al. (2021)	Not specifically mentioned	Monitor, control, and manage overall infrastructure, boost power distribution efficiency and Optimize devices' power consumption.	Not specifically mentioned.
Mhaisen et al. (2020)	Security	Cost-efficient	Not specifically mentioned.

Table 1. Continued

Reference	Characteristics	Benefits	Challenges
Venkatesh et al. (2020)	System integration, High information reliability, Governance structure transparency, Instant update of all supply chain events, High security, multi-stakeholder control, Open cum closed environments and decentralized process	Production and logistics traceability, Supply chain transparency, Labour and human rights, Workplace health and safety, Monitor social sustainability compliance efficiently and effectively, Reduce the incidences of record duplication and prevents record manipulation, Schedule social sustainability audits in a transparent manner to all stakeholders, Support the governments in improving social sustainability, Prevent bribes and miscellaneous indirect overheads, Reduce the overall turnaround time of audits	Deployment of IoT technology, An incentive mechanism, Worker cooperation, System implementation cost, and Government policy formulation.
Santis et al. (2020)	Decentralization scalability, Security	Data provenance, Integrity, Metrological traceability	Not specifically mentioned.
Lahbib et al. (2019)	Decentralization, Security, Traceability	Higher resiliency to attacks.	Not specifically mentioned.
Dasaklis et al. (2019)	Security, Privacy, Compliance, Conflicting interests, Interoperability, End-to-End Visibility, Context-aware/ Customisation, Granularity, Stakeholders management	Auditability, Trust, Enhancing compliance	Not suitable for storage of vast amounts of data, scalability.
Ahmed et al. (2021)	Accuracy, Completeness, Consistency, Correctness	Not specifically mentioned.	Not specifically mentioned.
Wang et al. (2021)	Product flow traceability, Tamper-proof, Distributed sharing	Logistics users can see all the containers' information.	Not specifically mentioned.
Zichichi et al. (2020)	Authenticity, Verifiability, Immutability, Proof-of-location	Not specifically mentioned.	Not specifically mentioned.
Sadawi et al. (2021)	Efficiency, Resilience, Decentralized data storage, Scalability, Ease of deployment, Data integrity, Security, Data authenticity, Privacy, Offloaded computation, Low latency, Access control, Adaptability	Transaction quick finalization, Energy efficiency, Low reward variation.	Sybil attacks.

Blockchain technology can effectively improve inventory management. It makes all the processes more efficient to be monitored and managed. Blockchain technology also makes it more efficient to gain and respond to customer reflections (Sylim et al., 2018). It can boost the efficiency of power distribution and optimize the power consumption of devices (Shahzad et al., 2021).

An Overview of Challenges: IoT and Blockchain Systems to Improve Traceability

Kwok & Koh, (2020) reviewed that there are two main challenges of blockchain technology in the supply chain industry: process transformation and systems integration. Further, the challenges of blockchain technology in applying to the supply chain area can be found in many places. This section concludes and analyses five dimensions of challenges i.e., scalability (memory and energy constraints), security, the coverage of data collection, and the challenge from theory to practice. The details can be found in Table 1.

Memory Limitation and Energy Constraints (Scalability)

One big challenge of IoT and blockchain technology is its scalability. Meanwhile, the memory limitation and energy constraints make a big challenge for implementing blockchain and IoT. It is suggested that blockchain-based traceability is not suitable to store vast amounts of data (Katsikouli et al., 2021). Further, in terms of the natural environment, Katsikouli et al. (2021) argued that CO_2 elimination limitation is also an energy challenge for applying blockchain-based IoT traceability systems. Furthermore, Zhao et al. (2019) mentioned that the issue of throughput and latency are limited. Hence, it is encouraged to expand the bandwidth to minimize the latency.

Security

The security issue still leaves a possible challenge to the supply chain. Kuhn, Funk, Zhang, et al. (2021) found that smart contract bugs present a risk to the blockchain solution. Giusto et al., (2020) introduced quantum computers to replace traditional computers and provide more robust security than before. Kuhn, Funk, Zhang, et al. (2021) mentioned that the challenge and the balance point of the trade-offs between data protection and sufficient transparency are required to be found.

The Coverage of Data Collection

Montoya et al. (2018) mentioned that one challenge for the pharmaceutical supply chain is monitoring the medicine quality during manufacture, transport, and sales, which requires high accuracy and precision in IoT data collection devices. Also, it is found that the data management of blockchain-based traceability systems is limited to on-chain information and items. Meanwhile, even though blockchain technology can help record and store data immutably, it has little effort to track, regulate, and eliminate unauthorized medicines by itself, such as counterfeit drugs. Therefore, more regulations are required to minimize unauthorized access to medicines in the pharmaceutical supply chain (Tan et al., 2021).

The Challenge from Theory to Practice

Casino et al. (2019) pointed out that, technically, their solutions are simple architectures for the supply chains that still have a lot to do with complex business implementation. Technical deficiencies in IoT and blockchain technology still need to be improved. The cost of system implementation i.e., the trade-offs between technology cost and business benefits be considered for effective utilization of technology. Furthermore, it is challenging to popularize blockchain technology. Abu-elezz et al. (2020) mentioned that blockchain technology is new for consumers who require more time to accept the novel idea than IT practitioners and pharmaceutical supply chain practitioners.

DISCUSSION

The discussion section will provide insights into the main themes of IoT, Blockchain in the context of PSC and traceability architecture. The benefits and challenges of blockchain-based traceability have been explored from the lens of practitioners and the government/public. These will help the decision-makers in effective planning to address the challenges in the PSC.

Insight Into the Theme of IoT, Blockchain and Pharmaceutical Supply Chain

The quality of medicine is most important for pharmaceutical companies to ensure the products are rightly delivered to the consumers because the validation of medicine will directly affect health and even lives. Thus, pharmaceutical supply chains have a severe requirement on the supply chain environment. Simply transferring medicines from one site to another is not enough, but all the supply chain stakeholders must ensure that the medicines are monitored and stored in a particular database. However, it is reflected that pharmaceutical supply chains have a severe problem with authorized and qualified medicine management ("Prescribing a paperless society", 2017). Especially during the COVID-19 pandemic, evidence shows that because of insufficient validation of vaccines the stealing of data and counterfeits have happened several times ("Fake vaccine warning", 2021). Also, tangible examples show that the phenomenon of fake vaccine cards exists (Zhou, 2021). All realities emphasize a more urgent requirement of the cooperation between supply chain management and government regulations.

IoT is a relatively new concept in the 21st century. It utilizes different technologies and attempts to connect individual information with numbers and data, but all things and relevant data on the Internet, and provide productivity and in-time service (McFarlane, 2018). Further, IoT has been widely used in society and supply chains, such as QR scans and barcode, temperature sensors and humidity sensors etc. Applying IoT in pharmaceutical supply chain management can help practitioners collect, record, store and analyze data along with the medicine, and improve the accurate management of medicines. Thus, numerous IoT devices will be involved in the IoT deployed network. However, high-security risks and other risks exist in the network (Casino et al., 2019).

The innovation of blockchain technology by Satoshi Nakamoto brings new hope to solving the IoT security risk, thanks to its asymmetric encryption algorithm (Bodkhe et al., 2020). However, the application of blockchain in the supply chain is tortuous because of its invention and distributed ledger technology (DLT) that attracts a massive group of financial practitioners ("PwC's Global Blockchain Survey", 2018). Furthermore, due to the feature of quick profit in the financial market, the application of blockchain technology in the supply chain seems chronic and profitless. Nevertheless, the development of cryptocurrency and its supports to the industries and supply chains has been confirmed by governments, such as China, as reported by Yang et al. (2018). Huawei, one of the top technological companies in the world, also published a whitepaper about it and proposed the architecture of blockchain technology to apply financial function in the supply chain ("Huawei Technologies", 2018). Thus, blockchain technology in the pharmaceutical supply chain does not play a perfect tool primarily due to the challenges discussed above, but more as a supply chain supervision tool and as a pharmaceutical industry supervisor who can lead the industry to go on a virtuous circle rather than a vicious circle.

Insight Into the Blockchain-Based Traceability Architecture

Typically, blockchain-based traceability architectures have three main progressive layers. A complete architecture includes all nodes in the supply chain, such as *technology nodes* (data sensors, data storage, data transmission, data processing), *organization nodes* (manufacture, warehouse, distributor, retailer, hospital, consumer/patient, government, third-party regulatory, and logistics), and *work nodes* (driver, researcher, IT practitioner and so on) required in each stage (Banu et al., 2017). It is expected that IoT and blockchain architecture are ideologies, while only playing their efforts on a specific supply chain environment, making the ideology into reality.

There is a gap, which is challenges in the application, between the ideology and reality, and there is always a task for supply chain practitioners and IT practitioners to expand benefits and eliminate challenges. Transferring all challenges into benefits and achieving ideology in real life reflects reaching the other shore of the world. However, supply chain practitioners will not be satisfied with the present status, and they are always looking for a better shore of the world where they can get more profits through improving current technologies and developing new technologies. Therefore, there is always an existence of both benefits and challenges. And there is always a task to find the most suitable architecture for each pharmaceutical supply chain in existence.

Insight Into the Findings on Benefits and Challenges

Blockchain-Based Traceability for Pharmaceutical Supply Chain Practitioners

IoT is the basis of a blockchain-based traceability system. The establishment of the IoT provides an efficient way to trace medicines (Hosseini Bamakan et al., 2021). It consists of different kinds of devices to establish the IoT structure. Data sensor devices allow IoT to collect environmental information, such as temperature, location, light, speed, humidity, and PH value, using data readers, such as GPS, RFID and NFC. Then, data transmission devices, such as 4G, 5G, WIFI, and Zigbee, set data from local devices to the data center. Then, data will be analyzed for the pharmaceutical supply chain and provides specific instruction for each stage. However, these IoT devices are found to be easily attacked and lead to lots of problems, such as data tampering, data theft, IoT network collapse, and business loss (de Haro-Olmo et al., 2020).

Further, the literature review has shown that blockchain can solve the privacy and safety issues of IoT. Blockchain technology brings benefits of tamper-proof, immutability, safety and security to the Internet of Things. In operation, the blockchain-based traceability system requires recording data on-chain from the beginning of the supply chain to the end. Thus, the pharmaceutical company has a vital role in leading the establishment of the blockchain-based traceability system. However, some limitations of blockchain technology may bring hidden risks to the traceability system during the whole journey. First, because it is almost impossible to change the data on the blockchain, it is crucial to check that all the information on the chain is correct. Otherwise, the traceability process will be wrong from the beginning. Second, it is also hard to correct on-chain data if the practitioner found mistakes in the data center. In other words, blockchain can only play a data storer, but it still needs helps from IoT to keep and store precise data.

Among the solutions, a big part of solutions is applied in Ethereum, which is a public blockchain, and another big part of solutions chooses to use Hyperledger to store data as a private blockchain. The review analysis shows that the designed blockchain-based traceability systems have shown good performance on Ethereum and Hyperledger, meanwhile in both public and private blockchain generally.

A smart contract is the digital version of the traditional contract. The stakeholders use it in the blockchain to restrict all members in the blockchain as per predefined conditions (Bodkhe et al., 2020). In the pharmaceutical supply chain, it can automatically monitor the quality of items, report abnormal items, improve the supply chain process, assist blockchain work, etc. In many blockchain-based traceability solutions, smart contracts are used to cooperate with IoT to achieve traceability purposes.

Some medicines require a specific environment in transportation, thus requiring technology and devices to record information to monitor and control the quality of medicines, primarily for vaccines. Earlier reviews have found that blockchain technology has a positive effort in managing the medicine channel (Abu-elezz et al., 2020).

As discussed, the blockchain is a state-to-art technology, some companies have already started using blockchain technology to trace items, such as blockchain-based traceability to trace seafood (Zhang et al., 2021) and trace processes from farm to fork (Jaiyen et al., 2020). The matching degree between the blockchain technology and the specific traceability requirement still needs further development under specific requirements. Besides, employees' technological proficiency in operating blockchain-based traceability systems also needs to be improved to follow the renewal of traceability systems. Especially, failure to record any detail in the pharmaceutical supply chain will lead to an inaccuracy in the trace system and lead to failure of medicine traceability.

Data storage in the blockchain-based traceability system is a big challenge for blockchain-based traceability. The storage limitation limits the development of blockchain-based traceability systems widely applied in the pharmaceutical supply chain for supply chain practitioners. Furthermore, according to the thematic analysis, some practitioners store supply chain data on ERP systems and then put them on the blockchain. Hence, blockchain can be seen as a valuable second secure door for storing data.

Furthermore, the cost of blockchain technology is relatively high for some companies (Venkatesh et al., 2020b). Big pharmaceutical companies have strong financial background so they can invest in blockchain technology to achieve tamper-proof traceability.

Blockchain-Based Traceability for the Government and the Public

The literature review shows that the pharmaceutical industry requires further support by multi-cooperation among pharmaceutical companies, supply chain units and the government in many ways. First, it is better for pharmaceutical companies and related companies on the chain to make comprehensive inner-managerial policies (Eryilmaz et al., 2020). Second, the government should launch relevant policies in company supervision, public reporting system, off-chain medicine inspection system, and so on (Sylim et al., 2018). Second, the governments can lead or provide financial support and technical support to the pharmaceutical companies. Some countries have launched blockchain research plans or whitepapers to accelerate the exploration of the supply chain, such as China and India.

Furthermore, the innovation of blockchain technology raises public attention, especially in some technologically advanced countries. This review shows that the government and public also puts a high expectation on technology for tracing drugs and minimizing counterfeit drugs (Pharma, 2020). Moreover, on the other hand, the regulation of counterfeit drugs also needs public support in terms of opinion support and active support.

CONCLUSION

This study has provided a systematic literature review on the benefits and challenges of IoT and blockchain to improve traceability in the pharmaceutical supply chain. In the review, a descriptive analysis of 56 articles is done based on seven characteristics i.e., a year of publication, paper type, the geographic distribution of articles, study method, quality assessment, subject area, and keywords to bring up some meaningful full insight from the topic. The thematic analysis has reviewed the blockchain-based traceability systems, including solutions to the pharmaceutical supply chains. The benefits and challenges of blockchain-based traceability systems have been analyzed in the context of pharmaceutical supply chains. Finally, the discussion section provides insights into the themes of IoT and blockchain to address traceability issues in the pharmaceutical supply chain.

In the review, it was found that IoT is one of the key enablers that facilitates data collection, transmission, and storage. The main benefits of blockchain-based traceability have been discussed such as providing security and privacy for the supply chains, decentralization and authenticity, transparency and traceability, and low cost and time efficiency. Moreover, the challenges of blockchain-based traceability solutions are streamlined such as scalability, security, the coverage of data collection and the challenge from theory to practice. Many insights have been discussed related to technology and industry such as limitations of the methodology, blockchain-based traceability architecture and regulations.

REFERENCES

Abu-elezz, I., Hassan, A., Nazeemudeen, A., Househ, M., & Abd-alrazaq, A. (2020). The benefits and threats of blockchain technology in healthcare: A scoping review. *International Journal of Medical Informatics*, *142*, 104246. doi:10.1016/j.ijmedinf.2020.104246 PMID:32828033

Ahmadi, V., Benjelloun, S., El Kik, M., Sharma, T., Chi, H., & Zhou, W. (2020). Drug Governance: IoT-based Blockchain Implementation in the Pharmaceutical Supply Chain. *2020 Sixth International Conference on Mobile And Secure Services (MobiSecServ)*, 1–8. doi:10.1109/MobiSecServ48690.2020.9042950

Ahmed, M., Taconet, C., Ould, M., Chabridon, S., & Bouzeghoub, A. (2021). IoT Data Qualification for a Logistic Chain Traceability Smart Contract. *Sensors (Basel)*, *21*(6), 2239. https://doi.org/10.3390/s21062239

Alotaibi, B. (2019). Utilizing Blockchain to Overcome Cyber Security Concerns in the Internet of Things: A Review. *IEEE Sensors Journal*, *19*(23), 10953–10971. https://doi.org/10.1109/JSEN.2019.2935035

Asante, M., Epiphaniou, G., Maple, C., Al-Khateeb, H., Bottarelli, M., & Ghafoor, K. Z. (2021). Distributed Ledger Technologies in Supply Chain Security Management: A Comprehensive Survey. *IEEE Transactions on Engineering Management*, 1–27. doi:10.1109/TEM.2021.3053655

Astill, J., Dara, R. A., Campbell, M., Farber, J. M., Fraser, E. D. G., Sharif, S., & Yada, R. Y. (2019). Transparency in food supply chains: A review of enabling technology solutions. *Trends in Food Science & Technology*, *91*, 240–247. https://doi.org/10.1016/j.tifs.2019.07.024

Balamurugan, S., Ayyasamy, A., & Joseph, K. S. (2021). IoT-Blockchain driven traceability techniques for improved safety measures in food supply chain. *International Journal of Information Technology*. doi:10.1007/s41870-020-00581-y

Banu, N. M. M., Rr, V. D., Sujatha, C., & Department, E. (2017). IoT Architecture a Comparative Study. *International Journal of Pure and Applied Mathematics*, *117*(8), 45–49. https://doi.org/10.12732/ijpam.v117i8.10

BCG Global. (2021). *Internet of Things*. BCG Global. https://www.bcg.com/capabilities/digital-technology-data/internet-of-things

Blockchain in the Food and Beverage Industry. (2019). *Blockchain in the Food and Beverage Industry*. Siemens. https://new.siemens.com/global/en/markets/food-beverage/exclusive-area/whitepaper-blockchain.html

Bodkhe, U., Tanwar, S., Parekh, K., Khanpara, P., Tyagi, S., Kumar, N., & Alazab, M. (2020). Blockchain for Industry 4.0: A Comprehensive Review. *IEEE Access: Practical Innovations, Open Solutions*, *8*, 79764–79800. https://doi.org/10.1109/ACCESS.2020.2988579

Botcha, K. M., Chakravarthy, V. V., & Anurag. (2019). Enhancing Traceability in Pharmaceutical Supply Chain using Internet of Things (IoT) and Blockchain. *2019 IEEE International Conference on Intelligent Systems and Green Technology (ICISGT)*, 45–453. doi:10.1109/ICISGT44072.2019.00025

Bumblauskas, D., Mann, A., Dugan, B., & Rittmer, J. (2020). A blockchain use case in food distribution: Do you know where your food has been? *International Journal of Information Management*, *52*, 102008. https://doi.org/10.1016/j.ijinfomgt.2019.09.004

Cao, Y., Jia, F., & Manogaran, G. (2020). Efficient Traceability Systems of Steel Products Using Blockchain-Based Industrial Internet of Things. *IEEE Transactions on Industrial Informatics*, *16*(9), 6004–6012. https://doi.org/10.1109/TII.2019.2942211

Casino, F., Kanakaris, V., Dasaklis, T. K., Moschuris, S., & Rachaniotis, N. P. (2019). Modeling food supply chain traceability based on blockchain technology. *IFAC-PapersOnLine*, *52*(13), 2728–2733. https://doi.org/10.1016/j.ifacol.2019.11.620

Chanson, M., Bogner, A., Bilgeri, D., Fleisch, E., & Wortmann, F. (2019). Blockchain for the IoT: Privacy-Preserving Protection of Sensor Data. *Journal of the Association for Information Systems*, 1272–1307. doi:10.17705/1jais.00567

Chen, T., Ding, K., Hao, S., Li, G., & Qu, J. (2020). Batch-based traceability for pork: A mobile solution with 2D barcode technology. *Food Control*, *107*, 106770. https://doi.org/10.1016/j.foodcont.2019.106770

Cold Chain Federation. (2020). *What is the cold chain?* Cold Chain Federation. https://www.coldchain-federation.org.uk/what-is-the-cold-chain/

Dasaklis, T. K., Casino, F., & Patsakis, C. (2019). Defining granularity levels for supply chain traceability based on IoT and blockchain. *Proceedings of the International Conference on Omni-Layer Intelligent Systems*, 184–190. doi:10.1145/3312614.3312652

de Haro-Olmo, F. J., Varela-Vaca, Á. J., & Álvarez-Bermejo, J. A. (2020). Blockchain from the Perspective of Privacy and Anonymisation: A Systematic Literature Review. *Sensors (Basel)*, *20*(24), 7171. https://doi.org/10.3390/s20247171

Demestichas, K., Peppes, N., Alexakis, T., & Adamopoulou, E. (2020). Blockchain in Agriculture Traceability Systems: A Review. *Applied Sciences (Basel, Switzerland)*, *10*(12), 4113. https://doi.org/10.3390/app10124113

Denyer, D., & Tranfield, D. (2009). *Producing a systematic review. The Sage handbook of organizational research methods*. Sage Publications.

Dwivedi, S. K., Amin, R., & Vollala, S. (2020). Blockchain based secured information sharing protocol in supply chain management system with key distribution mechanism. *Journal of Information Security and Applications*, *54*, 102554. https://doi.org/10.1016/j.jisa.2020.102554

Elsevier. (2021). *Why choose Scopus—Scopus benefits*. https://www.elsevier.com/solutions/scopus/why-choose-scopus

Eryilmaz, U., Dijkman, R., van Jaarsveld, W., van Dis, W., & Alizadeh, K. (2020). Traceability Blockchain Prototype for Regulated Manufacturing Industries. *Proceedings of the 2020 2nd International Electronics Communication Conference*, 9–16. doi:10.1145/3409934.3409937

Fake vaccine warning. (2021). https://www.chinadaily.com.cn/a/202103/27/WS605e54eea31024ad0bab1ef3.html

Falagas, M. E., Pitsouni, E. I., Malietzis, G. A., & Pappas, G. (2008). Comparison of PubMed, Scopus, Web of Science, and Google Scholar: Strengths and weaknesses. *The FASEB Journal*, *22*(2), 338–342. https://doi.org/10.1096/fj.07-9492LSF

Feng, H., Wang, X., Duan, Y., Zhang, J., & Zhang, X. (2020). Applying blockchain technology to improve agri-food traceability: A review of development methods, benefits and challenges. *Journal of Cleaner Production*, *260*, 121031. https://doi.org/10.1016/j.jclepro.2020.121031

Fernandez-Carames, T. M., & Fraga-Lamas, P. (2018). A Review on the Use of Blockchain for the Internet of Things. *IEEE Access: Practical Innovations, Open Solutions*, *6*, 32979–33001. https://doi.org/10.1109/ACCESS.2018.2842685

Giusto, E., Vakili, M. G., Gandino, F., Demartini, C., & Montrucchio, B. (2020). Quantum Pliers Cutting the Blockchain. *IT Professional*, *22*(6), 90–96. https://doi.org/10.1109/MITP.2020.2974690

Golpîra, H., Khan, S. A. R., & Safaeipour, S. (2021). A review of logistics Internet-of-Things: Current trends and scope for future research. *Journal of Industrial Information Integration*, *22*, 100194. https://doi.org/10.1016/j.jii.2020.100194

Grecuccio, J., Giusto, E., Fiori, F., & Rebaudengo, M. (2020). Combining Blockchain and IoT: Food-Chain Traceability and Beyond. *Energies*, *13*(15), 3820. https://doi.org/10.3390/en13153820

Haroon, A., Basharat, M., Khattak, A. M., & Ejaz, W. (2019). Internet of Things Platform for Transparency and Traceability of Food Supply Chain. *2019 IEEE 10th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON)*, 13–19. doi:10.1109/IEMCON.2019.8936158

Hosseini Bamakan, S. M., Ghasemzadeh Moghaddam, S., & Dehghan Manshadi, S. (2021). Blockchain-enabled pharmaceutical cold chain: Applications, key challenges, and future trends. *Journal of Cleaner Production*, *302*, 127021. https://doi.org/10.1016/j.jclepro.2021.127021

Huawei Technologies, . (2018). *Huawei Blockchain Whitepaper*. https://www.huaweicloud.com/content/dam/cloudbu-site/archive/hk/en-us/about/analyst-reports/images/4-201804-Huawei%20Blockchain%20Whitepaper-en.pdf

Jaiyen, J., Pongnumkul, S., & Chaovalit, P. (2020). A Proof-of-Concept of Farmer-to-Consumer Food Traceability on Blockchain for Local Communities. *2020 International Conference on Computer Science and Its Application in Agriculture (ICOSICA)*, 1–5. doi:10.1109/ICOSICA49951.2020.9243172

Katsikouli, P., Wilde, A. S., Dragoni, N., & Høgh-Jensen, H. (2021). On the benefits and challenges of blockchains for managing food supply chains. *Journal of the Science of Food and Agriculture*, *101*(6), 2175–2181. https://doi.org/10.1002/jsfa.10883

Khan, K. S., Kunz, R., Kleijnen, J., & Antes, G. (2003). Five Steps to Conducting a Systematic Review. *Journal of the Royal Society of Medicine*, *96*(3), 118–121. https://doi.org/10.1177/014107680309600304

Khan, M. A., & Salah, K. (2018). IoT security: Review, blockchain solutions, and open challenges. *Future Generation Computer Systems*, *82*, 395–411. https://doi.org/10.1016/j.future.2017.11.022

Kuhn, M., Funk, F., & Franke, J. (2021). Blockchain architecture for automotive traceability. *Procedia CIRP*, *97*, 390–395. https://doi.org/10.1016/j.procir.2020.05.256

Kuhn, M., Funk, F., Zhang, G., & Franke, J. (2021). Blockchain-based application for the traceability of complex assembly structures. *Journal of Manufacturing Systems*, *59*, 617–630. https://doi.org/10.1016/j.jmsy.2021.04.013

Kwok, A. O. J., & Koh, S. G. M. (2020). Neural Network Insights of Blockchain Technology in Manufacturing Improvement. *2020 IEEE 7th International Conference on Industrial Engineering and Applications (ICIEA)*, 932–936. doi:10.1109/ICIEA49774.2020.9101957

Lahbib, A., Toumi, K., Laouiti, A., Laube, A., & Martin, S. (2019). Blockchain based trust management mechanism for IoT. *2019 IEEE Wireless Communications and Networking Conference (WCNC)*, 1–8. doi:10.1109/WCNC.2019.8885994

Leong, C., Viskin, T., & Stewart, R. (2019). *Tracing the supply chain*. Accenture. https://www.accenture.com/_acnmedia/PDF-93/Accenture-Tracing-Supply-Chain-Blockchain-Study-PoV.pdf#zoom=50

Lin, J., Shen, Z., & Miao, C. (2017). Using Blockchain Technology to Build Trust in Sharing LoRaWAN IoT. *Proceedings of the 2nd International Conference on Crowd Science and Engineering*, 38–43. doi:10.1145/3126973.3126980

Martín-Martín, A., Orduna-Malea, E., Thelwall, M., & Delgado López-Cózar, E. (2018). Google Scholar, Web of Science, and Scopus: A systematic comparison of citations in 252 subject categories. *Journal of Informetrics*, *12*(4), 1160–1177. https://doi.org/10.1016/j.joi.2018.09.002

McFarlane, P. D. (2018). *Industrial Internet of Things*. Academic Press.

Mhaisen, N., Fetais, N., Erbad, A., Mohamed, A., & Guizani, M. (2020). To chain or not to chain: A reinforcement learning approach for blockchain-enabled IoT monitoring applications. *Future Generation Computer Systems*, *111*, 39–51. https://doi.org/10.1016/j.future.2020.04.035

Mingers, J., & Yang, L. (2017). Evaluating journal quality: A review of journal citation indicators and ranking in business and management. *European Journal of Operational Research*, *257*(1), 323–337. https://doi.org/10.1016/j.ejor.2016.07.058

Montoya, G. N., Santos, J. B. S., Jr., Novaes, A. G. N., & Lima, O. F. (2018). Internet of Things and the Risk Management Approach in the Pharmaceutical Supply Chain. In M. Freitag, H. Kotzab, & J. Pannek (Eds.), Dynamics in Logistics (pp. 284–288). Springer International Publishing. https://doi.org/10.1007/978-3-319-74225-0_38.

NakamotoS. (2021). In *Wikipedia*. https://en.wikipedia.org/w/index.php?title=Satoshi_Nakamoto&oldid=1059079841

Pandey, P., & Litoriya, R. (2021). Securing E-health Networks from Counterfeit Medicine Penetration Using Blockchain. *Wireless Personal Communications*, *117*(1), 7–25. https://doi.org/10.1007/s11277-020-07041-7

Pharma. (2020). *From visionto decision Pharma 2020*. PwC. https://www.pwc.com/gx/en/pharma-life-sciences/pharma2020/assets/pwc-pharma-success-strategies.pdf

Prescribing a paperless society. (2017). *PwC*. https://www.pwc.co.uk/healthcare/assets/documents/prescribing-paperless-society.pdf

PwC's Global Blockchain Survey 2018. (2018). *PwC*. https://www.pwccn.com/en/research-and-insights/publications/global-blockchain-survey-2018/global-blockchain-survey-2018-report.pdf

Rejeb, A. (2018). Halal Meat Supply Chain Traceability based on HACCP, Blockchain and Internet of Things. *Acta Technica Jaurinensis*, *11*(4), 218–247. https://doi.org/10.14513/actatechjaur.v11.n4.467

Sadawi, A. A., Hassan, M. S., & Ndiaye, M. (2021). A Survey on the Integration of Blockchain With IoT to Enhance Performance and Eliminate Challenges. *IEEE Access: Practical Innovations, Open Solutions*, *9*, 54478–54497. https://doi.org/10.1109/ACCESS.2021.3070555

Sangeetha, A. S., Shunmugan, S., & Murugan, G. (2020). Blockchain for IoT Enabled Supply Chain Management—A Systematic Review. *2020 Fourth International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC)*, 48–52. doi:10.1109/I-SMAC49090.2020.9243371

Santis, L. D., Paciello, V., & Pietrosanto, A. (2020). Blockchain-Based Infrastructure to enable Trust in IoT environment. *2020 IEEE International Instrumentation and Measurement Technology Conference (I2MTC)*, 1–6. doi:10.1109/I2MTC43012.2020.9128817

Scimago Journal & Country Rank. (2021). https://www.scimagojr.com/

Shahzad, A., Zhang, K., & Gherbi, A. (2021). Privacy-preserving smart grid traceability using blockchain over IoT connectivity. *Proceedings of the 36th Annual ACM Symposium on Applied Computing*, 699–706. doi:10.1145/3412841.3441949

Sharma, H. B., Vanapalli, K. R., Cheela, V. S., Ranjan, V. P., Jaglan, A. K., Dubey, B., Goel, S., & Bhattacharya, J. (2020). Challenges, opportunities, and innovations for effective solid waste management during and post COVID-19 pandemic. *Resources, Conservation and Recycling*, *162*, 105052. https://doi.org/10.1016/j.resconrec.2020.105052

Singh, S., Kumar, R., Panchal, R., & Tiwari, M. K. (2020). Impact of COVID-19 on logistics systems and disruptions in food supply chain. *International Journal of Production Research*, *0*(0), 1–16. https://doi.org/10.1080/00207543.2020.1792000

Sunny, J., Undralla, N., & Madhusudanan Pillai, V. (2020). Supply chain transparency through blockchain-based traceability: An overview with demonstration. *Computers & Industrial Engineering*, *150*, 106895. https://doi.org/10.1016/j.cie.2020.106895

Sylim, P., Liu, F., Marcelo, A., & Fontelo, P. (2018). Blockchain Technology for Detecting Falsified and Substandard Drugs in Distribution: Pharmaceutical Supply Chain Intervention. *JMIR Research Protocols*, *7*(9), e10163. https://doi.org/10.2196/10163

Tan, S. Y., Taeihagh, A., & Tripathi, A. (2021). Tensions and antagonistic interactions of risks and ethics of using robotics and autonomous systems in long-term care. *Technological Forecasting and Social Change, 167*. doi:10.1016/j.techfore.2021.120686

Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review. *British Journal of Management*, *14*(3), 207–222. https://doi.org/10.1111/1467-8551.00375

Tsang, Y. P., Choy, K. L., Wu, C. H., Ho, G. T. S., & Lam, H. Y. (2019). Blockchain-Driven IoT for Food Traceability With an Integrated Consensus Mechanism. *IEEE Access: Practical Innovations, Open Solutions*, *7*, 129000–129017. https://doi.org/10.1109/ACCESS.2019.2940227

Venkatesh, V. G., Kang, K., Wang, B., Zhong, R. Y., & Zhang, A. (2020). System architecture for blockchain based transparency of supply chain social sustainability. *Robotics and Computer-integrated Manufacturing*, *63*, 101896. https://doi.org/10.1016/j.rcim.2019.101896

Vidgen, R., Mortenson, M., & Powell, P. (2019). Invited Viewpoint: How well does the Information Systems discipline fare in the Financial Times' top 50 Journal list? *The Journal of Strategic Information Systems, 28*(4), 101577. doi:10.1016/j.jsis.2019.101577

Vivaldi, F., Melai, B., Bonini, A., Poma, N., Salvo, P., Kirchhain, A., Tintori, S., Bigongiari, A., Bertuccelli, F., Isola, G., & Di Francesco, F. (2020). A temperature-sensitive RFID tag for the identification of cold chain failures. *Sensors and Actuators. A, Physical*, *313*, 112182. https://doi.org/10.1016/j.sna.2020.112182

Wang, C., Sang, X., & Gao, L. (2021). A Cross-chain Gateway for Efficient Supply Chain Data Management. In W. Gao, K. Hwang, C. Wang, W. Li, Z. Qiu, L. Wang, A. Zhou, W. Qian, C. Jin, & Z. Zhang (Eds.), *Intelligent Computing and Block Chain* (Vol. 1385, pp. 318–333). Springer Singapore. doi:10.1007/978-981-16-1160-5_25

Wei, L. (2018). *DHL: Smart Management is Smart Business*. Huawei. https://www.huawei.com/uk/technology-insights/publications/huawei-tech/84/dhl-smart-iot-smart-logistics

Wei, L., Wu, J., Long, C., & Lin, Y.-B. (2019). The Convergence of IoE and Blockchain: Security Challenges. *IT Professional*, *21*(5), 26–32. https://doi.org/10.1109/MITP.2019.2923602

Wu, M., Wang, K., Cai, X., Guo, S., Guo, M., & Rong, C. (2019). A Comprehensive Survey of Blockchain: From Theory to IoT Applications and Beyond. *IEEE Internet of Things Journal, 6*(5), 8114–8154. doi:10.1109/JIOT.2019.2922538

Yang, K., Shen, H., Forte, D., Bhunia, S., & Tehranipoor, M. (2018). Hardware-Enabled Pharmaceutical Supply Chain Security. *ACM Transactions on Design Automation of Electronic Systems*, *23*(2), 1–26. https://doi.org/10.1145/3144532

Zhang, Y., Liu, Y., Jiong, Z., Zhang, X., Li, B., & Chen, E. (2021). Development and assessment of blockchain-IoT-based traceability system for frozen aquatic product. *Journal of Food Process Engineering*, *44*(5). https://doi.org/10.1111/jfpe.13669

Zhao, G., Liu, S., Lopez, C., Lu, H., Elgueta, S., Chen, H., & Boshkoska, B. M. (2019). Blockchain technology in agri-food value chain management: A synthesis of applications, challenges and future research directions. *Computers in Industry*, *109*, 83–99. https://doi.org/10.1016/j.compind.2019.04.002

Zhou, M. (2021). *Now spreading in US: Fake vaccine cards*. https://www.chinadaily.com.cn/a/202105/13/WS609c7f4fa31024ad0babd914.html

Zichichi, M., Ferretti, S., & D'Angelo, G. (2020). Are distributed ledger technologies ready for intelligent transportation systems? *Proceedings of the 3rd Workshop on Cryptocurrencies and Blockchains for Distributed Systems*, 12–17. doi:10.1145/3410699.3413789

Chapter 2
Role of Social Media in the Indian Banking Sector

Aastha Sawhney
Amity Business School, Amity University, Noida, India

Vandana Ahuja
https://orcid.org/0000-0002-4512-7203
Jaipuria Institute of Management, Ghaziabad, India

Poonam Sharma
Jaipuria Institute of Management, Noida, India

ABSTRACT

With the upsurge of innovation, transformation, and digitization in the Indian banking sector there has been a paradigm shift in banking operations. The evolution of mobile banking, internet banking, and facilities like ATMs have altered the way consumers use banking facilities. The Indian banks are racing to upgrade their tech infrastructure and digital products to service clients quickly and effectively during the post-pandemic era. Social media provides vivid opportunities for consumers to have access to information and avail banking services 24 hours a day, across temporal and geographical borders. Marketers need to develop new customer-centric strategies to deal with the high expectations of the digitally empowered consumers and deliver a personalized, immersive experience to remain competitive. Also, customers need to be made aware of how individual banking brands can benefit them and help enhance better returns on their financial investments. Banks can further enhance trust and credibility using digital platforms which in turn will trigger their growth.

INTRODUCTION

The Indian Banking sector is witnessing significant levels of innovation, transformation, and digitization. The sector is well regulated and is being further restructured to cater to the growth of the domestic banking industry in India. The traditional fabric of public sector banks, private sector banks, foreign

DOI: 10.4018/978-1-6684-5274-5.ch002

banks, regional rural banks, urban cooperative banks, etc. is now witnessing the arrival of the era of payments banks and finance banks (Bobade & Alex, 2020).

As digitization increases, growth of mobile banking, internet banking and facilities like ATM have changed the way consumers use the facilities of banks (Alavi & Ahuja, 2016). A growing middle class where several members are working, need to maintain salary accounts and the need to handle their money in an efficient manner, is giving rise to the need for banks to communicate with their customers in more organized and methodical ways. Banks are now recognizing the need for customer relationship management and key account management endeavors to enhance customer acquisition and retention. Banks also need to find ways to get their customers to use more and more banking products to increase customer share (Das, 2020).

Social media presents a brilliant opportunity for the same, as customers need to be made aware of how individual banking brands can benefit them and help enhance better returns on their financial investments (Arora & Agarwal, 2020).

MAIN FOCUS OF THE CHAPTER

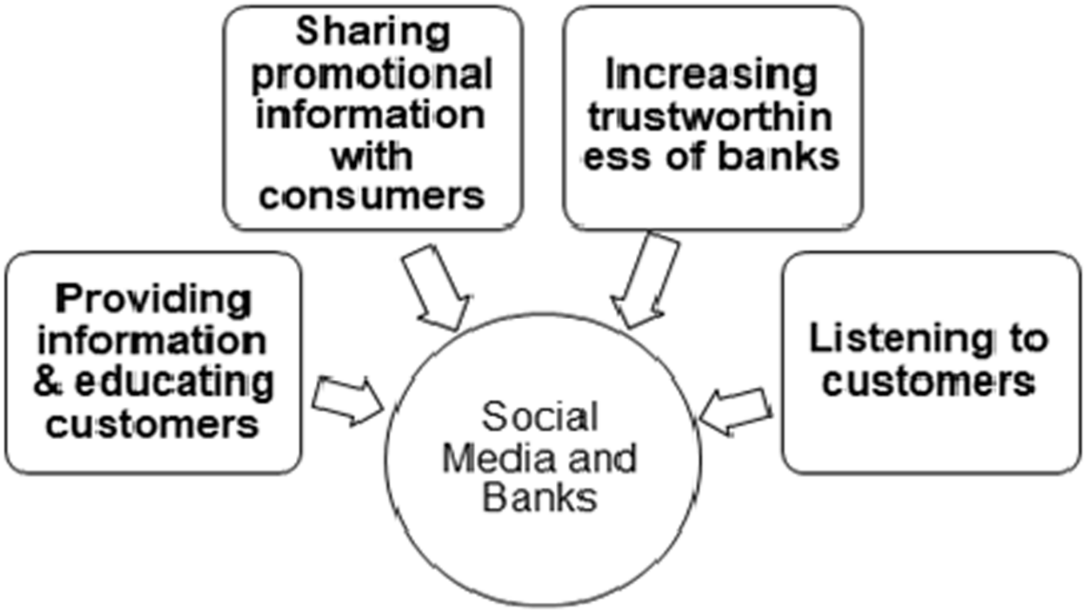
Overview of the Indian Banking Industry

- Regulatory mechanisms by the Reserve Bank of India and well defined monetary and monitoring policies have further strengthened this sector.
- Banks now need to position and explain their banking products to consumers to generate higher ROIs for all stakeholders.
- Small Finance Banks and Payments Banks have come up in India, to promote financial inclusion across all social classes.
- The evolution of the Digital Payments system and the government's commitment for increasing digitization of all services has further given an impetus to the growth of the banking sector.
- Additional equity funding to the microfinance sector, coupled with enhanced spending on infrastructure and well directed efforts towards financial reform are strengthening the Government of India's financial inclusion initiatives across rural India.
- Banks now recognize the need for Customer Experience Management and a competitive positioning for their individual brands.

OPPORTUNITIES FOR SOCIAL MEDIA MARKETERS

Owing to high levels of internet penetration and widespread adoption of smartphones and mobile gadgets, usage of social media is on the rise, and the medium has an important role to play, in corporate competitiveness (Alavi & Ahuja, 2016). As already discussed in the above section, consumers are not only using social media for entertainment and building social connectivity, but also for trade.

Figure 1. Opportunities for Social Media Marketers in The Banking Sector
Source: Author's Representation



The volumes of banking consumers who also happen to be on social media are too large to ignore, thereby making social media an interesting marketing platform for the banking industry. Research clearly shows that average daily internet consumption in India has reached significant levels and individuals are devoting a lot of time to browsing and collecting information regarding various financial products and services (Dhingra & Gupta, 2020). Banks are all about money and finances and the traditional Indian consumer who has been indulging in a relationship with his banks, on the premise of trust, needs to be handled with care. As information technology, ecommerce and social media allow consumers to access information and avail banking services 24 hours a day, across temporal and geographical borders, marketers need to develop new customer-centric strategies, to deal with the high expectations of the digitally empowered consumers and deliver a personalized, immersive experience, to remain competitive (Arora & Agarwal, 2020).
Social media marketers in the Banking sector can use online networks for 4 major purposes (Fig.1).

1. Providing Information and Educating Customers

As the banking industry continuously moves towards digitization and keeps on launching new apps and internet banking services, it is vital for the banks to communicate with the customers and educate them about how the banking services can be used by them for personal benefit (Dua & Das, 2021).

Social networking platforms can provide relevant information to consumers. This can range from ATM and branch locators to new schemes and consumer advantages. For example, ICICI Bank introduced the Shopping Fest 2019 and customers who were using internet banking could turn their bills into rewards. A social media post to this effect directed customers to the specific campaign and provided them information on how they could benefit. State Bank of India used social media to provide information to consumers on how they could transfer their home loan to SBI at zero processing fee and get a better deal for themselves (Garg, 2020).

Additionally, banks can use social media to educate the customers regarding new products, introduction of digitization, usage of mobile banking apps, internet banking etc. For instance, State Bank of India, an Indian multinational, public sector banking and financial services organization, recently invited its consumers to link their SBICAP Securities DEMAT & trading accounts on #YONOSBI. This would enable them to view their portfolio and trade at any given point of time. YONO is an integrated digital banking platform offered by State Bank of India to enable users to access a variety of financial and other services such as taxi bookings, online shopping, or medical bill payments. YONO is offered as a smartphone app for both Android and iOS. As technology provides opportunities for improving the transactional experiences, it is vital for the banking sector to understand that the success of these endeavors will be a function of consumer adoption of technology (Ginotra, 2019). Consumers will adopt technological tools only when they understand them. While the traditional Technology Adoption Models (TAM) and the Unified Theory of Acceptance and use of technology provided a series of well-defined drivers to the adoption of technology, recent research[1] pertaining to the banking sector identified that need for information, perceived usefulness, perceived ease of use, perception as an alternative source and perceived risk and cost were the key determinants to adoption of technology, in the case of a banking consumer (Bhasin & Rajesh, 2022).

2. Sharing Promotional Information with Consumers

Banks can share promotional information with consumers. This can include formulation of synergistic tie-ups with other stakeholders or increasing the usage of digital tools by incentivizing usage (Gupta, 2019). Listed below are a few examples.

- HDFC Bank celebrated the Great Indian Restaurant Festival after tying up with the restaurant table reservation company, Dine out. A social media post was subsequently hosted by HDFC on the social media platforms offering customers a 50% Cashback on booking fee on Dine out with HDFC Bank Credit and Debit Cards.
- ICICI shared a promotional post on its social media platforms, directed towards enhancing the usage of ICICI's iMobile app. Consumers were encouraged to download the app, activate the same and perform two transactions using the apps. Subsequently the campaign gave the consumers the opportunity to get vouchers worth Rs 5,000. The vouchers included Titan Eye+, Bigbasket, and Myntra vouchers worth Rs 1,000 each and a MakeMyTrip voucher worth Rs 2,000.
- Additionally, ICICI also encouraged consumers to download and activate its iMobile app or start using ICICI Bank Internet Banking to get a Flipkart voucher worth Rs. 250 every hour.
- HDFC bank tried to promote its app, PayZapp by inviting customers to book tickets, by using the app, on BookMyShow and avail 25% cashback.

3. Increasing Trustworthiness for the Banks

Banks can regularly host videos and posters on social media emphasizing the need to use internet banking safely (Gupta, 2019). Detailed videos can help customers remember some safety tips like keeping their ATM PINs confidential, during their online transactions and ensure security of their dealings. This specifically takes care of the perceived consumer insecurity pertaining to usage of digitization which presents a unique challenge for banks, who must develop reliability for themselves in the consumer mind. For example, SBI furthers the progress of Government schemes by providing online and offline assistance to its customers and invites them to follow the official process of enrolment to avoid being duped by fraudulent entities. Further, banks can enhance credibility and trustworthiness by regularly responding to consumer complaints, using social media. Also, by demonstrating a significant amount of consumer sensitivity, banks can gain consumer trust (Gupta, 2021). For example, HDFC uses its social media presence to invite consumers to ask tax related questions and provide them with help on making the right investment choice. Axis Bank is demonstrating its customer support by giving senior citizens a higher interest rate of up to 8.25% on fixed deposits. It is the demonstration of a commitment to the long-term benefit and security of the consumer, that will help banks build long term trust and faith.

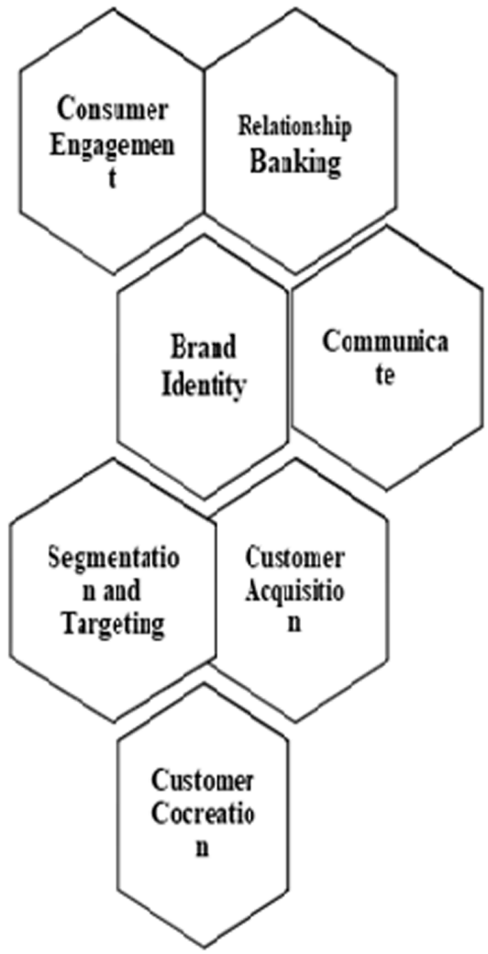
4. Listening to Customers

While banks have well established customer care helplines, some customers have also started actively using social media platforms to voice their grievances. It is vital for banking organizations to keep track of what their customers are saying about them and take corrective action to ensure long term customer retention and loyalty. This way, the banks can promote consumer advocacy and evangelism through the proliferation of positive consumer-generated content (Gupta, 2021). Research has shown that many organizational customers leave an organization, merely because of the perceived indifference of an organisation[2]. In a bid to tackle this problem, banks should find ways to engage in an online[3] dialogue with their customers. This will help them in their dual responsibility of customer acquisition, retention and increasing customer share (Gupta and Kumar, 2017). As peer support and recommendations increase, banks can get new customers. As customer faith in a bank goes up, customer loyalty results and individuals do not leave a banking brand to go to a competing brand. At the same time, banks will benefit when they recognize the opportunities associated with increasing customer share and when their customers start using more and more of their products. By cross selling and upselling banking products to present customers, banks can experience growth with the existing customers. When a bank sells a credit card to a customer who already has a savings bank account with the bank, cross selling takes place. When a customer who already has purchased an insurance policy from a bank is shown the additional attributes of a new insurance scheme and asked to upgrade to the new policy by some additional investment, upselling takes place.

FUNCTIONAL BENEFITS OF SOCIAL MEDIA FOR THE BANKING SECTOR

A thorough research and analysis of the banking sector helps compile a list of seven functional benefits offered by social media, specifically for the growth of the banking industry (Arora & Agarwal, 2020) (Fig. 2). These are-

Figure 2. Functional Benefits of Social Media Marketers in The Banking Sector
Source: Author's Representation



1. Formation of an Online Community for Consumer Engagement

Banks usually need to be very careful regarding advertising and promotional issues because of concerns pertaining to regulatory compliance. Social media has provided banks with a method to enhance their reach and spread their wings to connect and communicate with many people (Kalaisel VI, 2020). Interestingly, the banking sector, which was associated with finance, money and structuring the growth and safety of this money, in dull and drab environments, can now make use of social media to show their humane side.

In contemporary times, consumers are more sociable than earlier. Hence, institutions like banks, where profitability and sustainability are long term goals, can involve homogeneous groups of consumers in an online dialogue, which can help in building relationships through participation and reciprocity. Banks are increasingly using social media to provide their consumer groups with content like financial tips and updates on products and services. Further, by maintaining a harmonious, open culture, a good speed of responding to any consumer queries or comments and maintaining accuracy and sanctity of information, banks can create quality environments in the virtual arena (Zeithaml, Berry, & Parasuraman, 1996).

Illustration 1: IDBI-Bank Aisa, Dost Jaisa

The Industrial Development Bank of India Ltd. (IDBI) is a public sector bank, which is very popular in India. IDBI used its online presence to form a community of likeminded people in the online domain, and encouraged customers to follow the bank online, to receive latest updates pertaining to the Indian economy as also, any new products launched by IDBI. IDBI used its social media presence across a diverse set of platforms to communicate its philosophy of customer centricity through its Tagline- 'Bank aisa, dost jaisa'. IDBI has garnered a significant volume of customer support which is visible in its 18 lakh Facebook likes and 175,000 followers on Twitter. IDBI's posts on 'enjoying tax free income from PPF', 'Ease of Banking through Digital', 'Aiye Baat Kerein' got a lot of support from followers. The crossword puzzles and word search contests hosted by IDBI garnered tremendous response from the members of the community.

Additionally, by retweeting content generated by the Ministry of Finance and taking consumers on a step-by-step tutorial pertaining to the Indian Budget, IDBI's Twitter presence has created a knowledge repository which is of use to the customer base. By engaging a set of people who were interested in content being generated by IDBI and concerned about giving feedback to the bank, IDBI has carved a success story for itself, on social media.

2. Relationship Banking

By the formulation of long term, synergistic relationships which are to all the involved entities, banks can use the theories of relationship marketing[4] to indulge in relationship banking, by forming 3 types of bonds with customers. These are financial bonds, relational bonds, and structural bonds, and are being strengthened by the banking sector's intrinsic use of social media (Mitic & Kapoulas, 2012).

Financial bonds intrinsically have a monetary connotation. These are the result of some transactions where the involved parties are making economic gains, like when a customer feels that he is benefitting financially from the relationship with an organizational brand, in this case a bank. Hence, when a customer makes a fixed deposit with a bank and is satisfied with the interest rate or gets a home loan from a bank and feels that he is getting a good deal, then he has entered a financial bond with the bank (Ginotra, 2019). Similarly, when a bank provides a higher return on investment to a loyal customer, for example, through higher interest rates for long-duration accounts; the customer is gaining because of the financial bond. Suitable social media campaigns showing the benefits of long-term deposits will contribute to the growth of these financial bonds.

Relational bonds are those which are based on interpersonal interactions and social relationships. Berry and Parasuraman's[5] studies showed that longevity of customer relationships with an organization was a function of friendship, rapport, and social support. These relationships can be built by gaining an in depth understanding of customer requirements, giving him adequate importance, interacting with him regularly, ensuring that he gets what he wants, conveniently (Zeithaml, Berry, & Parasuraman, 1996). Several banks are hiring relationship managers, but the role of social media cannot be underestimated in this respect. A well-crafted social media strategy can help build a psychological attachment between bank and consumer. ICICI's 'khayal aapka' was a campaign in this direction and introduced an element of personalization to the equation. Banks can generate social media content to communicate to the customers that they are important to the bank, the bank is their well-wisher and is concerned with their health and wellbeing. Several banks are now hosting social media content warning customers against financial fraud and using digitization safely. Content like this showcases the banks' concern for the clients, thereby ushering in the aspects of cooperation, trust and participation between banks and consumers. By creating the appropriate atmosphere online, banks can generate trust wherein consumers feel that their banking partner is true to them, will not act opportunistically and can be relied upon (Gupta & Mittal, 2021). For example, Yes Bank hosts a significant volume of content pertaining to life matters which creates a strong resonance between consumers and banks. Posts like What Does a Credit Score Mean for Your Loan Application? as well as 5 Fabulous Financial Gifts This Raksha Bandhan for Your Sister are bound to create an emotional connect between consumers and Yes Bank. Additionally, some banks are successfully using social media to build relationships by soliciting participation for events that are relevant to consumers.

Structural bonds are formed between a bank and consumer when a bank provides essential services that are not available from any other source, such as an integrated service through their business partners, innovative channels like internet banking, integrated customer databases etc. (Joseph & Dhanabhakyam, 2022) Once a structural bond is established between the two entities, there is a switching cost involved, should the customer want to move to a competing brand. This automatically results in higher consumer retention rates. Long term sustainable relationships result in greater share of the customer wallet, deeper loyalty and a stronger brand association between bank and consumer. Memberships on social media platforms is also an example of a structural bond.

Illustration 2: State Bank of India-Building Personal Relationships

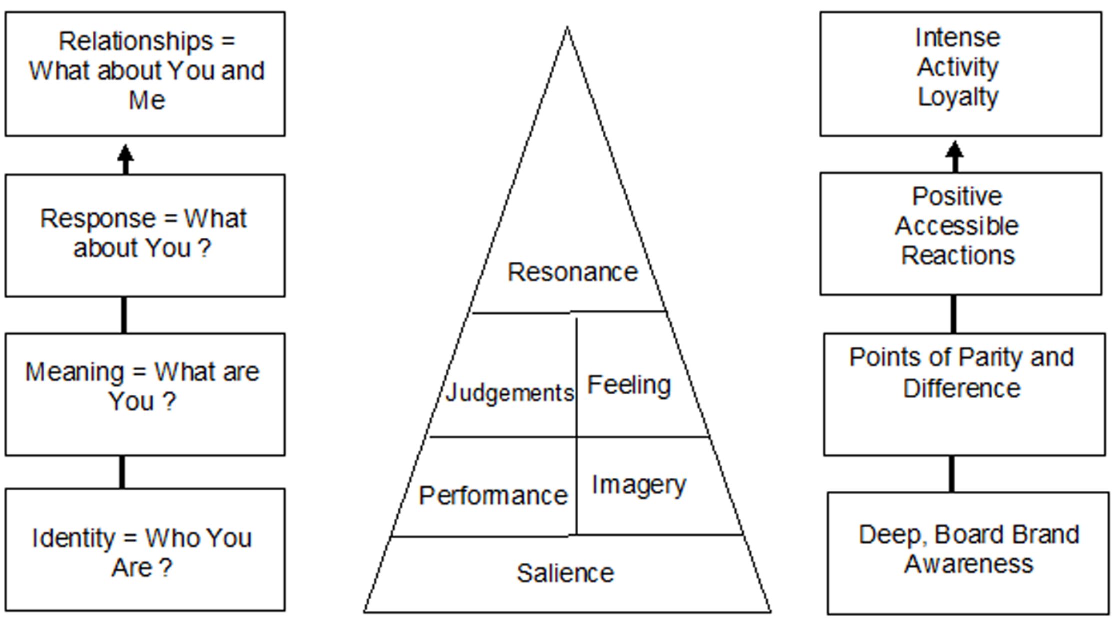
State Bank of India (SBI) organized a Green Marathon, reiterating its commitment to the initiative of protecting the environment. The event was covered on SBI's social media page and through the same, SBI was able to build relationship bonds with both the eco-friendly consumers as well as Health and fitness savvy individuals. By repeating its support towards reducing carbon footprints, and the importance of green initiatives and recycling, SBI through a marathon also emphasized the importance of remaining healthy and fit. By moving away from their commercial personals, banks can use endeavors like these to form a personal relationship with the consumer base.

3. Creating a Brand Identity for The Banks

Several banks are investing a lot of resources in their social responsibility endeavors (Kaur, 2020). For example, the ICICI foundation runs several skill developments programs in India, primarily for the disadvantaged section of society. These programs aim at imparting pertinent vocational skills to individuals, thereby empowering them to secure jobs and earn a living. This is ICICI's corporate social responsibility endeavor which is helping ICICI contribute to the growth of India, at large. ICICI further uses its social media platforms to disseminate stories about how these initiatives are helping the brand transform the lives of several individuals. The #ICICI Transforming Lives campaigns carry stories of youngsters who had to give up their studies due to personal problems, were enrolled in ICICI's skill building courses and subsequently have become financially independent. Stories of how better futures beckon simple people from small towns across India, after very difficult personal journeys contribute a lot to ICICI's corporate brand identity.

Using the customer-based brand equity[6] approach (Fig.3.3), it is vital for banks to reflect their personalities through their social media conversations and presence. The consistency of their messages and posts is what will generate a deep, broad, brand awareness in the consumer minds. This will define 'who' the bank is and will help develop brand salience-the ability of a brand to enter the choice set in the consumer mind when he thinks of making a purchase. Banks are all about money and money is all about trust. Banks which can create an image of a sensitive, thoughtful, and caring entity, resonate best with consumers (Perwej, 2020).

Figure 3. Customer Base Brand Equity Pyramid
Source: (Keller, 2001)



This is where ICICI has been successful. Its social media presence has created an image of a kind and considerate brand which is selfless and good for the consumers. Similar posts by Axis Bank where the bank shared information on how their rooftop installations at nearly 250 locations had helped them avoid over 4200 tons of carbon emissions across a year earned a lot of respect for the bank. The bank subsequently won the 'Private Sector Bank of the Year' award in the Solar Rooftop Category at the India Cleantech Investment and Finance Week Awards, 2018. The banking sector can further use social media to create a specific differentiation for themselves, by creating their own, unique brand stories, their mission, vision and value statements and organizational philosophies. For instance, Yes Bank, is using its social media presence to propagate its brand ethos of being the "Professionals' Bank of India", emphasizing its vision of "Finest Quality" and its mission of being a "customer-centric, service-driven, private Indian Bank catering to the 'Future Businesses of India' (Sharma, Shastri, & Rathore, 2020).

In addition, by highlighting the functional and psychological aspects that differentiate one brand from the other, banks can generate a loyal consumer base for themselves (Mathew, 2021). For instance, a bank which claims that customer centricity is its core philosophy, can indulge in creating all its social media content from a customer perspective i.e., specific benefits to the specific requirements of customers, along different life stages, through specific product attributes. This will define the brand meaning- 'what' the bank is all about. The objective of these endeavors is to create positive judgements in the consumer minds and elicit the reactions of consumer adoption of the brand. The long-term branding objective, nevertheless, is to stimulate brand resonance and formulate a long-term relationship between brand and consumer.

Illustration 3: The SBI Foundation

The SBI foundation maintains a series of Corporate Social Responsibility endeavors and routinely showcases its efforts on social media.
These include

- Project Gyanshala where SBI has partnered with Education support Organization to provide quality education to slum children in India.
- Beti Padhao Kendras to support the girl child.
- Midday meals to support nutrition requirements of children.
- SBI Digital Class for providing digital technology support to poor, rural children.
- Bodhshalas for providing education to the underprivileged.
- Khelwadi for building the abilities of children, stimulating their creative thinking and personality development.
- EduDisha for personal counselling of students in northeastern regions of India.
- SBI virtual eye for visually impaired children.
- SBI Udaan for skilling children in the slum communities for career growth.
- SBI Disha for the education of young children in villages.
- SBI Eklavya to promote sports culture amongst youngsters.
- Shiksha Sahay to support education in the scheduled tribes.
- School Adoption programs to improve the standards of learning levels in government schools.

4. Communicate

Social media is a strategic vehicle which can be used by banks to share authentic content with their consumers. This can include, generic economic content aimed at improving the financial health of the consumer (a budgeting infographic, financial planning goals, managing multiple fixed deposits, the evolution of online banking, mobile banking tips, handy guides to personal loans etc.) or well directed campaigns pertaining to banking products (savings and current accounts, downloading mobile banking apps, business and home loans, credit card bill payment etc.) and policies (Alavi & Ahuja, 2016). A well-defined social media content strategy can help in positioning the bank as intellectually competent and the social media marketers as subject matter experts, thereby enhancing consumer confidence in the bank and its ability to support their banking needs. For example, Axis Bank hosted a social media post pertaining to its highly interactive knowledge sessions with industry leaders, with a #EvolveWithAxis, and invited industry speakers to share information on the importance of innovations to unlock growth for businesses (Singh, 2019).

By sharing basic information like how basic savings accounts do not require individuals to maintain any average monthly balance or how bank credit card purchases can be paid in easy equated instalments with nil processing or foreclosure charges, banks can enter the social media feed of the consumers daily Paul, J., Gupta, S., & Tyagi, S2021). Additionally, by sharing information pertaining to consumer convenience, banks can appear as attractive options to consumers. For instance, an IDBI bank social media post viz. “Built for those who live life on the fast lane, IDBI Bank Imperial Salary Account gives you 24x7 convenience, including online banking, quick electronic transfers, Gold debit card and Insurance cover” appeared distinctly attractive to professionals. App install posts allow banks to promote their mobile banking applications and with a specific targeting effort like tagging some users, banks can motivate its consumer base to download the app from the Apple or Android store, on to their device.

5. Segmentation and Targeting

Social media can be used by the banking sector as a marketing tool-firstly for customer segmentation and targeting and then for customer acquisition (Parvatiyar & Sheth, 2001).

As content is hosted on social media, conversations start taking place, between the bank and the prospective or current consumers. These conversations or consumer generated media are in the form of textual content. This textual content can be analyzed to gain insight into the consumer cognitive space and generate marketplace intelligence. The information received through this analysis can be used for consumer segmentation, as discussed in Chapter 1. Consumers can be divided into homogeneous groups and separate targeting strategies can be employed for each group. Groups of senior citizens can be subjected to content pertaining to investing their lifetime savings and get maximum returns. Groups of youngsters can be subjected to content pertaining to getting good deals for their entertainment agendas, using bank credit cards etc. (Tabassum, Perumal, Mohanan, Suresh, Cheriyan, & Hassan, 2021). For instance, Axis Bank’s tweet linking happiness with melted chocolate balls, which invited individuals to use Axis Bank credit cards in over 4000 restaurants to get 20% off, gained a lot of popularity. Similarly, customers looking for home loans can be subjected to content pertaining to home loans with reduced monthly instalments/fixed monthly principal repayment etc.

Well planned targeting strategies can help organizations identify the needs of each consumer segment and help the banking industry to reach out to specific consumer groups with specific information, tailored to their needs. This level of personalization in the marketing effort results in a higher consumer conversion rate and consumers adopt the banking products faster (Potts, Hartley, Banks, Burgess, Cobcroft, Cunningham & Montgomery, 2008).

6. Customer Acquisition Through Advertising

Customer acquisition is the process of gaining new consumers by persuading them to purchase a company’s products or services (Adam & Alhassan, 2021). This can be done by showing the positive attributes of the brand, or the product or service in question. Consumers adopt or buy a product or service when they are convinced that they need the same or when they feel that the offer is better than what they are already using. Hence banks need to find ways to show themselves in a good light so that prospective customers open their accounts with them. This can be done by formulating a good advertising strategy.

Banks usually acquire new customers when a person who has never held a bank account opens one or when a customer who has been banking with a particular bank brand, switches to another bank, because of three reasons-

- Influence of Marketing messages
- Negative experiences with the previous bank
- Significant life events.

Research has shown that consumers spend no more than 2-3 months, pondering over their decision when they are planning to switch to a competing brand and peer recommendations play a very important role in consumer decision making (Sawhney & Ahuja, 2021).

Banks can use social media to attract new customers and the following section discusses how they can do so (Shainesh, & Sheth, 2005).

- By monitoring the content created by competing entities, banks can create relevant differentiation for themselves and can find ways to generate greater appeal for the target audience.
- They can create suitable content to advertise products and services, investment services and wealth management services.
- Banks can host customer testimonials. This will give a significant positivity to a bank's image and build credibility for the bank. This will make the bank very attractive to anyone who has had a negative experience with his previous bank.
- Additionally, by hosting promotional content that will be attractive to the consumers, banks can get more account holders to open accounts with them or utilize additional banking products. For instance, Axis Bank generated social media content pertaining to how customers could make every-day fashionable with buying products from brands like AND, Global Desi etc. and get up to 10% off on sales with Axis Bank credit and debit cards.
- When certain banks promote specialized, personalized, and customized schemes for retired people or senior citizens, they become attractive to that specific segment. Banks can find ways to build content around special life events. This will make them appear empathetic and they will become attractive to people who are going through that life situation (Trivedi & Malik, 2022). For instance, when a family wants to procure a home for themselves, a bank hosting a # Aao wish karein campaign to help customers' dreams come true through loans will be very attractive to them. Similarly, a family looking to invest their savings will find a social media post from a bank inviting them to create a Demat account with them and invest their money for greater returns interesting for themselves.

7. Customer Interaction, Co-Creation and Retention

The banking sector has been able to accomplish something which some of the other sectors are still struggling with-use social media effectively for customer interaction, co-creation, and retention (Huang, 2020).

- Banks need to interact with their customers to get them to behave in a particular fashion or use a particular service. ICICI Bank has started a social media campaign encouraging consumers to make monthly bill payments through their iMobile apps to get BookMyShow vouchers worth Rs. 250 and has been successfully able to motivate them to do so.

- Banks can use their customers as their partners and solicit their ideas to generate value in the banking ecosystem. This is the process of co-creation[7]. This usually results in more personalized experiences for the customer because of an improvement in the banking processes or unique experiences for the customers. Simultaneously, the process of co-creation results in improved revenue, enhanced learning, and greater market performance drivers for the firm. For example, State Bank of India opened its APIs for a hackathon. The hackathon was open to developers and start-ups from India, with the idea of tapping into a larger development pool for new technology innovations (Bhasin & Rajesh, 2022). By opening the APIs, SBI attempted to create new services and products. By sharing this information on social media, the bank further showcased its commitment to increase user participation for the benefit of all.
- Banks need to focus on consumer retention. It costs 5 times more to acquire a new consumer as compared to retaining a pre-existing one. Banks should focus on retaining their customers by ensuring their satisfaction, preventing churn, and enhancing customer lifetime value. Banks have large databases pertaining to the transactions of their customers and other data which helps them identify ways to increase their business from a single customer (Sharma, Shastri, & Rathore, 2020). For instance, if an individual has a savings bank account with a bank, the relationship marketing executive from the bank can find ways to ensure that this customer applies for a home loan or an insurance policy from the bank. Usage of multiple products from the same bank, prevents a customer from switching. In addition to this, by creating loyalty programs and popularizing them on social media, banks can create consumer evangelists who are consumer advocates and recommend the bank's services to their peers. For instance, ICICI reached a milestone of 20 years of Digital Banking. The bank decided to celebrate the event by hosting a social media campaign inviting the top 20 customers with the highest number of transactions with the ICICI Bank internet banking or iMobile app, to meet Ranbir Kapoor. By bringing in brand ambassadors and finding ways to engage and reward loyal customers, the bank has reiterated its commitment and affection towards its customers. By offering cashbacks to customers using ICICI Bank internet banking to book an airline ticket with Air Vistara, the bank has caught the interest of the loyal customers. Social media campaigns stating that customers could get cashbacks of Rs. 1000 on minimum bookings of Rs. 8000 were appreciated by the consumer base (Bhasin & Rajesh, 2022).

MOBILE WALLET (M-WALLET) COMPANIES, PAYMENTS PLATFORMS AND SOCIAL MEDIA

India has recently witnessed how Mobile wallets and payments platforms have shaken up the consumer psyche completely. In a very short span after its launch, Google's payments app is processing the same number of digital transactions a month, as Axis bank. Samsung Pay launched its payment platform using Unified Payments Interface and Amazon Pay is moving fast. The current Indian market size for m-wallets is expected to cross Rs. 1500 crore by 2020. Top m-wallet companies in India include PayTM, MobiKwik, Oxigen and Citrus Pay (Dhingra & Gupta, 2020).

What is a Mobile Wallet?

A mobile wallet is a virtual wallet. It stores payment card information on a mobile device like a smartphone (Alavi & Ahuja, 2016). It allows users to make and receive payments easily. This way, an individual can make a payment, using a smartphone, a tablet, or a smartwatch. These mobile wallets are easily accessible and can be used for making day to day transactions. It is easy for an individual to add money to a mobile wallet and use it for making all types of payments. Individuals can also make use of the auto pay facilities which ensures timely payments of all bills and can also benefit from the promotional baskets that each e-wallet offers cashbacks, discounts, and gifts. All mobile wallets and payments platforms aid quick transfer of funds without transaction charges. In addition, India is witnessing the era of UPI (Unified Payments Interface) and the launch of apps like BHIM (Bharat Interface for money), developed by the National Payments Corporation of India. This denotes the complete transformation of the Indian payments landscape. UPI facilitates electronic fund transfer and allows users to receive or send money simply by using their mobile numbers. Owing to interoperability and a seamless experience, the BHIM app is providing a stiff competition to other e-wallet companies (Lim, Gupta, Aggarwal, Paul & Sadhna, 2021).

These companies and apps offer consumers with new services. Whenever new services are launched in the market, the associated organizations need to play an additional role-that of consumer awareness and consumer education. Consumers need to be alerted about how these services can benefit them. Relevant comparisons and promotional messages need to be sent to them to stimulate consumer adoption of the service.

Social media is serving as a brilliant platform to provide information to the consumers about the attributes and characteristics of these new services. The associated organizations can build trust and credibility for themselves, by using this virtual medium, which are important factors in the adoption of these mobile wallets by consumers[8]. This will automatically trigger their growth (Shaw, 2014).

CONCLUSION

The Indian Banking sector is witnessing significant levels of innovation, transformation, and digitization. The sector is well regulated and is being further restructured to cater to the growth of the domestic banking industry in India. As digitization increases, growth of mobile banking, internet banking and facilities like ATM have changed the way consumers use the facilities of banks (Shridhar & Sharma, 2019). A growing middle class where several members are working, need to maintain salary accounts and the need to handle their money in an efficient manner, is giving rise to the need for banks to communicate with their customers in more organized and methodical ways. Social media presents a brilliant opportunity for the same, as customers need to be made aware of how individual banking brands can benefit them and help enhance better returns on their financial investments. Banks are all about money and finances and the traditional Indian consumer who has been indulging in a relationship with his banks, on the premise of trust, needs to be handled with care. As information technology, ecommerce and social media allow consumers to access information and avail banking services 24 hours a day, across temporal and geographical borders, marketers need to develop new customer-centric strategies, to deal with the high expectations of the digitally empowered consumers and deliver a personalized, immersive experience, to remain competitive (Bhasin & Rajesh, 2022). Social media marketers in the Banking sector can use online networks for 4 major purposes - Providing information and educating customers, sharing promotional information with consumers, creating a brand identity for the banks, and listening to customers. A thorough research and analysis of the banking sector helps compile a list of seven functional benefits offered by social media, specifically for the growth of the banking industry. These include formation of an online community for consumer engagement, relationship banking, creating a brand identity for banks, communicating, Segmentation and Targeting, Customer acquisition through advertising and Customer interaction, co-creation, and retention. India has recently witnessed how Mobile wallets and payments platforms have shaken up the consumer psyche completely. These companies offer consumers with new services. Whenever new services are launched in the market, the associated organizations need to play an additional role-that of consumer awareness and consumer education. Consumers need to be alerted about how these services can benefit them. Relevant comparisons and promotional messages need to be sent to them to stimulate consumer adoption of the service.

Social media is serving as a brilliant platform to provide information to the consumers about the attributes and characteristics of these new services. The associated organizations can build trust and credibility for themselves, by using this virtual medium. This will automatically trigger their growth (Dua, Singh, & Das, 2021).

REFERENCES

Adam, I. O., & Alhassan, M. D. (2021). The role of social media in the diffusion of e-government and e-commerce. *Information Resources Management Journal*, *34*(2), 63–79. doi:10.4018/IRMJ.2021040104

Alavi, S., & Ahuja, V. (2016). An empirical segmentation of users of mobile banking apps. *Journal of Internet Commerce*, *15*(4), 390–407. doi:10.1080/15332861.2016.1252653

Arora, T., & Agarwal, B. (2020). An empirical study on determining the effectiveness of social media advertising: A case on Indian millennials. *International Journal of E-Business Research*, *16*(2), 47–68. doi:10.4018/IJEBR.2020040104

Bhasin, N. K., & Rajesh, A. (2022). The role of emerging banking technologies for risk management and mitigation to reduce non-performing assets and bank Frauds in the Indian Banking System. *International Journal of e-Collaboration (IJeC), 18*(1), 1-25.

Bobade, P., & Alex, A. (2020). Study The Effect of Covid-19 in Indian Banking Sector. *JournalNX*, 179-184.

Das, S. (2020). Innovations in digital banking service brand equity and millennial consumerism. In *Digital transformation and innovative services for business and learning* (pp. 62–79). IGI Global. doi:10.4018/978-1-7998-5175-2.ch004

Dhingra, S., & Gupta, S. (2020). Behavioural intention to use mobile banking: An extension of UTAUT2 model. *International Journal of Mobile Human Computer Interaction*, *12*(3), 1–20. doi:10.4018/IJMHCI.2020070101

Dua, S., Singh, I., & Das, S. (2021). Banking innovative service with digital brand equity for new age consumers: Internet banking and millennial consumerism. In *Innovations in digital branding and content marketing* (pp. 134–159). IGI Global. doi:10.4018/978-1-7998-4420-4.ch007

Garg, P. (2020). Impact of digitization on commercial banking services. In *Technological Innovations for Sustainability and Business Growth* (pp. 71–90). IGI Global.

GinotraP. (2019). *Innovations in Indian Banking Sector*. Available at SSRN 3438918.

Gupta, N. (2019). A study towards the digitalization of Indian banking sector. *Asian Journal of Multi-dimensional Research*, *8*(2), 87–94. doi:10.5958/2278-4853.2019.00034.X

Gupta, R. (2021). Industry 4.0 Adaption in Indian Banking Sector—A review and agenda for future research. *Vision (Basel)*.

Gupta, S., Aggarwal, A., & Mittal, A. (2021). Modelling the motivations of millennials' online shopping intentions: A PLS-SEM approach. *International Journal of Business and Globalisation*, *29*(1), 135–147. doi:10.1504/IJBG.2021.117409

Gupta, S., & Kumar, R. (2017). Effectiveness of digital marketing a descriptive analysis. *International Journal of Applied Business and Economic Research*, *15*(2), 1–8.

Huang, L. (2020). Social media-based data collection and analysis in educational research. In *Advancing Educational Research with Emerging Technology* (pp. 54–77). IGI Global. doi:10.4018/978-1-7998-1173-2.ch004

Joseph, E., & Dhanabhakyam, M. M. (2022). Role of Digitalization Post-Pandemic for Development of SMEs. In *Research Anthology on Business Continuity and Navigating Times of Crisis* (pp. 727–747). IGI Global. doi:10.4018/978-1-6684-4503-7.ch036

Kalaisel, V. I. S. (2020). A Study on Role of E-Banking Services Towards Digital India. *Journal of Interdisciplinary Cycle Research*, *12*(2), 939–951.

Kaur, S. (2020). Social and financial performance of Indian banking sector. *International Journal of Public Sector Performance Management*, *6*(4), 435–455. doi:10.1504/IJPSPM.2020.109301

Keller, K. L. (2001). *Building customer-based brand equity: A blueprint for creating strong brands*. Marketing Science Institute.

Lim, W. M., Gupta, S., Aggarwal, A., Paul, J., & Sadhna, P. (2021). How do digital natives perceive and react toward online advertising? Implications for SMEs. *Journal of Strategic Marketing*, 1–35. doi:10.1080/0965254X.2021.1941204

Mathew, V. (2021). Prospects, Challenges, and Opportunities of Digital Financial Services in Developing Countries. *Managerial Issues in Digital Transformation of Global Modern Corporations*, 69-88.

Mitic, M., & Kapoulas, A. (2012). Understanding the role of social media in bank marketing. *Marketing Intelligence & Planning*, *30*(7), 668–686. doi:10.1108/02634501211273797

Parvatiyar, A., & Sheth, J. N. (2001). Customer relationship management: Emerging practice, process, and discipline. *Journal of Economic & Social Research*, *3*(2).

Paul, J., Gupta, S., & Tyagi, S. (2021). Theory of dogmatism, personality traits and shopping behavior. *European Management Journal*. Advance online publication. doi:10.1016/j.emj.2021.10.009

Perwej, A. (2020). The impact of pandemic COVID-19 on the Indian Banking System. *International Journal of Recent Scientific Research*, *11*(10), 39873–39883.

Potts, J., Hartley, J., Banks, J., Burgess, J., Cobcroft, R., Cunningham, S., & Montgomery, L. (2008). Consumer co-creation and situated creativity. *Industry and Innovation*, *15*(5), 459–474. doi:10.1080/13662710802373783

Sawhney, A., & Ahuja, V. (2021). Drivers of Social Media Content Marketing in the Banking Sector: A Literature Review. *International Journal of Service Science, Management, Engineering, and Technology*, *12*(3), 54–72. doi:10.4018/IJSSMET.2021050104

Shainesh, G., & Sheth, J. N. (2005). *Customer Relationship Management: A Strategic Perspective*. Macmillan.

Sharma, R., Shastri, S., & Rathore, J. S. (2020). Exploring E-CRM in Indian banking sector. *International Journal of Public Sector Performance Management*, *6*(5), 653–663. doi:10.1504/IJPSPM.2020.110136

Shaw, N. (2014). The mediating influence of trust in the adoption of the mobile wallet. *Journal of Retailing and Consumer Services*, *21*(4), 449–459. doi:10.1016/j.jretconser.2014.03.008

Shridhar, R., & Sharma, A. (2019). Marketing Strategy and its Influence in Banking Sector. *Asian Journal of Management*, *10*(4), 346–348. doi:10.5958/2321-5763.2019.00052.0

Singh, A. (2019). *Awareness of Internet and Internet Banking in Indian Banks*. Academic Press.

Tabassum, M., Perumal, S., Mohanan, S., Suresh, P., Cheriyan, S., & Hassan, W. (2021). IoT, IR 4.0, and AI Technology Usability and Future Trend Demands: Multi-Criteria Decision-Making for Technology Evaluation. In *Design methodologies and tools for 5G network development and application* (pp. 109–144). IGI Global. doi:10.4018/978-1-7998-4610-9.ch006

Trivedi, S., & Malik, R. (2022). Social Media Marketing as New Marketing Tool. In Research Anthology on Social Media Advertising and Building Consumer Relationships (pp. 18-33). IGI Global. doi:10.4018/978-1-6684-6287-4.ch002

Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing*, *60*(2), 31–46. doi:10.1177/002224299606000203

KEY TERMS AND DEFINITIONS

Brand Identity: This refers to the visible elements of a brand including color, design, and logo, that identify and differentiate a brand in the consumer mind.

Consumer Segmentation: This is the practice of grouping similar consumers together. Each group or segment contains members which are dissimilar from members of the other group or segments.

Consumer Targeting: This is the process of examining the attractiveness and suitability of different consumer segments and then approaching them separately.

Relationship Banking: This is a concept where banks move beyond transactional banking, to form relationship with their customer and use these relationships to enhance consumer loyalty.

Social Media: A series of virtual channels, tools and platforms which enable people to come together in the virtual arena and interact with each other, collaborate, and share content.

APPENDIX: ADDITIONAL READING

Case Study: PayTM

PayTM represents the success story of the mobile wallet domain in India. India underwent an era of demonetization, under Prime Minister, Narendra Modi. Subsequently, cashless transactions became popular, new bank accounts were opened overnight, millions of new users got pushed onto the country's digital economic grid by virtual fiat, e-payment services saw rapid growth and PayTM's evolution skyrocketed overnight. Interestingly, digitally focused sectors like online grocery started flourishing and digitization touched a new success point when the vegetable vendors on India's streets created PayTM wallet accounts and provided swiping machines in their outlets. Small time convenience stores, rickshaw pullers and taxi drivers also jumped onto the cashless world showing that a new digital era had begun.

PayTM was launched in 2010 by Vijay Shekhar Sharma and was initially positioned as a prepaid mobile and DTH recharge platform. PayTM wallet came into being in 2014 and there was no looking back once it gained endorsement by Indian Railways and Uber.

- What can consumers use PayTM for?
    - Recharging their mobile phones
    - Make travel - (air and rail) and hotel bookings
    - Book movie or amusement park tickets
    - Transfer money
    - Pay insurance premium
    - Pay education fees
    - Pay electricity, gas and water bills
    - Buy gold online using PayTM Gold

In 2017, PayTM became India's first payment app to cross over 100 million app downloads. Other members of the PayTM portfolio include PayTM Payments Bank, PayTM for Business app and PayTM mall. PayTM also launched two wealth management products-PayTM Gold Savings Plan and Gold Gifting.

More and more customers have adopted PayTM because of four primary reasons-ease of use, fast service, instant availability, and the numerous cashbacks offered across transactions.

PayTM's advertising is done across the following media vehicles-

- Television
- Radio
- Print
- OOH
- Social Media

The company developed an interesting integrated marketing campaign titled 'PayTM karo', which became an overnight success because of a high resonance with customers. PayTM became a household name because of the campaign which successfully showcased the uses of PayTM and positioned PayTM wallet as an alternate currency leading to a cashless India. By enhancing brand likeability and maintaining uniformity of the marketing message across all touchpoints, the company was able to embed information pertaining to PayTM's functionalities in the minds of the common man (Kaur, 2020). The simple storyline of how individuals could send money to their relatives, pay electricity bills, make offline payments, and buy groceries, triggered a mass appeal and a well-crafted social media strategy used the growing popularity of the brand to accomplish the development of engagement with the consumers in the online domain. The social media popularity of Paytm financial services, Paytm Mall, Paytm entertainment, Paytm payments bank, Paytm for Business etc. is growing. The company has successfully ensured that the robust social media presence caters to all the 4 Agendas - Providing information and educating customers, sharing promotional information with consumers, creating a brand identity, and listening to customers. The Wednesday wisdom posts on investment tips for consumers, content about ordering food using the PayTM app, booking movie tickets and getting cashbacks, informative content like 'over 42 million payments bank customers can now invest in mutual funds' and 'PayTM hotels-lowest price guaranteed' are efforts in the above direction (Paul, Gupta, & Tyagi, 2021).

However, what stands out is the relationship building endeavors of the brand by showcasing its emotionality and empathy towards consumers (Das, 2020). Posts pertaining to motivational proverbs and messages under the aegis of Monday motivation, the Friday fun puzzles and the social responsibility endeavors for the bereaved families of the Pulwama tragedy in India, have successfully positioned PayTM as a growth oriented and aggressive, yet emotionally sensitive brand in the minds of the consumers.

Chapter 3
Museums in the Digital Age:
Hybrid Museum Experience

Gamze Ergin
https://orcid.org/0000-0002-7874-4902
Mimar Sinan Fine Arts University, Turkey

ABSTRACT

This chapter examines the transformation of museums into a hybrid space. In this context, a fully digital contemporary museum in Paris, Atelier des Lumieres, has been chosen as a case study. The research aims to answer the following questions: What is the historical process of change in artworks and museum spaces through technical reproduction? What are the factors that shape the museum experience? What is the hybrid museum? How does the museum space and experience transform with digital technological representation methods? The theoretical framework investigates the technological development of museums with a comprehensive literature review. In addition, the study creates a theoretical construct for the hybrid museum experience by examining the changing museum experience with the effects of digitalization. Atelier des Lumieres was investigated for its characteristics of the hybrid museum experience by field research. As a result, the study offers alternative solutions to increase the hybrid museum experience.

INTRODUCTION

Rapidly developing digital technologies are widely used in many disciplines, from communication to art, from education to entertainment. Recent technologies such as Virtual Reality (VR), Augmented Reality (AR), Mixed Reality (MR), projection mapping, Artificial Intelligence (AI), and 3D printers are being widely used in art production. New spatial interfaces are emerging at the intersection of virtual and physical, and the future of the immersive, inclusive, interactive museum that stretches the boundaries depend on these digital applications. These emerging technologies bring unique spatial experiences. In the digital age, museums are becoming a hybrid experience space.

The museum-technology relationship is contextual. Museums have been changing throughout history by keeping up with new developments. In the 20th century, defined as "The Age of Extremes" by

DOI: 10.4018/978-1-6684-5274-5.ch003

Hobsbawm (2020), social and political events, wars, and scientific and technological developments have also affected all fields of art. Museums, which have been in constant change since their emergence, have gained a new identity in the 20th century. After the utilization of photography and video in art production, internet technology has also revealed other interfaces in the reproduction and dissemination of information. These developments have transformed museums into institutional spaces that change simultaneously with technology (CIDOC, 2020).

Artworks have gained new identities by transforming with digitalization. Whether the copies of found objects, photographs, videos, and works of art had artistic value or not was a controversial issue even before the digital age of artistic production. According to Walter Benjamin (1935/2020), works produced through video and photography can create new meanings even if they cause the work of art to lose its "aura." New technologies offer different possibilities by enabling artworks to be reproduced and presented to society.

Today, digital production and exhibition techniques are used in museums and archiving beyond photography and video. For instance, through AR technology, classical works of art can be animated, or a cultural heritage object that is too sensitive to touch can be 3D printed and used as a tactile object next to its original. According to Mensch (2019), a copy can be distinguished by three dimensions: Physical characteristics, function/importance, and context. Museologically, each object is unique in the interaction between these three dimensions. Even with a high degree of physical similarity, a copy is always different from the original by its function/importance and context (Mensch, 2019). Artifacts reproduced with digital technologies are generally far from imitation but rather aim to strengthen communication and create an immersive visitor experience. Thus, transforming the spatial identity of the museum. The new production and representation methods create hybrid museum spaces that bring together physical and digital space. All these initiatives transform museology with the increasing diversity of information technologies. In addition to management, archiving, and exhibition techniques, they also play a vital role in museums' architectural transformation.

This research aims to examine the hybrid museum in depth through the digitalization process of museums. Firstly, the study investigates the background through the digitalization process of museums and then constructs the museum experience and hybrid museum concepts. After a comprehensive literature review, the research gathers data from a hybrid museum using the single case study method from qualitative research methods. As one of the latest hybrid museums, Atelier des Lumieres in Paris was chosen to examine with a physical site visit. Through the site analysis, the study documents and analyses the hybrid museum space and the process of the hybrid museum experience.

BACKGROUND

Technically Reproduced Artworks

While examining the relationship between artworks and technology, Walter Benjamin's famous article The Work of Art in the Age of Mechanical Reproduction is one of the principal sources in the literature. According to Benjamin (1935/2021), technical reproducibility first began with the woodblock printing of graphic art. For the first time in history, graphic arts could be put on the market daily using the lithography technique. However, the invention of photography overcame this with a great leap. It made more impression than the invention of the Internet in its time (Walsh, 2007). This 19th-century innovation has triggered a cultural -and at the same time artistic- change that brought visuality to the fore. It allowed the rapid production of images and "perfection" in art production (Benjamin, 1935/2021). However, Benjamin remarks that this state of being perfect causes the work of art to lose its uniqueness, its "aura" as he puts it. For him, the quality that gives the work of art its uniqueness is its existence with its original quality as where it belongs. However, as Benjamin emphasizes, new techniques and productions are unavoidable. In conjunction with the development of photography and cinema, art has lost its divine quality resulting from its uniqueness. It has become a means of entertainment for the masses, a part of the culture industry.

Whether photography is an art form or not, the loss of aura has been debated for many years. And finally, at the end of the 20th century, it was accepted as an art form (Walsh, 2007). The visuality of photography that reflects the environment with all its details has changed public perception through artistic realism which is hard to achieve with paintings.

Even before photography, artists were imitating artworks. Reproductions, such as engravings were considered works of art. However, with the invention of the camera, photography became the primary production tool of new images (Walsh, 2007). The reproducibility of images has also transformed the identity of museology. In addition to exhibiting classical works, museums have turned into places that can display copies of originals through photography, as they are educational and facilitate access to information. As a new visual production technology, photographic productions were not a part of museum collections but became a method for public awareness and access to information.

Technical reproduction has also provided a significant breakthrough in archiving, dissemination, and display. Andre Malraux's (1978) concept of the imaginary "museum without walls" (Le Musee Imaginaire) owes its origin to the invention of photography. Malraux explains the possibility of bringing together all the sculptures, paintings, different kinds of art, and new genres through photographic reproduction. He defines them not only as artistic products but as "art moments" (Malraux, 1978). Malraux's museum without walls came true with digitalization and the Internet. It has long been commonplace to display artworks in virtual museums. During the Covid-19 pandemic that emerged in 2020, many museums continued their activities virtually. They have also gained a new identity in physical space through digital representation methods. Contemporary museums use digital effectively in both their archives and exhibitions.

Digitalization has also had sociological effects on the perception of art. Walter Benjamin (1935/2021) likens the change in the relationship between replicas and the original artwork and its audience to the perception of architectural space. According to him, the relationship established with architectural spaces develops in two ways: visual and tactile. The perception of architectural space includes habits and does not require intense attention. For this very reason, together with technically reproduced art such as cinema, the audience habitually examines the work without focusing, just like in the architectural space. In this context, the perception between the original work of art and the work obtained by technological production has changed (Benjamin, 1935/2021).

Furthermore, the contextual transformation mentioned here is not just a traditional work of art taken from its original environment and brought to the museum, for instance, to a white cube gallery space. The spatial identity of the museum and the artworks produced with contemporary technological methods are now designed to serve this perception. Each of them is a production aimed at entertaining the masses, and as Horkheimer and Adorno put it, they are parts of the culture industry (Adorno, 1947/2021).

Digital Transformation of Museums

Culture industry is transforming with digital technologies. The history of digitalization in museums dates to the 1960s. Smithsonian Institution in Washington put a stake in the ground on digitalization of museology in 1967 (Parry, 2007). With the cultural and ecological awakening of 60s America, social interest in museums increased. However, the inventions of television and computers and their effects on social life have changed visitor expectations. Especially after the emergence of the new museology discourse in the 1980s, museums have increasingly begun to be seen as institutions that point to and contribute to social change (Vergo, 1989). Society began to expect regularly recorded collections and renewed exhibition environments at the end of the 20th century. (Williams, 1987). At that time, access to computers in museums was an expensive technology that only large-scale museums could afford. Museums tried to use a complex system by building rooms for early computers called “mainframes”. Few large-scale museums were able to incorporate a computer system. SELGEM (SELf GEnerating Master), produced by the Smithsonian Institution, was used for collection management and has been freely available to other institutions since the 1970s (Williams, 1987). The writings of Williams on the digitalization history of museums define how far the relationship between museology and computing goes back. It shows that both collection records and social developments go through technology. In this context, it is appropriate to say that the connection of museology with digitalization initially started with collection records.

In the 1990s, with the influence of new media art, a new understanding of museology and critical approaches to new technologies began to be presented (Parry, 2010). The emergence of digital artworks and computer-aided products in museums has also affected the display methods. The transition from permanent-collection-oriented exhibitions to periodic-exhibition-oriented programs has begun.

According to Parry (2013), digital technologies have become normative in museums after digital technological developments of the last decade. Interactive technologies began to be used in science museums and museums in Europe in the 1920s. Tangible objects were the essence of the participatory learning process. In 1933, science museums in the United States started using the information transmission method through interaction with objects (Bedno & Bedno, 1999). Since then, museums have used multiple technological advances. High-tech interactive systems such as Augmented Reality, multi-touch surfaces, and Virtual Reality have increasingly been used in many art museums in recent years (Confalonieri, 2015).

Negroponte (1995) predicted the effects of digitalization on our lives and called the 21st century the post-information age and that each generation will become more digital than the next. He explained the impact of digitalization on art as follows:

We are entering an era when expression can be more participatory and alive. We could distribute and experience rich sensory signals in ways that are different from looking at the page of a book and more accessible than traveling to the Louvre. Artists will come to see the Internet as the world’s largest gallery for their expressions and as a means of disseminating them directly to people. (Negroponte, 1995, 224)

Today we know that Negroponte’s predictions have come true. Digitalization, new media art, and information technologies turned museums into a multi-layered, experience-oriented spaces. The transformation that started with photography proceeded with inventions such as video, projection mapping, 3D printers, and immersive reality technologies.

Digitalization has created a paradigm shift for museums. They have had to adapt to preserve their existence (Tallon, 2019). The digital age has created a participatory culture (Bautista, 2013). Thanks to the progress in digital archiving and exhibition techniques, the accessible areas in museums have increased. Museum spaces have become more transparent to the public. They are obliged to adapt to the social changes in communication with attractive methods and cultural activities that can include all segments of the society, especially the new generation born into the digital. Within the framework of these expectations, museums have gained the identity of an experiential space. They have transformed from places where artifacts are preserved and exhibited to user-oriented experiential structures.

Contemporary museums have become places that encourage smartphones and social media today. Historically, museums are the institutional places for accessing information together with libraries, archives, and galleries which have transitioned from collection-oriented spaces to visitor/user-centered models with the impact of developments in information technologies (Giannini & Bowen, 2019). With digital methods that increase the user experience, the exhibition styles of museums are also changing. In addition to museum archives, virtual museum tours, and virtual exhibitions, it is consequential to reveal the differences between experiencing the museums in real space. In this context, the museum architecture and interior design gained a flexible, permeable, and inclusive identity.

As curated spaces, museums offer knowledge and experience about objects or themes. Digital tools enable new ways of providing this environment. Digital media is reintroducing and transforming previous representation techniques while generating new ways of looking at and understanding collections. Each of them claims to bring the outside world into the museum. They produce new ways of being in the world and learning about it (Geismar, 2018).

The production of space that highlights the urban culture by making the public space participatory has become more important than its form (Gandolfi, 2009). New digital technologies offer tools that can transform spaces regardless of their structure. Just as the diversity in artistic productions increases with technology, museums use technology as a tool for functionality and display techniques. New technologies operate as facilitating resources for museums to achieve their goals of archiving works of art and presenting them to public service. Immersive reality technologies such as AR, VR, and MR have become widespread for cultural knowledge dissemination. They have been used for enriched personalized museum experiences (Kassahun Bekele & Champion, 2019). The use of immersive reality technologies in museums results in Human-Computer Interaction (HCI) and creates altered museum experiences. It is critical to understand the dimensions of these new experiences to address the issues regarding the HCI.

MUSEUM EXPERIENCE

Digitalization brings interaction, and interaction brings the concept of experience to the fore. The culture industry is directly related to experience. Merriam-Webster Dictionary (2021) defines the concept of experience as “direct observation of or participation in events as a basis of knowledge.” Experience is knowing and perceiving the surroundings through senses, perception, and comprehension (Tuan, 1977). It is both a mental and physical activity. According to Pallasmaa (2011), cognition creates knowledge and forms artistic ideas by triggering the imagination.

However, the museum experience is often associated with aesthetic experience. John Dewey had a significant impact on 21st-century museology through his comprehensive theories for artistic and aesthetic experiences in his book Art as Experience (Bedford, 2014). Dewey uses the definition of “an experience" instead of aesthetic experience. According to him, for an action to be called an experience, it must be educational, and the person must be an active participant in the implementation of the action (Glass, 1997). In this context, it is not accidental that the experience concept has become one of the main concepts affecting the culture industry. Pine and Gilmore's (1998) article "Welcome to the Experience Economy" explains the experience economy concept through its relationship with the entertainment industry and new technologies. According to them, experiences are the center of the entertainment industry. They encourage new experiences such as motion-based simulators and virtual reality.

Museums would offer remarkable experiences even before they were defined as experiential spaces. However, Hein (2006) points out that the concept of "experience museum" emerged in the middle of the 20th century when temporary exhibitions replaced permanent collections (as cited in Bautista, 2013). It was not a common practice to survey museum visitors until the 1960s. Museums started learning about the wishes of society in the 60s and 70s (Hein, 2006). They transformed their model from education with information transmission to mutual interaction, information sharing, and improving the visitor experience. This experience-based model continues to evolve, supported by digital technologies. Museums try to interact with visitors in physical space, not only in the focus of visuality but also by digitally assisted stimulation of all the senses. They offer tools and applications that aim to increase the museum experience by analyzing the data obtained simultaneously from the museum visitors. In this context, museums are becoming hybrid spaces that blend virtual applications into physical space.

There is comprehensive literature on museum visitor studies (Black and Hein, 2003; Falk and Dierking, 1992, 2000, 2012; Hooper-Greenhill, 1999; Black, 2012). These studies suggest that the museum experience is not standard for everyone but often occurs as a personal experience (Chang, 2006). The change in the characteristic features of the museum visitors also affects their experience. In this context, Falk and Dierking (2012) discuss the visitor-oriented museum experience under three main headings in their museum experience model called the Contextual Model of Learning: personal, socio-cultural, and physical. The personal context means visitor characteristics. The socio-cultural context defines factors such as the visitor's local living area and language. The physical context defines the physical environment and architecture of the museum. In addition to these three contextual factors, Falk and Dierking define the time factor as an integral part of the model. The Contextual Model is a dynamic and situation-specific museum experience model that is constantly reproduced by the museum visitors and becomes the experience over time (Falk & Dierking, 2012).

Walker (2008) argues that the word "visitor" is associated with 'passivity' as if a person just comes and visits a museum collection and leaves the place. However, Walker emphasizes that many museums today accept a "constructivist" view, suggesting knowledge is actively produced by a learner. Museums now focus not on what an individual learns but on what the museum contributes to their existing knowledge. Thus, the importance of a meaningful and fulfilled museum experience emerges.

According to Ciolfi and Bannon (2007), the practices that make space meaningful and offer personalized experiences lie in the 'space-place' relationship. Ciolfi and Bannon define the place with personal, social, and cultural dimensions and deal with the concept of 'place' through Tuan's (1977) definition of dimensions of place. They argue that technologically supported museum spaces establish personal, social, and cultural ties as in the concept of place. Each dimension is present at any given moment in one's spatial experience. They define the museum experience through physical/structural, personal, social, and cultural dimensions (Ciolfi & Bannon, 2007). Ciolfi and Bannon describe these dimensions as follows:

- **Physical/Structural Dimension:** the aesthetical features of the exhibition

- **Personal Dimension:** the exhibition should encourage visitors to join and express their ideas and be inclusive.
- **Social Dimension:** the exhibition should allow visitors to interact with each other.
- **Cultural Dimension:** the exhibition should represent the museum identity and the urbanites.

The dynamic connections between these dimensions shape the experience. Although influenced by the interaction and presence of others, each experience is individual and unique. Understanding a place and its inhabitants lies in these dimensions and interactions in between. They define a fulfilled physical space experience. Contemporary museums support their presentation techniques and augment the physical space through immersive digital technologies. Thus, creating the hybrid museum concept.

The Hybrid Museum Concept

The hybrid museum concept is directly related to the hybrid space notion. Hybrid space has different interpretations in literature. While some sources define a hybrid museum as a combination of museums, libraries, galleries, and archives under a single institution (Robinson, 2019) or their public-private relationship (Schuster, 1998; Rius-Ulldemolins, 2016), other researchers define the concept through the relationship between digital and physical space.

The International Council of Museums (ICOM) defines museums as: "A non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, research, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment." (ICOM, 2007). The 21st-century goals of museology can be seen in this definition. Museums are institutional places of knowledge that highlight their educational and public service identity. Toward accessing a broader audience and sustaining the museum hegemony, digital tools are handy, and they help create new spatial experiences.

Experiential exhibitions usually need open-planned free spaces for temporary exhibitions in diverse sizes and presentation methods.

Contemporary museum structures are designed with extensive galleries to serve temporary, interactive, immersive exhibitions. Large-scale, inclusive, and interactive spaces enable new ways of perception and learning in the museum (Kocsis & Kenderdine, 2014). New media and digital technologies offer tools for these interactive spaces.

According to Semper (1997), the key to understanding the potential of the new media in museums is to understand the museum experience. Semper defines museums as unique, public places that tend to get self-contained and disconnected from society. New media technologies can help museums connect with the world as hybrid spaces by mixing exhibits, media, communication, and both on and offsite audiences (Semper, 1997). Since then, new media technologies have developed and become more widespread. Virtual experiences with a realistic simulation in physical spaces created hybrid spaces with a developed technological infrastructure. Physical and digital environments came together through the possibilities of digital media, and traditional public spaces became hybrid spaces (Kluitenberg, 2006). Kluitenberg (2006) criticizes Castells' (1996) theory of two kinds of spatial logic in "The Network of Waves Living and Acting in a Hybrid Space". According to Castells, these two kinds of spatial logics are "the logic of material places and locations (space of place) and the logic of intangible flows of information, communication, services and capital (space of flows)." Kuitenberg argues that the current tendency of information technologies blurs the distinctions between the physical space and the informational space.

So these two spatial logics are no longer strictly separated by the influence of technology. Instead, he proposes the hybrid space as a multiform concept as follows:

Against the place lessness and continuity of Castells' ahistorical 'space of flows' stands the discontinuity and multiplicity of hybrid space. The hybridity of this spatial concept refers not only to the stratified nature of physical space and the electronic communication networks it contains, but every bit as much to the discontinuity of the 'connectivity' or degree of connection between the multiplicity of communication networks. (Kluitenberg, 2006)

Today, this stratified nature of the hybrid space opens the public sphere to new possibilities. Hybrid spaces born from the union of physical and virtual, bring different meanings, forms, dimensions, and qualities to public spaces through digital technological opportunities.

Digitally supported museum experience is realized with tools such as sensors, VR, AR, MR, AI, 3D printers, and projectors. Digital innovations enable new forms of representation. They change the perception of space. Layering digital on physical space opens new perspectives for visitors to direct their experience through digital applications. Complex reproduction methods immersively represent even classical artworks. AR and MR tools create 3D visuals in real space. The hybrid museum experience transforms together with the state of the artworks.

According to the European Commission report "Innovation & Cultural Heritage", the use of digital tools helps increase the museum experience and engage visitors actively with cultural heritage (European Commission, 2018). They help provide a fun, interactive, and playful museum experience. An example of these in the report is the GIFT Project, funded by the EU's Horizon 2020 research program. The project aims to help museums create hybrid experiences that combine the physical and digital to create new mediums between visitors and the cultural heritage. One of the studies in the project offers museum visitors a mobile digital application for sharing "museum exhibition playlists" with their friends. The GIFT project constructs the hybrid virtual museum experience model through the mixed reality method (Back et al., 2018). In this context, such use of games and play in museums is increasing (Beale, 2011).

Koleva et al. (2020) also proposed hybrid gifts in their study as part of the GIFT project. Their study explored the idea of hybrid gifting in four different case studies. The first one is an augmented advent calendar that enables visitors to give personalized digital content to others. The second one is a museum gift app for gifting personalized museum tours. Another one is a locative media experience in which both givers and receivers undertake a city walk in order to select and listen to personal music playlists. And they even worked on a case for edible music tracks where digital music tracks are wrapped in food. By using the concept of "hybrid wrapping" that involves physical and digital layers through gifting, the study offered original experiences.

However, the introduction of games into a museum environment also brings its challenges (Løvlie et al., 2021). Løvlie et al. (2021) point out the distracting nature of games in the museum environment. Instead, they suggest the critical play concept by defining it as "a form of play in which norms and conventions are deliberately being challenged." To that end, they designed a single player role-playing game prototype called Twitto for the Museum of Yugoslavia. The game consists of scannable stickers as 'Artcodes' next to artifacts that belong to the former president and dictator Tito. By scanning a sticker, visitors enter a game where they get information about the period and get tasks, and questions. Thus, they get into a series of creative challenges as players. The prototype is an example of digital interactions in hybrid museums for augmentation but not a distraction from the physical artifacts.

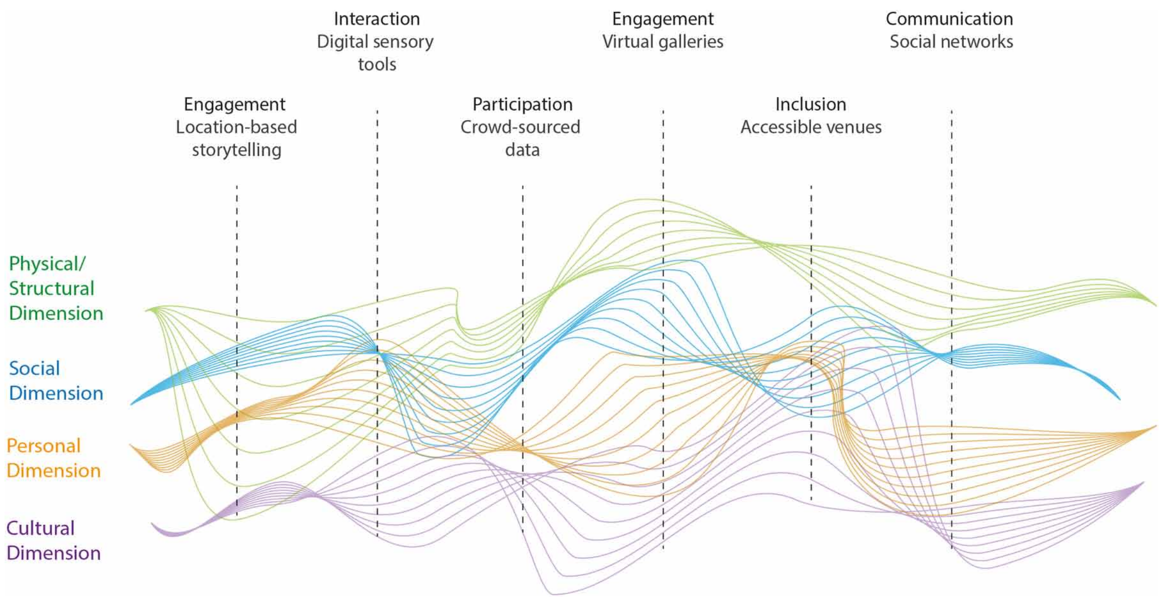
Similarly, the Berlin Global Exhibition at the Humboldt Forum in Berlin offers visitors digital technologies for participation. The visitors are expected to wear a digital wristband that collects data on their choices throughout the exhibition. The communication ticket given at the end of the museum trip shows the personalized results in the chosen language. Moreover, the engaging applications make the museum experience memorable afterward. In addition, allowing visitors to choose from multiple language packages for voice notifications also increases the inclusiveness.

The hybrid museum concept enhances the inclusivity in museums with digital sensory tools. To set an example, Smithsonian Institute uses an open-source assistive technology suite with audio called Synthaisthesia, developed by Ian McDermott, that describes works of art in detail to blind visitors using augmented reality technology (Morrison, 2021). Synthaisthesia creates an auditory experience parallel to the visual experience of art so that the visually impaired or low vision visitors can better understand the visuals in museums. Unlike the classical audio guides, this tool allows visitors to be directed to the desired points on the digital image with a mouse curser. Thus, the user can get detailed information about the work in such a way that they are in control, and disadvantaged individuals can become participants through a new museum experience model (Morrison, 2021).

Morrison (2021) classifies the visitor experience in the hybrid museum as an "expanded visitor experience" under six headings: Engagement with location-based storytelling, interaction through digital sensory tools, participation using crowd-sourced data collection, engagement with virtual galleries, inclusion with accessible venues, and communication through social networks. In order to achieve the expanded visitor experience, digital tools or presentation techniques may change, but the result should support the participation, engagement, inclusion, communication, and interaction goals. Digital tools are agents for creating aesthetically pleasing environments to support physical/structural elements (Ciolfi & Bannon, 2007). They support personalized visits to sustain the personal dimension and social interaction through social networks. Finally, they aid museum identities and help create a physical museum environment where the visitors can feel free, share freely, and be comfortable as themselves.

By using Morrison's (2021) "expanded visitor experience" dimensions to identify the technologically enhanced museum experience and Ciolfi and Bannon's (2007) "fulfilled physical space experience" dimensions, the study identifies the concept of the hybrid museum experience. According to these data, the hybrid museum experience model can be seen in Figure 1:

Figure 1. Hybrid museum experience model (Author, 2022)



The next chapter of the study investigates the case of Atelier des Lumieres in the context of the hybrid museum experience model.

AN IMMERSIVE, HYBRID MUSEUM EXPERIENCE: ATELIER DES LUMIERES

Atelier des Lumieres is the first digital art center of Paris. The museum building is a re-functionalized industrial building that dates to 1835. The industrial structure used to function as an iron foundry called The Chemin-Vert foundry. In 2013 Culturespace organization rented the building to create a digital art center in Paris, and Atelier des Lumieres opened its doors to visitors in 2018. In its first year, 1.2 million people visited the museum (Atelier des Lumieres, 2022).

The museum has a 3,270 m2 projection area. Industrial features of the former foundry are visible in its original elements, such as its metallic structure and the brick chimney (Culturespaces, 2022). The building has high ceilings of more than ten meters and open spaces with industrial features instead of regular, white cube exhibition halls. A reception area, a museum shop, and a cafe/bar welcome visitors at the entrance.

Atelier des Lumieres offers a one-hour immersive experience with various themes. The visual and audio-supported exhibit is projected on the floors and walls of the exhibition space by several projection devices mounted on the ceiling. This immersive experience is a kind of virtual reality. It immerses the viewer by projecting images in space and allows the viewer to interact with others. The physical site acts as a screen (Kayser, 2019).

The museum only exhibits digital exhibitions in physical space. The theme is usually a display of famous masterpieces of well-known painters such as Gustav Klimt, Salvador Dali, and Egon Schiele. Thus, it calls to mind the discourses of Walter Benjamin on technically reproduced artworks and the loss of aura. The immersive projection of animated visuals alters the museum environment and the aura of classical artworks. Therefore, it changes the experience of space and art (Figure 2).

Figure 2. Atelier des Lumieres, Egon Schiele and Gustav Klimt exhibition (Author, 2022)

The study uses the previously mentioned "expanded visitor experience dimensions" and the "fulfilled physical space experience dimensions" for examining the hybrid museum experience in Atelier des Lumieres. Table 1 describes the data gathered from Atelier des Lumieres in the context of the hybrid museum experience model.

Table 1. Consideration of Atelier des Lumieres in the context of Morrison's (2021) expanded visitor experience and Ciolfi and Bannon's (2007) fulfilled physical space experience dimensions

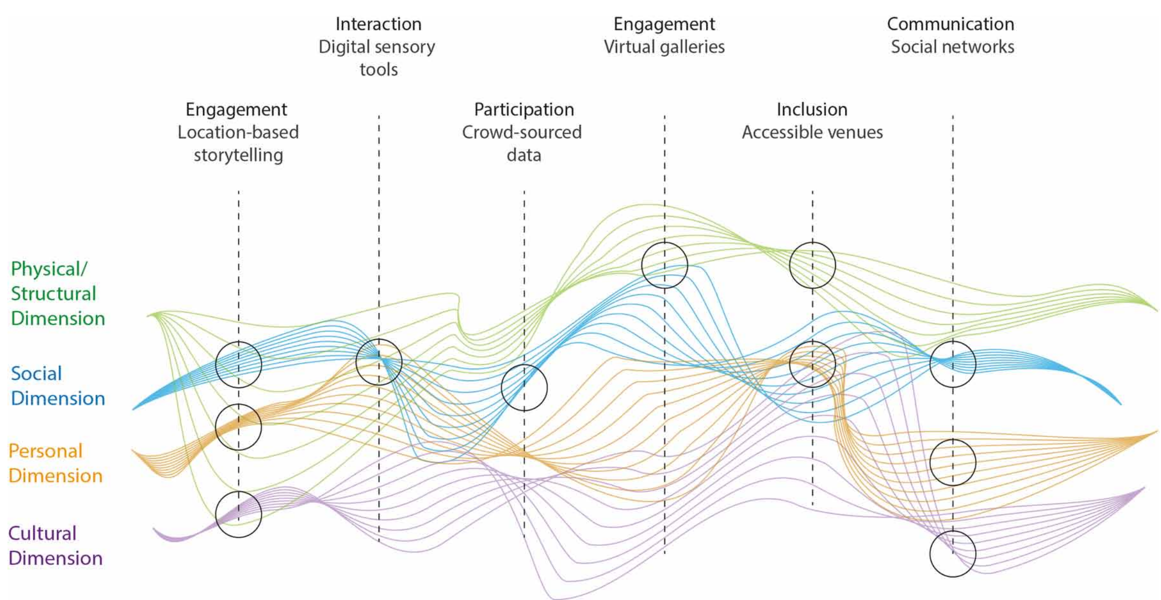
	Physical /Structural Dimension	Social dimension	Personal Dimension	Cultural Dimension
Engagement Location-based storytelling	Open space galleries	Interaction with others in museum environment	Visitors can move freely in space and interact with others.	Culturally stimulating content
Interaction Digital sensory tools	a) Projection mapping b) Touch screens c) Digital sensory tools	"Les centres d'art DES LUMIERES" Application	Digital sensory tools encourage interaction	-
Participation Crowd-sourced data		Visitors able to move freely in space and interact with others. "Les centres d'art DES LUMIERES"Application.	-	-
Engagement Virtual galleries	a) The exhibition is fully digital with immersive, virtual galleries. b) Projection mapping c) Touch screens d) Digital sensory tools	a) Social media accounts b) "Les centres d'art DES LUMIERES" Application	-	-
Inclusion Accessible venues	a) Visitors can move freely in space. b) However, the exhibition itself is not suitable for everyone. It is mostly engaged with the sense of sight.	Social media accounts promote inclusion and sharing ideas and photos of the visit.	Social media accounts promote inclusion and sharing ideas and photos of the visit.	Visitors are able to move freely in space and interact with others.
Communication Social networks	a) Open space galleries b) Visitors can move freely in space and interact with others.	a) Social media accounts b) "Les centres d'art DES LUMIERES" Application	Visitors can move freely in space and interact with others.	Visitors can move freely in space and interact with others.

Firstly, the museum uses an exhibition form based entirely on interaction with digital sensory tools. There is an area where visitors can interact with digital images using touch sensory tools. They actively participate and engage with the visuals in the cylindrical area in the center of the exhibition hall. There is an upper floor with printed information about the artist and the exhibition. Additionally, the immersive yet physical exhibition space allows visitors to interact with each other and the museum environment.

There is no cohesive story narrative, so the space can be experienced as the viewer chooses. The open-plan structure of the exhibition hall offers visitors the opportunity to move freely within the museum. Unlike the classic museum visits, the visitors are much more in contact with the museum space and experience the exhibition by sitting on the floor, lying down, and even dancing. Therefore, participation is encouraged. Layered and scaled images with immersive audio create new perspectives. Being in an immersive art show and following the story of the artworks entertainingly, the perception of space completely changes. Immersive digital presentations free the viewers out of the constraints of the traditional, static space and image.

Visuality is the basis of the exhibition. In addition to the sense of sight, the music accompanying the visuals also supports the sense of hearing. Even though the display is fully digital, it is not feasible for visually impaired people. In this context, the experience can be improved in terms of inclusivity. While physical access to the museum is easy, the content is not designed for everyone. The website and social media accounts provide up-to-date information about the exhibits and activities. Along with the social media accounts and the official website, the museum also has a digital application called “Les centers d’art DES LUMIERES”. This application contains information and anecdotes on current exhibitions. In this context, visitors keep receiving information about the content before, during, and after the visit. Therefore, the museum stays in touch with the public and is good at communication. Below, Figure 3 presents the intersection points of the fulfilled physical space experience and the expanded visitor experience dimensions of Atelier des Lumieres in the hybrid museum experience model.

Figure 3. The Atelier des Lumieres considered in the context of hybrid museum experience model (Author, 2022)



SOLUTIONS AND RECOMMENDATIONS

The road toward inclusion in museums is challenging, but the efforts of art museums in responding to diversity are remarkable. Digital technology is a crucial tool that museums use to aid them in their continuing efforts (Bautista, 2013). To strengthen the user experience and increase participation and interaction, applications supported by digital technology in real space give museums a hybrid museum identity. Hybrid museums offer many new possibilities for public interest by enhancing the experience with entertainment, interaction, participation, inclusivity, and immersion. The new museum spaces operate like “entertainment centers” free from the strict rules of classical museology. Experience and show-oriented museum spaces try to offer activities for all people. Thus, this increases the interest in museums.

In addition to digital works such as new media art and generative art, hybrid museums use digital tools to enhance spatial interaction and exhibition experience. The new generation is used to digital content, so using digital to enhance the museum experience might increase the interest in museums.

Crowdsourcing may offer rational solutions for a fulfilled exhibition experience. These applications can personalize the museum experience and sustain new perspectives and possibilities.

21st Century museums are taking a big step forward in democratization, especially with new technological applications that allow access to disabled people who previously had limited access to art or museum spaces. Hybrid museums can reach more people through digital applications both in the physical and virtual environment.

Atelier des Lumieres was investigated through the hybrid museum experience model as a museum that uses digital technologies in physical space to alter the museum experience. However, the data shows that the exhibitions in Atelier des Lumieres mainly appeal to the sense of sight and hearing. It is not fully inclusive but much more immersive than the classical presentation techniques. The previous studies in the literature indicate that hybrid museums should be inclusive, easily accessible, participatory places with the help of digital interactive tools. In this context, limited sensory tools, as in the example of Atelier des Lumieres, are helpful but not sufficient to support this purpose. Assistive technologies such as "Synthaisthesia" used in Smithsonian Institution can enhance this immersive experience so that the exhibition would be inclusive to visually impaired people as well. Moreover, crowd-sourced data collection through wearable technologies can also increase the hybrid museum experience.

On the other hand, the presentation of digital art supported by audio with an immersive approach offers new possibilities for conveying the story of the work of art. Visitors are generally passive participants in this immersive virtual reality experience since they can't alter the visuals projected to the environment. Tools like sensors, haptic devices, and smartphones can increase the interaction between the museum environment and the visitor. Mobile, wearable technologies can create invisible communities without spatial and geographical limitations (Andersen & Berzowska, 2006). Therefore, they are a connection between private space and public space. The free-planned museums without restrictions improve the social and personal dimensions of space. Visitors navigate themselves freely within the museum environment. Accordingly, wearables can enhance the museum experience without taking precedence over the exhibits and wouldn't restrict the visitor movements in the museum environment. It is critical that technology does not predominate the museum experience but work 'invisibly' as an auxiliary element.

FUTURE RESEARCH DIRECTIONS

Recent studies and emerging trends indicate that digital technology is a means of propulsion for creating an inclusive, democratic museum environment. The adaptation of new digital tools and portable and wearable devices in museums for playful museum visits strengthens the communication between visitors and the museums. Further studies that develop new communication networks, games, and plays that increase the society-museum relationship would be valuable for the research field.

CONCLUSION

In this chapter, the concept of hybrid museum experience was introduced through the case of Atelier des Lumieres. The concept is defined using the fulfilled physical space experience and the expanded visitor experience dimensions as the hybrid museum experience model. The immersive virtual reality experience in museum space was analyzed through this model.

Atelier des Lumieres offers a fully digital display technique in physical space. According to the data obtained, immersive display with projection mapping completely alters the perception of classical artworks and the perception of space. The case of Atelier des Lumieres proves that a hybrid museum can meet both the expanded visitor dimensions and the experience of physical space dimensions by using an immersive digital tool that creates a virtual environment in physical space. The open-planned museum structure offers an interactionist environment between the visitors and the museum space. As an old industrial building, Atelier des Lumieres shows its former identity with its distinctive steel structure during the digital exhibition. Yet, as the speed, content, and presentation of the visuals change along with the music during the immersive virtual reality experience, the identity of the space changes completely. However, this immersive experience focused mainly on visuals is not sufficient in the context of inclusivity. Designing exhibitions and museum spaces following universal design principles with digital assistive tools would increase the inclusiveness and democratization of the museum. Immersive reality technologies, sensors, crowd-sourced data collection, and interactive games embedded in the museum visits, hold promising potential to support a fully immersive, inclusive, interactive, and engaging hybrid museum experience.

REFERENCES

Adorno, T. W. (1947). Kültür endüstrisi: Kültür yönetimi [Culture industry: Culture management]. Iletisim Publishing.

Andersen, K., & Berzowska, J. (2006). Worn technology the alteration of social space. *Open*, *11*, 148–157.

Atelier des Lumieres. (2022). *Atelier des Lumieres an historic area.* https://www.atelier-lumieres.com/en/un-peu-dhistoire

Back, J., Bedwell, B., Benford, S., Eklund, L., Løvlie, A. S., Preston, W., Rajkowska, P., Ryding, K., Spence, J., Thorn, E. C., Waern, A., & Wray, T. (2018). GIFT: Hybrid museum experiences through gifting and play. *CEUR Workshop Proceedings*, *2235*(4), 31–40.

Bautista, S. S. (2013). *Museums in the digital age: changing meanings of place, community, and culture*. Altamira Press.

Beale, K. (Ed.). (2011). *Museums at play – Games, interaction and learning*. MuseumsEtc.

Bedford, L. (2014). *The art of museum exhibitions: How story and imagination create aesthetic experiences.* Routledge.

Bedno, J., & Bedno, E. (1999). *Museum exhibitions: Past imperfect, future tense*. Museum News the American Association of Museums.

Benjamin, W. (1935). Teknik olarak yeniden üretilebilirlik çağında sanat yapıtı [The work of art in the age of mechanical reproduction]. Istanbul: Zeplin Publishing.

Benjamin, W. (1935). Pasajlar [The arcades project]. Istanbul: Yapı Kredi Publishing.

Black, G. (2012). *The engaging museum: Developing museums for visitor involvement*. Routledge. doi:10.4324/9780203559277

Black, M., & Hein, G. E. (2003). You're taking us where? Reaction and response to a guided art museum fieldtrip. In M. Xanthoudaki, L. Tickle, & V. Sekules (Eds.), *Researching visual arts education in museums and galleries*. Kluwer Publishers.

Castells, M. (1996). *The rise of the network society*. Blackwell Publishers.

Chang, E. (2006). Interactive experiences and contextual learning in museums. *Studies in Art Education a Journal of Issues and Research*, *47*(2), 170–186. doi:10.1080/00393541.2006.11650492

CIDOC. (2020). *Digital transformation in cultural heritage institutions.* https://cidoc.mini.icom.museum/archive/past-conferences/cidoc-2020-geneva/

Ciolfi, L., & Bannon, L. J. (2007). Designing hybrid places: Merging interaction design, ubiquitous technologies and geographies of the museum space. *CoDesign*, *3*(3), 159–180. doi:10.1080/15710880701524559

Culturespaces. (2022). *Atelier des Lumieres the first digital art centre in Paris.* https://www.culturespaces.com/en/sites/atelier-lumieres

European Commission. (2018). *Innovation & cultural herritage conference report*. https://ec.europa.eu/info/sites/default/files/conferences/ki-02-18-531-en-n.pdf

Falk, J. H., & Dierking, L. D. (1992). *The museum experience*. Whalesback Books.

Falk, J. H., & Dierking, L. D. (2000). *Learning from museums: Visitor experiences and the making of meaning*. Altamira Press.

Falk, J. H., & Dierking, L. D. (2012). *The museum experience revisited*. Routledge.

Gandolfi, E. (2009). Spaces of freedom. *Archit Design*, *79*, 78-81.

Geismar, H. (2018). *Museum object lessons for the digital age*. UCL Press. doi:10.2307/j.ctv1xz0wz

Giannini, T., & Bowen, J. P. (2019). Museums and digitalism. In T. Giannini & J. P. Bowen (Eds.), *Museums and Digital Culture New Perspectives and Research*. Springer. doi:10.1007/978-3-319-97457-6_2

Glass, N. R. (1997). Theory and practice in the experience of art: John Dewey and the Barnes Foundation. *Journal of Aesthetic Education*, *31*(3), 91–105. doi:10.2307/3333490

Hein, H. (2006). *Public art: Thinking museums differently*. Altamira Press.

Hobsbawm, E. J. (2020). *Kısa 20. yüzyıl 1914-1991 aşırılıklar çağı* [The age of extremes: The short twentieth century, 1914–1991]. Everest Publishing.

Hooper-Greenhill, E. (1999). *The educational role of the museum*. Routledge.

ICOM. (2007). *Museum definition.* ICOM Statutes, 22nd General Assembly, Vienna, Austria. https://icom.museum/en/resources/standards-guidelines/museum-definition/

Kassahun Bekele, M. & Champion, E. (2019). A comparison of immersive realities and interaction methods: Cultural learning in virtual heritage. *Frontiers in Robotics and AI*. . doi:10.3389/frobt.2019.00091

Kayser, C. (2019). Dyaspace dialogic perception and aesthetic experience in digital exhibits A multidisciplinary approach involving humanities and neuroscience. *Hal Open Science*.

Kluitenberg, E. (2006). The network of waves: Living and acting in a hybrid space. *Hybrid Space, 11*, 6-16.

Kocsis, A., & Kenderdine, S. (2014). I sho u: An innovative method for museum visitor evaluation. In H. Din & S. Wu (Eds.), *Digital heritage and culture: Strategy and implementation*. World Scientific Publishing. doi:10.1142/9789814522984_0016

Koleva, B., Spence, J., Benford, S., Kwon, H., Schnädelbach, H., Thorn, E., Preston, W., Hazzard, A., Greenhalgh, C., Adams, M., Row Farr, J., Tandavanitj, N., Angus, A., & Lane, G. (2020). Designing hybrid gifts. *ACM Transactions on Computer-Human Interaction*, *27*(5), 1–33. doi:10.1145/3398193

Løvlie, A. S., Ryding, K., Spence, J., Rajkowska, P., Waern, A., Wray, T., Benford, S., Preston, W. & Clare-Thorn, E. (2021). Playing games with Tito: Designing hybrid museum experiences for critical play. *Journal on Computing and Cultural Heritage, 14*(2). . doi:10.1145/3446620

Malraux, A. (1978). Museum without walls. In The voices of silence. Princeton University Press.

Mensch, P. V. (2019). Copies as authentic evidence the medium is the message. *CIDOC Newsletter*. https://cidoc.mini.icom.museum/wp-content/uploads/sites/6/2020/11/CIDOC-Newsletter-2019_FINAL-2.pdf

Merriam-Webster Dictionary. (2021). *Definition of experience*. Accessed at: https://www.merriam-webster.com/dictionary/experience

Morrison, J. (2021). Hybrid museums: Enhancing visitor experiences. *Calvium.* https://calvium.com/hybrid-museums-enhancing-visitor-experiences/

Negroponte, N. (1995). *Being digital*. Alfred A. Knopf Inc.

Pallasmaa, J. (2011). *The embodied image imagination and imaginary in architecture*. John Wiley & Sons Ltd. Publication.

Parry, R. (2007). *Recoding the museum: Digital heritage and the technologies of change*. Routledge. doi:10.4324/9780203347485

Parry, R. (2010). Digital heritage and the rise of theory in museum computing. In R. Parry (Ed.), *Museums in a Digital Age*. Routledge.

Parry, R. (2013). The end of the beginning: Normativity in the postdigital museum. *Museum Worlds*, *1*(1), 24-39. https://search.proquest.com/docview/1699271092?accountid=16568

Pine, B. J., & Gilmore, J. H. (1998, July–August). Welcome to the experience economy. *Harvard Business Review*, 97–105. http://enlillebid.dk/mmd/wp-content/uploads/2012/03/Welcome-to-the-Experience-Economy-Pine-and-Gilmore.pdf PMID:10181589

Rius-Ulldemolins, J. (2016). The rise of the hybrid model of art museums and cultural institutions. The case of Barcelona. *Museum Management and Curatorship*, *31*(2), 178–192. doi:10.1080/09647775.2015.1107853

Robinson, H. (2019). *Interpreting objects in the hybrid museum*. Routledge. doi:10.4324/9780429454400

Schuster, J. M. (1998). Neither public nor private: The hybridization of museums. *Journal of Cultural Economics*, *22*(2–3), 127–150. doi:10.1023/A:1007553902169

Semper, R. (1997). Hybrid spaces, networked places: New media and museums. *Journal of Museum Education*, *22*(1), 17–18. doi:10.1080/10598650.1997.11510344

Tallon, L. (2019). Foreword. In T. Giannini & J. P. Bowen (Eds.), *Museums and digital culture new perspectives and research*. Springer.

Tuan, Y. F. (1977). Space and place: The perspective of experience. University of Minnesota Press.

Vergo, P. (Ed.). (1989). The new museology. Reaktion Books.

Walker, K. (2008). Structuring visitor participation. In L. Tallon & K. Walker (Eds.), *Digital technologies and the museum experience: Handheld guides and other media*. Altamira Press.

Walsh, P. (2007). Rise and fall of the post-photographic museum: Technology and the transformation of Art. In F. Cameron & S. Kenderdine (Eds.), *Theorizing digital cultural heritage: A critical discourse*. The MIT Press. doi:10.7551/mitpress/9780262033534.003.0002

Williams, D. (1987). A brief history of museum computerization. In R. Parry (Ed.), *Museums in a digital age* (Vol. 2010). Routledge.

ADDITIONAL READING

Alexander, E. P., & Alexander, M. (2007). *Museums in motion: An introduction to the history and functions of museums*. Altamira Press.

Arnaboldi, M., & Diaz Lema, M. L. (2021). The participatory turn in museums: The online facet. *Poetics*, *89*, 101536. doi:10.1016/j.poetic.2021.101536

Graham, B., & Cook, S. (2010). *Rethinking curating. Art after new media*. The MIT Press.

Kluitenberg, E. (2007). (Ed.). The book of imaginary media: Excavating the dream of the ultimate communication medium. Nai Publishers.

Mandić, A., & Roberts, P. (2012). Museum education in times of radical social change. *Journal of Museum Education*, *37*(3), 3, 9–13. doi:10.1080/10598650.2012.11510738

Mccarthy, J. C., & Wright, P. C. (2004). *Technology as experience*. The MIT Press. doi:10.1145/1015530.1015549

Pauget, B., Tobelemi, J. M., & Bootz, J. P. (2021). The future of French museums in 2030. *Technological Forecasting and Social Change*, *162*, 120384. doi:10.1016/j.techfore.2020.120384 PMID:33100415

Pohawpatchoko, C., Colwell, C., & Lassos, J. (2017). Developing a native digital voice: Technology and inclusivity in museums. *Museum Anthropology*, *40*(1), 52–64. doi:10.1111/muan.12130

Tallon, L., & Walker, K. (Eds.). (2008). *Digital technologies and the museum experience. Handheld guides and other media*. Altamira Press.

KEY TERMS AND DEFINITIONS

Artcodes: A pattern recognition system similar to QR codes.

Artificial Intelligence (AI): The ability of a system to accurately interpret and learn from given data and use them to achieve specific tasks through adaptation.

Augmented Reality (AR): An immersive technology that overlays digital information on top of the real environment that acts as a background through a device.

Crowd-Sourced Data Collection: To obtain data from a large group of people using digital data collection tools.

Human-Computer Interaction (HCI): An interdisciplinary field that studies how people interact with and through computers.

Location-Based Storytelling: Using computer-based tools and applications to creates stories at specific locations.

Mixed-Reality (MR): A type of immersive reality that combines the real-world environment and virtual content. It differs from virtual and augmented reality by allowing users to interact with both the real world and the virtual environment.

Virtual Reality (VR): A computer-generated stimuli that creates interactive, immersive three-dimensional environments.

Chapter 4
Can Multiple Channels Coexist?
The Case of the Indian FMCG Sector

Swati Bhatnagar
https://orcid.org/0000-0002-5507-0618
New Delhi Institute of Management, India

Rajan Yadav
https://orcid.org/0000-0003-1960-6101
Delhi Technological University, India

ABSTRACT

As markets mature, businesses adopt the multiple channel strategy to compete head on. With the intention of acquiring new markets and new customers, this strategy appears good and logical. However, if implemented in haste without a business model and proper orientation, can this multichannel strategy be beneficial in the long run? The press articles are rife with news of inter-channel competition and its consequences in different sectors. This case is set in the context of the fast moving consumer goods (FMCG) sector in India where the facts and figures are pointing to a disruption in the distribution network. How should distributors of different trade channels coexist? This case is developed from a general trade distributor's point of view on the challenges he faces and attempts to examine what should be the way going forward. Essentially, how should managers manage multiple channels? This question in channel literature has been commonly advised as a future area of research; it is unfortunate that still not much work has been done in this area.

INTRODUCTION

Businesses today, particularly consumer goods companies in the retail sector use multiple channels to reach different segments of customers in a fragmented market. A firm is said to employ a multiple channel structure when it delivers a product or service to the market through two or more channels of distribution (Gassenheimer et al., 2006; Webb and Hogan, 2002). The basic purpose behind a multiple channel strategy is extending a firm's market coverage to newer markets (Lassar and Kerr,1996). Some

DOI: 10.4018/978-1-6684-5274-5.ch004

of the prominent examples of multiple channels being deployed by businesses today are online, offline, mobile, tele calling, catalogue marketing etc. Business leaders have accepted the fact that operating multiple channels is not a choice but a necessity in today's fast changing world. Technology has brought a disruption in businesses; and the FMCG sector is no exception. As a matter of fact, it is expected that this disruption is going to be even more severe in the consumer goods space. Almost 150-190 million Indian consumers with the capacity to spend 40-45 billion were digitally influenced in the FMCG sector by 2020. However, the adoption of new emerging channels e-commerce, m-commerce, modern trade etc. is increasingly causing stress to the conventional go to market strategy (general trade) of FMCG firms. When multiple channels emerge, it is vital for the managers to systematically select specific channels and coordinate efforts amongst them to maximize the effectiveness of distribution arrangements (Coelho and Easingwood,2008). It is no surprise that the general press is inundated with news of companies that have completely failed in dealing with these new distribution structures. In the haste of chasing and adopting new channels, the important question to be answered is, do companies have a proper profitable model in place for operating these different channels? How would these channels interplay? What would be the role of different channels? Can they cannibalize each other? And if they do, is that a concern for the companies, the way it is for the distributors?

BACKGROUND

The FMCG sector deals in relatively inexpensive high volume low margin consumer products which are primarily convenience goods. Consumer good products have a high turnover rate and usually get replaced within one year. The range of products which are consumed daily include toiletries, soap, detergents, cosmetics, oral care products, shaving products, packaged foods, and digestive products. It also includes pharmaceutical products and drugs. This FMCG sector is the fourth largest sector of the economy. This market in India is expected to grow at a CAGR of 14.9% from US$ 110 billion in 2020 to US$ 220 billion by 2025 (IBEF, 2022).

The Indian online grocery market is estimated to grow at a CAGR of 28.99% and cross the sales level of about Rs. 1,310.93 billion by 2026. The gross merchandise value (GMV) of the Indian online grocery market is expected to increase 18 times over the next five years to reach US$ 37 billion by FY25. In India, the FMCG sector is majorly dominated by international companies Hindustan Unilever Ltd, Reckitt Benckiser, Procter & Gamble etc. however there are some home-grown companies as well which have created their own space and image in the sector like Dabur, Marico, ITC and the recent entrant Patanjali with their large number of product lines. Many FMCG firms have partnered with e-commerce platforms such as Dunzo, Grofers, Flipkart, and Big Basket to deliver products at the doorstep of consumers during the COVID-19 pandemic. An interesting development to note that in the fourth quarter of FY21, e-commerce sales of Marico Ltd. was 8%, Hindustan Unilever Ltd. was 6%, Dabur India Ltd. was 5%, ITC Ltd. was 5% and Godrej Consumer Products Ltd. was 4% of the total FMCG sales. As of June 2021, e-commerce share has already touched 7-8% for some of the largest FMCG companies in the country, according to Accenture India (IBEF, 2022) The e-commerce market is expected to reach US$ 200 billion in 2026 backed by growth in online users which is expected to reach 900 million in 2025.

Evolution of the Distribution strategy of the Indian FMCG Sector

The distribution strategy in the Indian FMCG sector has evolved in India since the year 1950. It can be segregated in the following phases:

- **Distribution 1.0** (1950 to 1980): This was the era of the traditional distribution model and very little changed in this duration.
- **Distribution 2.0** (1980 to 2000): This was once again the period of small changes like
    a) Manufacturer's sales personnel got transferred to the distributor for better control, supervision, and management. These were referred as Distributor Sales Reps (DBSRs) or sometimes Distributor Sales Force (DSF) or Feet on Street (FOS). Some companies even began dividing the sales teams into category teams, who would continue to serve the General Trade but shall focus on each category and SKU (Stock Keeping Unit)
    b) Leading FMCG companies started adopting technology to track primary sales at both the distributor and the branch level.
- **Distribution 3.0** (2000 to 2018): This was the period of some major changes like:
    a) Much wider adoption of technology for the purpose of tracking of inventory and sales (both primary as well as secondary). This was done through the implementation of software's like Dealer Management Systems (DMS) and Sales Force Automation (SFA) etc.
    b) The emergence and rapid growth of Modern Trade (MT) from 2000 onwards, followed by e-commerce 2014 onwards.
    c) FMCG firms started outsourcing their sales personnel to third parties to decrease the complexity for GT coverage. They also deployed in-store sales promoters to engage with end consumers to improve the shopping experience.
    d) And last but not the least, the Goods & Service Tax (GST) was rolled out in 2018. This enabled the manufacturers for the first time to view India as 'One Market'. They adapted their distribution networks, accordingly, doing away with the C&F agents and consolidating distributors across the country.

Major Segments in the FMCG Sector

Household Care: The household care segment consists of products which are used in our daily life for the purpose of household care. These items include air fresheners, dishwashing products, chlorine bleach, insecticides, polishes, laundry care, toilet care, surface care and varied other products.

Personal Care: The personal care segment includes oral, skin, hair care and cosmetic products, personal wash products, etc. The hair care market can be divided into hair oils, hair colorants, conditioners, shampoos and hair gels. Marico (with Parachute) and Dabur are the major players in the branded coconut oil market.

Oral Care: This segment consists of toothpaste, tooth powder and toothbrushes. Colgate Palmolive is the market leader with more than 49 percent of the share under its name, while HUL with 30 percent of share. Colgate and Dabur are the leaders in the oral segment.

Food and Beverages: The food and beverages segment consist of packaged food, bread, biscuits, chocolates as well as confectionery, mineral drinking water and ice creams. Most prominent items in this industry are tea, cookies, and soda. Tea is the most preferred beverage and holds an important position in the Indian market. The top players to this segment are HUL (Brooke Bond) and Tata Tea and in the food segment; Amul, Dabur, Nestlé and ITC are leading players.

Distribution Channels

The term "distribution channels" can at the moment be replaced by the term "marketing channel". "Marketing channel" is a more complex term that has been used in the USA since the 1970s, because the intermediaries include not only those who participate in the physical flow of a product from the manufacturer to the end user, but also those that have a role in the transfer of product ownership (D.Tipuric, 1993). A common definiton in all management circles is the one given by the father of Marketing Channel Studies, Louis Stern (1992), i.e., A set of interdependent organizations involved in the process of making a product or service available for use or consumption. Rosenbloom (1995) defined distribution channels as the external contractual organizations through which firms achieve their distribution objectives. From a relationship perspective, "A marketing channel can be defined as an array of exchange relationships that create customer value in the acquisition, consumption and disposition of products and services. This definition implies that exchange relationships emerge from market needs as a way of serving market needs.

The last two decades has seen a dramatic change in the retailing sector due to the introduction of the online channel and ongoing efforts of digitalization. In many retail markets, the online channel has become very popular and may be considered disruptive (Christensen and Raynor, 2003). Travel industry is a recent example with new online players, such as Expedia, Booking.com and Trip Advisor, causing a complete shake-out between traditional travel intermediaries. In industries such as food-retailing such impact has been less disruptive. However, many retailers' business models have undergone deep change (Sorescu et al. 2011) as the channel mix has changed and customers behaved differently because of these developments. To handle this development, many retailers have initiated multichannel strategies. These strategies at first mainly focused on the decision whether to add new channels to the existing channel mix (Geyskens et.al., 2002; Deleersnyder et al., 2002). This decision relates to the traditional brick-and-mortar players and to the new online players who confront the question if they should be present offline as well (Avery et al., 2012).

The scope of multi-channel retailing was broadened by allowing for issues such as the management of customers across channels and the integration of the retail mix across channels (Neslin et al., 2006). Recent years have observed a further digitalization in marketing and retailing with new challenges (Leeflang et al., 2014). More specifically, with the commencement of the mobile channel, social media, tablets, and the integration of these new channels in online and offline retailing, the retail sector continues to change. Many popular press articles are now suggesting that the world is moving from a multi-channel to an omni-channel retailing model (Rigby, 2011). Brynjolfsson et.al., (2013) argued that the past decade saw the brick-and-mortar retail stores as unique in permitting consumers to touch and feel merchandise and offer instant gratification. To counter this, the e-commerce platforms tried to persuade shoppers with wide product selection, attractive low prices, and content such as product reviews and ratings. As the retailing sector heads toward a seamless "omni-channel retailing" experience, the distinctions between physical and online will disappear turning the entire world into a showroom without walls. This movement to omni-channel retailing surprisingly has not been conceptualized that well in channel literature despite its mounting importance in practice.

Channel Conflict: Conflicts are issues that test the relationship between channel members. The most common causes of conflict between channel members are when the members start competing. Other causes include miscommunication, excessive use of power by one channel member over the other and existence of different set of goals between the channel members. Channel conflict is a natural feature of any distribution channel due to the presence of independent third parties participating in the various flows of the distribution channel. Marketing channels vary in terms of the extent of the presence of conflict; its expression can be in the form of contention, disunity, disharmony, argument, friction, hostility, antagonism, struggle and in some cases even a legal battle. It is a logical outcome of the play of power and dependence which exists in a marketing channel. For example, a stronger channel member attempts to further increase its dominance or power while the weaker party strives to sustain its position (Gaski1984; Lusch,1976; Liu and Sharma, 2011). Channel conflict is defined as a situation in which one channel partner feels that the other channel partner is behaving in a manner to prevent the former from accomplishing one's goal (Stern and El-ansary, 1977; Gaski 1984). This conflict can be horizontal (between channel partners at the same level, for example, between two distributors or two retailers) or vertical, between channel partners who constitute a hierarchy (for example, between distributor and a retailer or supplier and the distributor).

Multiple Channels

Recent years have seen that the number of channel alternatives has proliferated. It incorporates the internet-based channels, retail stores, personal sales, call centres and direct mail. Organisations are progressively relying on multiple channels to distribute goods and services which has given rise to the term 'multichannel marketing'. Multiple distribution channels are defined as a multi-channel arrangement in which the companies use the traditional channel as well as online channel to make its product reach to consumers by combination of distinct channels. This way a variety of marketing mix offerings are designed to satisfy the needs of all the customers of the company in the market. The multiple distribution channels used by the companies sometimes cover the same segment of customer and causes overlap of services. The consumer not only analyses the product in store but also researches the product on internet and compares it with similar products, its features, its price, and value-added services before finalising the purchase. There are many benefits associated with multichannel marketing, as it increases revenue and at the same time reduces distribution costs. Many companies have created their own company-owned website to show their presence in the digital world. Online presence of companies gives direct competition to the traditional reseller channel. Samsung sells its product through both traditional and digital channel. This use of digital channel causes conflict due to difference in goal which occurs as organisations want to maximize its profits over all its distribution channel. The digital channels offer the companies a higher profit margin on sales than the traditional channel as the fixed cost associated with online channel is comparably lower than traditional channel (Coughlan, Anderson, Stern, & El-Ansary, 2001). To cover the costs of establishing and operating the new channel, the companies try to push their customers to use online channel for buying its product.

Advantages of using Multiple Channels

- Reduce the cost of distribution.
- Increase product availability.

- Facilitate the customer with transaction.
- Enhance customer convenience while making purchase.
- Increase awareness of product with wide presence.

Identifying the most appropriate channel is therefore a critical issue for marketers. Deciding on the appropriate channel structure is difficult given the various alternatives, each with its own benefits and disadvantages. The complexities for marketers do not end here. Even after channels are selected, organisations need to ensure that internal structures, cultures, and processes are reconfigured to support the selected channel strategy (Myers et al., 2004). The challenges and implementation difficulties in multichannel marketing include issues like the internal politics of modifying channel arrangements, making use of synergies in complementary channels and finally managing the movement of consumers between online and offline modes, both for different products and for consumers at different stages of the purchasing process (van Dijk, Minocha, and Laing, 2007).

Disadvantages of using Multiple Channel

- Management issue due to loss of complexity with different channels.
- Conflict between different channels.
- Loss of revenue due to competitive nature of channel partners.
- Difficult for company to assign territory of doing business.
- Overlap of services.

Managing Multiple Distribution Channels

Coelho et al. (2003) stated that when opting for multiple channels, organisations face more complex channel design decisions to obtain increased benefits. The addition of the internet and other digital channels has augmented the chances of organisations making strategic errors arising out of increasing channel complexity. The surge of digital channels is not reducing the number of traditional channels being used, rather it presents more channels to be managed and greater implementation complexity (Wilson and Daniel, 2007), leading to increase in chances of decline in organisational performance when multichannel marketing is implemented poorly. However, multiple channels also represent an opportunity to organisations for effective channel decisions and for differentiating itself from competitors who fare poor in implementing a multichannel strategy or who remain single channel competitors. The proliferation of channels and the dynamic nature of the external environment (Sterman, 2000) makes bureaucratic 'top–down' multiple channel decision even more difficult. This is partially due to the level of decentralisation linked with channel authority and management within organisations. For example, most of the time there is no single entity responsible for the overall organisational channel's strategy, i.e., the call centres, websites and the salesforce are managed separately.

Information about new products, promotional campaigns, etc., must be transmitted from the organisation to the channel partners. The channel partners on the other hand have information about the market condition in which they operate and offer feedback to the organisation about customer's reactions to products. If there is lack of communication between the channel partner and the organisation, misunderstanding occurs, implementation of strategies gets affected and the channel relationship get hampered.

Etgar (1979) mentioned that competition for scarce resources occurs when the demand for resources in a channel is more that the supply available to fulfil it. It is observed that different channel members, such as dealers and wholesalers, compete to have special right to sell companies' products in market. Channel members also try to have control over other members. For example, companies aim to control retail price by using suggested retail price lists. Etgar (1979) said that power is an important factor in channel relationships. There is a direct connection between power and conflict. Many researchers agree with the fact that conflicts arise in a channel because big channel partner always likes to control the activities of smaller ones, and the small channel members want to operate independently so they resist such control. Power is viewed as a result or response to conflict.

Internet and e-commerce helped the companies in building a direct channel to customers and made the availability of product near the customer at a convenient location. This has also cut all the geographical barriers arising while selling with the use of traditional channel. The internet-based channels help the companies to overcome old territorial borders. It has the potential to capture the market from any location that are served by the traditional channels therefore causing conflict due to unclear geographical boundaries. Conflict also occurs when there is no clarity regarding the functions and roles performed by channel partners. This can also happen when the company decides to use internet channel to sells its products (Coughlan et.al., 2001). Usually, customers who are willing to buy a product, visit a traditional store look at the product gather information consults the store personnel and asks questions about the product, check the price, and then buy the product online. A conflict of interest can occur if a customer who has bought the product from the company's website but decides to return the product and tries to do so at a traditional retailer. Generally, the retailer will not agree to return the item.

MAIN FOCUS OF THE CHAPTER

Issues, Problems and Grievance of a General Trade Distributor

A general trade distributor of a leading FMCG firm was interviewed to express his views and share his experiences of being a distributor in today's challenging environment of multiple channels. The distributor was probed on the existing relationship with major suppliers and whether there was any incidence of conflicts in the recent past. When asked whether the new channels are posing threat to their business, he said, *"Yes, MT (modern trade) and online selling is increasingly becoming a problem. The landing price of stock for an MT or e-commerce is markedly less than that of GT (General Trade), we cannot match it. As a distributor, we still are pressurized to clear the stock. There are so many instances when the wholesalers to whom we supply, purchase the stock from modern trade like Big Bazaar or Reliance Retail due to competitive pricing. If Modern trade continues to grow there will be no incentive to remain a general trade distributor. These days there are even websites like "Udaan" which provide you goods at a price which is way below than our landing price, in such a case, how do we continue to sell*?" When asked, why don't they take this matter with the supplier, the distributor said *"They hardly visit us, in a period of one year, we get to meet the Area Sales Manager not more than twice or thrice. They only come when the targets are not being met, they get their stock cleared by engaging in promotional activities with the sales force they have provided to us, thus from their end there are very rare occasions where they need to meet us."*

Such issues with a distributor are not surprising. Theory of Channel literature also indicates that such outcomes are bound to happen. The usage of multiple channels leads to ‘‘more marketing units compete for customers and revenues’’ (Moriarty and Moran, 1990), a state that is very likely to create conflict among channels. Multiple channels increase the chances for a customer to use different channels on different occasions, which creates the problem of ‘‘who owns the customer”. This is bound to be a concern for the initial most channel as the last channel entrant can free ride on the former’s efforts to gain the customer in the first case (Stern et al., 1996). Conflicts can also arise as different channels contest for the limited resources of the supplier (Coelho and Easingwood, 2008). Each channel is likely to ask for preference in product development efforts or for promotional assistance. The common consequences of such conflict are lower motivation of channel partners, increase in the lack of co-operation among channel members, deterioration of service levels, greater intermediary bias towards competition and degradation of communication levels. Ultimately, such conflicts result in customer dissatisfaction, the intermediary moving out of a distribution channel and an obvious loss of market share. The same is already being witnessed in the Indian FMCG sector due to the competition from new age business like e-commerce, mobile phone retail, modern trade etc. E-marketplaces like Udaan has close to 3million retailers across 900 cities and connects them to 25000 sellers across 200 cities. It serves not just as an e- marketplace but also offers supply chain, payment, lending and marketing capabilities and other value-added services, enabling sellers to source from large manufacturers and distributors. The basic objective of Udaan is to solve issues for SMEs by treating supply chain holistically and providing a complete trade solution, where competitive price is one of the benefits (Economic Times, 2019). The same is providing an opportunity to cut out middlemen, tap big order sizes and encourage repeat purchase. This has made it extremely challenging for FMCG firms to recruit and retain salespeople putting pressure on their business model and their margins.

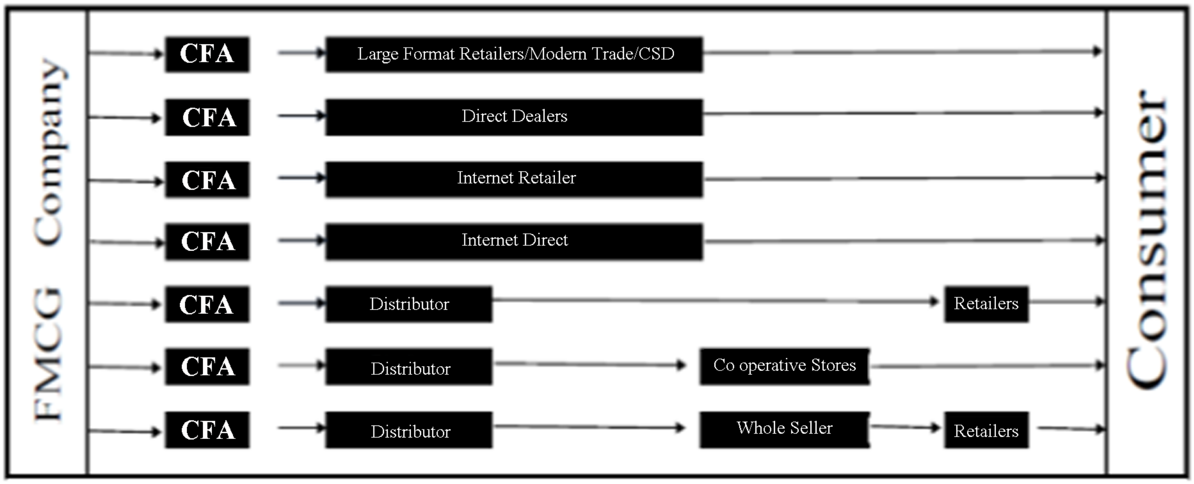
The increase in channel conflict due to pricing, discounts, and the range between the landing price of GT, e-commerce and MT is increasing pricing and margin pressure on FMCG firms. They continue to juggle their volume growth ambitions while trying to develop their “omni” channel presence. It can surely be said that the end consumer is benefitting due to this multichannel conflict but the pressure on margins across the value chain continues to grow.

The Go To Market Strategy of the Indian FMCG Sector

The FMCG sector by virtue of its nature of products and the demographic profile of the customers it serves (a population of more than 1.3 billion) needs to implement an intensive distribution strategy. With such a huge market to serve all the FMCG players rely on a robust and active distributor network to make their products reach customer. Hence, it is the most ubiquitous sector in India.

FMCG products move from brands ‘manufacturing units to their Distribution Centre (DC) or warehouse, from a warehouse to the Carry and Forward (C&F) agents in each state, and then to the state’s hundreds of Distributors (DB) who finally supply to the retailers from where the consumers purchase them. The retail environment has been more or less static; close to 90% of FMCG retail sales even today is dominated by mom and pop outlets, or what is referred as General Trade (GT) in India. A decade back this figure was as high as 98%. The FMCG players in India tap the customers majorly through a) traditional trade b) the modern trade and c) the new emerging digital channels (Figure 1). The e-commerce is pegged to touch around 10-15% in some categories by 2025 (BCG Report, 2015). It was projected that by 2021 traditional retail will hold a major share of 75%, organized retail would reach 18% and e-commerce shall reach 7% of the total retail market (IBEF,2019). The retail network in India consists of more than 14 million outlets which are largely unorganized.

Figure 1. The General Distribution Model of the Indian FMCG sector (Author, 2022)



Developed countries generally have marketing channels with large wholesalers, retailers etc. They have fewer levels in the distribution channel as compared to channels in less developed countries (Olson & Granzin, 1992). Thus, these developed markets are found to have more of organized retail and wholesale chains (Figure 2), a good use of technology and data by channel members, updated and informed customers, high levels of internet penetration, sophisticated logistics and strong implementation of laws and regulations (Figure 3). Distribution channels in developing markets, on the other hand, are marked by unorganized retailing and wholesaling; small sized independent retailers and wholesalers, greater levels of the distribution channel, lesser use of technology and data by channel members, less penetration of internet, evolving logistics infrastructure and poor implementation of laws and regulations. This is because the emerging markets have large base-of-pyramid (BOP) i.e., larger proportion of rural and fragmented markets which gives exceptional challenges for distribution.

Figure 2. Organised vs Unorganised Trade in different countries (TechSci Research, 2015)

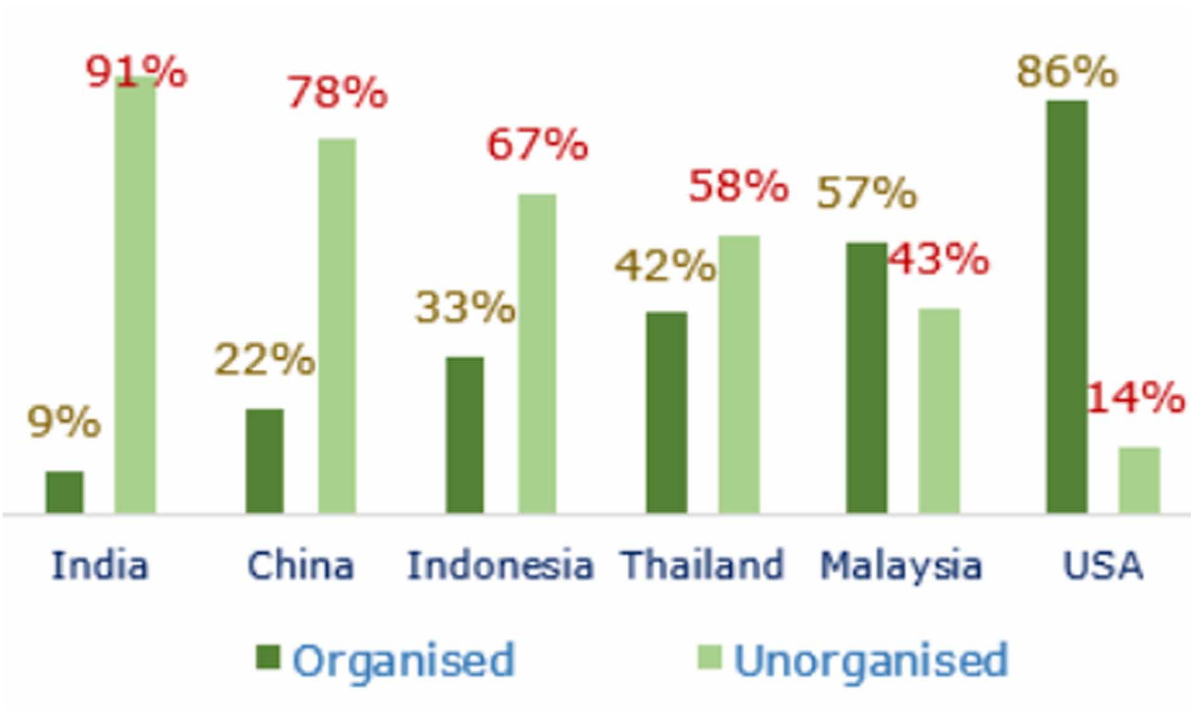


Figure 3. E commerce Share in FMCG, 2015 (TechSci Research, 2015)

E-Commerce Share in FMCG, by Selected Countries, 2015	
France	10%
UK	10%
India	1.4%
China	15%
South Korea	30%

The traditional unorganized outlets offer advantages like spatial convenience, credit facility, home delivery and a good deal of personalized service. Modern retail, on the other hand, offers a one stop shopping experience. They give periodic promotional offers, lower prices per SKU, wider and deeper assortment, air-conditioned ambience, and higher quality brands (Mulky,2013). However, the level of trust and the personalized selling experience which the local “mom and pop store” or Kirana store provides can never be matched by the hyper market retailers.

While the modern trade is emerging to be a big retail channel for FMCG products, it is also turning out to be a major competitor to the General Trade channel. These Modern Trade channels have come up with their own sales and distribution networks to target General Trade or Kirana stores, the HORECA channel (hotels, restaurants, and cafeteria’s) and supermarkets, etc. This is fueling significant channel conflict between the traditional distributors and the modern trade distribution arms. While the brands may benefit in the short term due to increased sales, the long-term consequence will disruption of the distribution network. In addition, Modern Trade’s growing distribution to the General Trade channel is causing them to sell more of modern trade’s private label products which is in direct competition to the national brands. This is leading to a bigger battle for shelf space in General Trade.

SOLUTIONS AND RECOMMENDATIONS

The Indian FMCG sector is staring at Distribution 4.0 where disruption and restructuring shall be inevitable. In such a scenario how should FMCG companies plan for the next decade? The India retail sector is expected to double to $1.5 trillion by 2030 from today’s $700 billion (Economic Times, 2019) (Figure 4). Many of the Kirana stores in metros and tier 1 & 2 cities are upgrading and looking and feeling more like Modern Trade. Modern Trade with different formats and sizes, continues to grow and can command a share of 25-30% by 2030 due to expansion into tier 1, 2 and 3 cities (Economic Times, 2019). E-commerce also will account for 15-20% of total retail by 2030. The e-commerce business was already at a level of 50% of retail in China in 2019. Similar growth in India will be driven by affordable smartphones and internet penetration, growth of digital payments and expansion of logistics infrastructure. Even the smallest of retailer is trying to seek advantage of scale, analytics, financial exclusivity, and procurement. Besides this, structural changes in the economy like the implementation of GST and promotion of digital payment windows like Unified Payments Interface is also contributing to the growth of e-commerce (Figure 5)

Figure 4. Key Trends in the Indian Retail Sector (IBEF, June 2019)

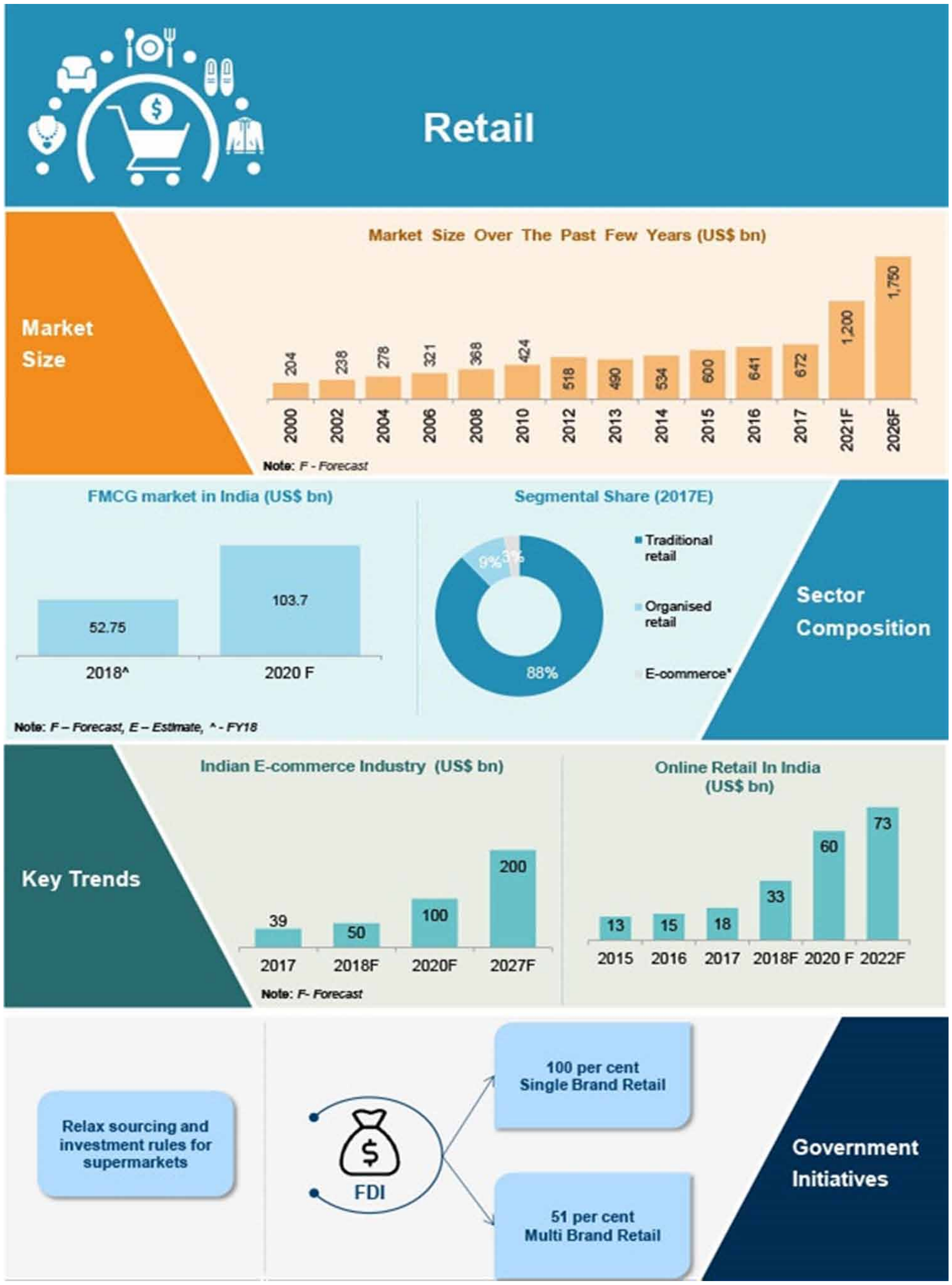
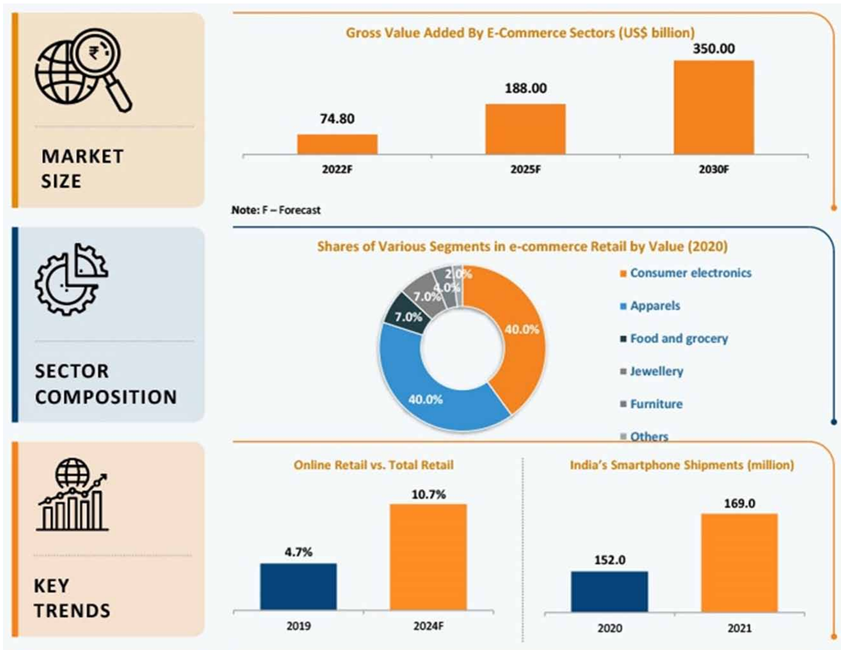


Figure 5. Trends in Indian Ecommerce (IBEF, Feb 2022)



With the growth of new channels, the General trade distributor is increasingly getting disillusioned with the margin and landing cost disparity between different channels. The basic assurance of return on investment by the FMCG firms on the stocks purchased is the only motivation for business. Most of the trade promotions and schemes are given to the e- commerce or modern trade. There is hardly any focus on relationship management with the General Trade distributor. The FMCG firms continue to ignore the grievance of the General Trade distributor. They need to put a business model that allows both to coexist instead of one at the cost of other. Multi-channel structures provide benefits which can't be ignored but they also generate danger that can put business's survival at stake (Moriarty and Moran, 1990). This is evident from the recent press articles which highlight the increased conflict levels between the FMCG sector distributors and the manufacturers.

The FMCG distributors, particularly the General trade distributors are seeking a level playing field. In January 2022, the AICPDF (All India Consumer Products Distributor Federation) announced that it would boycott sales of Colgate Palmolive and HUL in four states of India due to the rising pricing disparity between the traditional trade and business-to-business retailers such as Jiomart, Walmart, Metro Cash & Carry, Booker, ElasticRun, Udaan, etc. This is not the first time that such developments have been observed. The last 5-6 years have seen an increasing trend of rift between General Trade distributors and Modern Trade and E-commerce. This is because the General Trade distributors can offer retailers margins of only about 8-12% vs 15-20% offered by B2B firms. This is applicable for both online and offline since the B2B or key accounts get better discounted prices from the FMCG firms. Organized trade purchases much higher volumes from FMCG brands which the General trade distributor can never match. The traditional distributors also fear that such biasness and disparity is making them supply local products that are not available on B2B platforms like modern trade and e-commerce. These local products do not to give them enough margins and volumes to sustain in the long run.

Though the manufacturers maintain that they remain fully committed to the growth and prosperity of General Trade distributor and shall ensure a fair ROI (return on investments), the matter remains unresolved. The future of distribution in FMCG sector has will be directed on how to make products accessible widely and deeply into the large Indian market. There was always a stiff competition in the FMCG space in India. How should multiple channels be managed? The answer to this question will lay the foundation of the future distribution strategy of the FMCG firms in the Indian market. This will be possible if the FMCG firms' profitability facilitate transition of multiple channels to Omni channel distribution mechanisms. All FMCG firms need different distribution channels for sustainable growth and no one channel will be sufficient to help firms achieve growth in the long run.

The new digital world presents new opportunities and threats. Firms will be compelled to fight on different fronts. Most of the FMCG firms have understood that the problem and the solution, lies in the adaptability and efficacy of the supply chains. While traditional trade remains the mainstay of the FMCG sector, consumer's adoption of digital mediums is making FMCG firms develop new strategies and formats. Thus, FMCG firms need to work towards a model of seamless integration of different channels to offer Indian consumers a holistic experience across channels. This is increasingly being witnessed with many offline retailers serving as fulfillment centers to e-commerce platforms. The weakness of one channel should be compensated by the strength of the other channel for the FMCG firms to ensure growth of all channels in the long run, in a sustainable manner.

FUTURE RESEARCH DIRECTIONS

This case study surely has theoretical and practical implications, but the current study still has some limitations. First, the case study methodology has a very common criticism which is generalizability (Walsham, 2006). The authors investigated the grievance of distributors and developed this case study. More cases like same should be collected and investigated in the future to identify implementation processes of online and offline channel conflict management strategies. Also, different resource orchestration actions and capabilities under the guidance of the main multichannel strategy should be analyzed. Secondly, this study did not take the manufacturers and consumer's perspective regarding online and offline channel conflict management. In future, it will be significantly useful to collect the consumers' perspective and investigate how consumers perceive and act on manufacturers' strategies and actions.

CONCLUSION

The rapid pace of development of e-commerce has compelled many enterprises to establish online channels to meet consumers' needs and reduce costs. However, it has also led to online and offline channel conflicts. Therefore, it is vital to investigate how enterprises develop and implement online and offline channel conflict management strategies. Although prior literature has investigated this question and proposed channel conflict management strategies, but they have ignored to illustrate the "how" question, i.e. "How should organisations implement the online and offline channel integration and segmentation strategies?" Given the significance of resources in solving the conflict, the resource orchestration perspective may be used to investigate the implementation processes of the strategies. A new perspective or theory is required that discourses channel implementation difficulties faced by managers as they try to combine traditional and new digital channels while changing an organisation to deliver multichannel marketing. Therefore, need subsists for development of more vigorous strategic frameworks applied to the multichannel implementation process and on relationships with customers. Managers need to think carefully about the repercussions of adding call centres and digital channels to the channel mix and its impact on internal organizational structures and processes. In this regard, the guidance offered by theory on strategic customer management in multichannel setting is limited. The growth of better models to ascertain the components of good customer management in this area would contribute significantly to this.

REFERENCES

Coelho, F., & Easingwood, C. (2008). A model of the antecedents of multiple channel usage. *Journal of Retailing and Consumer Services*, *15*(1), 32–41. doi:10.1016/j.jretconser.2007.03.002

Economic Times. Brand Equity. (2019). *Distribution 4.0: Re-Imagining FMCG distribution in India 2030*. https://brandequity.economictimes.indiatimes.com/news/business-of-brands/distribution-4-0-re-imagining-fmcg-distribution-in-india-2030/70166977

Economic Times. (2019). *Udaan valuation soars to $2.8 billion post $585 mn funding*. https://economictimes.indiatimes.com/small-biz/startups/newsbuzz/udaan-valuation-soars-to-2-8-billion-post-585-mn-funding/articleshow/71416118.cms

Economic Times. (2022). https://retail.economictimes.indiatimes.com/news/food-entertainment/personal-care-pet-supplies-liquor/colgate-initiates-talks-with-fmcg-distributors-boycotting-its-products-in-maha-other-states/88724088

Gassenheimer, J. B., Hunter, G. L., & Siguaw, J. A. (2006). An evolving theory of hybrid distribution: taming a hostile supply network. *Industrial Marketing Management*. https://retail.economictimes.indiatimes.com/re-tales/how-omni-channel-retail-format-can-help-fmcg-industry-to-grow-bigger/5187 doi:10.1016/j.indmarman.2006.02.007

IBEF. (2019). *Indian FMCG Industry in India Industry Report (February 2019).* India Brand Equity Foundation (IBEF). Retrieved from https://www.ibef.org/download/fmcg-feb-2019.pdf

IBEF. (2022). *Indian FMCG Industry in India Industry Report (March 2022).* India Brand Equity Foundation (IBEF). Retrieved from https://www.ibef.org/industry/fmcg

Lassar, W. M., & Kerr, J. L. (1996). Strategy and control in supplier distributor relationships: An agency perspective. *Strategic Management Journal*, *17*(8), 613–632. doi:10.1002/(SICI)1097-0266(199610)17:8<613::AID-SMJ836>3.0.CO;2-B

Moriarty, R., & Moran, U. (1990). Managing hybrid marketing systems. *Harvard Business Review*, *68*(6), 146–155. PMID:10107959

Mulky, A. G. (2013). Distribution challenges and workable solutions. *IIMB Management Review*, *25*(3), 136. doi:10.1016/j.iimb.2013.06.010

Olson, J. E., & Granzin, K. L. (1992). Economic development and channel structure: a multinational study. *Journal of Macromarketing, 10*, 61-77.

Stern, L. W., El-Ansary, A. I., & Coughlan, A. T. (1996). *Marketing Channels* (5th ed.). Prentice-Hall.

Webb, K. L., & Hogan, J. E. (2002). Hybrid channel conflict: Causes and effects on channel performance. *Journal of Business and Industrial Marketing*, *17*(5), 338–356. doi:10.1108/08858620210439031

ADDITIONAL READING

Brown, J. R., & Dant, R. P. (2014). *The role of e-commerce in multi-channel marketing strategy. Handbook of strategic e-business management*. Springer Berlin Heidelberg.

Brown, J. R., & Dant, R. P. (2014). *The role of e-commerce in multi-channel marketingstrategy. Handbook of strategic e-business management*. Springer Berlin Heidelberg.

Brown, J. R., Lusch, R. F., & Smith, L. P. (2016). Conflict and satisfaction in an industrial channel of distribution. *International Journal of Physical Distribution & Logistics Management*, *21*(6), 15–26. doi:10.1108/EUM0000000000390

Brown, J. R., Lusch, R. F., & Smith, L. P. (2016). Conflict and satisfaction in an industrial channel of distribution. *International Journal of Physical Distribution & Logistics Management*, *21*(6), 15–26. doi:10.1108/EUM0000000000390

Coughlan, A. T., Anderson, E., Stern, L. W., & El-Ansary, A. I. (2001). *Marketing channels* (Vol. 6). Prentice Hall.

Cronin, J. Jr, & Baker, T. L. (1993). The effects of a distributor's attribution of manufacturer influence on the distributor's perceptions of conflict, performance and satisfaction. *Journal of Marketing Channels*, *3*(2), 83–110. doi:10.1300/J049v03n02_04

Magrath, A. J., & Hardy, K. (1988). *A strategic framework for diagnosing manufacturer reseller conflict*. Marketing Science Institute.

Rosenbloom, B. (2006). Multi-channel strategy in business-to-business markets: Prospects and problems. *Industrial Marketing Management*, *36*(1), 4–9. doi:10.1016/j.indmarman.2006.06.010

Rosenbloom, B., & Larsen, T. (2003). Communication in international business-to-business marketing channels: Does culture matter? *Industrial Marketing Management*, *32*(4), 309–315. doi:10.1016/S0019-8501(01)00202-4

Verhoef, P. C., Kannan, P. K., & Inman, J. J. (2015). From multi-channel retailing to omnichannel retailing: Introduction to the special issue on multi-channel retailing. *Journal of Retailing*, *91*(2), 174–181. doi:10.1016/j.jretai.2015.02.005

KEY TERMS AND DEFINITIONS

Channel Conflict: A situation in which channel partner feels that another channel partner is involved in a behaviour which prevents the former from achieving their goal.

Multi-Channel Customer Management: The design, deployment, coordination, and evaluation of channels to enhance customer value through effective customer acquisition, retention, and development.

Omni-Channel Management: The synergetic management of the numerous available channels and customer touchpoints, in such a way that the customer experience across channels and the performance over channels is optimized.

Showrooming: A specific form of research shopping in in which a shopper first searches offline and subsequently purchases online.

Chapter 5
Validating the Potency of Attitude in Predicting Intention to Purchase Non-Deceptive Counterfeit Branded Products

Tushar Prabhakar
https://orcid.org/0000-0002-1088-7325
University Business School, Panjab University, Chandigarh, India

ABSTRACT

This study examined the effect of attitude towards counterfeit branded products on purchase intention for such products. It also investigated the difference in the attitude and purchase intention of past buyers and non-buyers of counterfeit branded products. Data were collected from a sample of 133 respondents, using snowball sampling technique. The results of structural equation modeling (SEM) indicated that attitude positively predicts counterfeit purchase intention. Demographic variables had no effect on either of the two constructs. Additionally, the results of an independent sample t-test revealed that past buyers of counterfeit branded products had more favorable attitudes and higher purchase intention towards such products in comparison to non-buyers. The findings provide useful practical insights that can be leveraged by the manufacturers of genuine branded products to combat counterfeiting.

INTRODUCTION

Counterfeiting can be understood as the unauthorized replication of genuine branded products (Malik et al., 2020). Counterfeit branded products are *prima facie* indistinguishable from their genuine counterparts (Chand & Fei, 2021). Thus, counterfeiters illicitly encroach on the trademarks and copyrights of the manufacturers of genuine branded products (Pratt & Zeng, 2019). This phenomenon has witnessed an unprecedented surge in recent years (Davidson et al., 2019). The menace has spread like a wildfire and has devoured almost all product categories in all the countries (Veloutsou & Bian, 2008). For a better understanding of consumer unethical behavior, counterfeiting has been bifurcated into two categories:

DOI: 10.4018/978-1-6684-5274-5.ch005

deceptive and non-deceptive counterfeiting (Grossman & Shapiro, 1988). In both the categories, the product in question is not an authentic article. The difference lies in the nature of consumers' involvement in the transaction. In deceptive counterfeiting, consumers are nescient of the fact that the product they are being sold is a counterfeit branded product, and they buy that product under the impression of it being a genuine branded product (Malik et al., 2020). In its polar opposite, i.e., non-deceptive counterfeiting, consumers have full cognizance that the product they are buying is a counterfeit branded product (Eisend, 2019). The latter is an epitome of consumer connivance and thus represents an opposite choice for the present study because it is only in this context that consumers' real motivations behind the purchase of counterfeit branded products are likely to be unearthed (Veloutsou & Bian, 2008).

Counterfeiting has detrimental economic repercussions (Penz et al., 2009) such as loss of tax revenues (Eisend, 2019), engendering joblessness (Koay, 2018), impeding economic growth (Bloch et al., 1993) *inter alia*. It contributed to 3.3% of the global trade in 2016 (OECD/EUIPO, 2019). This brazen phenomenon is further alleged to have created a ₹1 lakh crore hole in the Indian economy in 2019 alone (The Economic Times, 2020). Apart from the ruinous macro-economic effects, counterfeiting has various other ramifications also. Genuine brand manufacturers are deprived of billions of dollars in sales revenue (Koay, 2018), the brand equity of the genuine brand deteriorates (Bian & Haque, 2020; Gentry et al., 2006) and the cost associated with instigating the measures to combat counterfeiting increases (Veloutsou & Bian, 2008), the burden of which is ultimately passed on to the consumers of genuine branded products. It is due to the overpowering financial significance of the counterfeiting activity that it has garnered notable research attention (Malik et al., 2020). However, most of such research has been conducted in developed countries only (Ang et al., 2001; Bian & Moutinho, 2009; Michaelidou & Christodoulides, 2011; Randhawa et al., 2015). Even though the plight is shared both by the developed and the emerging economies (Eisend et al., 2017), research in the latter is conspicuously exiguous. Given that most of such developing countries are provenance economies (OECD/EUIPO, 2019), more research in emerging economies is warranted to advance our embryonic understanding of consumers' willing counterfeit purchase behavior (Kaufmann et al., 2016; Malik et al., 2020; Singh et al., 2021). Burgess & Steenkamp (2006) warned against the generalization of the knowledge created in the developed economies owing to the cultural differences and other idiosyncrasies prevalent in the emerging economies. The above arguments lend support to carrying out this research in the context of an emerging economy, India.

The present study aims to assess the potency of attitude towards counterfeit branded products in leading to the formation of intention to purchase such products, in line with one of the fundamental propositions of the theory of reasoned action (TRA). By positioning the study in the idiosyncratic context of an emerging economy, India, this study marks a departure from the norm in the counterfeiting literature represented by an inundation of research in developed countries. India presents a useful context for the examination of consumer willing involvement with counterfeit branded products because it is argued to be one of the most prolific producers of counterfeit merchandise (OECD/EUIPO, 2019; Quoquab et al., 2017). Moreover, this deplorable activity has seen exponential growth in India, especially in more recent times (Verma et al., 2018). By investigating the role of attitudes in instigating consumers' demand for counterfeit branded products, this study serves to make various theoretical as well as pragmatic contributions, which will be discussed in the terminal section.

The remainder of the paper is organized as follows: in the next section, literature is reviewed, and research hypotheses are developed, which is followed by a section dedicated to discussion on research methodology. The results of the study are then presented. The managerial implications are briefly discussed before the limitations of the study and directions for future research mark the end of the paper.

LITERATURE REVIEW

Theory of Reasoned Action (TRA)

TRA is an expectancy-value theory and has been extensively used to examine consumer complicity with counterfeit products (Vida et al., 2012). The theory of planned behavior (TPB; Ajzen, 1991), which is an extension of TRA, is also a commonly used theory to understand consumers' counterfeit purchase behavior. TRA is more suitable for explaining/predicting behaviors that are under full volitional control of the actor; while TPB, on the other hand, is more useful in predicting the behaviors that are not under complete control of the individual (Bray, 2008). As the act of purchasing counterfeit branded products is deemed to be under the control of the individual (Sharma & Chan, 2016), TRA is argued to provide a more useful theoretical base for this study. The basic premise of TRA is that attitudes and subjective norms influence behavioral intention (Madden et al., 1992), which is itself the immediate antecedent as well as the best predictor of behavior (Fishbein & Ajzen, 1975). Attitude may be construed as "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly & Chaiken, 2007), whereas subjective norm is indicative of an individual's perception of whether important referent individuals think that the person should or should not perform the behavior (Randall & Gibson, 1991). Previous research lends sufficient evidence to assert that subjective norms exert limited influence in explaining behavioral intention for unethical behavior, such as the one involving the volitional purchase of counterfeit branded products (Chang, 1998; Donald & Cooper, 2001). It is therefore postulated that consumer counterfeit purchase behavior is under attitudinal control, and as such, subjective norm is not posited as an antecedent to purchase intention in the present study. This conceptualization is consistent with those in the counterfeiting literature (Ang et al., 2001; de Matos et al., 2007; Singh et al., 2021; Wang et al., 2005), and is hence justified.

Attitude and Intention

Behavioral intention refers to the subjective probability that an individual will perform a given behavior (Fishbein & Ajzen, 1975). In the context of this study, behavioral (purchase) intention is indicative of the extent to which an individual believes that he/she will purchase counterfeit branded products. The relationship between attitude and behavioral intention has been widely examined (Ajzen, 1991). TRA asserts that attitude, behavioral intention, and behavior influence one another in a fixed hierarchy that flows in a rightward direction (Feldman & Lynch, 1988). In other words, it means that attitude is the single most important predictor of behavioral intention, which in turn is a proxy of actual behavior (Chaudhry & Stumpf, 2011). Previous research in the counterfeiting literature testifies to the indubitable positive association between attitude and behavioral (purchase) intention (C. Kim et al., 2016; Kwong et al., 2003; Michaelidou & Christodoulides, 2011; Singh et al., 2021; Ting et al., 2016). Put differently, an individual who views counterfeit branded products in a positive light is likely to have a higher intention to purchase counterfeit branded products (Wu et al., 2019). On the contrary, if a consumer holds negative attitude towards counterfeit branded products, then he/she will have low intention to purchase counterfeit branded products (Bhatia, 2018; Quoquab et al., 2017). On the basis of these arguments, the following is hypothesized:

H_1: Attitude towards counterfeit branded products has a significant positive effect on intention to purchase such products

Difference in the Attitudes and Purchase Intention of Past Buyers and Non-Buyers

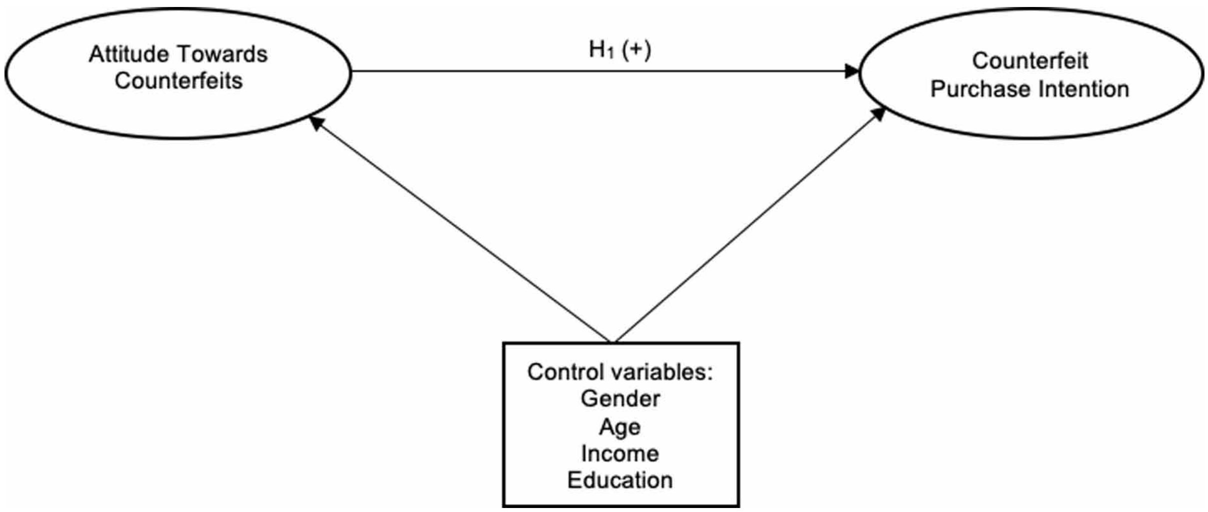
Past research has demonstrated that consumers who have previously purchased counterfeit branded products hold more favorable attitudes towards such products, vis-à-vis the consumers who haven't purchased such products (Ang et al., 2001; Phau & Teah, 2009). In a similar vein, past buyers of counterfeit branded products are proven to develop a higher intention to purchase such products, while those who are devoid of such experience exhibit significantly lower intention to purchase counterfeit branded products (Tan, 2002; Yoo & Lee, 2012). In sum, past research indicates that buyers of counterfeit branded products hold significantly different attitude and purchase intention as compared to non-buyers. This might happen because repeated past behavior leads to habitual conduct (Phau & Liang, 2012), which generates inertial habit to continue endorsing that behavior (Yoo & Lee, 2012). This view purports that once a consumer purchases counterfeit branded products, he/she will develop more approving attitude and higher purchase intention towards such products. Informed by past research, it is expected that:

H_{2a}: Buyers have more favorable attitudes towards counterfeit branded products vis-à-vis non-buyers.
H_{2b}: Buyers have a higher intention to purchase counterfeit branded products vis-à-vis non-buyers.

Control Variables

Past research has asserted that demographic variables such as gender, age, income, and educational achievement also affect attitude towards and intention to purchase counterfeit branded products (Kwong et al., 2003; Malik et al., 2020; Tan, 2002). However, it is worth noting that such demographic variables do not affect attitude and purchase intention in a consistent manner (Wiedmann et al., 2012). For instance, while on one hand, Malik et al. (2020) found that age was negatively related to counterfeit purchase intention, Wee et al. (1995) observed no significant effect of age on purchase intention of counterfeit branded products. Similar inconclusive results were observed about other demographic variables in other studies. Thus, demographic variables, especially, gender, age, income and education may confound the results of the study, and as such, these variables have been incorporated in the present study as control variables to account for their possible confounding effect. Following the recommendation of Penz et al. (2009), the present study assesses the impact of demographic variables on both attitude towards and purchase intention of counterfeit branded products. The research model is depicted in Figure 1.

Figure 1. Conceptual Model



Measurement of the Constructs

Standardized scales with proven psychometric properties were adapted for this study. Table 1 lists the sources of the standardized scales used. The responses to the statements concerning attitude towards counterfeit branded products and purchase intention of such products were captured on 7-point Likert scales, with strongly disagree anchored at 1 and strongly agree anchored at 7.

Table 1. Standardized Scales and Their Sources

Construct	Source	Number of items
Attitude towards counterfeit branded products	Huang et al. (2004)	5
Purchase intention for counterfeit branded products	Dodds et al. (1991)	4

Methods of the Study

Consistent with previous studies in the reference literature (Castaño & Eugenia Perez, 2014; Khandeparkar & Motiani, 2018), the present study made use of snowball sampling technique to get respondents, given its sensitive nature. Snowball sampling is recognized for its ability to provide a sample even for studies involving sensitive topics (Waters, 2015), such as the present study itself. Specifically, the initial respondents were requested to suggest other individuals for participating in the study. The respondents were administered web-based surveys, as these ensure higher respondent anonymity vis-à-vis traditional paper-and-pen based surveys (Ward et al., 2014). Additionally, web-based surveys ensure higher response rates (Ilieva et al., 2002) and less chances of missing data (McDonald & Adam, 2003). Moreover, web-based surveys have been used previously also in the counterfeiting literature (Marticotte

& Arcand, 2017; Randhawa et al., 2015). Thus, the choice of web-based survey for the present study stands justified. Respondents participated in the study at their own discretion, without any monetary or non-monetary reward.

The present study espoused a stimulus-based approach to data collection because it allows the study participants to appreciate the difference between genuine and counterfeit branded products. Due to its superiority, this method has been widely used in the counterfeiting literature (Bekir et al., 2011; Chand & Fei, 2021; Malik et al., 2020; Randhawa et al., 2015). Sunglasses were used as the product stimulus as they are highly counterfeited (Bekir et al., 2011; Davidson et al., 2019) and are widely accepted by consumers, in counterfeit form (Yoo & Lee, 2012). A pretest conducted on 45 respondents, who were recruited using convenience sampling, indicated that consumers are most familiar with the 'Ray-Ban' brand of sunglasses. Thus, the brand of sunglasses that was used for the present study is Ray-Ban. In the final web-based survey, the respondents were first requested to observe a picture showing a genuine pair of Ray-Ban sunglasses and a counterfeit version of the same Ray-Ban sunglasses. The respondents were further informed that the appearance of both the pairs was too similar to be told apart without adequate expertise.

The data collection window was open for 10 days, during which a total of 133 responses were obtained. No missing data was observed as responding to all the statements was made mandatory, using a feature of web-based survey. A summary of the demographic characteristics of the respondents is presented in Table 2.

Table 2. Demographic Characteristics of the Respondents

Demographic characteristics	Frequency	Percentage
Gender		
Male	73	54.9
Female	60	45.1
Age		
20 years or below	10	7.5
21-30 years	99	74.4
31 years or above	24	18.1
Income		
₹1,00,000 or below	41	30.8
₹1,00,001- ₹5,00,000	49	36.8
₹5,00,001- ₹10,00,001	32	24.1
₹10,00,000 or above	11	8.3
Education		
Senior Secondary or lower	8	6
Bachelors	43	32.3
Masters or higher	82	61.7
Past counterfeit purchase experience		
Yes	93	69.9
No	40	30.1

EMPIRICAL RESULTS

Data were analyzed using SPSS v25 and AMOS v23. The author firstly performed a principal axis factoring with promax rotation to assess the unidimensionality of the scales. Orthogonal rotation techniques were deliberately avoided as they forcefully prevent the factors from correlating (Costello & Osborne, 2005), which is highly unnecessary in the realm of behavioral sciences (Reise et al., 2000). The results of the factor analysis (detailed in Table 3) confirmed the unidimensionality of the scales.

Table 3. Dimensionality Analysis Through Factor Analysis

Observed variables	Factors	
	1	2
Purchase intention for counterfeit branded products		
The likelihood that I would purchase counterfeit branded products is high.	.990	
The probability that I would consider buying counterfeit branded products is high.	.943	
My willingness to buy counterfeit branded products is high.	.941	
I would purchase counterfeit branded products.	.691	
Attitude towards counterfeit branded products		
Buying counterfeit branded products generally benefits the consumer.		.870
There is nothing wrong with purchasing counterfeit branded products.		.867
Considering price, I prefer counterfeit branded products.		.726
Generally speaking, buying counterfeit branded products is a better choice.		.717
I like shopping for counterfeit branded products.		.564

Note: Extraction method: Principal Axis Factoring, Rotation method: Promax Rotation

Next, the author followed the two-step approach suggested by Iacobucci (2009), in which the measurement model is assessed in the first stage via confirmatory factor analysis (CFA), and then the structural model is assessed in the second stage for testing of the research hypotheses. These two steps are discussed in length below.

The Measurement Model

The measurement model was assessed via CFA in AMOS v23 using the maximum likelihood estimation method. Following Iacobucci (2009), the author checked the significance and loadings of the observed variables, the model fit and the reliability and validity of both the scales. All the observed variables were significant at the 0.1% level of significance. It is suggested in the methodological literature that a single fit index should not be resorted to for assessing model fitness, rather it should be gauged through various fit indices (Hair et al., 2010). Following this recommendation, the author assessed the fitness of the model through various fit indices such as the chi-square statistic (χ^2), normed chi-square (χ^2/df), comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA) and standardized root mean square residual (SRMR). The chi-square value of the model was 71.094, which came out to be statistically significant ($\chi^2 = 71.094$, df = 25, p = 0.000). Ideally, this chi-square value should be non-significant, indicating that the difference between the observed and the estimated covariance matrices is not different from zero (Hinkin et al., 1997). But since the chi-square statistic is extremely sensitive to the sample size, achieving a non-significant chi-square statistic is a herculean task (Iacobucci, 2010). However, Hinkin et al. (1997) proposed that a significant chi-square is not problematic, provided other fit indices are acceptable. Other recommended fit indices, along with their respective thresholds are reported in Table 4.

Table 4. Fit Indices for the Model

Fit indices	Suggested threshold (Hair et al., 2010)	Value observed
χ^2/df	<3	2.844
CFI	>0.90	0.960
TLI	>0.90	0.942
RMSEA	<0.08	0.118
SRMR	<0.10	0.048

Abbreviations: CFI = Comparative fit index, TLI = Tucker-Lewis Index, RMSEA = Root mean square error of approximation, SRMR = Standardized root mean square residual.

It is evident from Table 4 that all the fit indices, except for RMSEA, are acceptable. The observed value for RMSEA was 0.118, although it should be less than 0.08. The high value of RMSEA can be attributed to the few degrees of freedom that this relatively simple model has (Kenny et al., 2014). Kenny et al. (2014) remarked that for a simple model with few degrees of freedom, computing RMSEA could be misleading and problematic, unless the sample size is very large, because it can falsely indicate a poor fit of the model even if the model otherwise fits the data well. This is because RMSEA, as an absolute fit index, has the tendency to penalize relatively simple models with few degrees of freedom (Hu & Bentler, 1999). Thus, it is suggested in the methodological literature that for a simple model with few degrees of freedom, the assessment of model fitness should be made on the basis of other fit indices such as CFI, TLI, SRMR, etc. (Kenny et al., 2014). As other reported fit indices are acceptable, it can be concluded with confidence that the model is a good fitting model.

Following this, the author examined the reliability (internal consistency) and validity (both convergent validity and discriminant validity) of the scales. The measures and criteria used for the assessment of reliability and validity are concisely discussed. Reliability was assessed through two measures, i.e., Cronbach alpha (α) and composite reliability (CR), with the minimum recommended threshold for both the measures being 0.70 (Hair et al., 2010). For scales to exhibit convergent validity, the factor loadings for all the observed variables should exceed 0.50, CR should exceed 0.70, the average variance extracted (AVE) should be greater than 0.50 and CR should be greater than AVE (Hair et al., 2010). For discriminant validity, the Fornell & Larcker (1981) criterion of square root of AVE being greater than the inter-construct correlations was utilized. The results of the analysis are presented in Table 5.

Table 5. Psychometric Properties of the Scales

Construct	α	CR	AVE	ATC	PIC
ATC	0.903	0.904	0.655	**0.809**	
PIC	0.957	0.961	0.860	0.803*	**0.927**

Note: The bolded values on the diagonal represent the square root of AVE. Values below the diagonal are the inter-construct correlations. Abbreviations: ATC = Attitude towards counterfeit branded products, PIC = Purchase intention for counterfeit branded products, α = Cronbach alpha, CR = Composite reliability, AVE = Average variance extracted.
* = p<0.001

It is clear from Table 5 that the values for α and CR exceed the minimum recommended cut-off of 0.70, in support of the reliability of the scales. All the factor loadings were significant at 0.1% level and were more than 0.50, the CR for all the constructs exceeded 0.70, the AVE for all the constructs was greater than the threshold of 0.50, and CR was greater than AVE for all the constructs. Thus, evidence in support of convergent validity was obtained. Lastly, as the square root of AVE was greater than the inter-construct correlations, evidence for discriminant validity was also obtained. Taken together, the measurement model produced desired results, following which the presence of common method bias (CMB) was assessed as a precursor to the assessment of the structural model.

Assessment of Common Method Bias

In their seminal paper, Podsakoff et al. (2003) argued that cross-sectional studies which rely on the same source to gather data on both dependent and independent variables are prime victims of common method bias. Common method bias has the potential to distort research findings and undermine knowledge advances. Some statistical techniques exist that serve to detect the presence of common method bias. These include the marker variable technique (Lindell & Whitney, 2001), the unmeasured common latent factor method (Liang et al., 2007), Harman's single factor test (Podsakoff et al., 2003), among others. For this study, the author used a CFA-based Harman's single factor test. The idea behind this test is that if a single factor model possesses a better model fit vis-à-vis the specified multifactor model, the data may be contaminated by common method bias. The results of the test indicated a poor fit of the single factor model (χ^2 = 208.074 (df = 27, p = 0.000), χ^2/df = 7.706, CFI = 0.841, TLI = 0.789, RMSEA = 0.225, SRMR = 0.096) in comparison to that of the specified multifactor model, thereby ruling out the potential for common method bias. Next, the author examined the structural model to test the study hypotheses.

The Structural Model

To test the full structural model, all the four control variables (gender, age, income and education) were also included in the model to control for their possible confounding effect. The model fit of the full structural model (χ^2 = 95.556 (df = 53, p = 0.000), χ^2/df = 1.803, CFI = 0.965, TLI = 0.949, RMSEA = 0.078, SRMR = 0.039) was satisfactory. The author then tested the hypotheses by examining the significance and the sign of the path coefficients. The results of the analysis revealed that attitude towards counterfeit branded products had a significant positive effect on intention to purchase counterfeit branded products (ß = 0.818, p<0.001). Thus, evidence in support of H_1 was obtained. Attitude is indeed a significant predictor of purchase intention, and it explains 66% variance in the latter ($R^2 = 0.657$). The results are detailed in Table 6.

Table 6. Results of the Structural Model

Hypothesis	Path	Standardized ß	t-value	p-value	Hypothesis supported?
H_1	ATC → PIC	0.818	8.940	<0.001	Yes

Abbreviations: ATC = Attitude towards counterfeit branded products, PIC = Purchase intention for counterfeit branded products

Difference in Attitude and Purchase Intention of Buyers and Non-Buyers

To assess the significance of difference in the attitudes and purchase intention of buyers and non-buyers, the author firstly computed factor scores for both these constructs by using regression imputation in AMOS. This was done right after getting desirable results of the measurement model in CFA. An independent sample t-test was then conducted to test the significance of difference in the attitude towards and intention to purchase counterfeit branded products, between buyers and non-buyers. The results of the test (detailed in Table 7) indicated a significant difference in the attitudes and purchase intention of the two groups of consumers. More specifically, past buyers (mean = 4.060) had a more favorable attitude towards counterfeit branded products than non-buyers (mean = 2.804), thereby supporting H_{2a}. In a similar vein, past buyers (mean = 3.860) exhibited a higher intention to purchase counterfeit branded products, in contrast with non-buyers (mean = 2.513). Thus, evidence in support of H_{2b} was also found.

Table 7. Independent Sample t-test for Difference in Attitude and Purchase Intention of Past Buyers and Non-Buyers

Hypothesis	Variable	Buyers	Non-buyers	t-value	p-value	Hypothesis supported?
H_{2a}	Attitude towards counterfeit branded products (Mean)	4.060	2.804	5.210	0.000	Yes
H_{2b}	Purchase intention towards counterfeit branded products (Mean)	3.860	2.513	4.727	0.000	Yes

Post-Hoc Analysis Involving Control Variables

The analysis further revealed that none of the demographic variables, namely gender, age, income and education, has a significant influence on either the attitude towards counterfeit branded products or the intention to purchase such products. It implies that demographic variables have no confounding effect on consumers' attitudes and purchase intention towards counterfeit branded products. Implications of the research findings are discussed in the next section.

DISCUSSION AND MANAGERIAL/POLICY IMPLICATIONS

The present study investigated the effect of attitude towards counterfeit branded products on the intention to purchase such illicit products in the context of an emerging economy, India. The result that merits attention is that attitude towards counterfeit branded products positively predicts purchase intention for such products. This finding is consistent with the findings of the previous studies (Ang et al., 2001; Bhatia, 2018; de Matos et al., 2007; Huang et al., 2004; C. Kim et al., 2016; Kwong et al., 2003; Michaelidou & Christodoulides, 2011; Phau & Teah, 2009; Singh et al., 2021). This result was highly anticipated because it is one of the fundamental propositions of TRA that attitude explains a large proportion of variance in behavioral (purchase) intention (Fishbein & Ajzen, 1975), as was the case in the present study also ($R^2 = 0.657$). This implies that the modified version of TRA stands validated in the specific context of consumer counterfeit purchase behavior in India, an emerging economy. In this way, the findings of the study advance empirical support for the use of TRA in explaining consumer depraved behavior, in general, and thus systematically progress our limited theoretical understanding. Future studies can therefore use TRA to examine unethical consumer behavior with confidence.

A corollary of the main finding is that in order to nip the consumers' preference of counterfeit branded products in the bud, it is crucial to prevent the formation of favorable attitudes towards such products. Manufacturers and policymakers can gain a lot out of the findings of this study. They can identify factors that lead to the formation of positive as well as negative attitudes towards counterfeit branded products. They can then work to accentuate the impact of the factors that act as deterrents to counterfeit purchase such as social risk, ethics, etc., while at the same time attenuate and negate the impact of the factors that are propellants of consumers' preference for counterfeit branded products such as fashion inclination, value for money, etc. For instance, past research has proved that value-conscious consumers view counterfeit branded products in a positive light (Bhatia, 2018; Singh et al., 2021). To prevent consumers from turning to counterfeit branded products, manufacturers of genuine branded products can consider introducing affordable versions of their products through relatively cheaper offerings. Nokia is the quintessence for the price reduction strategy. It launched a bespoke version of its flagship phone at a lower price, catering particularly to the needs of the lower strata (Hamelin et al., 2013). By doing so, it killed two birds with a single stone. First, consumers turned to Nokia as it offered better quality phones at prices comparable to those of counterfeit phones. Second, being already positioned as a cheaper, yet a better-quality alternative, Nokia phone proved to be uneconomic to the counterfeiters to reproduce. All in all, Nokia's astuteness saved it from being a sitting duck at the hands of ingenuine counterfeiters. The legitimate manufacturers should also contemplate offering more than just the tangible product because it is believed that counterfeiters can replicate the tangible product, but they cannot imitate the intangible cues that form the extended product (Phau & Teah, 2009). The intangibles in the form of lifetime warranties, cashback schemes, loyalty points, no-questions-asked return policy, and many more, will render consumers' shopping experiences worth relishing and would endow comparative advantage to the genuine manufacturers, which will eventually arm them in their fight against counterfeiting (Randhawa et al., 2015).

Similarly, most past research testifies to the incontrovertible role rendered by risk perceptions in deterring consumers from purchasing counterfeit branded products. Manufacturers and policymakers can highlight the risk associated with counterfeit branded products, which will serve to curtail the development of favorable attitudes towards them. For instance, marketing communication should highlight the social risk associated with the purchase of counterfeit branded products. It is widely held that Asians in general value the concept of "face" a lot (Phau & Teah, 2009; Zhou & Belk, 2004). Managers can leverage this knowledge and design such messages as the "loss of face" (Priporas et al., 2020) or potential embarrassment (Davidson et al., 2019) upon being detected as a user of counterfeit branded products, which are likely to attenuate the preference for counterfeit branded products. By preventing the development of favorable attitudes, half the job of constraining counterfeiting is done as without favorable attitudes, there will be no intention to purchase counterfeit branded products, which will further ensue in no actual purchases of such products.

Time and again, researchers have highlighted the role of consumer education and awareness in impeding the development of positive attitudes towards counterfeit branded products. The government may consider launching campaigns that aim to educate consumers about some of the deleterious effects of counterfeiting activity such as cumbering the creation of new jobs (Koay, 2018) and sponsoring terrorism and sweatshops (Davidson et al., 2019; Yoo & Lee, 2012), which are purported to evoke guilt in consumers and eventually lead them to develop an unfavorable attitude towards counterfeiting activity. Thus, apart from providing corroborating theoretical evidence by validating TRA in the context of counterfeit purchase behavior, the study also makes a useful contribution of high practical worth by recommending novel strategies (based on its empirical findings) to combat counterfeiting.

Further, the results indicated that consumers who have prior experience of purchasing counterfeit branded products hold a favorable attitude towards such products, in comparison with the consumers who have no experience with counterfeits. This finding is in line with that of previous research (Ang et al., 2001; de Matos et al., 2007; H. Kim & Karpova, 2010; Wang et al., 2005). Consistent with the findings of past research, it was also found that buyers expressed a higher purchase intention for counterfeit branded products vis-à-vis non-buyers (Kwong et al., 2003; Tan, 2002; Yoo & Lee, 2012). These findings can be explained by the self-perception theory (Festinger & Carlsmith, 1959), which purports that current buyers of certain products should exhibit positive attitudes and higher purchase intentions towards them. Moreover, it is argued that habits formed on the basis of past experiences of an individual affect attitudes and future behavior to a considerable extent (Phau & Liang, 2012).

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Like all other investigations, this study also has some limitations that need to be recognized. First, the sampling technique used does not permit generalization of the results because it is a non-probability sampling technique. Future studies should use probability sampling techniques to obtain a representative sample to have more vigorous generalizability. Second, the use of a web-based survey for collecting data may have precluded those who had no access to the internet. The author recommends that future studies should use a hybrid method of data collection, utilizing both a web-based survey and a paper-and-pen based survey to widen the respondent base. Third, the use of self-report surveys to collect data for a study involving a potentially sensitive topic may have induced respondents to give socially desirable responses (Donaldson & Grant-Vallone, 2002; Steenkamp et al., 2010). Future studies should use more procedural remedies or perhaps use some other method of data collection such as observation, to preclude the respondents' tendency of giving socially desirable responses. Additionally, the study was confined in its scope to just one country, India. The author warns against the risks associated with generalizing the study's results to other countries. Future researchers are encouraged to conduct cross-cultural research to provide a more solid understanding of unethical consumer behavior, with special reference to the purchase of counterfeit branded products. Lastly, researchers can test the moderating effect of certain variables in the relationship between attitudes and purchase intention, to discern what factors strengthen and what factors weaken the relationship between the two constructs.

REFERENCES

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. doi:10.1016/0749-5978(91)90020-T

Ang, S. H., Cheng, P. S., Lim, E. A. C., & Tambyah, S. K. (2001). Spot the difference: Consumer responses towards counterfeits. *Journal of Consumer Marketing*, *18*(3), 219–233. doi:10.1108/07363760110392967

Bekir, I., el Harbi, S., & Grolleau, G. (2011). (Deceptive) status seeking strategies in France and Tunisia. *Journal of Economic Issues*, *45*(3), 717–732. doi:10.2753/JEI0021-3624450311

Bhatia, V. (2018). Examining consumers' attitude towards purchase of counterfeit fashion products. *Journal of Indian Business Research*, *10*(2), 193–207. doi:10.1108/JIBR-10-2017-0177

Bian, X., & Haque, S. (2020). Counterfeit versus original patronage: Do emotional brand attachment, brand involvement, and past experience matter? *Journal of Brand Management*, *27*(4), 438–451. doi:10.105741262-020-00189-4

Bian, X., & Moutinho, L. (2009). An investigation of determinants of counterfeit purchase consideration. *Journal of Business Research*, *62*(3), 368–378. doi:10.1016/j.jbusres.2008.05.012

Bloch, P. H., Bush, R. F., & Campbell, L. (1993). Consumer "Accomplices" in Product Counterfeiting: A Demand-Side Investigation. *Journal of Consumer Marketing*, *10*(4), 27–36. doi:10.1108/07363769310047374

Bray, J. (2008). *Consumer Behaviour Theory: Approaches and Models* [Unpublished manuscript]. Bournemouth University. Retrieved from http://eprints.bournemouth.ac.uk/10107/1/Consumer_Behaviour_Theory_-_Approaches_&_Models.pdf

Burgess, S. M., & Steenkamp, J.-B. E. M. (2006). Marketing renaissance: How research in emerging markets advances marketing science and practice. *International Journal of Research in Marketing*, *23*(4), 337–356. Advance online publication. doi:10.1016/j.ijresmar.2006.08.001

Castaño, R., & Eugenia Perez, M. (2014). A matter of love: Consumers' relationships with original brands and their counterfeits. *Journal of Consumer Marketing*, *31*(6/7), 475–482. doi:10.1108/JCM-05-2014-0970

Chand, V. S., & Fei, C. (2021). Self-brand connection and intention to purchase a counterfeit luxury brand in emerging economies. *Journal of Consumer Behaviour*, *20*(2), 399–411. doi:10.1002/cb.1871

Chang, M. K. (1998). Predicting Unethical Behavior: A Comparison of the Theory of Reasoned Action and the Theory of Planned Behavior. *Journal of Business Ethics*, *17*(16), 1825–1834. doi:10.1023/A:1005721401993

Chaudhry, P. E., & Stumpf, S. A. (2011). Consumer complicity with counterfeit products. *Journal of Consumer Marketing*, *28*(2), 139–151. doi:10.1108/07363761111115980

Costello, A. B., & Osborne, J. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation*, *10*.

Davidson, A., Nepomuceno, M. V., & Laroche, M. (2019). Shame on You: When Materialism Leads to Purchase Intentions Toward Counterfeit Products. *Journal of Business Ethics*, *155*(2), 479–494. doi:10.100710551-017-3479-5

de Matos, C. A., Ituassu, C. T., & Rossi, C. A. V. (2007). Consumer attitudes toward counterfeits: A review and extension. *Journal of Consumer Marketing*, *24*(1), 36–47. doi:10.1108/07363760710720975

Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of Price, Brand, and Store Information on Buyers' Product Evaluations. *JMR, Journal of Marketing Research*, *28*(3), 307–319. doi:10.1177/002224379102800305

Donald, I., & Cooper, S. R. (2001). A facet approach to extending the normative component of the theory of reasoned action. *British Journal of Social Psychology*, *40*(4), 599–621. doi:10.1348/014466601165000 PMID:11795070

Donaldson, S. I., & Grant-Vallone, E. J. (2002). Understanding Self-Report Bias in Organizational Behavior Research. *Journal of Business and Psychology*, *17*(2), 245–260. doi:10.1023/A:1019637632584

Eagly, A. H., & Chaiken, S. (2007). The advantages of an inclusive definition of attitude. *Social Cognition*, *25*(5), 582–602. doi:10.1521oco.2007.25.5.582

Eisend, M. (2019). Morality Effects and Consumer Responses to Counterfeit and Pirated Products: A Meta-analysis. *Journal of Business Ethics*, *154*(2), 301–323. doi:10.100710551-016-3406-1

Eisend, M., Hartmann, P., & Apaolaza, V. (2017). Who Buys Counterfeit Luxury Brands? A Meta-Analytic Synthesis of Consumers in Developing and Developed Markets. *Journal of International Marketing*, *25*(4), 89–111. doi:10.1509/jim.16.0133

Feldman, J. M., & Lynch, J. G. (1988). Self-generated validity and other effects of measurement on belief, attitude, intention, and behavior. *The Journal of Applied Psychology*, *73*(3), 421–435. doi:10.1037/0021-9010.73.3.421

Festinger, L., & Carlsmith, J. M. (1959). Cognitive consequences of forced compliance. *Journal of Abnormal and Social Psychology*, *58*(2), 203–210. Advance online publication. doi:10.1037/h0041593 PMID:13640824

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention and behavior: An introduction to theory and research. Addison-Wesley Pub (Sd).

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *JMR, Journal of Marketing Research*, *18*(1), 39–50. doi:10.1177/002224378101800104

Gentry, J. W., Putrevu, S., & Shultz, C. J. (2006). The effects of counterfeiting on consumer search. *Journal of Consumer Behaviour*, *5*(3), 245–256. doi:10.1002/cb.176

Grossman, G. M., & Shapiro, C. (1988). Foreign Counterfeiting of Status Goods. *The Quarterly Journal of Economics*, *103*(1), 79–100. doi:10.2307/1882643

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th ed.). Prentice Hall.

Hamelin, N., Nwankwo, S., & el Hadouchi, R. (2013). 'Faking brands': Consumer responses to counterfeiting. *Journal of Consumer Behaviour*, *12*(3), 159–170. doi:10.1002/cb.1406

Herstein, R., Drori, N., Berger, R., & Barnes, B. R. (2015). Anticounterfeiting Strategies and Their Influence on Attitudes of Different Counterfeit Consumer Types. *Psychology and Marketing*, *32*(8), 842–859. doi:10.1002/mar.20822

Hinkin, T. R., Tracey, J. B., & Enz, C. A. (1997). Scale Construction: Developing Reliable and Valid Measurement Instruments. *Journal of Hospitality & Tourism Research (Washington, D.C.)*, *21*(1), 100–120. doi:10.1177/109634809702100108

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*(1), 1–55. doi:10.1080/10705519909540118

Huang, J. H., Lee, B. C. Y., & Ho, S. H. (2004). Consumer attitude toward gray market goods. *International Marketing Review*, *21*(6), 598–614. doi:10.1108/02651330410568033

Iacobucci, D. (2009). Everything you always wanted to know about SEM (structural equations modeling) but were afraid to ask. *Journal of Consumer Psychology*, *19*(4), 673–680. doi:10.1016/j.jcps.2009.09.002

Iacobucci, D. (2010). Structural equations modeling: Fit Indices, sample size, and advanced topics. *Journal of Consumer Psychology*, *20*(1), 90–98. Advance online publication. doi:10.1016/j.jcps.2009.09.003

Ilieva, J., Baron, S., & Healey, N. M. (2002). Online Surveys in Marketing Research. *International Journal of Market Research*, *44*(3), 1–14. doi:10.1177/147078530204400303

Kaufmann, H. R., Petrovici, D. A., Filho, C. G., & Ayres, A. (2016). Identifying moderators of brand attachment for driving customer purchase intention of original vs counterfeits of luxury brands. *Journal of Business Research*, *69*(12), 5735–5747. doi:10.1016/j.jbusres.2016.05.003

Kenny, D. A., Kaniskan, B., & McCoach, D. B. (2014). The Performance of RMSEA in Models With Small Degrees of Freedom. *Sociological Methods & Research*, *44*(3), 486–507. doi:10.1177/0049124114543236

Khandeparkar, K., & Motiani, M. (2018). Fake-love: Brand love for counterfeits. *Marketing Intelligence & Planning*, *36*(6), 661–677. doi:10.1108/MIP-11-2017-0278

Kim, C., Ko, E., & Koh, J. (2016). Consumer attitudes and purchase intentions toward fashion counterfeits: Moderating the effects of types of counterfeit goods and consumer characteristics. *Journal of Global Fashion Marketing*, *7*(1), 15–29. doi:10.1080/20932685.2015.1105109

Kim, H., & Karpova, E. (2010). Consumer attitudes toward fashion counterfeits: Application of the theory of planned behavior. *Clothing & Textiles Research Journal*, *28*(2), 79–94. doi:10.1177/0887302X09332513

Koay, K. Y. (2018). Understanding consumers' purchase intention towards counterfeit luxury goods. *Asia Pacific Journal of Marketing and Logistics*, *30*(2), 495–516. doi:10.1108/APJML-05-2017-0100

Kwong, K. K., Yau, O. H. M., Lee, J. S. Y., Sin, L. Y. M., & Tse, A. C. B. (2003). The Effects of Attitudinal and Demographic Factors on Intention to Buy Pirated CDs: The Case of Chinese Consumers. *Journal of Business Ethics*, *47*(3), 223–235. doi:10.1023/A:1026269003472

Liang, H., Saraf, N., Hu, Q., & Xue, Y. (2007). Assimilation of Enterprise Systems: The Effect of Institutional Pressures and the Mediating Role of Top Management. *Management Information Systems Quarterly*, *31*(1), 59–87. doi:10.2307/25148781

Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *The Journal of Applied Psychology*, *86*(1), 114–121. doi:10.1037/0021-9010.86.1.114 PMID:11302223

Madden, T. J., Ellen, P. S., & Ajzen, I. (1992). A Comparison of the Theory of Planned Behavior and the Theory of Reasoned Action. *Personality and Social Psychology Bulletin*, *18*(1), 3–9. doi:10.1177/0146167292181001

Malik, A., Merunka, D., Akram, M. S., Barnes, B. R., & Chen, A. (2020). Self-concept, individual characteristics, and counterfeit consumption: Evidence from an emerging market. *Psychology and Marketing*, *37*(10), 1378–1395. doi:10.1002/mar.21386

Marticotte, F., & Arcand, M. (2017). Schadenfreude, attitude and the purchase intentions of a counterfeit luxury brand. *Journal of Business Research*, *77*, 175–183. doi:10.1016/j.jbusres.2016.12.010

McDonald, H., & Adam, S. (2003). A comparison of online and postal data collection methods in marketing research. *Marketing Intelligence & Planning*, *21*(2), 85–95. doi:10.1108/02634500310465399

Michaelidou, N., & Christodoulides, G. (2011). Antecedents of attitude and intention towards counterfeit symbolic and experiential products. *Journal of Marketing Management*, *27*(9–10), 976–991. doi:10.1080/0267257X.2010.549189

OECD/EUIPO. (2019). *Trends in Trade in Counterfeit and Pirated Goods, Illicit Trade. OECD Publishing*. European Union Intellectual Property Office., doi:10.1787/g2g9f533-

Penz, E., Schlegelmilch, B. B., & Stottinger, B. (2009). Voluntary purchase of counterfeit products: Empirical evidence from four countries. *Journal of International Consumer Marketing*, *21*(1), 67–84. doi:10.1080/08961530802125456

Phau, I., & Liang, J. (2012). Downloading digital video games: Predictors, moderators and consequences. *Marketing Intelligence & Planning*, *30*(7), 740–756. doi:10.1108/02634501211273832

Phau, I., & Teah, M. (2009). Devil wears (counterfeit) Prada: A study of antecedents and outcomes of attitudes towards counterfeits of luxury brands. *Journal of Consumer Marketing*, *26*(1), 15–27. doi:10.1108/07363760910927019

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, *88*(5), 879–903. doi:10.1037/0021-9010.88.5.879 PMID:14516251

Pratt, S., & Zeng, C. Y. H. (2019). The economic value and determinants of tourists' counterfeit purchases: The case of Hong Kong. *Tourism Economics*, *26*(1), 155–178. doi:10.1177/1354816619834482

Priporas, C.-V., Chen, Y., Zhao, S., & Tan, H. (2020). An exploratory study of the upper middle-class consumer attitudes towards counterfeiting in China. *Journal of Retailing and Consumer Services*, *53*, 101959. doi:10.1016/j.jretconser.2019.101959

Quoquab, F., Pahlevan, S., Mohammad, J., & Thurasamy, R. (2017). Factors affecting consumers' intention to purchase counterfeit product. *Asia Pacific Journal of Marketing and Logistics*, *29*(4), 837–853. doi:10.1108/APJML-09-2016-0169

Randall, D. M., & Gibson, A. M. (1991). Ethical decision making in the medical profession: An application of the theory of planned behavior. *Journal of Business Ethics*, *10*(2), 111–122. doi:10.1007/BF00383614

Randhawa, P., Calantone, R. J., & Voorhees, C. M. (2015). The pursuit of counterfeited luxury: An examination of the negative side effects of close consumer-brand connections. *Journal of Business Research*, *68*(11), 2395–2403. doi:10.1016/j.jbusres.2015.02.022

Reise, S. P., Waller, N. G., & Comrey, A. L. (2000). Factor analysis and scale revision. *Psychological Assessment*, *12*(3), 287–297. Advance online publication. doi:10.1037/1040-3590.12.3.287 PMID:11021152

Sharma, P., & Chan, R. Y. K. (2016). Demystifying deliberate counterfeit purchase behaviour: Towards a unified conceptual framework. *Marketing Intelligence & Planning*, *34*(3). Advance online publication. doi:10.1108/MIP-12-2014-0228

Singh, D. P., Kastanakis, M. N., Paul, J., & Felix, R. (2021). Non-deceptive counterfeit purchase behavior of luxury fashion products. *Journal of Consumer Behaviour*, *20*(5), 1078–1091. Advance online publication. doi:10.1002/cb.1917

Steenkamp, J.-B. E. M., de Jong, M. G., & Baumgartner, H. (2010). Socially Desirable Response Tendencies in Survey Research. *JMR, Journal of Marketing Research*, *47*(2), 199–214. doi:10.1509/jmkr.47.2.199

Tan, B. (2002). Understanding consumer ethical decision making with respect to purchase of pirated software. *Journal of Consumer Marketing*, *19*(2), 96–111. doi:10.1108/07363760210420531

The Economic Times. (2020, July 30). *Counterfeit products create Rs 1-lakh-cr hole in economy, incidents up 24% in 2019: Report*. https://economictimes.indiatimes.com/news/economy/finance/counterfeit-products-create-rs-1-lakh-cr-hole-in-economy-incidents-up-24-in-2019-report/articleshow/77259432.cms?from=mdr

Ting, M. S., Goh, Y. N., & Isa, S. M. (2016). Determining consumer purchase intentions toward counterfeit luxury goods in Malaysia. *Asia Pacific Management Review*, *21*(4), 219–230. doi:10.1016/j.apmrv.2016.07.003

Veloutsou, C., & Bian, X. (2008). A cross-national examination of consumer perceived risk in the context of non-deceptive counterfeit brands. *Journal of Consumer Behaviour*, *7*(1), 3–20. doi:10.1002/cb.231

Verma, S., Kumar, R., & Yadav, S. K. (2018). An Empirical Study on Consumers' Buying Intentions of Counterfeit Products in India. *Journal of Intellectual Property Rights*, *23*, 250–260. http://nopr.niscair.res.in/handle/123456789/47338

Vida, I., Koklič, M. K., Kukar-Kinney, M., & Penz, E. (2012). Predicting consumer digital piracy behavior: The role of rationalization and perceived consequences. *Journal of Research in Interactive Marketing*, *6*(4), 298–313. doi:10.1108/17505931211282418

Wang, F., Zhang, H., Zang, H., & Ouyang, M. (2005). Purchasing pirated software: An initial examination of Chinese consumers. *Journal of Consumer Marketing*, *22*(6), 340–351. doi:10.1108/07363760510623939

Ward, P., Clark, T., Zabriskie, R., & Morris, T. (2014). Paper/Pencil Versus Online Data Collection. *Journal of Leisure Research*, *46*(1), 84–105. doi:10.1080/00222216.2014.11950314

Waters, J. (2015). Snowball sampling: A cautionary tale involving a study of older drug users. *International Journal of Social Research Methodology*, *18*(4), 367–380. doi:10.1080/13645579.2014.953316

Wee, C.-H., Tan, S.-J., & Cheok, K.-H. (1995). Non-price determinants of intention to purchase counterfeit goods: An exploratory study. *International Marketing Review*, *12*(6), 19–46. doi:10.1108/02651339510102949

Wiedmann, K.-P., Hennigs, N., & Klarmann, C. (2012). Luxury consumption in the trade-off between genuine and counterfeit goods: What are the consumers' underlying motives and value-based drivers? *Journal of Brand Management*, *19*(7), 544–566. doi:10.1057/bm.2012.10

Wu, G. J., Bagozzi, R. P., Anaza, N. A., & Yang, Z. (2019). A goal-directed interactionist perspective of counterfeit consumption: The role of perceived detection probability. *European Journal of Marketing*, *53*(7), 1311–1332. doi:10.1108/EJM-07-2017-0455

Yoo, B., & Lee, S. H. (2012). Asymmetrical effects of past experiences with genuine fashion luxury brands and their counterfeits on purchase intention of each. *Journal of Business Research*, *65*(10), 1507–1515. doi:10.1016/j.jbusres.2011.10.018

Zhou, N., & Belk, R. W. (2004). Chinese Consumer Readings of Global and Local Advertising Appeals. *Journal of Advertising*, *33*(3), 63–76. doi:10.1080/00913367.2004.10639169

KEY TERMS AND DEFINITIONS

Attitude: Attitude may be defined as a learned predisposition to respond to an object in a consistently favourable or unfavourable manner.

Counterfeit Branded Products: Counterfeit branded products are the illegitimate facsimiles of genuine branded products. Such products encroach on the intellectual property rights owned by a legal manufacturer.

Non-Deceptive Counterfeiting: It is the form of counterfeiting in which consumers know that the products that they are purchasing are counterfeits products, and not genuine products.

Purchase Intention: Purchase intention can be construed as the individual's subjective probability that he or she will purchase a given product.

Theory of Reasoned Action: Theory of reason action is an expectancy-value theory which holds that a given behaviour is best predicted by behavioural intention, which is itself a function of attitude towards performing the behaviour and subjective norms associated with performance of the behaviour.

Chapter 6
Public Sector Disinvestment in India:
A Narrative Review and Future Research Directions

Priyanka Chadha
Manav Rachna University, India

Rajat Gera
https://orcid.org/0000-0001-7558-1426
K. R. Mangalam University, India

ABSTRACT

The chapter is a narrative review of the empirical studies conducted on Indian PSE's post disinvestment. Eighteen papers were selected through a process of search and exclusion to meet the criteria specified and results synthesized under four inductively derived themes. The review shows wide variability in performance outcomes of PSE's post disinvestment. The Indian Government has not followed a transparent process or framed a policy for disinvestment, which would gain public confidence. The process of disinvestment is driven by political expediency. Future research directions are proposed.

INTRODUCTION

In 1947, when Indian became independent, 'Public Sector' Enterprises included the Railways, the Posts and Telegraphs, the Port Trusts, the Ordinance Factories, All India Radio and some the departmentally managed organizations like Government Salt Factories, Quinine Factories. Post -independence, India opted for planned economic development to face the challenges of inequalities in income, low levels of employment, regional imbalances in economic development and lack of trained manpower. Hence, Public Sector was designed as an instrument for self-reliant economic growth and implemented through Industrial Policy Resolution of 1948 and 1956 which laid emphasis on tackling the challenges of regional imbalances, unemployment, expansion of production especially of capital equipment and commodities

DOI: 10.4018/978-1-6684-5274-5.ch006

for domestic consumption and export. The strategies for public sector were further refined in policy statements of 1973, 1977, 1980 and 1991.

The Indian Government adopted disinvestment in PSUs as a major route for privatization. Disinvestment refers to the sale of PSU's equity to the private sector and the public. The disinvestment program began in 1991-92, and 48 public sector companies' stakes were sold in varying degrees by 2004-05.

The various modalities of disinvestment are Sales on a Strategic basis; Capital Market (which refers to a sales offer to the public for a certain price; Secondary Market Operation; Sales offer made to the public through the building of books; International offering- Global Depositary Receipts (GDR), American Depositary Receipts (ADR); Placement of Private nature; Equity Reduction - (By buying back Equities, Equity conversion into debt, which can be used for exchange in the instruments functional within the capital market space; Sales of Assets; Buy-out of Management Employees; Cross Sale; Demergers); Warehousing and Auctioning.

Until 1999-2000, disinvestment was majorly carried out by holding auctions to sell minority shares. However, the dynamics changed between 1999 and 2000 and between 2003 and 2004, as disinvestment methods shifted to strategic sales. The disinvestment policy focuses on regulating the ownership of CPSEs so that the equity share of the Government stays above 51%, i.e., to ensure management control remains with the Government (Vijayakumar and Jayachitra, 2015). In 1991-92 A total of 31 PSUs were finalized for disinvestment, with their equity amounting to Rs 30.38 billion by making shares available to workers, financial institutions, mutual funds, and the public. Between 1991 and 1992 and 2000 and 2001, shares worth Rs 203.21 billion were sold to private players.
The three different approaches of divestment are:

1. Disinvestment of a minor portion wherein the majority stake is retained by the government post divestiture of above 51%, and management control.
2. Majority disinvestment, the Government retains a minority stake of less than 51%.
3. Complete privatization, total control over the company given to private sector (BSE, 2017). In the Indian context, modality selection became critical and has been debated regarding appropriate modality.

The bundling of shares at the initial phase and later the strategic sale has come under criticism. Though disinvestment of profit-making PSUs has been the issue of criticism, very few review studies, have been undertaken on disinvestment, especially in India, as evident from a literature review. The author could not find any review paper on the topic in literature.

In this narrative review, the literature on disinvestment of Indian public sector enterprises has been synthesized under the themes of factors determining performance outcomes of disinvestment, Performance outcomes of disinvestment, Problems, and issues of disinvestment.

METHODOLOGY

A narrative review of literature depicted in (Table 1.0) has been carried out to analyze the available data, summarize its contents, and draw inferences regarding PSEs (Public Sector Enterprise) in this paper (Tranfield et al., 2003). This paper aims to analyze the currently existing literature available on PSE disinvestment in a wide horizon while identifying literature gaps and future scope of research. The work done by Hohenstein et al. (2014) and Rashman et al. (2009) serves as the base for this study. This study has been carried out in four steps, which involve discussions about the time horizon, selection of a database, articles, and classification of articles. A systematic process (PRISMA) was followed for selection of articles for review (Figure 1.0)

1. To start the study, the keywords were defined first, which comprised terms like "Public sector disinvestment," "PSU disinvestment," "Central public sector enterprise India," mentioned in text format over databases available online.
2. A literature search of the past twenty years' research (2000 to 2020) was conducted using search engines such as Google Scholar and Scopus. It was decided that academic journals made available before the start of 2020 will be considered for this research, keeping in mind that there has been a spike in interest regarding this topic.
3. Articles in the English language were considered from databases available online, including Emerald Insight, Science Direct, Wiley Online, Springer Link, Taylor & Francis, by searching Google Scholar and Scopus databases. However, the selected databases are still incomplete and not exhaustive, but they represent most of the significant literature published in this field.
4. From the 126 articles initially extracted from the literature search, 61 were selected for final review after excluding conceptual articles, conference papers, opinion articles, papers not published in indexed journals, duplicate articles, and book chapters.
5. To ensure that the journals align well with the topic of study, their abstracts are carefully studied, and irrelevant articles were rejected so that bias could be minimized.
6. The selected 19 articles were subsequently classified into several areas of focus, four to be exact, focusing upon dominant areas of interest. The themes for review (Antecedents of PSU disinvestment, factors affecting PSU divestment; performance outcomes of PSU divestment; Other issues/ Problems in PSU divestment; Measures of Performance) which were inductively derived for this review.

Figure 1. **PRISMA (2009) Flow Diagram**

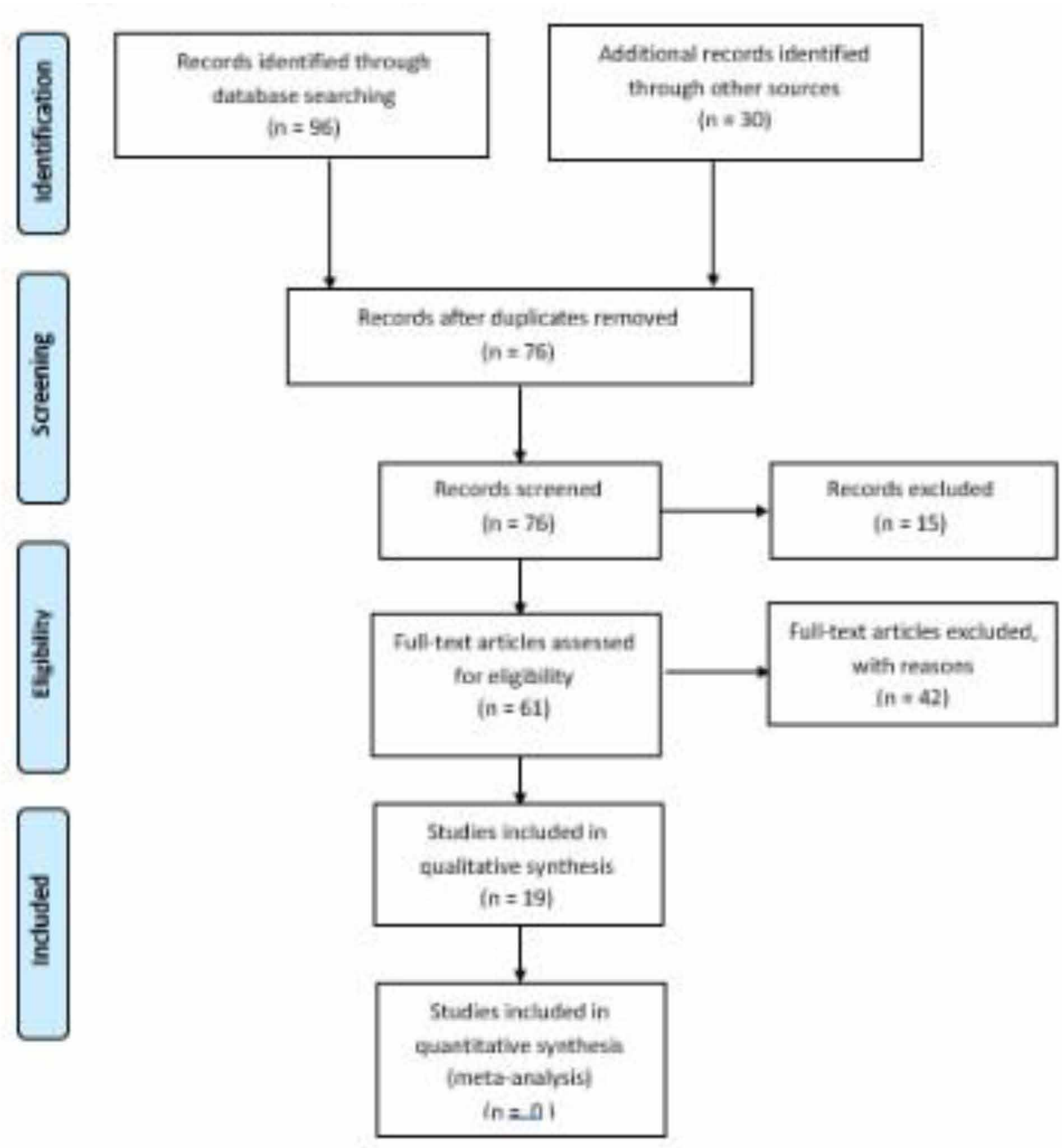


Table 1. Summary Table of Articles Selected/Reviewed

S. No	Author, Year	Country	Journal	Investigation Theme
1.	V. Ravi Anshuman, 2003	India	Economic and Political Weekly	Empirical Theme
2.	R. Nagaraj, 2006	India	Economic and Political Weekly	Empirical Theme
3.	B. P. Mathur	India	Economic and Political Weekly	Empirical Theme
4.	T. G. Arun et al., 2010	UK	Oxford Development Studies	Empirical Theme
5.	Prahlad K. Basu, 1994	UK	International Journal of Public Sector Management	Empirical Theme
6.	C.P. Chandrashekhar, 2007	India	SAGE Publications	Empirical Theme
7.	Chhibber, 2018	India	International Journal of Public Sector Management	Empirical Theme
8.	Balasooriya, 2006	Sri Lanka	ANZAM Conference	Empirical Theme
9.	Gakhar, 2018	India	International Journal of Public Sector Management	Empirical Theme
10.	Elshaug, 2008	Australia	International Journal of Technology Assessment in Health Care	Qualitative Theme
11.	P.K. Jain et al., 2014	India	Public Sector Enterprises in India	Review Theme
12.	Mandiratta, 2017	India	Management and Labour Studies	Empirical Theme
13.	Mandiratta, 2020	India	Journal of Economic and Administrative Sciences	Empirical Theme
14.	Mohanan, 2009	India	Int. J. Indian Culture and Business Management	Empirical Theme
15.	Pheko, 2013	Africa	International Journal of Business and Management	Review Theme
16.	Edwina Pio, 2007	USA	Human Resource Management Review	Review Theme
17.	Verbeeten, 2008	Netherlands	Accounting, Auditing & Accountability Journal	Empirical Theme
18.	Seema et al., 2011	India	Journal of Applied Finance & Banking	Empirical Theme
19.	G Wilson et al., 2014	Canada	Wilson et al. Systematic Reviews	Empirical Theme

DISCUSSION OF FINDINGS

The summary of articles extracted for review is presented in Table 1.0. Three of the articles are review papers while 15 are empirical research papers (14 are quantitative and 1 is qualitative research methodology). 10 of the empirical research studies are based on PSUs in India while 2 are from UK, while one each is from Netherlands and Sri Lanka. The qualitative research paper is from Australia. This indicates the scarcity of research interest and selective geographical focus of researchers on the theme of PSU disinvestment

The results from the studies are thematically presented in Tables 2, 3 and 4.

Antecedents of PSU Disinvestment

While there is little empirical research and evidence on the antecedent factors driving PSU disinvestment (Arun and Nixon, 2010), the ideological perspectives on disinvestment and privatization of PSU's are predominantly financial (reduce fiscal and budgetary deficit, source of revenue for exchequer) or/ and strategic (to improve financial discipline and governance of PSUs, expose PSUs to market forces, global competition, and technological advancement). Privatization resulted from perception of failure of central planning in enhancing performance of PSU's in transition economies like China and Russia, It emerged from the micro economic logic that poor financial performance of state-owned enterprises was due to their governance structure (ownership and organizational structure) and hence objectives of privatization were to ensure autonomy in decision-making, modification in incentive and governance structures, through board and shareholder independence and budgetary discipline (Chandrasekhar, 2007). However. in mixed economies like India, microeconomic arguments were justified with macro-also economic justifications. Hence privatization was pursued to reduce the budgetary burden of subsidies on state exchequer on account of public sector losses and to generate resources so that interest burden can be reduced by retiring public debt (Ajay Chhibber, Swati Gupta, 2017; Chandrashekhar, 2007). In India, disinvestment included several complementary strategies of public sector restructuring, reform-cum-commercialization, management contracts with private companies, joint ventures with or without equity participation and/or management contract; leasing and hardcore divestiture which involved change of ownership by offering all the shares to divestiture of minority shareholding, employee share ownership option, retaining golden shares etc (Priya Mandiratta and G.S. Bhalla, 2019; Priya Mandiratta and G.S. Bhalla, 2017; Ajay Chhibber, Swati Gupta,2017; Gakhar and Phukon,2017; Gupta Seema et al, 2011; Verbeeten, 2008; Basu, 1994). The results of research on post privatization performance and corporate governance of PSUs are diverse and inconsistent/inconclusive partly due to diverse selection of variables and research approach (Gakhar and Phukon, 2017). Hence a multi-disciplinary and consistent approach to study of PSU performance is required to validate the predominantly conceptual approach adopted for PSU divestment in India.

Table 2. Antecedents of PSU Disinvestment

Reduce the financial losses and burden (fiscal deficit) on government from subsidies paid for loss making PSUs	Priya Mandiratta and G.S. Bhalla, 2019; Nagaraj, 2006;
Generate resources for retirement of accumulated public debt and decrease the annual interest burden of the government (reduce fiscal deficit)	Priya Mandiratta and G.S. Bhalla, 2019; Chandrashekhar, 2007
Mobilise short-term funds to minimize loss in the long-term, under the ideology that the role of the government is not to be involved in concerned activity considerations.	Chandrashekhar, 2007
Selling off loss-making Public Sector Units (PSUs), while supporting profitable and well performing PSUs through autonomy to grow as global Indian Multinational Corporations (MNCs),	Arun and Nixon, 2000; Chandrashekhar, 2007
Selling off shares of prime PSUs, for reducing budget deficit due to tax reductions and un-warranted expenditures and partly as ideology of withdrawal from production.	Ajay Chhibber, Swati Gupta,2017; Chandrashekhar, 2007
As part of reforms to ensure financial discipline and improve performance of PSUs	Priya Mandiratta and G.S. Bhalla, 2019; Priya Mandiratta and G.S. Bhalla, 2017; Ajay Chhibber, Swati Gupta,2017; Divya Verma Gakhar, Abhijit Phukon,2017; Gupta Seema et al, 2011; Verbeeten, 2008; Basu, 1994
Equity sale to reduce the government's stake below 50 per to 25 per cent in some Cases as strategy of withdrawal from non-core and non-strategic areas and incentivize the private sector to acquire public sector equity. Strategic sales of PSUs, or sales of equity blocks to a single buyer along with transfer of management to the private investor.	Ajay Chhibber, Swati Gupta,2017; Arun and Nixon, 2000
To stabilize and consolidate developing Economies and deal with "market failures" by minimizing or eliminating the protective regime of "government failures" by exposing the developing economies to global market competition and technological advancement.	Chandrashekhar, 2007; Basu, 1994;

Factors Determining Performance Outcomes of Disinvested PSEs

The factors affecting the performance outcomes of divestment of PSUs in India are mostly related to the modality of divestment. The results show that partial or fractional divestment of equity leads to improvement in the financial and operational performance of the PSU that has been divested. While the inferences are not convergent as two of the studies (Seema et al., 2011) did not find any positive impact of partial disinvestment on PSU performance or (Vadlamannati (2007) very weak correlation between disinvestment and privatization (in India) about these variables. However, Sarkar, Sarkar, and Bhaumik (1998) and Ghosh (2009) found that active trading of the shares of divested PSUs in the stock market leads to improved performance.

Table 3. Factors determining performance outcomes of disinvested PSE's

Study	Factors	Authors
	Stock market listing has been observed as a key performance driver.	Sarkar, Sarkar, and Bhaumik (1998) and Ghosh (2009)
This study is carried out based on service and manufacturing firms under central ownership (247) and the State Governments (92) in 1999-2002.	Upon trading of shares of firms that have been *divested*, a productivity improvement was witnessed without laying off employees.	Gupta (2005)
	The relation between the fraction of the equities sold to the private sector and improvement in performance for CPSEs that have been divested is prominent and positive.	Gupta (2010)
	It was observed that the profitability, liquidity, employment, and leverages declined, while dividend pay-out ratio and efficiency improved significantly.	Naib (2003)
PSUs were studied before and after their divestment for two decades, between 1986 and 1987 and 2009 and 2010.	Partial disinvestment was not observed to affect the performances of PSUs when profitability, efficiency, and productivity were measured with the help of certain indicators of financial performance.	Seema et al. (2011)
The study is based upon the analysis of econometric models and data collected from a period spanning 16 years, starting from 1990.	It has been inferred from the empirical results that disinvestment and privatisation in the Indian subcontinent are weakly correlated, when kept in view of the privatisation program and slow-paced and small-sized disinvestments.	Vadlamannati (2007)

Performance Outcomes of disinvestment of PSE's

As evident from Table 4.0, there is wide variation in the results of performance outcomes linked with the divestment of PSEs. While there is improvement in sales, profits, and overall productivity of partially privatized PSEs in some studies Majumdar (2008) and Gupta (2005), Ghosh (2008), Gupta et al. (2011), and Singh and Chittedi (2011) study by G.S. Bhalla and Priya Mandiratta (2017) shows no improvement in profitability sales have been observed to increase, in addition to the operating efficiency. Positive financial and non-financial performance outcomes of disinvestment of PSEs cannot be assumed and may depend on the competitive and market environment, management effectiveness, and other contextual factors.

Table 4. Performance outcomes of disinvestment of PSE's

Performance Outcomes	Authors
The performance of private banks traded is better than the public ones. However, the non-traded ones showed the same performance levels as the public ones.	Sarkar et al. (1998)
Performance indicators such as sales, profits, and overall productivity of PSES that are disinvested are positively related to disinvestment.	Ghosh (2008), Majumdar (2008) and Gupta (2005), Singh and Chittedi (2011) and Gupta et al. (2011)
The fractions of equities sold affect the performance of CPSEs that are divested positively.	Gupta (2010)
Partially privatized CPSEs perform better than CPSEs owned by the Government fully.	Ghosh (2008)
Efficiency spikes up following privatisation, as it brings more competition.	Gupta and Kaur (2004)
Sales efficiency and the net income efficiency, comprising the overall operating efficiency, have gone up, while not much has changed concerning profitability position. Let alone positive impact, the profitability of CPSEs has rather dwindled.	Priya Mandiratta and G.S. Bhalla, (2017)

Problems/Issues of PSE Disinvestment

From a review of selected papers (Table 5.0), it can be inferred that PSU/PSE disinvestment is driven by political expediency and short-term measures of financial necessity rather than economic and managerial considerations. The valuation method most followed was the DCF method which may not reflect the appropriate economic value of the PSU as PSU/PSEs are driven by economic and social objectives, and the DCF method of valuation may have failed to incorporate the value of real and financial assets of the enterprises being disinvested. Further transparent Process was not followed in most cases which could have affected the competitiveness and performance of the PSU divested post disinvestment. The ignorance towards several core assets such as housing, leasehold land, plant, machinery, or a township is substantial. PSUs have ended up undervalued, owing to this. These PSUs generate the best prices as competition has been absent. The financial bids were only made by one party when MFIL, PPL, and CMC were considered, and in the case of BALCO, HZL, VSNL, and HTL, it was made by two parties. However, three parties were interested in the case of IPCL, and all their bids were discarded without any reasoning. The shareholders signed the agreements on adverse terms for the Government because the strategic partner could buy balanced equity belonging to PSUs being privatized, which gives them more power. This is called a call and put option.

Table 5. Problems of Disinvestment

Other Issues	Studies	Findings
Problems of disinvestment	Authors(year)	
Selection of PSUs for disinvestment	The comparison of Fully Government-Owned enterprises and Partially Government-owned enterprises was carried out by Ghosh (2008) to find out how disinvestment affects the performance of enterprises in India.	FGOs are comparatively less profitable than PGO enterprises
Valuation method used	Recommendations made in 1993 by the CDS (Community on Disinvestment and Shares)	DCF method was predominant/ several core assets such as household land, plant and machinery, township and housing, in addition to other core assets were not valued enough, if not ignored.
Insufficient competition:	Disinvestment Commission report.	Only one party made financial bids while dealing with enterprises such as PPL, MFIL, and CMC, while in the case of HZL, BALCO, VSNL, and HTL. Two parties were able to make bids. However, three bids were made by different parties, in the case of IPCL, all of which were rejected without giving any reasons.
The role played by factors, political and financial, in deciding the disinvestment of equities of firms owned by the Government.	Dinc and Gupta (2011)	Several firm-level variables that are financial, which are also location-specific, affect privatization decisions when combined with electoral factors.

Continued on following page

Table 5. Continued

Other Issues	Studies	Findings
Modalities of Disinvestment	T. G. ARUN; F. I. NIXSON (2000)	Lacking transparency, under-priced shares being sold, uncommon objectives of the Indian Government, and Commission for Disinvestment have been identified as major problems.
The scarcity of a concise policy concerning privatization and restructuring of a public sector enterprise can increase political expediency, which will be suitable for the short run. However, this might lead to less effective economic management in the long run. The motive behind the under-pricing of shares turns out to be an attempt to dispose of shares quickly.	Gouri (1996)	criteria adopted in the selection of PSEs and the methods involved in the valuation of shares lacked the essential transparency needed to gain public confidence in the Process
Large differences between the amount generated by disinvestment and following best value methods have been observed.	(Mishra et al., 1993; Sankar et al., 1994)	
Strong relationship between privatization and political factors.	Banerjee and Munger 2004)	
The poor financial state of CPSEs before their disinvestment and inefficient return rates from PSEs that are capital owned.	Priya Mandiratta and G.S. Bhalla, 2017	
Disinvestment was not resorted to, as aggressively as the reinvention of PSEs owing to certain political factors.	(Chari & Gupta, 2008; Gouri, 1997).	

Measures of Performance Post Disinvestment

Varied return on investment, profitability, operational measures of performance has been used to evaluate the post disinvestment outcomes, which reflect the lack of consensus on appropriate indicators of performance outcomes of disinvestment of PSEs.

Table 6. Measures of Performance Post Disinvestment

Authors	Method	Measures
Sarkar et al. (1989)	The balance sheet that combines the financial details of 541 private limited companies has been studied. The summarized financial details of these companies can be sourced from RBI reports.	The ROCE (Return on Capital Employed), a well as ROTA (Return on Total Assets), and ROSE (Return on Shareholders' Equity) have been measured. It has been inferred that the Profit before Interest and Taxes or the PBIT, when calculated over the total value of assets, allows accurate economic impact measurement. In addition, the ratio of PBIT and effective capital employed paints a good picture of how effective management is, while the ratio of Profits after Tax and the net worth helps shareholders understand how well a company is doing.
Jain (1988)	It has emphasized the operational and allocation efficiency criteria to comment upon how the Industrial Finance Corporation of India (IFCI) has performed financially.	To judge the efficiency of a financial institution, the operational efficiency criteria must be utilized, while the efficiency criteria must be utilized to judge the developmental functions.

CONCLUSIONS, IMPLICATIONS, RESEARCH DIRECTIONS AND LIMITATIONS:

How disinvestment has impacted the performance of a firm in India has been addressed in several studies, which has led to the inference that a focused objective has been missing, along with policy options that are well defined (Chari & Gupta, 2008; Gouri, 1997). These studies have led to the inference that the approach of disinvestment was not pursued aggressively compared to the efforts made to reinvent Public Sector Enterprises, leading to increased competition. Most of the studies touching upon how financial performance and disinvestment related to privatized firms only analyze a single variable, which is traditional and involves the comparison of profitability and efficiency ratios before and after disinvestment. Thus, analysis is required on a deeper level to understand how disinvestment impacts affect divested firms regarding financial performance.

The ANOVA (Analysis of Variance), Paired Simple Test, Multiple Discriminant Analysis, Panel Data, Cross-Section analysis, and Regression analysis have been utilized in this study. Certain parameters, financial in nature, have been subjected to a paired sample test, in which data is put through a "before-and-after" analysis. This was done to understand whether there was any change in the performance of SOEs once they were privatized. ANOVA has proved instrumental in handling a sample size of over 30 and carrying out section analysis. Researchers utilized Multiple Regression to predict a certain value, based on the values of variables, two or more in number. It has also contributed to the analysis of variables that determine how SOEs perform, other than privatization, in addition to the direction and magnitude of variables that are independent/predictor in nature and criterion/dependent variables.

Most studies have mentioned a positive impact, while only a few suggest otherwise. Lack of a comprehensive study that focuses on all aspects related to PSEs, to understand how disinvestment and MoU's available on how PSEs in India perform financially. The Government has not adopted a suitable methodology and policy to oversee the disinvestment.

Empirical evidence regarding privatization and the theory does not support the belief that the outcomes or efficiency of firms improves upon privatization. However, even though the theoretical literature available regarding this topic suggests potential benefits to privatization, it also outlines the conditions that need to exist for these benefits to be gained. The empirical evidence, at least a big part of it, supports improved performance upon privatization. However, the evidence is mixed up and requires special attention to conclude.

Future studies can attempt a comprehensive study to cover the universe of PSEs divested in India. Multi theoretical approaches which encompass and integrate the economic and non-economic performance indicators of PSEs may offer better insights into performance outcomes of PSEs and the factors that influence them. Further studies with stratified samples of PSUs based on their industry, competitive environment, and other strategic factors could better understand the variability in performance outcomes post disinvestment.

REFERENCES

Arun, T. G., & Nixson, F. I. (2000). The disinvestment of public sector enterprises: The Indian experience. *Oxford Development Studies*, *28*(1), 19–32. doi:10.1080/713688302

Basu, P. K. (1994). Demystifying privatization in developing countries. *International Journal of Public Sector Management*, *7*(3), 44–55. doi:10.1108/09513559410061740

Chhibber, A., & Gupta, S. (2018). Public sector undertakings: Bharat's other Ratnas. *International Journal of Public Sector Management*, *31*(2), 113–127. doi:10.1108/IJPSM-02-2017-0044

Chibber, P. K., & Majumdar, S. K. (1998). State as Investor and State as Owner: Consequences for Firm Performance in India. *Economic Development and Cultural Change*, *46*(3), 561–580. doi:10.1086/452358

Chittoor, R., Sarkar, M. B., Ray, S., & Aulakh, P. S. (2009). Third-world copycats to emerging multinationals: Institutional changes and organizational transformation in the Indian pharmaceutical industry. *Organization Science*, *20*(1), 187–205. doi:10.1287/orsc.1080.0377

D'souza, J., & Megginson, W. L. (1999). The financial and operating performance of privatized firms during the 1990s. *The Journal of Finance*, *54*(4), 1397–1438. doi:10.1111/0022-1082.00150

Dinc, I. S., & Gupta, N. (2011). The decision to privatize: Finance and politics. *The Journal of Finance*, *66*(1), 241–269. doi:10.1111/j.1540-6261.2010.01631.x

Ghosh, S. (2008). Does divestment matter for firm performance? evidence from the Indian experience. *Economic Systems*, *32*(4), 372–388. doi:10.1016/j.ecosys.2008.03.002

Gouri, G. (1996). Privatisation and public sector enterprises in India: Analysis of impact of a nonpolicy. *Economic and Political Weekly*, *31*(48), M63–M74.

Gouri, G. (1997). The new economic policy and privatization in India. *Journal of Asian Economics*, *8*(3), 455–479. doi:10.1016/S1049-0078(97)90049-X

Groves, T., Hong, Y., McMillan, J., & Naughton, B. (1994). Autonomy and incentives in Chinese state enterprises. *The Quarterly Journal of Economics*, *109*(1), 183–210. doi:10.2307/2118432

Gupta, K. L., & Kaur, H. (2004). *New Indian economy and reforms*. Deep and Deep Publication Pvt Ltd.

Gupta, N. (2005). Partial privatization and firm performance. *The Journal of Finance*, *60*(2), 987–1015. doi:10.1111/j.1540-6261.2005.00753.x

Gupta, S. (2010). *Financial performance of public sector enterprises in India with focus on disinvestment and MOU* (Doctoral dissertation). IIT Delhi.

Gupta, S., Jain, P. K., Yadav, S. S., & Gupta, V. K. (2011). Financial performance of disinvested central public sector enterprises in India: An empirical study on select dimensions. *Journal of Applied Finance & Banking*, *1*(4), 57–106.

Jain, N. (2011). Application of disinvestment on PSEs. *International Journal of Commerce and Business Management*, *4*(1), 74–92.

Jain, P. K., & Yadav, S. S. (2005). *Financial management practices: A study of public sector enterprises in India*. Hindustan Publishing Corporation.

Kumar, P. (2014). Impact of Disinvestment on profitability of selected Public Sector Units. *International Journal of Reviews, Surveys and Research*, *3*(2), 28–42.

Naib, S. (2004). Disinvestment in India: Policies, procedure, practices. *Sage (Atlanta, Ga.)*.

Naik, S.D. (2001, Aug. 22). Decade of reforms: Privatization: A dismal report card. *Business Line*.

Reddy, Y. V. (1988). Privatization of public enterprises: scope and limits. In T. L. Sankar & Y. V. Reddy (Eds.), *Privatization: diversification of ownership of public enterprises* (pp. 79–116). Institute of Public Enterprises and Bobolinks Corp.

Sachdev, J. C. (1976). Disinvestment: A corporate failure or a strategic success. *International Studies of Management & Organization*, *6*(1/2), 112–130. doi:10.1080/00208825.1976.11656199

Sankar, T. L., Mishra, R. K., & Lateef Syed Mohammed, A. (1994). Divestments in public enterprises: The Indian experience. *International Journal of Public Sector Management*, *7*(2), 69–88. doi:10.1108/09513559410055242

Singh, G., & Paliwal, D. (2010). Impact of Disinvestment on the Financial and Operating Performance of Competitive and Monopoly Units of Indian Public Sector Enterprises. *International Journal of Research in Commerce and Management*, *1*(2), 40–57.

Singh, J., & Chittedi, K. R. (2010). Performance of public sector enterprises in India: Pre and post liberalization scenario. *The IUP Journal of Managerial Economics*, *9*(3), 7–25.

Srivastava. (2014). Disinvestment in India: An empirical study. *International Journal on Management, 5*(4), 19-24.

KEY TERMS AND DEFINITIONS

Disinvestment: The term “Disinvestment” is the opposite of the term “Investment.” Investment is acquisition of earning asset with the help of money.

Public Sector: Public Sector is unlikely that organisations will expire if they do not develop new ideas. In the absence of the profit motive, it is essential to provide other incentives for individuals and organisations, such as greater recognition of success amongst one’s peers.

Public Sector Enterprise: A business organization wholly or partly owned by the state and controlled through a public authority. Some public enterprises are placed under public ownership because, for social reasons, it is thought the service or product should be provided by a state monopoly.

Chapter 7
Can Digital Transformation Be a Solution for Maternal Health?

Rachita Ota
Amity Global Business School, Bhubaneswar, India

Supriti Agrawal
Amity Business School, Amity University, Noida, India

Sushree Sangita Ray
Amity Global Business School, Bhubaneswar, India

ABSTRACT

Due to ineffective management, the attainment of the maternal health goals by the primary healthcare in the state of Odisha turns out to be a great challenge. Hence, it is imperative for the government to come up with various interventions with an effective implementation of the digital solutions to bring down the fatalities during pregnancy and childbirth. The researchers through this study have attempted to identify the variation in the usage and accessibility of maternal and child healthcare services among the marginalized groups of Northern and Central Zones of Odisha and have also highlighted the impacts of the digital transformation and their subsequent challenges. The researchers have utilized a mixed approach for the attainment of the objectives. Based on the findings of the study, the policymakers and health strategists may focus on improvising the management of the maternal health resources and facilities meant for the maternal healthcare across the masses to bring down the maternal mortality and morbidity rate of Odisha.

INTRODUCTION

"Motherhood is the greatest thing and the hardest thing." – Ricki Lake

Motherhood is a joyous moment for every mother, especially seeing a newborn in one's arms, which is the right of every woman. But, for women in underdeveloped countries, it turns out to be a painful experience. This painful experience may further lead to dreaded maternal deaths if unattended which

DOI: 10.4018/978-1-6684-5274-5.ch007

increases maternal mortality and morbidity. As per World Health Organization (WHO), "Maternal Mortality" means – "the annual number of female fatalities taking place during pregnancy and child delivery, or within 42 days of termination of pregnancy, which may be for any cause connected to pregnancy (excluding accidental or incidental causes), independent of the duration and location of the pregnancy". Though India has achieved tremendous progress in lowering maternal and child mortality, it still fell short of its health objectives. The Maternal Mortality Ratio (MMR) in India has decreased to 113 in the period 2016 – 18 from the ratio of 122 in the period 2015 – 17 (WHO, 2010).

Odisha is one of the five states that had a notable drop in MMR throughout this time. For two years, Odisha saw a 14-point decline in maternal mortality rates against the national average of 10 points. The maternal mortality rate (MMR) has decreased from 150 per one lakh live births in 2016-18 to 136 (Sample Registration System, 2017-19).

The state saw roughly 85.4 percent institutional delivery in 2015, and since then has seen improvements (NFHS-4, 2015 – 16). Despite a large increase in institutional deliveries, transporting pregnant women to hospitals remains a gargantuan task in many isolated areas due to a lack of all-weather roads. It has also been discovered that among Odisha's 30 districts, the four tribal-populated districts of Sundargarh, Sambalpur, Malkangiri, and Nabarangpur have a greater prevalence (about 70%) of anemic women. This might be attributed to a lack of health education in the community.

World Health Organization have highlighted that numerous such deaths of women of their reproductive age are due to various complications identified during pregnancy or after that. As indicated by a report provided by the Ministry of Health and Family Welfare, sepsis due to contamination, hemorrhage during the post-partum period, unsafe mode of abortions, anemia as well as malaria have been considered the most probable reasons for maternal deaths in India. (RGI - CGHR, 2005) Complications related to maternal deaths and other problems arise due to a lack of timely information and prevention. These problems and their related complications can be averted when information is provided on time through digital interventions. Countries across the globe have been working towards effective management meant for the delivery of maternal health services at the primary healthcare level through several initiatives. Because of it, nowadays health institutions realize the importance of digital transformation in enhancing health care, especially in maternal health-related services. Digital health should be an important component of health priorities, benefiting people in an ethical, safe, secure, equal, and sustainable manner.

Digital Transformation is not confined to technological expenditures; it is far more than that. However, it leads to changes in organizational culture, employee engagement, and enterprise-wide participation. This turns out to be a herculean task for the industry. Hence, the implementation of digital interventions in the healthcare and pharmaceutical business has been moving at a tardy pace. According to a recent survey, it has been observed that just 7% of healthcare and pharmaceutical firms have gone digital, compared to 15% of companies in other industries (Reddy, 2022). Despite significant progress, some countries still require institutional support for the development and consolidation of national digital health strategies, as well as the implementation of their action plans, which typically necessitates additional resources and capabilities leading to a "Digital Divide".

Many countries and regions have been suffering due to the "Digital Divide", Odisha is one of them. The state witnessed various kinds of divides such as Urban-Rural and Rich-Poor which is leading to the prevalence of the Digital Divide. Over the last two decades, significant progress has been achieved in eliminating unnecessary maternal fatalities. However, the gap in the progress is due to inadequacies in knowledge, policy, resource availability, digital interventions, and digital culture. Due to these various inconsistencies have been observed in the form of interstate and intra-state disparities which are inhibiting the achievement of health equity (Prusty, Gouda & Pradhan, 2015). Socio-economic, medical, and inadequate healthcare framework-related issues have been ascribed as major reasons for the high maternal mortality and morbidity among the masses (Pallikadavath, Foss and Stones, 2004), (Kesterton et al., 2010), (Stephenson and Tsui, 2002), (Vora et al., 2009). Hence, the policymakers and the health practitioners need to make efforts to upgrade their healthcare ecosystem with digital inclusion.

HEALTHCARE ECOSYSTEM

The term "healthcare" refers not only to the clinical element of a community's health and well-being but also to the socio-cultural dimensions. The primary purpose of any healthcare system is to promote the community's attainment of an ideal degree of well-being through the provision of effective, safe, and high-quality people-centered health services. It has been observed that 15% of all deaths that take place in various nations are because of poor-quality health practices which are devoid of standardization. Even maternal deaths cannot be ignored. This is creating essentiality among various nations to come up with different interventions with digital inclusion to upscale the quality-based health services at different healthcare levels.

Levels of Healthcare

According to World Health Organization, the Healthcare Delivery system has been bifurcated into different levels – Primary, Secondary, Tertiary, and Quaternary based on the level of complexity of the patient's care and the level of experience and skills used by the health professional. These levels are responsible for various health services including curative, preventive, and promotive health services which is an essential component of maternal health services.

Hence, in some way or the other, maternal care services are provided at all levels. The status of the health care institutions delivering the maternal health services at different levels is mentioned in table 1.

Table 1. Status of the health care institutions delivering the services in India and Odisha

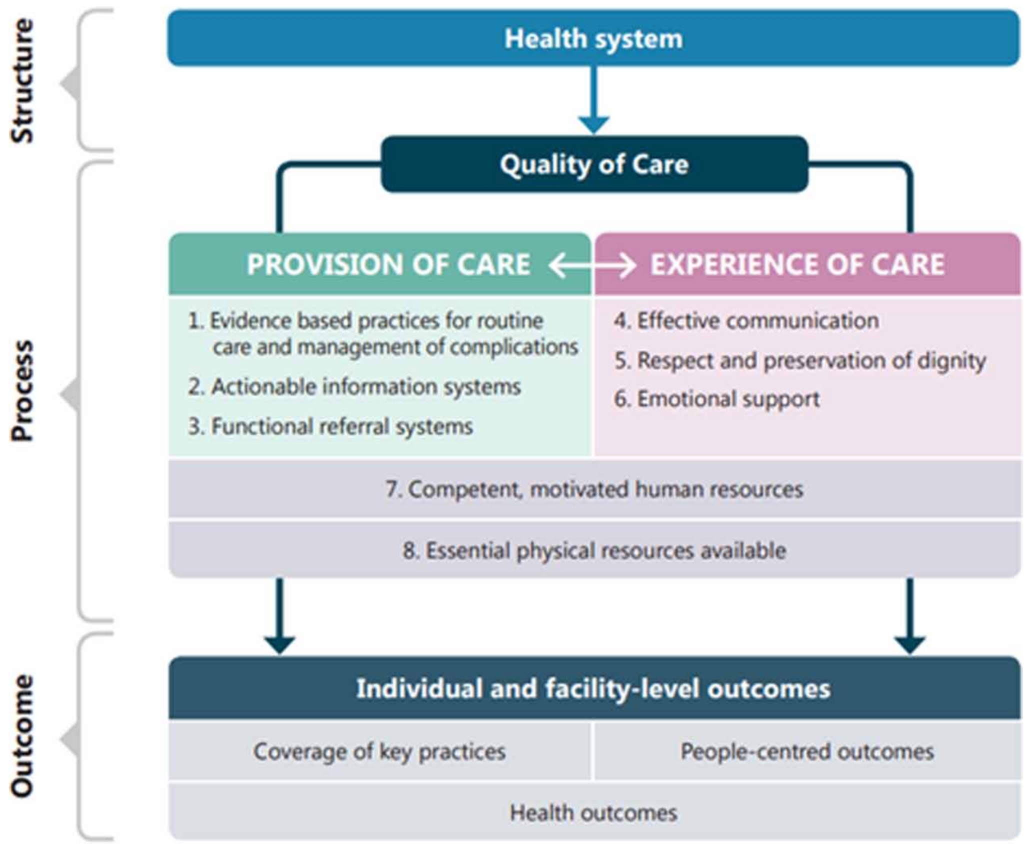
	Primary Health care				Secondary Health Care			Tertiary Health Care	
	Sub-centers		Primary Health Centres		Community Health Centres		Sub-Divisional Hospitals	District Hospitals	Medical Colleges
	Rural	Urban	Rural	Urban	Rural	Urban			
India	155404	2517	24918	5895	5183	466	1193	810	274
Odisha	6688	0	1288	89	377	07	33	32	07

Source: Rural Health Statistics 2019-20

Quality Standards for Maternal Healthcare

Accessibility can be accompanied by quality-based maternal health services to bring down Maternal and neonatal mortality and morbidity rates. To achieve the same, WHO has established an eight-domain framework (Figure 1) based on several models and health system approach provided by WHO to enhance and monitor maternal healthcare facilities.

Figure 1. WHO Framework for Quality-based Maternal Health services
Source: standards-for-improving-quality-of-maternal-and-newborn-care-in health-facilities



The two interconnected aspects of the health system approach are "Provision of Care" and "Experience of care". Provision of Care comprises the utilization of evidence-based procedures for routine and emergency care, information systems that allow for review and auditing, and working mechanisms for referral across different levels of care. Experience of Care includes good communication with women and their families about the care delivered, their expectations, and their rights; care with dignity and respect, and access to the social and emotional support of their choosing (WHO, 2016). The framework's cross-cutting categories include the availability of competent, motivated human resources as well as the physical resources required for high-quality care in healthcare institutions. Based on this framework the following standards were framed as mentioned in table 2:

Table 2. Quality Standards for Maternal and Newborn Care

Standard 1	Every woman and infant receive regular, evidence-based care and treatment of abnormalities during labor, delivery, and the early postnatal period.
Standard 2	The health information system allows data to be used to guarantee timely, appropriate action
Standard 3	Referring to the patients with issues that are untreatable under the existing resources
Standard 4	Effective communication with women and their families as per their needs and preferences
Standard 5	Care accompanied by dignity and respect
Standard 6	Care with emotional support as per the needs of the women to enhance their capabilities
Standard 7	For the provision of the routine care, the availability of competent and motivated staff is needed
Standard 8	The health facility needs to include provisions for sufficient water, apt sanitation, and electricity sources, as well as medications, supplies, and equipment for regular maternity and newborn care.

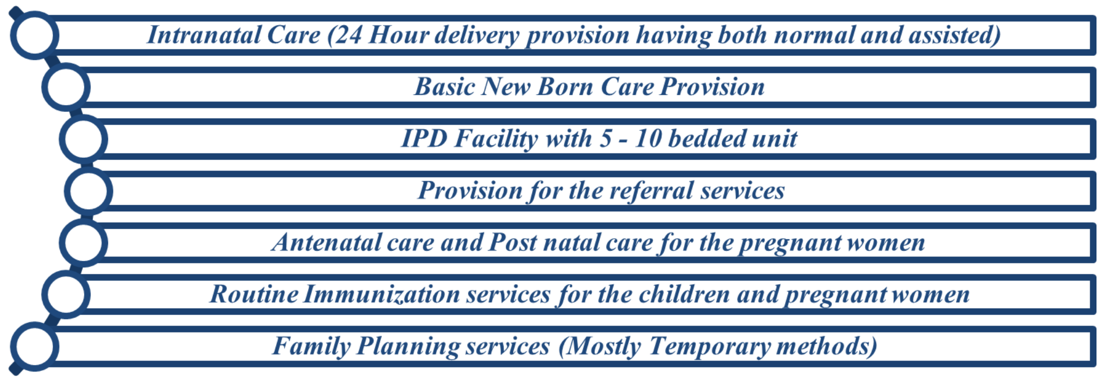
Source: *Standards for improving quality of maternal and newborn care in health facilities*

Primary Healthcare System for the Maternal Health Services in Odisha

The primary healthcare services are considered the beneficiary's first point of contact with the health-care infrastructure and have been designed to provide basic services to the population, primarily to the underprivileged groups comprising women and children. As per WHO, it has been assumed that with an investment of US$200 billion per year in primary healthcare, the government can successfully save the lives of 60 million people across the globe. Primary health care (PHC) is an integration of the eight fundamental components that work in synchronization with each other for bringing health equity (Du, Cao, Zhou, et al., 2019). In the presence of limited resources, delivering all eight components of primary healthcare at the same time has been regarded as problematic. As a result, certain components such as maternity and child healthcare facilities, immunization, consultation for common diseases, and the availability of critical drugs should be prioritized. In comparison to health facilities geared for acute disease, intra-natal care, and family welfare services, these services were designed for promotion and prevention. Sub-centers and primary health centers make up primary healthcare facilities, whereas community health centers serve primarily as referral centers. The primary health care centers revolve around the goal of providing integrated curative and preventative health services.

Primary Healthcare facilities in Odisha are intended to provide basic health care as well as emergency assistance to the communities surrounding the PHCs. According to the Odisha government, the services mostly include the services mentioned in figure 2

Figure 2. Maternal Healthcare services at Primary Healthcare Level in Odisha
Source: NRHM Odisha: Guideline on primary health center (new) in PPP mode



The health sector should focus on outcomes measured against Indian Public Health Standards; the statutory body meant for bringing benchmarks in the delivery of the primary health services. According to the Indian Public Health Standards (IPHS, 2012), antenatal care primarily consists of provisions such as prenatal registration, antenatal clinics, early detection of pregnancy problems, and nutritional and health education. Intra-natal care requires the availability of 24-hour delivery facilities, promotion of institutional deliveries, and a reliable referral system in the event of an emergency. In the case of postnatal care, primary healthcare institutions must ensure that any difficulties that arise during the postpartum period are addressed, as well as educate the mother on breastfeeding, nutrition, cleanliness, and contraception following the Janani Suraksha Yojana's rules (JSY). This scheme is meant to encourage infants to be born in hospitals and the number has expanded from 47 percent in 2008 to 84 percent in 2015 (Randive, Diwan, and De Costa, 2013), (Randive et al., 2014). However, even in the presence of other schemes such as Suman, Mamta Yojana, and Pradhan Mantri Surakshit Matritva Abhiyan, considerable segments of the population still favor home delivery because of the lack of awareness of those schemes and available resources. This low incidence of utilization has been reported among impoverished, uneducated women who belong to socially excluded groups (Nair et al., 2012).

Odisha's healthcare infrastructure and service levels are worse than the national average. Odisha comprises 30 districts and these districts have been equally segregated into three administrative zones – Northern, Central, and Southern. The marginalized indigenous tribal dwellers are mostly found in the Northern and Southern zones and are largely dependent on the health services provided by the primary healthcare institutions. The government faces a great challenge in providing the basic facilities meant for improvising the quality of life of the maternal and child population in remote locations. Due to the uneven distribution of health care providers and facilities at the grassroots level in Odisha, there is a high prevalence of health inequity. Due to obstacles such as inadequate or inconsistent compensation, poor working conditions, insufficient training, weak surveillance, and poor health infrastructural provisions, most health professionals shift to other fields or leave the business (Dash & Panda, 2017). All these issues can be minimized to a great extent with the presence of digital interventions.

Digital Footprint in Health Ecosystem

Digital Transformation in healthcare refers to the use of new technologies that facilitate the transition to safe, high-quality treatment (Haggerty, 2017). The World Health Assembly advised member states in its eHealth resolution WHA58.28 in 2005 to focus on developing a consistent eHealth vision that is aligned with their country's health priorities and resources, and a framework meant for measuring and reviewing eHealth implementation (WHO, 2021).

Digital Transformation in healthcare is a notion that overlaps with digital health, which is defined as the "application of information and communication technologies to improve human health, healthcare services, and wellbeing for people and across groups" (Kostkova, 2015). A systematic literature analysis on digital transformation in healthcare highlighted seven technology-related topics of research: 1) Integrated Health Information Technology Management; 2) Medical Images; 3) Electronic Medical Records; 4) Health Information Technology and Portable Devices; 5) Access to E-Health; 6) Telemedicine; and 7) Medical Data Privacy that impacted the health domain (Marques & Ferreira, 2019). A multi-stakeholder perspective is essential in understanding how the various stakeholders in a healthcare ecosystem (patients, pharmaceutical firms, hospitals, governmental agencies, and many more) use and generate value from digital transformation (Verhoef et al., 2021, Vial, 2019). The Internet's debut in the mid-1990s had a significant influence on how stakeholders communicated (Arni and Laddha, 2017; Suggs, 2006). Even the advent of information and communication tools in the healthcare sector in the mid-twentieth century transformed the industry via enhanced research and service delivery (Ford et al., 2016).

The outstanding rise in national digital health policies in around 120 nations demonstrates a strong commitment to using digital technology to promote the Sustainable Development Goals, support universal health coverage, and determine the future of primary health care (WHO, 2021). All types of digital technologies have become key resources in primary care, and the last decade has seen fast integration of technology in a variety of sectors that support primary care and essential public health responsibilities.

Telemedicine, AI-enabled medical devices, and blockchain electronic health records are some of the concrete examples of how digital transformation in healthcare is completely reshaping (Shudes et al., 2021). Many hospitals and health systems have adopted digital technologies in their various functional areas over the last two decades, from installing electronic health record (EHR) systems to developing apps to experimenting with disruptive technologies.

Leading health systems see digital transformation as a strategy to become more consumer-friendly while also transforming their operations, culture, and technology use, particularly in tough conditions such as epidemics, endemics, and even pandemics.

Evolving Digital Culture

The use of digital tools to inform, assist, and create capacity is a vital method of empowering the health workforce while also enhancing primary health care quality. The future health workforce currently lives in a connected environment with increasing access to digital tools in both the public and private sectors. Providing communication gadgets, information resources, patient management frameworks, and decision-making tools to health professionals allows them to be more efficient. Enabling community learners to gain knowledge and skills through training modules and online courses provided by distant institutions to enhance community participation (WHO, 2016).

While the benefits provided by digital health are increasingly recognized as critical to a contemporary health system, there are social, economic, and other constraints that limit a country's capacity to capitalize on them and assure equality in their usage. Policymakers must develop methods and capabilities to find, appraise, support, and monitor the integration of promising – as well as established – technologies into primary care and public health. When implementing novel ideas, the country's context should be carefully considered, guaranteeing the required monitoring and regulation to reap the advantages and avoid hazards.

Various information systems have been developed to meet the demands of various programs such as Program Monitoring Applications, Citizen-Centric applications, telemedicine, and many more. One of the main goals of these information systems was to connect them to the Geographic Information System (GIS) for map-based data processing and user-friendly data visualization, which is currently being used by the state, Odisha to identify neglected areas and plan Maternal and Child Healthcare Centers. Digital terrain modeling is used to plan for additional facilities as well as to detect inaccessible and difficult-to-reach locations.

Certain digital innovations that have helped in improvising the efficiency in the health service delivery at the Primary healthcare level are as follows:

Electronic Health Records: Electronic health records (EHRs) are a digitally stored system of patient data. "An Electronic Health Record is a patient's long-term record of his or her interactions with various healthcare institutions and episodes of care" (S. Ramanathan 2014). It allows patients' data to be shared for patient care, decision-making, planning, and research.

Telemedicine: The delivery of health care services by all health care professionals using information and communication technologies for the diagnosis, treatment, and prevention of disease and injuries, research and evaluation, and continuing education of health care providers. Its application focuses on removing various distance-related constraints and improving medical care accessibility Public Health Informatics through Digital and Social Connectivity: It is a methodical use of the Digital and Social platform for goals such as conception, design and development, implementation, maintenance, and assessment of various health parameters. Many maternity websites and Digital conversation platforms have been able to provide pregnant women with various resources and tools to help them prepare for their pregnancy.

M-Health: It is defined by the World Health Organization (WHO) as the use of mobile and wireless technology to aid in the attainment of health goals and may be used to encourage healthy habits and improve health systems. The demand for M-Health has been discovered to be greater in developing nations than in established economies.

AIMS AND OBJECTIVES

Considering the seriousness of the issue, the researchers have gone through multiple research papers highlighting the various aspects of maternal and child healthcare which has been the most essential aspect of primary healthcare. The highlights of a few of the reviews of the literature have been mentioned in table 3.

Table 3. A framework for the Literature Review

Title of the Paper	*Authors & Year*	*Objective*	*Location*	*Findings*
Beyond the template: the needs of tribal women and their experiences with maternity services in Odisha, India	*Sana Q. Contractor, Abhijit Das, Jashodhara Dasgupta, and Sara Van Belle; 2018*	*To comprehend the experiences of the tribal women regarding their pregnancy and their connections with the Institutional delivery system and the healthcare facilities.*	*Rayagada, Southern Odisha*	*There is a need for a well-equipped health infrastructure for handling high-risk birth cases. No efforts were made to bring in attitudinal changes regarding the safety of women. The only usage of incentives has been considered by the health workers*
Health System Competency for Maternal Health Services in Balasore District and Jaleswar Block, Balasore, Odisha, India: An Assessment	*Ranjit Kumar Dehury and Janmejaya Samal; 2016*	*To evaluate the capability of the Healthcare facilities for the delivery of the Maternal and Child Healthcare Services*	*Balasore district, Odisha*	*The accessibility of the maternal and child healthcare services had been greatly affected due to the absence of all-weather roads electricity facilities and also piped water supply for the medical services places in the locale. In any event, existing Primary Health Centers (PHCs) need ECG and X-Ray machines for proper delivery of the health services. Even the CHCs lack ambulance services.*
Inequality in the Utilization of Maternal Healthcare Services in Odisha, India	*Ranjan Kumar Prusty, Jitendra Gouda, Manas Ranjan Pradhan; 2015*	*To evaluate the intensity and pattern of the usage of the maternal healthcare services among different subcategories of women in Odisha*	*Koraput-Balangir-Kalahandi (KBK) districts*	*Presence of broad regional disparity in the availing of maternal healthcare services.*
Utilization of maternal health services and its determinants: a cross-sectional study among women in rural Uttar Pradesh, India	*Ranjana Singh, Sutapa B. Neogi, Avishek Hazra, Laili Irani, Jenny Ruducha, Danish Ahmad, Sampath Kumar, Neelakshi Mann, and Dileep Mavalankar; 2019*	*To review the usage of health facilities at the time of pregnancy, delivery, and post-delivery, seen among the women of rural areas of Uttar Pradesh*	*Rural Areas of Uttar Pradesh*	*Observation of low usage of the maternal health facilities in the selected areas. The presence of Health workers and marginalization turned out to be essential factors meant for the utilization of the maternal and child healthcare services.*
Assessment of utilization of maternal health care services in rural field practice areas of VIMS, Ballari	*Neeta P. N., Sameena A. R. B., Suresh C. M., Gangadhar Goud, Bharat ., Saraswati Sajjan, Chetana, 2017*	*To identify the consumption of maternal health services during antenatal and post-natal phases and identify the factors that play influencers*	*Ballari District of Karnataka*	*The study shows an inappropriately lower utilization level of postnatal care services in the selected areas. It also shows the inadequate level of postnatal care services.*
Pattern and Determinants of Maternal and Child Healthcare Services Among Tribals: With a Special Reference to Tribal Regions of Odisha	*Prasant Kumar Panda, Chittaranjan Subudhi, 2020*	*to examine the pattern of MCHC services availed by the tribal communities present in the tribal-dominated districts of Odisha*	*tribal-dominated districts of Odisha*	*Regions with thick tribal populaces in Odisha are put among the low-performing locale in MCHC. Education for women and marriage beneath lawful age arose critical in deciding institutional delivery pattern rate in areas of Odisha.*
Factors influencing the Accessibility of Maternal Health Service in Cambodia	*Won Ju Hwang and Yeon Mi Park; 2019*	*To identify the factors that influence the accessibility of Maternal Healthcare facilities*	*Cambodia*	*The factors that influence the accessibility are distance to the health facilities, the travel cost, the time needed for the travel, and the methods used for transportation.*

Continued on folllowing page

Table 3. Continued

Title of the Paper	Authors & Year	Objective	Location	Findings
Is quality and availability of facilities at Primary Health Centers (PHCs) associated with healthcare-seeking from PHCs in rural India: An exploratory cross-sectional analysis	Akif Mustafa & Chander Shekhar, 2020	The study aims to analyze the association between the availability of the health facilities and the health-seeking behavior of the masses of Rural India toward primary health centers	*India*	*There is a link between the availability of health facilities and health-seeking behavior at primary health centers. As a result, the lack of health amenities at PHCs has an impact on the masses of Rural India's health-seeking behavior at primary health centers.*
Can India's primary care facilities deliver? A cross-sectional assessment of the Indian public health system's capacity for basic delivery and newborn services	Jigyasa Sharma, Hannah H Leslie, Mathilda Regan, Devaki Nambiar, Margaret E Kruk, 2018	The study aimed to examine the capacity of the Indian public health systems to contribute to basic delivery and infant care and further explain the capacity variations across rural and urban areas	*India*	*Both rural and urban regions have been shown to have inadequate intrapartum care given by primary care institutions.*
Assessment of Health Management Information System for Monitoring of Maternal Health in Jaleswar Block of Balasore District, Odisha, India	Ranjit Kumar Dehury, Suhita Chopra Chatterjee, 2018	The study examines the difficulties in gathering data for HMIS and using it to improve maternal health programs in Odisha's tribal-dominated Jaleswar block.	*Odisha, India*	*The findings reveal that generating high-quality data, developing workforce capacity, and monitoring vulnerable tribal populations are all difficult tasks. The disparities between HMIS data and field reality reveal a disconnect between policy design and execution.*
Bridging the Health Divide: Use of Mobile Phone Technology for Health Care Service Delivery in Odisha	S Sahoo, 2018	To study the impact of mobile phone technology on the delivery of healthcare services	*Odisha, India*	*When mHealth is properly implemented, it may give reliable and real-time data that can be used to monitor and track women's and children's health and development. As a result, it may be concluded that mHealth has the potential to overcome Odisha's health gap, which is beset by challenges in health care delivery.*
The Effect of a Community Health Worker Utilized Mobile Health Application on Maternal Health Knowledge and Behavior: A Quasi-Experimental Study	Onaedo Ilozumba, Sara Van Belle, Marjolein Dieleman, Loan Liem, Murari Choudhury and Jacqueline E. W. Broerse, 2018	The objective of this study is to assess the impact of the mHealth intervention on maternal health.	*Jharkhand*	*Mobile for Mothers mHealth intervention might improve adherence and practice of recommended maternal health behaviors, but it did not overcome significant sociocultural factors of maternal health that are unique to the Indian setting, such as caste and educational standing.*
Importance of Quality in Health Care Sector: A Review	Khushboo Sabharwal Gupta & Varsha Rokade, 2016	To assess techniques and customer satisfaction aspects and quality indicators meant for measuring the quality in the healthcare industry.	-	To increase the quality of healthcare, doctors and employees should be trained in standard operating procedures (SOPs).

Continued on folllowing page

Table 3. Continued

Title of the Paper	*Authors & Year*	*Objective*	*Location*	*Findings*
Adapting the Quality Maternal and Newborn Care (QMNC) Framework to evaluate models of antenatal care: A pilot study	Andrew Symon, Alison McFadden, Marianne White, Katrina Fraser, Allison Cummins, 2018	to assess the feasibility of the QMNC process	*Scotland*	By adapting the Quality Maternal and New-born Care Framework, practitioners were able to focus on areas of care that worked well and did not function well for these important stakeholders.

After an intense literature review, whose summary has been displayed in the above table (Table 3), the objectives of the research paper have been framed which is as follows:

1. To identify the variation in the usage of the maternal and child healthcare services in the two different zones of Odisha
2. To study the association between the usage and the accessibility of maternal healthcare services
3. To analyze the significance of digital transformation on maternal healthcare at the primary healthcare level.

MATERIALS AND METHODS

Research Design

The present research is an effort to analyze probable solutions meant to bridge the gap between the demand and the supply of the maternal healthcare services with the help of digital innovations among the masses of Odisha present in the two zones - North and Central. A mixed approach is followed in the study. For the attainment of the first two objectives, the empirical study has been carried out by the researchers with the help of primary data sources. The primary data is collected through a self-administered questionnaire. The opinion of the beneficiaries regarding the usage of the maternal healthcare services is collected through a survey with the help of a questionnaire from the residents of Odisha belonging to the two different administrative zones – North and Central. For the fulfillment of the third objective, an extensive content analysis of various secondary sources is carried out.

Study Area

Odisha, the eastern coast of India, comprises 30 administrative units or districts. These districts have been segregated under three significant administrative zones – North, Central, and South, with each zone having 10 districts. For this study, the researchers have considered the North and Central zones. Among the 10 districts of North zones, the districts named – Dhenkanal and Bolangir have been considered for the study, while in the case of the Central zones Khorda and Cuttack have been considered.

Sampling Method and Sample Size

The sample of the study was identified through a multi-stage cluster sampling method and a sample size of 600 was determined for the study.

Data Collection

The responses were collected through a self-administered questionnaire which comprised questions related to the three different components of the maternal and child healthcare services – Antenatal, Neonatal, and Post Natal Care.

Working Definition:

Maternal Death or Maternal Mortality: According to World Health Organization, "Maternal Death is the demise of a lady while she is pregnant or is within the 42 days from the day of termination of pregnancy, from any reason identified with or exasperated by the pregnancy or its related management aspect but may not be from any incidental or accidental causes".

Maternal Mortality Ratio: has been acting as the essential indicator for measuring maternal mortality and this maternal mortality ratio is clearly stated as the number of maternal deaths during a given time frame per 100,000 live births.

Components of the Maternal and Child Healthcare facilities: Maternal healthcare facilities at the institutional delivery level mostly comprise three major components – **Antenatal Care, Safe Delivery, and Post Natal Care** (Prusty, Gouda & Pradhan, 2015) and the maternal care facilities initiate from the Antenatal care which mostly comprises of the frequent blood and urine tests, blood pressure checks, TT Vaccination, Iron and Folic acid supplements. The objective of antenatal care was to improvise maternal and fetus health so that the probability of the occurrence of any complications during the pregnancy can be reduced. The antenatal care was followed by the service of safe delivery. At this stage, it is the responsibility of the health care providers to make sure that proper safety and hygiene measures should be followed during the delivery of the babies so that the common and avoidable risks could be minimized. The health practitioners should be competent enough in handling obstetric-related complications during childbirth which accounts to be one of the major reasons for the maternal deaths in rural areas. The final stage is the Postnatal stage which is also called the Postpartum period. It is the most crucial period as most infant deaths take place during this phase which starts within an hour of the delivery of the child and may last till 6 to 8 weeks after the delivery. Postnatal care mostly revolves around the care for the baby, like keeping the baby warm, breastfeeding, and taking measures towards the hygiene of the baby, their umbilical cord, and their skin. Lack of Hygiene has been one of the major reasons behind the fact that most infants are unable to cross the age of five and die due to various water-borne diseases (Brown, Cairncross & Ensink, 2013). **Digital Transformation:** The utilization of digital technologies for the improvisation of the performance process and bringing in an innovative way for the delivery of healthcare meant to meet the consumer's expectations.

Variables: 1. The Outcome Variable comprised of the Utilization Maternal and Child Healthcare facilities, which comprised Antenatal care, Safe Delivery, and Postnatal Care; 2. The Independent variable for the study is zones having different socioeconomic attributes

Data Analysis: Analysis such as Chi-Square and t-tests were used to fulfill objectives 1 and 2. Content Analysis has been conducted for the fulfillment of objective 3.

Statistical Analysis

The Cronbach's Alpha value, which is meant to measure the reliability of the test, has been computed to 0.779, which is higher than the value of 0.70. Hence, the questionnaire used for the study has been considered reliable.

Table 4. Summary of the Demographic Profile analysis of the respondents

		Central	North			Central	North
AGE	20 – 40	50.00%	50.00%	EDUCATION	Below 5th Std	25.00%	25.30%
	40 – 60	25.00%	24.70%		10th-12th Std.	50.30%	49.30%
	60 – 80	25.00%	25.30%		Post-Graduation	24.70%	25.30%
GENDER	Male	50.30%	50.00%	NO. OF BREAD EARNERS	3	49.70%	50.70%
	Female	49.70%	50.00%		5	50.30%	49.30%

Table - 4 gives a clear detailed idea of the socio-economic background of the respondents of the study. The table denotes that the respondents were mostly belonging to a similar demographic background. As we have mainly targeted the lower income group, people, for the study opt for mostly public health facilities for their health needs. In the case of maternal and childcare, they would mostly avail of the service from the Primary Health Centers (PHCs), Urban Primary Health Centers (UPHCs), Community Health Centers (CHCs), and District Hospitals.

Table 5. Comparative t Values of the opinions related to maternal healthcare services in two selected zones

Factors	Zone	N	Mean	Std. Deviation	T Value
MCH Care and Services	Central	300	3.03	0.27	1.749
	North	300	2.99	0.29	

Table - 5 displays the calculated t – value of maternal and child healthcare facilities with the comparison between the two zones and t value was compared against the critical t - value of the selected significance level. The calculated t-value for maternal and child healthcare is greater than the table value at an alpha level of .05. The p-value is less than the alpha level: p =<.10 Hence, it can be clearly stated that there may be a presence of marginal difference in opinion among the beneficiaries of both the zones regarding the usage of the Maternal and Child Healthcare facilities. This can also be considered based on the presence of the low gap in the standard deviation of both zones, it can be stated that there may not be a huge variation in the responses of the participants from both the zones.

Table 6. Chi-square association between the use of the identified health facilities and the accessibility of the Maternal Health Care

Sl. No.	*Factor*	*Strongly Agree*	*Agree*	*Neutral*	*Disagree*	*Strongly Disagree*	*Chi-Square Value*	*Df*
01	Antenatal Clinics at regular interval	25.17	-	49.83		25	751.505[a]	4
02	Provision of Safe Delivery (24 Hr Normal Delivery)	-	25.17	-	83.17	-	201.782[a]	2
03	Facility for Post Natal mother care	-	-	50.17	-	49.83	300.010[a]	2
04	Facility for New Born Care	-	-	50.17	-	49.83	300.010[a]	2
05	Management of Low Birth Baby	-	25	49.83	25.17	-	751.505[a]	4
06	Provision of fixed immunization day	25	49.83	-	-	25.17	751.505[a]	4
07	BCG & Measles Vaccine	25.17	-	49.83	-	25	751.505[a]	4
08	Provision of Janani Suraksha Yojana	-	25	49.83	25.17	-	751.505[a]	4
09	Presence of well-equipped labour room	49.83	25	-	-	25.17	751.505[a]	4
10	Presence of deliveries at labour room	25.17	-	25	24.83	25	1200.000[a]	6

For achieving the objective 2, the following hypothesis is framed, and the Chi-Square Statistic method is used to test the hypothesis

H_O: There is no significant association between the usage of the identified health services – (Antenatal, safe delivery, and Postnatal care) and the accessibility of Maternal Healthcare services

H_1: There is a significant association between the usage of the identified health services – (Antenatal, safe delivery, and post-natal care) and the accessibility of Maternal Healthcare services.

The Chi-Square Statistical test was used to find out the significance level of the association between the accessibility of the Maternal and Child Health care and the usage of the identified health facilities which can be categorized under three categories – Antenatal Care, Safe Delivery, and Post Natal Care. Table – 6 highlights the chi-square values of the different health facilities provided at the primary health center levels.

The p-value calculated for the study is 0.01 and the calculated value is less than the alpha value which is 0.05. It denotes that there is a highly significant association between the two variables and hence the null hypothesis is rejected while the alternate hypothesis is accepted for the study. (p=<0.01).

CONTENT ANALYSIS

The interpretation from the above statistical analysis denotes that the usage of maternal health services is associated with the accessibility of the health facilities available in primary healthcare. So, to enhance the usage of health services, one needs to work on the improvisation of the accessibility of maternal health facilities delivered at the primary healthcare. Now, this turns out to be a challenge for the primary healthcare system which caters to a huge mass of marginalized groups both in the rural and the urban setting to deliver comprehensive primary healthcare. Countries like India and state like Odisha has limited resources with enormous healthcare needs but the technology is the one that can very well come to the aid in this mission of delivering maternal health services to all the lactating mothers. Rural India, which accounts for almost two-thirds of our population, still lacks access to advanced and specialized healthcare, and when it comes to maternal health resulting in a huge gap between the haves and have-nots. The experience at the health facilities turns out to be discouraging for the beneficiaries to avail them. Frequent instances like long waiting hours, commutation issues, lack of specialist consultation, and medical documents are frequently lost. For the overcoming of such challenges digital tools have been utilized, and technology has been employed to provide the best maternal health service to the mothers.

In the last few decades, the present generation has witnessed the growth of technologies and the advent in the healthcare system to make the delivery smooth and well-coordinated. There has always been a problem for the government to motivate young trained medical professionals to work in remote areas. But, with the help of technology like telemedicine and teleconsultation, now even by staying in the cities the health professionals can very well provide their consultation to the people sitting in the remotest areas. Building a strong healthcare infrastructure by equipping it with innovative technology and expanding public health funding can promote digital healthcare. Governments are becoming more interested in establishing telemedicine practices, resulting in a gradual but steady increase in its use in public health.

This has been greatly supported by the inclusion of private players in the developmental process. The private sector has been successful in reducing not just time but also money in the delivery of healthcare services. This results in the construction of an efficient framework, thanks to the use of cutting-edge digital technology. The recent digital innovation has helped the healthcare system in various ways. It has turned out as a blessing for both the ends – healthcare service providers and healthcare service beneficiaries which is explained in table 7.

Table 7. Benefits of Digital Innovation in the healthcare system

Healthcare Service Providers	Healthcare Service Beneficiaries
Reduces the number of unnecessary processes in the care delivery bringing down the time	Serves as a platform for people to learn about symptoms and medical issues associated with various illnesses.
Patients' total reliance on tertiary care is lessened by bringing down the burden.	Facilitates a more transparent communication between healthcare specialists and those who get treatment.
Keeping track of the recipients' health data and medical testing has helped to improve service delivery efficiency.	Facilitating in having more personalized treatment for the healthcare beneficiaries

These technologies have aided both sides of the healthcare industry in obtaining information more quickly, as well as enhancing the quality-of-service delivery in the healthcare sector.

Digitalization, Transformation, Maternal Death Prevention

The Government of India along with various state governments has attempted to fragmentize the unfragmented digital solutions by creating a framework that would help the medical professionals to improve healthcare performance. With that initiative in mind, the Ministry of Health and Family Welfare (MoHFW) has made the use of digital health a priority to provide effective "service delivery" and "citizen empowerment" to improve public healthcare delivery. Certain eHealth efforts employing ICT (Information and Communication Technologies) were done by MoHFW around the nation to enhance efficiency in healthcare delivery, extend healthcare to rural regions, and provide higher quality services at a cheap cost. For this, the Ministry of Health and Family Welfare formed a committee led by Shri J. Satyanarayana, for designing the implementation framework – The National Digital Health Blueprint (NDHB). The National Digital Health Blueprint (NDHB) lays out a strategy for establishing core IT components that will allow the health ecosystem to expedite information flows between actors while maintaining citizens' privacy and data confidentiality. A good design can assist to speed up the acceptance of health services and enhance their delivery in both the public and private sectors (Reddy, 2020).

Some specific digital solutions meant for the Maternal and Child Health at the National and State level have been mentioned below:

Table 8. Digital Solutions for Maternal and Child Health

National Level	
Mother and Child Tracking System (MCTS)	It's a centralized web-based tool that uses a name-based tracking system to provide a comprehensive range of maternal health care services to pregnant women and their children up to the age of five.
ANM-Online (ANMOL)	Is created to provide timely tracking of beneficiaries for optimal health care and to encourage them to use family planning techniques. This tool makes it easier to guarantee that fully competent prenatal and postnatal delivery services are delivered on time, as well as the tracking of infants for comprehensive vaccination services.
Kilkari	an audio-based mobile service that delivers weekly messages to families about pregnancy, family planning, childbirth, nutrition, maternal, and childcare.
Mobile Academy	service which helps ASHAs in refreshing and reinforcing their existing knowledge of maternal and child behaviors. This is an anytime-anywhere audio course that can train hundreds of ASHAs simultaneously.
State Level	
High-Risk Mother Tracking	to identify women with a high-risk pregnancy at an early stage and ensure safe delivery; The app also tracks and monitors the health parameters of all the pregnant women of Sambalpur who visit the District Headquarters Hospital.
e-Mamata	e-Governance Web & Mobile Application Project of Govt. of Odisha which provides monetary support to the pregnant and lactating women to enable them to seek improved nutrition and promote health-seeking behavior.

Few cases of digital interventions in Odisha and their impact on maternal health services

High-Risk Mother Tracking App

This can be witnessed in the Sambalpur district (Northern zone of Odisha), where the beneficiaries and the service providers have widely accepted the usage of the High-Risk Mother tracking app. From 52 maternal death due to pregnancy or childbirth-related has decreased to seven in 2019. Similarly, the number of newborn fatalities has decreased from 477 in 2016-17 to 83 in 2019-20. This app has also helped in bringing down the non-institutional delivery from 139 (2017-18) to 83 (2018-19) (New Indian Express, 2020).

E-Mamata App

By e-transferring over Rs. 2,000 crores to pregnant and breastfeeding mothers, Odisha has accomplished yet another milestone in the field of healthcare towards healthy maternity. According to an official press release, the State Government has reached 43 lakh pregnant and lactating women through the Mamata Scheme and has e transferred Rs 2006 crore in cash benefits straight to recipients' bank accounts throughout the State. Women have been more empowered because of the Mamata Scheme, which has improved their social and financial standing. According to the statement, the initiative has had a significant influence on nutritional status, healthy habits, and other mother and child health services.

MCTS and HMIS

HMIS (Health Management Information System) is an upgraded and user-friendly software that focuses on the utilization of data for planning and action. Antenatal care, delivery services, PNC services, family planning, immunization, and childhood illnesses are among the key data types gathered by HMIS. This has been implemented at most government health institutions at various levels. Odisha has made a considerable investment under the National Rural Health Mission (NRHM) initiative to construct HMIS. The Mother and Child Tracking System (MCTS) was established in 2010 to track pregnant women and monitor key maternal health statistics. Auxiliary nurse midwives (ANMs) and data entry operators (DEOs) are posted and educated for data generation in 32 district hospitals, 286 community health centers, and 6688 subcenters in Odisha, according to information from 2018 (Dehury & Chatterjee, 2018). However, inadequate management of the Health Management Information System (HMIS) at the grassroots level, which could combine data collection, processing, reporting, and use of information for critical health care improvement, has been one of the key hurdles to improving maternal health. Slow internet access, insufficient data collection by grassroots health workers – ASHAs and ANMs – and ineffective block level monitoring are all problems that contribute to the HMIS's poor performance. The seasonal migration by the pregnant women for agricultural employment makes it difficult for community health workers to keep track of them for vaccination and ANC is the reason for the subsequent data regarding the same cannot be captured by the MCTS or HMIS. Pregnant women migrate seasonally for agricultural employment, making it difficult for community health workers to keep track of them for vaccination and ANC. Pregnant women in Jaleswar (Central Zone), for example, relocate from their village to the neighbouring district to work in a brick kiln during the rainy season. For the development of reproductive and child health in a community, early registration for ANC of pregnant women is a critical characteristic. According to HMIS (2014), just 46.4 percent of pregnant women were enrolled for ANC services during the first trimester. For the MCTS, there are also concerns about data quality, accuracy, and timely data collection (Dehury & Chatterjee, 2018).

GIS is also used to organize Janani Express Ambulances and track Mobile Medical Units throughout the state. The state has also begun to employ GIS to analyze maternal and child mortality statistics, which gives better geographical dispersion and concentration information (NRHM, Odisha).

DISCUSSION

In this study, the researchers have highlighted the fact that there is a marginal difference in the opinions of the respondents towards the maternal healthcare facilities in the two zones of Odisha. Irrespective of the fact that the districts identified in the Central zones are more developed than compared to the districts identified in the Northern zones. It may be due to fact that the community that avails the basic maternal care facilities at the primary health centers are mostly belonging to similar socio-economic groups. It has also been observed that there is the usage of the maternal health services provided at the Primary Health Centers. But the beneficiaries are not much aware of the intricacies of the facilities and hence cannot act as the best judge for the services. Further, the study reveals the fact that three major components – Antenatal care, Safe Delivery, and Post-natal Care have a very high influence on the accessibility and usage of the maternal health care facilities which is essential to bringing down the Maternal Mortality and Morbidity.

Though the respondents through their opinion have given a positive response towards the maternal healthcare facilities delivered at the Primary health centers, still it has been observed that there is a huge gap between the demand and supply of the primary health facilities. Many factors may be playing the reason for this gap. Table 6 in the result section shows that the usage of the Safe Delivery provisions was much less than compared to the post-natal and antenatal care. For delivery, they were mostly referred to the district hospitals rather than the primary health center and community centers. While as per the Indian Public Health Standards (IPHS), safe delivery can be possible at the primary health centers, only in case of complications may be referred to the higher levels. Among all the availed facilities, immunization is the facility that is highly utilized. It may be either due to the attitude or perception of the masses towards childbirth which is mostly considered to be not a serious issue. Hence, in many rural areas, even today people are availing to go for delivery at home rather than availing the institutional facilities.

As per the Indian Public Health Standards, it is mandated for all the primary health centers and community health centers to be well equipped as per the prescribed guidelines and standards. Though most of the public health institutions have, to a large extent, followed the infrastructural requisites proper utilization and maintenance of the facilities are still lacking, which is affecting the fulfillment of the objectives of these institutions. This issue has been aggravated because of the behavioral aspects of the healthcare service providers, which are found to be not much friendly and uncooperative. This leads to less trust and acceptability towards the facilities which is highly important to bring in accessibility.

While talking about accessibility, making the error-free health services available is the biggest challenge for the health professionals, which can be taken care of by designing and implementing digital solutions. For a long time, digital health was thought to be the answer to the inadequate resource in healthcare. Unfortunately, there is a divide in access to digital health between rural and urban locations which is quite vivid in the state of Odisha. The beneficiaries' and practitioners' lack of understanding and acceptance of new technology is holding it back. Due to the lack of dependable internet access, all software solutions must include offline functionality, which raises their technological complexity enormously. The enormous number of patients and providers need high-performance, scalable systems capable of supporting tens of thousands of concurrent users, which is acting as a hurdle to acceptance. Structures and procedures in the healthcare system, as well as clinical protocols, are continuously changing and being adapted to fit the specific administrative environment and demands of local governments. While most digital health solutions aren't designed to react to changing conditions quickly.

LIMITATIONS

One of the major constraints was the paucity of time. The next bottleneck in our study was people's lack of awareness regarding the digitalization interventions due to which people's opinions could not be included in the study. Lack of information on certain latest vital statistics was not accessible.

CONCLUSION

Management of Maternal Mortality and Morbidity has always been one of the major concerns worldwide. Interventions and schemes are available by the government, but proper implementation is essential for the fulfillment of the sustainable development of the nation. Appropriate policies and implementation of procedures must be properly executed through community participation. Higher awareness of the essentiality of these facilities would enhance the usage of health resources. This awareness can be enhanced with the optimum utilization of the various digital solutions. Maternal health services can very well be benefitted through solutions such as mobile applications, Integrated Information Systems, Tracking systems, etc. Even in the presence of such innovations, the impact to that extent on maternal health services is not visible. This may be due to a lack of awareness and acceptance among the beneficiaries of these solutions. If there is an increase in awareness and acceptance among the beneficiaries, this may surely help in bringing down the maternal mortality rate in the study area.

Various factors like poverty alleviation, infrastructural development, and maintenance, attitudinal change of the healthcare providers, empowering women, and making them aware of the symptoms along with technological interventions can be of aid to the healthcare system. These help in bringing holistic management of the healthcare system meant for maternal health. Further studies can be done on the above-interrelated factors and the policy schemes need to be more areas specific rather than being generalized. However, this study has certain limitations. Time and various dialects of the specific areas have been the limitation of the study. There was a prevalence of response bias which may be because of the influenced attitude and perception of the interviewer.

Managerial Implication

It has always been said that to bring satisfaction to the service, it is imperative to enhance the motivation level among the service providers. More efforts may be put towards comfortable accommodation facilities, educational facilities for their children, and communication and networking facilities for making things easier for them. Initiatives should be made towards introducing rewards and recognition for enhancing competitiveness among the staff members (Bigirimana and Luginaah, 2020).

Digitalization in the record-keeping and monitoring process may help the supervisors to supervise the process efficiently. Along with that, the utilization of various digital solutions like m-health, e-health, EHRs, and telemedicine can be of great help. These efforts would surely help them on their personal grounds and would indirectly get depicted in their performance and commitment. If digital solutions are implemented properly, they can provide accurate and real-time data that can be utilized to monitor and track the growth and wellbeing of women and children.

The government may conduct more awareness programs instead of basic incentive methods to allure people towards institutional delivery facilities. These incentive-based schemes may not lead to long-term attitudinal changes. The beneficiaries of Maternal and Child healthcare are women. But it has been observed that decision-making power mostly resides with the male members of the family. NGOs and ASHA workers should take steps to educate the women of the house about their rights and encourage them to be a part of the decision-making process when it comes to their childbirth. With the presence of a healthy mother and child, a nation can flourish and develop sustainably.

REFERENCES

Alkema, L., Chou, D., Hogan, D., Zhang, S., Moller, A. B., Gemmill, A., Fat, D. M., Boerma, T., Temmerman, M., Mathers, C., & Say, L. (2016). Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: A systematic analysis by the UN maternal mortality estimation inter-agency group. *Lancet*, *387*(10017), 462–474. doi:10.1016/S0140-6736(15)00838-7 PMID:26584737

Arni, P., & Laddha, S. (2017). Adoption of digital marketing in health industry. *SIES Journal of Management, 13*(1).

Bigirimana, J. B., & Luginaah, I. (2020). Timely Access to Maternal, Neonatal and Child Healthcare for Rural Communities in Rwanda: Job Satisfaction of Community Health Workers Delivering Community Based Maternal, Newborn and Child Healthcare. *Electronic Thesis and Dissertation Repository*.

Brown, J., Cairncross, S. & Ensink, J.H.J. (2013). Water, sanitation, Hygiene and Enteric Infections in Children. *Archives of Disease in Childhood*, *98*(8), 629–634.

Contractor, S. Q., Das, A., Dasgupta, J., & Van Belle, S. (2018). Beyond the template: The Needs of Tribal Women and Their Experiences with Maternity Services in Odisha, India. *International Journal for Equity in Health*, *17*(1). Advance online publication. doi:10.118612939-018-0850-9 PMID:30244683

Dash, T., & Panda, H. (2017). A diagnosis model for job motivation of public health workers in rural Odisha India. *International Journal of Health Sciences and Research*, *7*(4), 442–452.

Dehury, R. K. (2016). Health System Competency for Maternal Health Services in Balasore District and Jaleswar Block, Balasore, Odisha, India: An Assessment. *Journal of Clinical and Diagnostic Research*, *10*(8). Advance online publication. doi:10.7860/JCDR/2016/16781.8329 PMID:27656464

Dehury, R. K., & Chatterjee, S. C. (2018). Assessment of Health Management Information System for monitoring of maternal health in Jaleswar Block of balasore district, Odisha, India. *Indian Journal of Public Health*, *62*(4), 259. doi:10.4103/ijph.IJPH_203_17 PMID:30539886

Du, S., Cao, Y., Zhou, T., Setiawan, A., Thandar, M., Koy, V., Nurumal, M. S., Anh, H., Kunaviktikul, W., & Hu, Y. (2019). The knowledge, ability, and skills of primary health care providers in SEANERN countries: A multi-national cross-sectional study. *BMC Health Services Research*, *19*(1), 602. Advance online publication. doi:10.118612913-019-4402-9 PMID:31455377

Ford, G., Compton, M., Millett, G., & Tzortzis, A. (2016). The role of Digital Disruption in Healthcare Service Innovation. *Service Business Model Innovation in Healthcare and Hospital Management,* 57–70. doi:10.1007/978-3-319-46412-1_4

Global Observatory for eHealth. Directory of eHealth policies. (n.d.). *World Health Organization*. Error! Hyperlink reference not valid.

Gupta, K. S., & Rokade, V. (2016). Importance of quality in health care sector. *Journal of Health Management*, *18*(1), 84–94. doi:10.1177/0972063415625527

Haggerty, E. (2017). Healthcare and Digital Transformation. *Network Security*, *2017*(8), 7–11. doi:10.1016/S1353-4858(17)30081-8

Hwang, W.J., & Park, Y.M. (2019). Factors Influencing the Accessibility of Maternal Health Service in Cambodia. *International Journal of Environmental Research and Public Health*, *16*(16).

Ilozumba, O., Van Belle, S., Dieleman, M., Liem, L., Choudhury, M., & Broerse, J. E. W. (2018). The effect of a community health worker utilized mobile health application on maternal health knowledge and behavior: A quasi-experimental study. *Frontiers in Public Health*, *6*, 133. Advance online publication. doi:10.3389/fpubh.2018.00133 PMID:29868541

Indian Public Health Standards. (2012). *Guidelines for Primary Health Centers*. Directorate General of Health Services. Ministry of Health and Family Welfare. Government of India. Available from: http://www.nhm.gov.in/images/pdf/guidelines/iphs/iphs-revised-guidlines-2012/primay-health-centres.pdf

Jat, T. R., Ng, N., & San Sebastian, M. (2011). Factors Affecting the Use of Maternal Health Services in Madhya Pradesh State of India: A Multilevel Analysis. *International Journal for Equity in Health*, *10*(1), 59. doi:10.1186/1475-9276-10-59 PMID:22142036

Kesterton, A. J., Cleland, J., Sloggett, A., & Ronsmans, C. (2010). Institutional Delivery in Rural India: The Relative Importance of Accessibility and Economic Status. *BMC Pregnancy and Childbirth*, *10*(1), 30. doi:10.1186/1471-2393-10-30 PMID:20525393

Kostkova, P. (2015). Grand Challenges in Digital Health. *Frontiers in Public Health*, *3*. Advance online publication. doi:10.3389/fpubh.2015.00134 PMID:26000272

Loewenson, R. (2002). Book Review: Imrana Qadeer, Kasturi Sen and K.R. Nayar (Eds), Public Health and the Poverty of Reforms: The South Asian Predicament. New Delhi: Sage Publications, 2001. 548 pp. ISBN 0–7619–9518–8; £39.99 (hbk). *Global Social Policy*, *2*(3), 361–364. doi:10.1177/14680181020020030701

Marques, I. C., & Ferreira, J. J. (2019). Digital transformation in the area of Health: Systematic Review of 45 years of evolution. *Health and Technology*, *10*(3), 575–586. doi:10.100712553-019-00402-8

Mekonnen, Y., & Mekonnen, A. (2003). Factors Influencing the Use of Maternal Healthcare Services in Ethiopia. *Journal of Health, Population and Nutrition*, *21*(4), 374–382. PMID:15038593

Ministry of Health & Family Welfare-Government of India. (n.d.). *National Health Profile (NHP) of India-2019*. Ministry of Health and Family Welfare. http://www.cbhidghs.nic.in/showfile.php?lid=1147

Mission Directorate. (2021). *Guideline on primary health center (new) in PPP mode*. nrhmorissa.gov.in

Mustafa, A., & Shekhar, C. (2021). Is quality and availability of facilities at Primary Health Centers (phcs) associated with healthcare-seeking from phcs in rural India: An exploratory cross-sectional analysis. *Clinical Epidemiology and Global Health*, *9*, 293–298. doi:10.1016/j.cegh.2020.10.001

N., N. P., A. R. B., S., C. M., S., Goud, G. B., Sajjan, S., & C. (2017). Assessment of utilization of maternal health care services in rural field practice areas of VIMS, Ballari. *International Journal of Community Medicine and Public Health, 5*(1), 170. doi:10.18203/2394-6040.ijcmph20175777

Nair, M., Ariana, P., & Webster, P. (2012). What influences the decision to undergo institutional delivery by skilled birth attendants? A cohort study in rural Andhra Pradesh, India. *Rural and Remote Health*, *12*, 2311. doi:10.22605/RRH2311 PMID:23148477

National Health Policy 2017. (2017). *Ministry of Health and Family Welfare*, Government of India.

Ota, R., Agarwal, S., & Majhi, P. R. (2021). Accessibility of Primary Healthcare Services at Primary Health Centre Level in Northern and Central Zones of Odisha. *International Journal of Management Practice*, *14*(4), 428. doi:10.1504/IJMP.2021.116583

Pallikadavath, S., Foss, M., & Stones, R. W. (2004). Antenatal care: Provision and Inequality in Rural North India. *Social Science & Medicine*, *59*(6), 1147–1158. doi:10.1016/j.socscimed.2003.11.045 PMID:15210087

Panda, P. K., & Subudhi, C. (2020). Pattern and Determinants of Maternal and Child Healthcare Services among Tribals: With a Special Reference to Tribal Regions of Odisha. *Journal of Development Policy and Practice*, *5*(2), 167–183. doi:10.1177/2455133320935536

Prachitha, J., Dhume, A., & Subramanian, S. (2019). India in pursuit of Millennium Development Goals: Were the targets really feasible? *Journal of Developing Societies*, *35*(1), 105–133. doi:10.1177/0169796X19826737

•Prusty, R. K., Gouda, J., & Pradhan, M. R. (2015). Inequality in the Utilization of Maternal Healthcare Services in Odisha, India. International Journal of Population Research, 2015(2), 1–10.

Randive, B., Diwan, V. & De Costa, A. (2013). India's Conditional Cash Transfer Programme (the JSY) to Promote Institutional Birth: Is There an Association between Institutional Birth Proportion and Maternal Mortality? *PLoS ONE*, *8*(6).

Randive, B., San Sebastian, M., De Costa, A. & Lindholm, L. (2014). Inequalities in institutional delivery uptake and maternal mortality reduction in the context of cash incentive program, Janani Suraksha Yojana: Results from nine states in India. *Social Science & Medicine*, *123*, 1–6.

Reddy, M. (2022, May 13). *Digital Transformation in Healthcare in 2022: 7 key trends*. Digital Authority Partners. Retrieved June 22, 2022, from https://www.digitalauthority.me/resources/state-of-digital-transformation-healthcare/

Reddy, S. (2020, August 14). *Financial express*. Retrieved April 13, 2022, from https://www.financialexpress.com/opinion/national-digital-health-blueprint-a-blueprint-to-transform-healthcare/2055627/

RGI-CGHR. (2006). *Sample Registration System Maternal Mortality in India: 1997-2003 Trends, Causes and Risk Factors*. Registrar General, India.

Sahoo, S. (2018). Bridging the Health Divide: Use of Mobile Phone Technology for Health Care Service Delivery in Odisha. *J Mass Communication Journalism*, *8*(05), 391. doi:10.4172/2165-7912.1000391

Sahu, P. R. (2017). The State of the State Odisha. *India Today*. Available at: http://www.ihdindia.org/pdf/Att3.pdf

Sharma, J., Leslie, H. H., Regan, M., Nambiar, D., & Kruk, M. E. (2018). Can India's primary care facilities deliver? A cross-sectional assessment of the Indian Public Health System's capacity for basic delivery and newborn services. *BMJ Open*, *8*(6), e020532. Advance online publication. doi:10.1136/bmjopen-2017-020532 PMID:29866726

Shudes, C., Shukla, M., Chang, C., Appleby, C., Hendricks, J., & Wurz, J. (2021, November 2). *Digital Transformation*. Deloitte Insights. Retrieved June 22, 2022, from https://www2.deloitte.com/us/en/insights/industry/health-care/digital-transformation-in-healthcare.html

Singh, R., Neogi, S. B., Hazra, A., Irani, L., Ruducha, J., Ahmad, D., Kumar, S., Mann, N., & Mavalankar, D. (2019). Assessment of utilization of maternal health care services in rural field practice areas of VIMS, Ballari. *Journal of Health, Population and Nutrition*, *38*(1).

Skudder-Hill, L. (2019). Maternal mortality and sustainable development. Encyclopedia of the UN Sustainable Development Goals, 461–471. doi:10.1007/978-3-319-69627-0_42-1

Stephenson, R., & Tsui, A. O. (2002). Contextual Influences on Reproductive Health Service Use in Uttar Pradesh, India. *Studies in Family Planning*, *33*(4), 309–320. doi:10.1111/j.1728-4465.2002.00309.x PMID:12561780

Suggs, L. S. (2006). A 10-year retrospective of Research in new technologies for health communication. *Journal of Health Communication*, *11*(1), 61–74. doi:10.1080/10810730500461083 PMID:16546919

Symon, A., McFadden, A., White, M., Fraser, K., & Cummins, A. (2018). Adapting the quality maternal and newborn care (QMNC) framework to evaluate models of Antenatal Care: A pilot study. *PLoS One*, *13*(8), e0200640. Advance online publication. doi:10.1371/journal.pone.0200640 PMID:30106961

Tsawe, M., Moto, A., Netshivhera, T., Ralesego, L., Nyathi, C., & Susuman, A. S. (2015). Factors Influencing the Use of Maternal Healthcare Services and Childhood Immunization in Swaziland. *International Journal for Equity in Health*, *14*(1), 32. doi:10.118612939-015-0162-2 PMID:25889973

United Nations. (2013). *The Millennium Development Goals Report*. United Nations.

Vellakkal, S., Reddy, H., Gupta, A., Chandran, A., Fledderjohann, J., & Stuckler, D. (2017). A qualitative study of factors impacting accessing of institutional delivery care in the context of India's cash incentive program. *Social Science & Medicine*, *178*, 55–65. doi:10.1016/j.socscimed.2017.01.059 PMID:28199860

Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Qi Dong, J., Fabian, N., & Haenlein, M. (2021). Digital Transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, *122*, 889–901. doi:10.1016/j.jbusres.2019.09.022

Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, *28*(2), 118–144. doi:10.1016/j.jsis.2019.01.003

Vora, K.S., Mavalankar, D.V., Ramani, K.V., Upadhyaya, M., Sharma, B., Iyengar, S., Gupta, V., & Iyengar, K. (2009). Maternal health situation in India: a case study. *Journal of Health, Population, and Nutrition*, *27*(2), 184–201.

WHO. (2010). *Trends in Maternal mortality: 1990 to 2008*. Available at: https://www.who.int/reproductivehealth/publications/monitoring/9789241500265/en/

WHO. (2021). *Global strategy on digital health 2020-2025*. World Health Organization.

WHO Library. (2016). *Standards for improving quality of maternal and newborn care in health facilities.* World Health Organization. Retrieved June 22, 2022, from https://cdn.who.int/media/docs/default-source/mca-documents/qoc/quality-of-care/standards-for-improving-quality-of-maternal-and-newborn-care-in-health-facilities.pdf?sfvrsn=3b364d8_4

World Health Organization. (2019). *Trends in maternal mortality 2000 to 2017: estimates by WHO, UNICEF: UNFPA*. World Bank Group and the United Nations Population Division.

World Health Organization. (2016). *Global Observatory for eHealth. Global diffusion of eHealth: Making universal health coverage achievable*. Geneva: World Health Organization. http://apps.who.int/iris/bitstre am/10665/252529/1/9789241511780-eng.pdf?ua=1

Zelalem Ayele, D., Belayihun, B., Teji, K. & Admassu Ayana, D. (2014). Factors Affecting Utilization of Maternal Health Care Services in Kombolcha District, Eastern Hararghe Zone, Oromia Regional State, Eastern Ethiopia. *International Scholarly Research Notices*, 1–7.

Zhou, F., Wang, Y., Liu, Y., Liu, X., Gu, L., Zhang, X., Pu, Z., Yang, G., Liu, B., Nie, Q., Xue, B., Feng, J., Guo, Q., Liu, J., Fan, H., Chen, J., Zhang, Y., Xu, Z., Pang, M., ... Cao, B. (2019). Disease severity and clinical outcomes of community-acquired pneumonia caused by non-influenza respiratory viruses in adults: A multicentre prospective registry study from the CAP-China Network. *The European Respiratory Journal*, *54*(2), 1802406. doi:10.1183/13993003.02406-2018 PMID:31164430

KEY TERMS AND DEFINITIONS

Electronic Health Records:: Electronic health records (EHRs) are a digitally stored system of patient data. "An Electronic Health Record is a patient's long-term record of his or her interactions with various healthcare institutions and episodes of care" (Ramanathan, 2014). It allows patients' data to be shared for patient care, decision-making, planning, and research.

M-Health: It is defined by the World Health Organization (WHO) as the use of mobile and wireless technology to aid in the attainment of health goals and may be used to encourage healthy habits and improve health systems. The demand for M-Health has been discovered to be greater in developing nations than in established economies.

Telemedicine: The delivery of health care services by all health care professionals using information and communication technologies for the diagnosis, treatment, and prevention of disease and injuries, research and evaluation, and continuing education of health care providers. Its application focuses on removing various distance-related constraints and improving medical care accessibility Public Health Informatics through Digital and Social Connectivity: It is a methodical use of the Digital and Social platform for goals such as conception, design and development, implementation, maintenance, and assessment of various health parameters. Many maternity websites and Digital conversation platforms have been able to provide pregnant women with various resources and tools to help them prepare for their pregnancy.

Chapter 8
Assessing E-Services: Satisfaction and Repurchase Intentions Among Viewers of Video Streaming Services

Silky Gaur
GIMS, Greater Noida Institute of Management Studies, India

Rahul Gupta
https://orcid.org/0000-0002-2328-0119
Amity University, Noida, India

Jaspreet Kaur
https://orcid.org/0000-0001-8358-7334
Pearl Academy, India

ABSTRACT

The demand for video streaming-based services (VSS) has increased immensely due to their comprehensive content, instant playback, flexibility to watch, and affordable costs. People have access to entertainment with a simple click at their convenience which wasn't possible on traditional television platforms. With companies ready to wrestle for a more significant market chunk, focusing only on price strategies might be a deficient perspective for the future. By enhancing e-service quality, a company can make its loyal base of customers leading to profitability. This study focuses on the quality of e-services relevant to VSS with its satisfactory and repurchasing impact on the client. Responses come from a questionnaire designed and distributed among Indian consumers using video streaming services. SPSS technique is used for result formulation. Implications for marketing managers and the scope for future research are proposed.

DOI: 10.4018/978-1-6684-5274-5.ch008

INTRODUCTION

The VSS in India are all the rage. Since the pandemic hit and everything in the country came to a halt for a straight 40 days, the people became more involved in online shopping and social media. VSS also termed as OTT (over the top media service) are increasingly becoming popular with their vast content, binge watching, flexibility and privacy. Since the arrival of OTTs in India in the year 2008, the streaming platforms have come a long way. With initially starting with a few programs, they now have a plethora of content that is being produced by them and contain many high-profile artists. Apart from that there is also a range of language focused content introduced to attract customers from all genres. However, any booming industry will have its fair share of competitors that an organization has to be wary about. There are close to 40 OTT's operating in India, and the chase for more subscriptions is getting fiercer. The companies must make sure that a user likes their content to an extent to purchase its subscription plans and continue doing so in the future. The companies are looking to create customers who are not only satisfied with their free content but are ready to buy subscriptions which may cost higher than their competitors. There are various ways an organization can justify its pricing, one of them being improving its quality of service. This paper looks at various dimensions that affect e-service quality of video streaming services among viewers repurchase behavior.

LITERATURE REVIEW

The concept of eservices is ever evolving. Parasuraman et al (1985) proposed SERVQUAL scale to assess e-services which contained 10 dimensions and concluded that assessing quality of services as perception of product of expected service v/s perceived service and ultimately influences customer satisfaction. The SERVQUAL scale is the foundation on which all the further theories and models for assessing quality of e-service. Santos (2003) studied customers evaluation and assessment of service delivery in online platform. In the 2000's, various models and theories of e-service quality began to emerge, wherein the following scales were mostly popular:

Table 1. Prominent scales developed on e-service quality

S. No.	Authors	Name	Industry	Year
1	Ziethaml et al	e-SERVQUAL	Online Shopping	2000, 2002
2	Yoo and Donthu	SITEQUAL	Online Shopping	2001
3	Barnes and Vidgen	WEBQUAL	Online Bookstores	2001
4	Loiacono et al	WEBQUAL™	CD's, books, online and hotel reservation	2002
5	Wolfinbarger and Gilly	eTAILQ	CD's, books and videos-	2003
5	Parsuraman et al	ESQUAL	Online Shopping	2005
6	Bauer et al	eTRANSQUAL	Online Shopping	2006
7	Ibrahim et al		Online Banking	2006
8	Ho and Lee		Online Travel Services	2007
9	Sohn and Tadisina		Online Financial Services	2008
10	Papadomichelaki and Mentzas		E-government Sector	2012
11	Blut		Online Shopping	2016
12	Kim		Luxury Shopping	2018
13	Ali		Online Education	2019

Satisfaction

Philip Kotler suggested satisfaction is feeling of pleasure after evaluation of the perceived performance and his expectations form product or services. Satisfaction, always being an integral marketing concept, is key to attaining loyal customers to ensure profitability of business. Since satisfaction, e-commerce, quality have been positively associated by many researchers (Collier and Beinstock 2006, Gong 2018, Cristobal 2007, Ghanei et al 2001, Chang et al 2009; Bresolles et al 2014, Lee and Lin 2005, Ho and Lee 2007, Zeglat 2016,). Khatib et al (2019) studied a positive association among quality and satisfaction for music streaming services.

Repurchase Intentions (RI)

Research have determined relationship among repurchase intentions and good quality (Bitner 1990; Patterson 1994; Ziethaml et al2000; Theodorakis et al 2009; Chang and Chang 2010; Wang 2011; Su et al 2016). Kitapci et al (2014) evaluated the relationship among client satisfaction and RI in the healthcare industry and concluded satisfaction has a great impact on repurchase behavior. Su et al and Ho and Lee (2007) studied the relationship in tourism industry while Patterson tested the relationship in B2B context. Other industries like airlines (Saleem et al 2017), telecom (Ahmed et al 2010), education (Shin et al 2013) and online financial studies (Sohn and Tadisina 2008) were researched by various authors to examine the relationship among RI and quality for online services. However not all studies confirmed a positive relationship between the two variables.

Hypothesis and Model of Proposed Work

After studying numerous models measuring quality dimensions, satisfaction and repurchase intention for e-service, five factors were selected.

1. Response Time

Response time mention how fast an organization responds to customers' queries and its ability to provide help in case of an issue or a problem. The studies by Parasuraman (2005), Long and McMellon (2004), Yang et al (2004), Lee and Lin (2005), have confirmed that response time/responsiveness is one of the important dimensions affecting e-service quality. Also, researchers like Loiacono et al (2002), Bauer et al (2006) and Ali (2019) have all established a positive relationship between response time and satisfaction.

H1: Satisfaction and Response Timeshare a positive effect
H2: Repurchase intentions and Response Time share a positive effect

2. Trust

Trust is defined as a consumers' perception of secure communication and to what extent the user information is protected by Loiacono (2002). Studies including Gruman (1999), Hoffman et al (1997), Sajadiand Zarei (2015) have confirmed the importance of trust in establishing quality leading to a positive relationship with satisfaction.

H3: Trust share a positive effect on satisfaction
H4: Trust share a positive effect on repurchase intentions

3. Tailored Communication (TC)

Tailored communication refers to an organization's ability to customize information to suit individual customer needs (Loiacono 2002). Sajadiand Zarei (2015) stated that TC was the crucial dimension for e-service quality. They discovered that users feel that personalized messages from the company leads to perception of better e-service quality than its competitors. This dimension is particularly significant in the video streaming services as it differentiates them from their competitors and leads to increased satisfaction amongst customers.

H5: Tailored communication share a positive effect on customer satisfaction
H6: Tailored communication share a positive effect on repurchase intentions

4. Visual Appeal

Visual appeal relates to the aesthetics of a website. Yoo and Donthu (2001) stated that creative design of a website is responsible to increase the intension of revisit the site. Loiacono et al (2002) reported that amongst the 12 factors of e-service quality, visual appeal had the lowest correlation with site revisit.

H7: Visual Appeal share a positive effect on customer satisfaction
H8: Visual Appeal share a positive effect on repurchase intentions

5. Innovativeness

Innovativeness refers to the customer's understanding of a website's level of uniqueness and creativity. Loiacono (2002) observed that innovativeness of the website had a high correlation with the purchase and site revisit on the website.

H9: Innovativeness share a positive effect on customer satisfaction
H10: Innovativeness share a positive effect on repurchase intentions

Figure 1. Research Model (Source: Author)

RESEARCH METHODOLOGY

Research Instrument

A structured questionnaire with a 5-point Likert Scale was designed for data collection. The questionnaire had 2 sections: 1) demographics with questions such as gender, age, educational qualifications were asked. 2) This section had 15items reflecting the 5 dimensions such as response time, trust, tailored communications, visual appeal, and innovativeness. Along with the 5 dimensions, 3 items of customer satisfaction and 3 items of repurchase intentions were also measured.

Research Sample

A sampling technique was implemented for the Convenience of data collection. The survey aimed for respondents over the age of 18 and using video streaming services in India.

Data Collection

To collect responses, structured questionnaires were circulated via Google Forms through emails and various social media groups. The resulting sample led to 256 valid questionnaires that were analyzed.

Data Analysis

The SPSS software was used to data analysis. Descriptive analysis was done to explain the demographics in the study. Also, usage statistics of respondents were reported to understand the preferences of users in accordance with demographics. Multiple regression analysis tool was used for hypotheses testing because the model contained two dependent variables which were tested for impact by independent variables in the study.

RESULTS AND DISCUSSION

The data collected form the questionnaire revealed information pertaining to users' perception of e-service quality in video streaming services. There were 256 responses in total with 146 female respondents and 110 males. The maximum respondents were obtained from 23-27 age group. The least responses were received from '38 and above' age group.

Table 2. Demographic Profile of Respondents

		Value Label	N
Gender	1.00	Male	110
	2.00	Female	146
Age Group	.00	18-22 years	49
	1.00	23-27 years	92
	2.00	28-32 years	68
	3.00	33-37 years	28
	4.00	>38 years	19
Educational Qualification	1.00	Undergraduate	40
	2.00	Graduate	81
	3.00	Postgraduate	135

Netflix was the top pick amongst users as 133 respondents claimed they use Netflix's streaming services the most.

Table 3. Gender preference of video streaming services

			Which video streaming service do you use most					Total
			Netflix	Amazon Prime Video	Hotstar	YouTube	Others	
Gender	Male	Count	47	43	11	6	3	110
		% within gender	42.7%	39.1%	10.0%	5.5%	2.7%	100.0%
	Female	Count	86	35	12	3	10	146
		% within gender	58.9%	24.0%	8.2%	2.1%	6.8%	100.0%
Total		Count	133	78	23	9	13	256
		% within gender	52.0%	30.5%	9.0%	3.5%	5.1%	100.0%

Table 4. Group Statistics

Group Statistics					
Gender		N	Mean	Std. Deviation	t-test (p value)
SAT	Male	110	3.37	.86	-0.66 (p = 0.51)
	Female	146	3.46	1.13	
RI	Male	110	3.50	.88	-0.45 (p = 0.66)
	Female	146	3.55	1.12	

The table shows that 110 males (M = 3.37, SD = 0.86) and the 146 females (M = 3.46, SD = 1.13), demonstrated a non -significance difference in customer satisfaction (t [255] = -0.66, p = .51). The table shows that 110 males (M = 3.50, SD = 0.88) and the 146 females (M = 3.55, SD = 1.12), demonstrated a non -significance difference in repurchase intention (t [255] = -0.45, p = 0.66).

Table 5. Model for Repurchase Intention

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			L. Bound	U. Bound
1	(Constant)	.406	.189		2.145	.033	.033	.778
	TC	0.118	.158	.018	-.310	.050	.133	.197
	TRUST	.330	.055	.330	5.957	.000	.221	.438
	RESP	.167	.078	.117	2.144	.033	.014	.319
	IO	.064	.069	.068	.919	.359	-.073	.200
	VA	.355	.070	.396	5.081	.000	.217	.492
Adjusted R Square = 0.601								
F=77.81, p=0.001								
Dependent Variable - Repurchase Intention								

Using the enter method it was found that TC (B=0.118, p = 0.05), TRUST (B=0.330, p = 0.001), RESP (B=0.167, p = 0.033), and VA (B=0.355, p = 0.001), explain a significant amount of the variance in the Repurchase Intention (F (2, 255) = 77.81, p=0.001, R_2Adjusted = 0.60).

Table 6. Model for Customer Satisfaction

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			L. Bound	U. Bound
1	(Constant)	.479	.190		2.526	.012	.105	.852
	TC	.011	.059	.011	.184	.854	-.105	.126
	TRUST	.184	.055	.185	3.327	.001	.075	.294
	RESP	.144	.078	.102	1.854	.065	-.009	.298
	IO	-.078	.069	-.084	-1.123	.262	-.215	.059
	VA	.576	.070	.642	8.225	.000	.438	.713
Adjusted R Square = 0.60								
F=77.14, p=0.001								
Dependent Variable - Customer Satisfaction								

It was found that TRUST (B=0.184, p = 0.001), and VA (B=0.576, p = 0.001), explain significant amount of the variance in the Customer Satisfaction (F (2, 255) = 77.81, p = 0.001, R_2 Adjusted = 0.60).

Table 7. Model for Demographic Variables for Satisfaction

Tests of Between-Subjects Effects					
Dependent Variable:	**SAT**				
Source	**Type III Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Corrected Model	54.931[a]	27	2.034	2.186	.001
Intercept	1075.679	1	1075.679	1155.920	.000
Gender	.534	1	.534	.573	.450
Age group	2.604	4	.651	.700	.593
Educational Qualification	10.256	2	5.128	5.510	.005
Gender * Age group	11.846	4	2.962	3.183	.014
Gender * Educational Qualification	.833	2	.417	.448	.640
Age group * Educational Qualification	23.657	8	2.957	3.178	.002
Gender * Age group * Educational Qualification	2.104	6	.351	.377	.893
Error	212.173	228	.931		
Total	3264.667	256			
Corrected Total	267.104	255			
a. R Squared = .206 (Adjusted R Squared = .112)					

For the model, 11.2% was defined through variance in the customer satisfaction. Educational qualification, gender * age group and age group * educational qualification are all found to be signification predictors of customer satisfaction.

Table 8. Model for Demographic Variables for Repurchase Intentions

Tests of Between-Subjects Effects					
Dependent Variable:	**RI**				
Source	**Type III Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Corrected Model	43.793[a]	27	1.622	1.654	.026
Intercept	1212.735	1	1212.735	1236.968	.000
Gender	.423	1	.423	.431	.512
Age group	9.550	4	2.388	2.435	.048
Educational Qualification	4.570	2	2.285	2.330	.100
Gender * Age group	8.637	4	2.159	2.202	.070
Gender * Educational Qualification	.650	2	.325	.332	.718
Age group * Educational Qualification	24.653	8	3.082	3.143	.002
Gender * Age group * Educational Qualification	1.089	6	.182	.185	.981
Error	223.533	228	.980		
Total	3457.222	256			
Corrected Total	267.326	255			
a. R Squared = .164 (Adjusted R Squared = .065)					

For the model, 6.5% was defined through variance in the repurchase intention. Age group, and age group * educational qualification are all found to be signification predictors of repurchase intentions.

Table 9. Summary of Hypothesis Testing

1	Response Time share a positive effect on customer satisfaction	Rejected
2	Response Time share a positive effect on repurchase intentions	Accepted
3	Trust shares a positive effect on customer satisfaction	Accepted
4	Trust shares a positive effect on repurchase intentions	Accepted
5	Tailored communication shares a positive effect on customer satisfaction	Rejected
6	Tailored communication shares a positive effect on repurchase intentions	Accepted
7	Visual Appeal share a positive effect on customer satisfaction	Accepted
8	Visual Appeal share a positive effect on repurchase intentions	Accepted
9	Innovativeness share a positive effect on customer satisfaction	Rejected
10	Innovativeness share a positive effect on repurchase intentions	Rejected

CONCLUSION AND IMPLICATIONS

The research adds to the current knowledge of e-service quality in streaming services. This research work obtained from the WEBQUAL model of e-service quality and extends it to apply the videos streaming services in India. This study concludes that Response Time, Trust, Tailored Communication and Visual Appeal have a good impact on repurchase intentions of users. Whereas it was found that amongst all the dimensions, Trust and Visual Appeal has a positive influence on customer satisfaction. The other dimensions such as Innovativeness, Response Time and tailored communication do not play a crucial role while determining customer satisfaction in the VSS based industry (Table 9). Based on the results, following recommendations can be made to focus on the following dimensions to enhance customer satisfaction and repurchase intentions.

1. Trust is reported to have effect on both consumer satisfaction and repurchase intentions. Hence, streaming services should assure their customers that they can safely do transactions with the company without the fear of company misusing their information. This move will harbor reliance in the consumer's minds which will eventually lead to enhanced customer satisfaction and repurchase intentions.
2. Visual appeal seems to have a positive influence on customer satisfaction. Thus, it implies that the more a streaming website is visually appealing and has easy to locate icons, the more a customer is satisfied and will have an intention to repurchase. Companies should aesthetically design their websites to attract and retain consumers.
3. Response time leads to positively affecting repurchase intentions. Companies should design their operations in such a manner that consumer's perception of response time is always quick. The issues should be resolved promptly and response to queries should be expedited.
4. Tailored communication was found to have an impact on repurchase intentions. Companies should create interactive websites to ensure consumers perceive the website communication is tailored for their specific needs. Tailored communication from the company lets customers have a more involved and delighted experience from the video streaming website.

LIMITATIONS OF THE STUDY

There are few limitations to this research which can be addressed in upcoming studies. Firstly, the sample size was low. Also, the sample was collected from only one country, India. Since Blut (2015) had acknowledged that culture of a country may affect the relevance or non-relevance of dimensions of e-service quality, it needs to be applied to various cultures. Secondly, only 5 dimensions were chosen for this study in the backdrop of numerous other dimensions. Future studies may add or change dimensions to gain a greater comprehension of the dimensions of e-service quality impacting customer satisfaction. Thirdly, this research specifically targets video streaming services, other e-services such as e-grocery, music streaming can be studied in future.

REFERENCES

Ahmed, I., & Nawaz, M. M. (2010). A mediation of customer satisfaction relationship between service quality and repurchase intentions for the telecom sector in Pakistan: A case study of university students. *African Journal of Business Management*, *4*(16), 3457–3462.

Ali, H. (2019). Measurement of e-services quality: An empirical study of University of Bahrain. *Edu. and Info. Tech.*, *24*(3), 1907–1924. doi:10.100710639-018-9775-6

Barnes, S. J., & Vidgen, R. (2001). An evaluation of cyber-bookshops: The WebQual method. *Int. J. of Elect. Comm.*, *6*(1), 11–30.

Barnes, S. J., & Vidgen, R. T. (2002). An integrative approach to the assessment of e-commerce quality. *Journal of Electronic Commerce Research*, *3*(3), 114–127.

Bauer, H. H., Falk, T., & Hammerschmidt, M. (2006). eTransQual: A transaction process-based approach for capturing service quality in online shopping. *Journal of Business Research*, *59*(7), 866–875. doi:10.1016/j.jbusres.2006.01.021

Bhattacharya, D. (2012). E-service quality model for Indian government portals: citizens' perspective. *J. of Enter. Info. Manage.*

Blut, M. (2016). E-service quality: Development of a hierarchical model. *Journal of Retailing*, *92*(4), 500–517. doi:10.1016/j.jretai.2016.09.002

Blut, M., Chowdhry, N., Mittal, V., & Brock, C. (2015). E-service quality: A meta-analytic review. *Journal of Retailing*, *91*(4), 679–700. doi:10.1016/j.jretai.2015.05.004

Bressolles, G., Durrieu, F., & Senecal, S. (2014). A consumer typology based on e-service quality and e-satisfaction. *J. of Retail. and Con. Services*, *21*(6), 889–896. doi:10.1016/j.jretconser.2014.07.004

Chang, H. H., Wang, Y. H., & Yang, W. Y. (2009). The impact of e-service quality, customer satisfaction and loyalty on e-marketing: Moderating effect of perceived value. *Total Quality Management*, *20*(4), 423–443. doi:10.1080/14783360902781923

Collier, J. E., & Bienstock, C. C. (2006). Measuring service quality in e-retailing. *J. of service res.*, *8*(3), 260–275. doi:10.1177/1094670505278867

Cox, J., & Dale, B. (2001). Service quality and e-commerce: An exploratory analysis. *Manag. Service Qua. International Journal*.

Cristobal, E. (2007). Perceived e-service quality (PeSQ). *Mana. Service Qua. International Journal*.

Fu Tsang, N. K., Lai, M. T., & Law, R. (2010). Measuring e-service quality for online travel agencies. *Journal of Travel & Tourism Marketing*, *27*(3), 306–323. doi:10.1080/10548401003744743

Gong, T., & Yi, Y. (2018). The effect of service quality on customer satisfaction, loyalty, and happiness in five Asian countries. *Psy. & Mark.*, *35*(6), 427–442. doi:10.1002/mar.21096

Ho, C. I., & Lee, Y. L. (2007). The development of an e-travel service quality scale. *Tourism Management*, *28*(6), 1434–1449. doi:10.1016/j.tourman.2006.12.002

Hume, M., Mort, G. S., & Winzar, H. (2007). Exploring repurchase intention in a performing arts context: Who comes? and why do they come back? *International Journal of Nonprofit and Voluntary Sector Marketing*, *12*(2), 135–148. doi:10.1002/nvsm.284

Ibrahim, E. E., Joseph, M., & Ibeh, K. I. (2006). Customers' perception of electronic service delivery in the UK retail banking sector. *International Journal of Bank Marketing*, *24*(7), 475–493. doi:10.1108/02652320610712094

Khatib. (2019). Factors of E-service Quality among Malaysian Millennial Streaming Service Users. *Int. J. of Eco. & Manage*, *13*(1).

Kim, J.-H. (2018). Conceptualization and assessment of E-service quality for luxury brands. *Service Industries Journal*. Advance online publication. doi:10.1080/02642069.2018.1517755

Kitapci, O., Akdogan, C., & Dortyol, İ. T. (2014). The impact of service quality dimensions on patient satisfaction, repurchase intentions and word-of-mouth communication in the public healthcare industry. *Procedia: Social and Behavioral Sciences*, *148*, 161–169. doi:10.1016/j.sbspro.2014.07.030

Kotler, P., & Armstrong, G. (2014). *Principles of marketing*. Pear. Edu.

Kotler, P., & Armstrong, G. (2014). *Principles of marketing*. Pear. Edu.

Lee, G. G., & Lin, H. F. (2005). Customer perceptions of e-service quality in online shopping. *Int. J. of Ret. & Dis. Manage.*

Loiacono, E. T., Watson, R. T., & Goodhue, D. L. (2002). WebQual: A measure of website quality. *Mark. Theory and App., 13*(3), 432-438.

Long, M., & McMellon, C. (2004). Exploring the determinants of retail service quality on the Internet. *Journal of Services Marketing*, *18*(1), 78–90. doi:10.1108/08876040410520726

Papadomichelaki, X., & Mentzas, G. (2012). e-GovQual: A multiple-item scale for assessing e-government service quality. *Govt. Info. Quar.*, *29*(1), 98–109. doi:10.1016/j.giq.2011.08.011

Parasuraman, A. (2005). ES-QUAL: A multiple-item scale for assessing electronic service quality. *J. of service res.*, *7*(3), 213–233. doi:10.1177/1094670504271156

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, *49*(4), 41–50. doi:10.1177/002224298504900403

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, *49*(4), 41–50. doi:10.1177/002224298504900403

Santos, J. (2003). E-service quality: A model of virtual service quality dimensions. *Mana. Service Qua. International Journal*.

Sohn, C., & Tadisina, S. K. (2008). Development of e-service quality measure for internet-based financial institutions. *Total Quality Management*, *19*(9), 903–918. doi:10.1080/14783360802224412

What is video streaming service? (2013, December 1). www.techtarget.com. https://www.techtarget.com/whatis/definition/video-streaming-service#:~:text=A%20video%20streaming%20service%20is,either%20per%20view%20or%20subscription

Wolfinbarger, M., & Gilly, M. C. (2003). eTailQ: Dimensionalizing, measuring and predicting etail quality. *Journal of Retailing*, *79*(3), 183–198. doi:10.1016/S0022-4359(03)00034-4

Yang, Z. (2004). Online service quality dimensions and their relationships with satisfaction. *Int. J. of Service Ind. Manage*.

Yoo, B. (2001). Developing a scale to measure the perceived quality of an Internet shopping site (SITEQUAL). *Quar. J.l of Elect. Comm.*, *2*(1), 31–45.

Zeithaml, V. A. (2000). A conceptual framework for understanding e-service quality: implications for future research and managerial practice. *Mark. Sci. Inst.*

Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2000). Service quality delivery through web sites: A critical review of extant knowledge. *Journal of the Academy of Marketing Science*, *30*(4), 362–375. doi:10.1177/009207002236911

KEY TERMS AND DEFINITIONS

Customer Satisfaction: Satisfaction is a pleasant emotion that follows an assessment of the perceived performance and the customer's expectations for the good or service (Kotler, 2014).

E-Service Quality: E-service quality is a general assessment or attitude relating to the overall superiority of the service (Parasuraman, 1985).

Repurchase Intentions: The decision of the customer to conduct additional business with the retailer or supplier is known as repurchase intention (Hume et al., 2007).

Streaming Services: An on-demand internet entertainment platform for TV series, streaming movies, and other material is a video streaming service.

Chapter 9
Employee Engagement Strategy:
Building an Engaged Workforce during COVID 19 with Special Reference to Manufacturing Sector in India

Swati Chawla
https://orcid.org/0000-0001-5543-9764
Amity University, Noida, India

Puja Sareen
Amity University, Noida, India

Sangeeta Gupta
Management Education and Research Institute, India

ABSTRACT

Considering the pandemic situation caused by COVID-19, the majority of Manufacturing companies in India have declared work from home until 2021. The pandemic has disrupted both the private and professional lives of people working in the Manufacturing sector, which has impacted the employee's attitude toward work. Therefore, the study is conducted to extract all the employee engagement factors that can actually improve the employee's performance during pandemic. Factor analysis has been applied on a sample of 200 respondents, and the factors significantly influencing the engagement of employees are organization's commitment, job safety and security, employee satisfaction, opinions and stability, and set goals and objectives.

INTRODUCTION

The Covid-19 epidemic in China poses a global hazard to health (Li et al., 2020). This sudden change to a work-from-home model has created uncertainty and unease among employees all around the world because of the pandemic crisis (Xiao et al., 2021).

DOI: 10.4018/978-1-6684-5274-5.ch009

Many businesses in India and throughout the world have been negatively affected by the ongoing COVID-19. Several countries, notably India, have declared a nationwide lockdown in response to the COVID-19 outbreak. Due to the escalating conflict, countries were forced to close their ports, airports, and internal transportation. As a result, the supply chain, production, and logistics sectors were severely impacted by the closure of facilities. This had a profound effect on the world's manufacturing industries. Chinese coronavirus is regarded as the world's most important industrial hub. A wide range of raw materials, intermediaries, components, and spare parts are all produced here, making it one of the world's major producers of these items. Many businesses were immediately halted because of the COVID 19 outbreak in China. This created supply chain interruptions and delayed deliveries due to logistical challenges. As a result, lockdowns around the country disrupted personal, business, and civil lives. Due to global supply constraints, the Indian industrial industry was also affected. Like in India, China imports a variety of products including raw materials and other manufacturing goods used by consumers. India, like many other countries, was having difficulty meeting customer demands, managing supply and labour shortages, and meeting manufacturing schedules. To prevent the spread of new coronavirus, India was also witnessed imposing its longest national lockdown. Several industries were shut down and migrant workers were left stranded because of this, significantly delaying production processes. Migrant workers had to struggle with financial hardships, food shortages, and other threats to their well-being. Kumar & Choudhury, 2021).

Theoretical Development: Employee Engagement

For the first time, Kahn (1990) posited that employee engagement refers to their mental present as they carry out their job duties. For Kahn, the goal was to find the psychological variables that explain the time of engagement and the moment of disengagement among employees in a variety of work environments. His work formed the groundwork for the Gallup Organization's philosophy. The term "employee engagement" as it is currently used was coined by the Gallup Organization (2005), after 25 years of research, despite the fact that engagement was first conceptualised and defined by Kahn as "The 'harnessing of organisational members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances" (Kahn, 1990:694)

Defining employee involvement is a subjective matter. At the end of the day, an employee who is committed to his or her work is one who is not only productive, but also a company ambassador always.

"The individual's involvement and satisfaction as well as excitement for work," is how Harter et al. (2002: 205) further defined employee engagement. An employee's level of dedication and connection with their company and its principles is measured by their level of employee engagement. The concept of employee engagement has been around for about two decades in the literature of human resources management (HRM) (Berridge, 2005; Daqar & Smoudy, 2019). According to some, job participation and flow are the best models for describing engagement (Rich, 2014; Saks, 2006).

The process of increasing the dedication and involvement of a company's human resources in order to produce better business outcomes is known as 'employee engagement' (Macey & Schneider, 2008). As a combination of a worker's cognitive, behavioural, and emotional commitment to his or her firm, employee engagement can be described as (Sun & Bunchapattanasakda, 2019).

There are three types of engagement: intellectual, emotional, and social. Intellectual engagement refers to a commitment to improving one's performance at work, while affective engagement refers to a feeling of well-being following the completion of one's tasks (Rich, 2014).

Whether or not an employee is engaged in their work is a question of how much of their mental, emotional, and physical resources they devote to the job (Kahn, 1990; Xu & Thomas, 2011). When an employee has the characteristics of a person who is active, entertaining, enjoyable, and effective in their work, it is likely that they are committed and willing to engage in their work (Kahn, 1990; Macey & Schenider, 2008; Xu & Thomas, 2011).

Increasing employee involvement is known to be a goal of organisations, since engaged individuals are more likely to play a proactive part in their jobs (Kahn, 1990). Engaged employees have a strong connection to the company and are passionate about its mission and values. They are intellectually and emotionally invested in the company. Additionally, this person can go above and above the call of duty if their supervisors consider both their team members' and the company's objectives, and then apply various leadership styles to achieve those objectives. In today's business environment, employee engagement has emerged as a key motivator. Employees that are more engaged at work are more likely to stay with the company, which can lead to greater business outcomes (Robertson & Cooper, 2010).

Drivers of Employee Engagement

Various academic studies have provided clues as to where the concept of engagement came from. In the context of employee engagement, there are three possible antecedent variables. Chandani et al. (2016) Chandani and colleagues (2016) Harter and colleagues (n.d.) (2002; Resick and colleagues (2007) and Rhoades and colleagues (2001)) Affective commitment (Rhoades et al., 2001), job fit (Resick et al., 2007), and psychological climate were the three antecedent variables (Brown & Leigh, 1996).

There are a variety of elements that influence the level of employee commitment in a company. The term 'drivers of engagement' refers to this concept. Leaders are continuously looking for new ways to keep their employees interested in the workplace today. Employee engagement and policy implementation are becoming more and more of a challenge for the company's management every day. Employee attrition is at an all-time high because of the frequent job changes that are occurring in various parts of the industry. The challenge of retaining and motivating employees in these uncertain economic times has grown exponentially. Research from throughout the world shows that several factors influence how engaged an employee is in a company, as listed below:

Career Development

Organisations with highly engaged employees provide their employees with ample opportunities to learn skills, develop abilities, acquire knowledge, and reach their potential. Career development practises help organisations retain talented employees and provide personal development opportunities. Many authors have argued that employees tend to invest in companies that invest in them by planning for their career development (Abraham, 2014; Bai & Liu, 2018; Singh & Arumugam, 2021).

Effective Management of Talent

Employee engagement-friendly culture appreciates the diversity related to talents and skills that come in with the employees and prompts the employees to aspire for and achieve the vision of future (Schuler et al., 2017).

Leadership

It's easier for workers to be enthusiastic about a company if they see their immediate supervisors praising them, or if they're receiving individual attention from top executives (Carasco-Saul et al., 2015). Employees who are engaged in their work are more likely to contribute to the success of their organisations. In previous research, it was found that the behaviours of proactive behaviour, organisational citizenship behaviour (OCB), and motivation, work satisfaction, and organisational commitment were all linked to leadership (Xu & Cooper Thomas, 2011).

HR Practices (Clarity of Company Values, Policies, and Practises)

HR practises and policies play an important role in defining the relationship between the employees and employers. However, there is no direct relationship between HR practices and policies and employee engagement rather it has an indirect impact. Employees should be made to feel that their companies' values are clear and unambiguous to generate higher engagement (Chanana & Sangeeta, 2021a).

Empowerment

Employees believe that employees should have a say in choices that could have an impact on their work. An environment where employees are encouraged to challenge conventional wisdom, innovate, and contribute to the company's growth is created by the leadership in high-engagement workplaces. Employees' ability and flexibility to express their opinions to the company's senior management is also a factor in employee satisfaction. Empowered employees are more likely to be interested in their work because they feel empowered by their manager's empowering style, which in turn gives them with a sense of drive and belongingness to the organisation (de Klerk & Stander, 2014).

Pay and Benefits

Employees are more likely to stay with a company if they feel they are being paid fairly. The employee must be compensated and benefitted to raise their level of involvement. To make money an effective motivator, employers should tie it to things like work assignments, performance evaluations, personal allowances and other perks like pensions and other benefits. The amount of employee engagement is affected using egalitarian pay systems. Base salary and benefits aren't as important as incentives, intangible rewards, and the quality of leadership when it comes to the potential of a firm to develop highly engaged people (Hoque et al., 2018).

Performance Appraisal

Another crucial factor in determining an employee's degree of involvement is the fairness of the employee's performance rating. It is common for organisations to exhibit a better degree of employee engagement when they use an appropriate assessment technique that is known to be objective and transparent (Ibrahim & Daniel, 2019). Manager-employee conversations about expectations for performance and the specific responsibilities of each person play an important role in fostering a sense of ownership and commitment among employees. An increase in employee engagement leads to an increase in workplace positivity, which in turn leads to an increase in individual performance (Medlin & Green, 2009).

Job Satisfaction

For an employee to be engaged in his or her work, the organisation must ensure that the aims of the job are aligned with the employee's personal ambitions. Higher levels of self-efficacy led to employees who are more likely to be engaged at work because they are more willing to put in extra effort and energy to complete their responsibilities, which leads to increased participation and absorption (Chhajer et al., 2018). To motivate themselves, those who are more ericaceous are more inclined to establish high objectives, which in turn makes them more engaged at work (Ouweneel et al., 2013). The more the perceived resemblance between the coworker and employee age, the larger the engagement when the contentment level was higher, and the less engagement when the satisfaction level was lower (Vorina et al., 2017).

Productivity

Employee engagement has a favourable impact on organisational citizenship behaviour, while employee engagement has a negative impact on counterproductive work behaviour (George & Joseph, 2015; Rurkkhum & Bartlett, 2012). Involved employees have a deep connection to the work they do. They strive tirelessly to achieve the goals that are necessary for their duties and responsibilities. They also go above and beyond the call of duty since they free up resources by successfully completing their goals and completing their assignments. But when a person has unfavourable feelings about his job, he is more prone to engage in harmful work habits.

Organization Politics

The perception of politics in an organization negatively influences the employee's engagement (Bello et al., 2021; Rurkkhum & Bartlett, 2012).Employees who worked in a positive work environment environment displayed positive emotions which results in individual adaptability, growth along with learning & development(Parent & Lovelace, 2018). This could directly impact work engagement, which might result in higher levels of employee commitment (Messner, 2013) and organizational commitment (Bello et al., 2021).

Nature of Job

In a study conducted to discover the Antecedents and Consequences of engagement of employees in the private sector companies using selected it is shown that job engagement and characteristics of a job are correlated positively to engagement (Prameswari, 2019). Jobs can be made more satisfying by creating small wins for the employee so as to increases the levels of engagement (Rai et al., 2017).

Impact of First and Second Wave of Covid-19 on Indian Manufacturing Sector

Recently, India's manufacturing industry has gone through several different stages of growth. The sector accounts for about 16-17% of GDP and employs about 20% of the workforce. During the first wave of the pandemic, lockdown-imposed limitations on the movement of goods and people greatly reduced worker capacity and disrupted supply chains, resulting in practically all production activity being halted.

The challenges of remote working must therefore be addressed and overcome through efficient personnel management and implementation of employee engagement

- What are the key factors that impact employee engagement during crisis?
- How to keep employees to motivated and engaged during crisis?
- How to address and overcome the challenges of remote working to effectively manage employees and promote employee engagement.

The key issues impacting the manufacturing sector are listed in the image below:

First Wave

- The pandemic had a significant influence on the manufacturing industry, resulting in lower production volumes and a decrease in the number of workers employed. Over time, this had a negative impact on sales and revenue.
- Core manufacturing also faced setbacks from the first and second wave of economic downturns, according to the International Institute for Applied Systems Analysis (IIASA).
- Supply and demand were affected in equal measure by both the whole and partial lockdowns. The supply chain was disrupted by the restricted flow of products, services, and employees.
- Jobs were lost as the economy shrank and manufacturing slowed overall. • • Demand-side factors including decreased discretionary income, savings, and increasing uncertainty exacerbated these supply-side effects.

Several economies realised the importance of diversification during the pandemic, and as a result, many enterprises shifted to other business hubs in order to do so. The Essential Commodities Act and covid-linked passes, implemented by the Indian government, made it easier for many stakeholders to carry out their daily operations. Confidence in the business outlook for output grew as a phased reopening of the economy was announced and the situation began to improve. After the first wave had stabilised and COVID-19 restrictions had been eased, the manufacturing sector had a favourable outlook due to the return of full-time work in factories and the boom in new work and exports. When it comes to the current state of the global economy, numerous businesses have turned to alternate suppliers (Apple, Samsung, LG Electronics, Kia Motors, Hyundai Motor, Zoom, Hasbro, etc.). After taking recent initiatives by Indian Government, they waited to see how the sector would perform in the short-, medium- or longer term. As the economy slowly began to open again, a new wave of virus hit the country, as shown in the following section.

Second Wave

After the 2020 financial year, a second wave was observed. In an additional blow to the country's hopes of a quick recovery, the number of cases rose far faster than the initial wave. Restrictions and curfews implemented by various states to reduce the number of deaths in the second wave increased the number of deaths among individuals. When the second wave hit, the country's healthcare system crumbled under the weight of the frenzied quest for beds, oxygen tanks, and other resources by the nation's population.

Further, this broad damage generated a terror in the populace, as new variations proved more potent leading to major breakout in Tier I cities and a surge in rural areas. As a result, people were forced to stay indoors, more so by need than by choice. The number of individuals employed in the second wave was substantially fewer than in the first, resulting in a more gradual return to growth. State governments permitted some leniency and exemptions as lockdowns were gradually being lifted to minimise the economic impact.

Because of the tight liquidity and limited working capital that small businesses and shops experienced in the wake of the second wave, they took the brunt of the early effect. A return to pre-covid revenue levels is predicted once the second wave settles. In the second wave, systemic problems led to an inability to handle the exponential increase in cases, which damaged the healthcare infrastructure. The National Health Mission and the National Digital Health Blueprint, as well as the building of hospital networks throughout the country, resulted in the inclusion of healthcare services in even the most remote places.

As a result, the second wave of COVID is projected to disrupt economic growth, but the overall impact is expected to be minimal. In April 2021, the manufacturing PMI remained at 55.4, the same as in March. Manufacturing orders, on the other hand, fell to an eight-month low in April and May. Volatility in fuel demand was also observed because of a 6.3% drop in demand for petrol and a 1.7% drop in demand for diesel. Several major automakers saw their April sales fall by roughly 9 percent from March's levels. An economic rebound is projected, although it may not be 'V-shaped,' as the recovery following the first wave was, because the sector saw a mild impact.

During the second quarter, manufacturing is likely to perk up after the core sector reaches early-March 2020 levels of production. Nearly 3% of India's population has been immunised as part of a massive vaccination campaign that involves large-scale manufacture and distribution. Over 186 million doses were administered, resulting in the complete immunisation of 41.1 million persons. Vaccinations are now available to anyone between the ages of 18 and 44, with the goal of immunising approximately 90% of the Indian workforce. As a result of the financial incentives given to vaccine makers and emergency vaccinations, a completely vaccinated population is expected to lead to improved production levels in the future. Efforts by the government and the private sector to improve health infrastructure have been ongoing, as has the expansion of medical services to previously unreachable regions. The central bank is anticipated to announce an economic stimulus package that will help small firms and support services. After reaching early March 2020 production levels in the core sector, manufacturing activity is likely to increase up in the second quarter. After the country recovers from the second wave, companies who have consolidated their operations and organised their supply chains/processes will have more opportunities. We anticipate plenty of opportunities for companies who anticipate and plan their business operations in accordance with the government's intentions for a strong economic recovery.

RESEARCH METHODOLOGY

Sample and Data Collection

The study's data came from Delhi, India's National Capital Region, Manufacturing Sector remote workers. It was in March 2021, when most manufacturing enterprises in India announced a work-from-home or hybrid structure, that the sample technique was conducted. Employees in Delhi NCR were sent a Google Forms questionnaire. Responses to an online survey were gathered using a systematised random sampling procedure. With Covid 19, most people say their work arrangements and organisational policies have changed significantly. Salary reductions, department downsizing, job losses for contract workers, and longer working hours were among the adjustments. When it came to working from home or in hybrid mode, some employees praised the new arrangement because it allowed for more flexible hours. They appreciated the opportunity to spend quality time with their loved ones and the encouragement to take on new educational challenges. It was found that 46 percent of respondents were between the age of 24 and 31 years old, while 30 percent were between the ages of 32 to 40 years old. A university degree was possessed by 81% of those polled, and a postgraduate degree was held by the remaining 19%. Nearly 76% of those polled were married (with 51% having children), while only 24% were unattached. Approximately 77% of respondents had monthly incomes between 31k and 40k, 13% had incomes between 41k and 50k, and 10% had incomes between 51k and 60k. As a rule, 56 percent of employees worked full-time, while 44 percent worked part time.

Measures

A proper questionnaire was formed in a structured sequence; the first part of the questionnaire was about basic demographics factors like age, gender, educational qualification, income of the respondent, and nature of job. The second part was based on gathering information about the impact of COVID 19 on work culture, which further resulted in the change in their behaviour and commitment toward work and their engagement levels. The questionnaire focussed on collecting information from respondents regarding the support they received from their leader and the organization in these difficult times. The questionnaire also enquires about the frequency of leaders' communication with employees about the changes incorporated within the organization structure and employees' involvement in the decision-making process". Further, questions on organization commitment were drafted to gather information about the opportunity's organization provided to their employees during pandemic as well as about employee's recommendation of their organization to others as employee friendly organizations. The questionnaire included statements to understand whether organizations conducted any online engagement activities for the employees and their family members. The questions were framed to extract factors that potentially impact the employee engagement of workers working remotely. The questionnaire reliability was tested by using IBM-SPSS Version 19 software. Table 1 shows the list-wise deletion with regard to all the variables in the procedure, and Table 2 shows the results of Cronbach Alpha value.

Table 1. Listwise deletion based on all variables in the procedure

Case Processing Summary			
		N	%
Cases	Valid	331	99.4
	Excluded[a]	1	0.6
	Total	330	100

Table 2. Cronbach's Alpha Reliability test

Reliability Statistics			
Construct	**No of Items**	**Cronbach's Alpha**	**Status**
Organization Commitment	5	0.887	Accepted
Job Safety and Security	3	0.846	Accepted
Employee Satisfaction	3	0.896	Accepted
Opinions and Stability	3	0.796	Accepted
Set Goals and Objectives	3	0.831	Accepted

RESULTS

The results obtained using Factor Analysis was related to the engagement of employees in Manufacturing Sector during pandemic. Factor analysis was done to derive different factors of the study. The scale reliability was found to beat a significant level, that is,0.839. The variables drawn and items reflected were all well above 0.660, which is the threshold limit (De Vellis, 1991; Nunally and Bernstein, 1994; Sppector 1992). Hence, it can be stated that all items were reliable. To find out whether an item is a part of factor as suggested by Nunally (1978), the factor loading of at least 0.660 was used as the cut-off. For this, initially Kaiser –Meyer-Olkin (KMO) test and Bartlett's Test of Sphericity were applied, which are presented in Table 3.

Table 3. KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.839
Bartlett's Test of Sphericity	Approx. Chi-Square	9014.089
	Df	731
	Sig.	0

The value of KMO being 0.839(> 0.05) was acceptable, which highlighted that the sample can further be used to perform analysis using factor loadings. Further, the value of Bartlett Test of Sphericity was found significant and acceptable, which demonstrated association among all the variables used. The analysis drawn and factors extracted were based on Principle Component Analysis and Varimax Rotation with Keiser Normalization. Five factors were extracted, which are presented Table 4 and the factor loadings are given in Table 5.

Table 4. Extraction Method: Principal Component Analysis

Total Variance Explained											
Extraction Method: Principal Component Analysis											
When components are correlated, sums of squared loadings cannot be added to obtain a total variance.											
Component	**Initial Eigenvalues Total**			**Extraction Sums of Squared Loadings**			**Rotation Sums of Squared Loadings**				
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative**		
1	4.476	24.867	24.867	4.476	24.867	24.867	3.222	17.903	17.903		
2	2.886	14.924	39.971	2.886	14.924	39.971	3.075	17.087	34.988		
3	2.125	11.808	51.599	2.125	11.808	51.599	2.176	12.09	47.077		
4	1.877	10.513	61.808	1.877	10.513	61.808	1.839	10.21	61.806		
5	1.459	7.999	69.804	7.999	1.459	69.804	1.539	8.994	69.81		
6	1.143	6.725	49.657								
7	1.07	6.295	55.952								
8	0.962	5.658	61.611								
9	0.915	5.381	66.992								
10	0.86	5.061	72.053								
11	0.84	4.943	76.996								
12	0.738	4.34	81.335								
13	0.722	4.247	85.582								
14	0.669	3.933	89.515								
15	0.641	3.772	93.287								
16	0.602	3.544	96.831								
17	0.539	3.169	100								

Table 5. Factor Loadings

	Factor Loadings				
	1	2	3	4	5
Factor 1: Organisation's Commitment					
Managers of my company really know what they're doing	0.684	X	X	X	X
Company conducts team building activities/ social activities to engage family members	0.76	X	X	X	X
Management spend time in one-on-onecommunication /organizing virtual informal meetings with employees.	0.745	X	X	X	X
Clear understanding of company's strategic goals and new business policy.	0.713	X	X	X	X
Work affects the company's overall success	0.735	X	X	X	X
Factor 2: Job Safety and Security					
Immediate boss encourages / appreciates your work	X	0.754	X	X	X
Company offers wellness packages to retain talent	X	0.736	X	X	X
Company conducts webinars to cope up with pandemic and its challenges	X	0.76	X	X	X
Factor 3: Employee Satisfaction					
Company has a streamlined performance-based incentives	X	X	0.726	X	X
Company gives opportunity to contribute and being on the frontline	X	X	0.725	X	X
Company offers flexible working hours to promote work life balance	X	X	0.719	X	X
Factor 4: Opinions and Stability					
Level of Current Operations: Full Operations but remotely (teleworking)	X	X	X	0.846	X
Leaders encourage new ideas and suggestions	X	X	X	0.73	X
Company makes effort to improve internal communication	X	X	0.68	X	X
Factor 5: Set Goals and Objectives					
Expected of me when it comes to my goals and objectives	X	X	X	X	0.746
Company offers detailed Job Description and does not expect employee to work beyond it	X	X	X	0.73	X
Pre-defined objectives	X	X	X	X	0.69

The Factor Analysis indicated the following factors affecting Manufacturing Sector during COVID 19

Factor 1: Organization Commitment

An employee's level of loyalty to an organisation is referred to as 'organisational commitment' (Mowday et al., 1979). To restore employee confidence and morale, leadership and management must try to communicate with employees on both a formal and casual basis. Organizations must therefore rethink their communication tactics and focus on the correct leadership to build strong employee interactions. Organizations must deal with issues related to employees since ignoring them has the potential to reduce employee commitment (Chanana & Sangeeta, 2021b). A clear understanding of the company's strategic goals and a changing organisational structure boost employee commitment to their jobs and the organisation. Finally, if communication and the organisational hierarchy can be made more efficient, employees will be more dedicated to their employers.

Factor 2: Job Safety and Security

In the wake of the corona virus outbreak, businesses, labour markets, and employment levels have been negatively affected. Keeping employees safe and secure on the job is critical to the success of an organization's mission. Organizations must now put in more effort to better understand issues like job insecurity and psychological anxiety among their workers. Contractual workers have been laid off and full-time staff have been forced to work from home, resulting in anxiety and unhappiness amongst workers (Organization, 2020). Because COVID -19 has slowed economic growth, workers are fearful of future layoffs, which necessitates steps to prevent employee burnout.

Factor 3: Employee Satisfaction

The two go hand in hand: a happy workforce and a motivated workforce. Employees are more likely to promote their employer to others if they feel safe and secure while working there. Employees are so content with their jobs at this company that they have no desire to leave for an extended period of time. This will help the organisation achieve its goals, because happy employees are more likely to focus their attention on the organization's long-term strategy. The demands of employees during pandemics, like as safety and security, must be addressed by enterprises.

Factor 4: Opinions and Stability

Employee feedback and opinion gathering is critical to a company's health and long-term viability, so it should not be ignored. During a pandemic, it is evident that employees are experiencing a lack of interaction and a sense of isolation at work because of the work from home model. Organizations need to regularly hear from their employees about their issues to improve their services. In addition, firms must devise strategies that will facilitate the exchange of ideas between leaders and employees, as well as between employees and their peers. Employees must be encouraged to be enthusiastic and engaged in their work. For a company to succeed, its employees must be treated with respect and care. To keep up with the ever-evolving business climate, employees must be given a voice and an opportunity to share their thoughts and comments.

Factor 5: Set Goals and Objectives

Having clear goals and objectives is essential for every organisation, and employees are more productive when they know what they're working for. To achieve corporate greatness, leaders must lay out a clear path for their staff to follow. The epidemic has reshaped the entire corporate environment, necessitating the need for clear policies, realistic targets, and long-term strategies. Employees are more likely to meet deadlines and contribute more if goals and objectives are well defined and communicated.

DISCUSSION AND CONCLUSION

According to the findings, a company's dedication to its employees is a critical factor in increasing employee happiness and motivation at work. To keep their staff engaged, committed, and motivated, manufacturing organisations need to implement successful employee engagement methods. Another significant influence on employee behaviour is the safety and security of the workplace. Employees who feel safe and secure in their workplace are more likely to have positive attitudes toward the company. Employee wellness programmes should be introduced in the manufacturing sector to promote psychological development, financial stability, and intellectual enrichment among employees. To further empower its workers, the manufacturing industry must implement effective communication tactics. In addition, manufacturing businesses must allow their employees to voice their ideas and respect their comments to continually improve their business operations and foster a positive work environment. For remote workers, it can be inferred from this study that clear business policies and clearly defined goals and objectives are necessary.

CONTRIBUTION OF THE STUDY

The COVID-19 epidemic has had a profound impact on the manufacturing sector. A recovery to pre-crisis levels will probably take several years, if not more, as it has in the past following other big upheavals, such as the 2008-2009 financial crisis. The industrial sector needed three years to recover to pre-crisis levels back in 2008. As bad as it was during the last financial crisis, things will be far worse this time around.

Compared to earlier crises, this one has a more positive (albeit not entirely positive) twist on things. In a better way: production levels had already slowed before COVID-19 and firms had not been as focused on robust growth as before the financial crisis. The likelihood of a crisis is also higher because businesses have more available cash and equity. A 'up and down' recovery is more likely than a smooth curve because of the combination of a supply and demand shock with shutdowns. In addition, China's role as a growth engine is collapsing, and already-implemented upheavals in the business are now speeding up.

There will be a wide range of repercussions based on the industry affected by the crisis. As a result of planned government infrastructure stimulus and a surge in e-commerce, construction machinery and intralogistics equipment, for example, are predicted to feel far less severe repercussions than during the financial crisis. There is a far greater impact on enterprises in the machine tools, plastics machinery, and steel production industries. Because of pre-existing overcapacity in the steel industry (pre-Coronavirus), as well as the acceleration of disruptions (pre-Coronavirus, e-Mobility, sustainability), investors are becoming more cautious, which is essential for machine tools because of investment restrictions.

False hopes are still clinging to the minds of many business leaders. Short-time work, for example, will not be able to address the issue of declining demand in the long term. To avoid a drastic drop in profits, companies in high-risk sectors must immediately re-evaluate their earlier assumptions about the direction of the crisis, develop a range of scenarios, and begin examining their organisational structures rigorously.

This research focuses on the 17 Sustainable Development Goals (SDGs) and focuses on target 3 (Good Health and Well-Being) and goal 8 (Decent Work and Economic Growth). Companies.

IMPLICATIONS OF THE STUDY

Employee engagement is critical to an organization's performance, and HR executives must take this into account when making decisions. The lack of productivity in an organisation with a high level of employee involvement is a direct result. The level of pleasure or dissatisfaction among employees is directly linked to the level of employee involvement. For employees to perform at their best, they must be given the proper encouragement and support. The feedback, physical and mental health, success, and acknowledgment of top achievers must be given top emphasis. An employee's success is determined by his or her desire to accomplish the goal. To inspire teamwork, their concerns should be adequately listened to, and there must be ongoing education and growth. To get the most out of your staff, you need to create the ideal working environment. Employee concerns need to be identified and addressed as a matter of urgency by manufacturing organisations. Effective employee engagement strategies/practices must be employed by manufacturing organisations to retain their personnel engaged, dedicated, and motivated. Efforts should be made to implement/revamp employee wellness programmes to promote psychological, financial, and intellectual growth and enrichment. The spiritual needs of employees must be addressed as 51% of employees were found to be less productive because of stress. Employees in the manufacturing sector need to be empowered through effective communication tactics. To keep remote workers motivated, organisations need to establish incentive and recognition systems that provide them a sense of accomplishment and acknowledgment.

FUTURE SCOPE OF THE STUDY

An investigation on the role of employee involvement during and after a pandemic in the manufacturing sector and other industries is laid out in this report. Employee engagement and organisational citizenship behaviour in unprecedented times like COVID 19 are examined via the lens of leadership styles, communication tactics, corporate wellness initiatives, and rewards systems.

COMPLIANCE WITH ETHICAL STANDARDS

I hereby certify that I acted ethically and professionally throughout the course of this investigation. Funding agencies from the public, private, and non-profit sectors did not provide any financial support for this research.

REFERENCES

Abraham, S. (2014). Development of Employee Engagement Programme on the basis of Employee Satisfaction Development of Employee Engagement Programme on the basis of Employee Satisfaction Survey. *Journal of Economic Development, 4*(1). https://www.researchgate.net/publication/256187156

Bai, J., & Liu, J. (2018). A Study on the Influence of Career Growth on Work Engagement among New Generation Employees. *Open Journal of Business and Management*, *06*(02), 300–317. doi:10.4236/ojbm.2018.62022

Bello, A., Omofowa, S., Nwachukwu, C., & Nguyen, A. V. H. (2021). Relationship between Organizational Politics and Organizational Commitment. *Webology, 18*(4), 278–287. doi:10.14704/WEB/V18SI04/WEB18128

Berridge, K. C. (2005). Espresso reward learning, hold the dopamine: Theoretical comment on Robinson et al. (2005). Behavioral Neuroscience, 119(1), 336–341. doi:10.1037/0735-7044.119.1.336

Brown, S. P., & Leigh, T. W. (1996). A new look at psychological climate and its relationship to job involvement, effort, and performance. *The Journal of Applied Psychology*, *81*(4), 358–368. doi:10.1037/0021-9010.81.4.358 PMID:8751453

Carasco-Saul, M., Kim, W., & Kim, T. (2015). Leadership and Employee Engagement. *Human Resource Development Review*, *14*(1), 38–63. doi:10.1177/1534484314560406

Chanana, N., & Sangeeta. (2021). Employee engagement practices during COVID-19 lockdown. *Journal of Public Affairs*, *21*(4). Advance online publication. doi:10.1002/pa.2508 PMID:33041656

Chandani, A., Mehta, M., Mall, A., & Khokhar, V. (2016). Employee Engagement: A Review Paper on Factors Affecting Employee Engagement. *Indian Journal of Science and Technology*, *9*(15). Advance online publication. doi:10.17485/ijst/2016/v9i15/92145

Chhajer, R., Rose, E. L., & Joseph, T. (2018). Role of Self-efficacy, Optimism and Job Engagement in Positive Change: Evidence from the Middle East. *Vikalpa*, *43*(4), 222–235. doi:10.1177/0256090918819396

Daqar, M. A. M. A., & Smoudy, A. K. A. (2019). Employee Engagement Level: The Transform from Employee to Partner. *Modern Applied Science*, *13*(7), 115. doi:10.5539/mas.v13n7p115

de Klerk, S., & Stander, M. W. (2014). Leadership empowerment behaviour, work engagement and turnover intention: The role of psychological empowerment. *Journal of Positive Management*, *5*(3), 28. doi:10.12775/JPM.2014.018

George, G., & Joseph, B. (2015). A study on the relationship between Employee engagement and organizational citizenship with reference to employees working in travel organizations. *Atna - Journal of Tourism Studies*, *10*(2), 33–44. doi:10.12727/ajts.14.3

Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *The Journal of Applied Psychology*, *87*(2), 268–279. doi:10.1037/0021-9010.87.2.268 PMID:12002955

Harter, J. K., Schmidt, F. L., & Keyes, M. C. L. (n.d.). *Well-being in the workplace and its relationship to business outcomes: A review of the Gallup studies*. https://www.researchgate.net/publication/237670380

Hoque, A. S. M. M., Awang, Z., Siddiqui, B. A., & Sabiu, M. S. (2018). Role of Employee Engagement on Compensation System and Employee Performance Relationship among Telecommunication Service Providers in Bangladesh. *International Journal of Human Resource Studies*, *8*(3), 19. doi:10.5296/ijhrs.v8i3.13081

Ibrahim, A. U., & Daniel, C. O. (2019). Impact of Performance Appraisal on Employee Productivity in Nigeria Breweries Plc. *International Journal of Business and Management*, *7*(5). Advance online publication. doi:10.24940/theijbm/2019/v7/i5/BM1905-044

Kumar, S., & Choudhury, S. (2021). Migrant workers and human rights: A critical study on India's COVID-19 lockdown policy. *Social Sciences & Humanities Open*, *3*(1), 100130. doi:10.1016/j.ssaho.2021.100130

Li, P., Fu, J.-B., Li, K.-F., Liu, J.-N., Wang, H.-L., Liu, L.-J., Chen, Y., Zhang, Y.-L., Liu, S.-L., Tang, A., Tong, Z.-D., & Yan, J.-B. (2020). Transmission of COVID-19 in the terminal stages of the incubation period: A familial cluster. *International Journal of Infectious Diseases*, *96*, 452–453. doi:10.1016/j.ijid.2020.03.027 PMID:32194239

Macey, W. H., & Schneider, B. (2008). The Meaning of Employee Engagement. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, *1*(1), 3–30. doi:10.1111/j.1754-9434.2007.0002.x

Medlin, B., & Green, K. W. Jr. (2009). Enhancing performance through goal setting, engagement, and optimism. *Industrial Management & Data Systems*, *109*(7), 943–956. doi:10.1108/02635570910982292

Messner, W. (2013). Effect of organizational culture on employee commitment in the Indian IT services sourcing industry. *Journal of Indian Business Research*, *5*(2), 76–100. doi:10.1108/17554191311320764

Monje Amor, A., Xanthopoulou, D., Calvo, N., & Abeal Vázquez, J. P. (2021). Structural empowerment, psychological empowerment, and work engagement: A cross-country study. *European Management Journal*, *39*(6), 779–789. doi:10.1016/j.emj.2021.01.005

Mowday, R. T., Steers, R. M., & Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*, *14*(2), 224–247. doi:10.1016/0001-8791(79)90072-1

Organization, W. H. (2020). *Getting your workplace ready for COVID-19*. https://www.who.int/teams/risk-communication/employers-and-workers?gclid=EAIaIQobChMI04XCqvXW9QIVcJFmAh3ZiAelEAAYASAAEgIu-PD_BwE

Ouweneel, E., Schaufeli, W. B., & le Blanc, P. M. (2013). Believe, and You Will Achieve: Changes over Time in Self-Efficacy, Engagement, and Performance. *Applied Psychology. Health and Well-Being*, *5*(2), 225–247. doi:10.1111/aphw.12008 PMID:23616308

Parent, J. D., & Lovelace, K. J. (2018). Employee engagement, positive organizational culture and individual adaptability. *On the Horizon*, *26*(3), 206–214. doi:10.1108/OTH-01-2018-0003

Prameswari, G. A. (2019). The effects of job characteristics on work engagement. *Russian Journal of Agricultural and Socio-Economic Sciences*, *85*(1), 475–479. doi:10.18551/rjoas.2019-01.58

Rai, A., Ghosh, P., Chauhan, R., & Mehta, N. K. (2017). Influence of job characteristics on engagement: Does support at work act as moderator? *The International Journal of Sociology and Social Policy*, *37*(1/2), 86–105. doi:10.1108/IJSSP-10-2015-0106

Resick, C. J., Baltes, B. B., & Shantz, C. W. (2007). Person-Organization Fit and Work-Related Attitudes and Decisions: Examining Interactive Effects With Job Fit and Conscientiousness. *The Journal of Applied Psychology*, *92*(5), 1446–1455. doi:10.1037/0021-9010.92.5.1446 PMID:17845097

Rhoades, L., Eisenberger, R., & Armeli, S. (2001). Affective commitment to the organization: The contribution of perceived organizational support. *The Journal of Applied Psychology*, *86*(5), 825–836. doi:10.1037/0021-9010.86.5.825 PMID:11596800

Rich, B. L. (2014). *Job engagement: Antecedents and effects on job performance*. https://www.researchgate.net/publication/258130125

Robertson, I. T., & Cooper, C. L. (2010). Full engagement: The integration of employee engagement and psychological well-being. *Leadership and Organization Development Journal*, *31*(4), 324–336. doi:10.1108/01437731011043348

Rurkkhum, S., & Bartlett, K. R. (2012). The relationship between employee engagement and organizational citizenship behaviour in Thailand. *Human Resource Development International*, *15*(2), 157–174. doi:10.1080/13678868.2012.664693

Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, *21*(7), 600–619. doi:10.1108/02683940610690169

Schuler, R., Mellahi, K., McDonnell, A., & Collings, D. G. (2017). Talent management: A systematic review and future prospects. *European Journal of International Management*, *11*(1), 86. doi:10.1504/EJIM.2017.081253

Singh, J., & Arumugam, T. (2021). Article in Global Business and Management Research. *An International Journal*. https://www.researchgate.net/publication/349108911

Sun, L., & Bunchapattanasakda, C. (2019). Employee Engagement: A Literature Review. *International Journal of Human Resource Studies*, *9*(1), 63. doi:10.5296/ijhrs.v9i1.14167

Vorina, A., Simonič, M., & Vlasova, M. (2017). An Analysis of the Relationship Between Job Satisfaction and Employee Engagement. *Economic Themes*, *55*(2), 243–262. doi:10.1515/ethemes-2017-0014

Xiao, Y., Becerik-Gerber, B., Lucas, G., & Roll, S. C. (2021). Impacts of Working From Home During COVID-19 Pandemic on Physical and Mental Well-Being of Office Workstation Users. *Journal of Occupational and Environmental Medicine*, *63*(3), 181–190. doi:10.1097/JOM.0000000000002097 PMID:33234875

Xu, J., & Cooper Thomas, H. (2011). How can leaders achieve high employee engagement? *Leadership and Organization Development Journal*, *32*(4), 399–416. doi:10.1108/01437731111134661

Chapter 10
A Study on the Impact of COVID-19 on Street Vendors in India:
With Reference to Vijayawada City, Andhra Pradesh, India

Srinivasa Rao Dokku
https://orcid.org/0000-0002-8082-9569
PVP Siddhartha Institute of Technology, India

Rajesh C. Jampala
PB Siddhartha College of Arts and Science, India

P. Adi Lakshmi
PVP Siddhartha Institute of Technology, India

ABSTRACT

The COVID-19 pandemic has led to a dramatic loss of human life worldwide and presents an unprecedented challenge to public health, food systems, and the world of work. The economic and social disruption caused by the pandemic is devastating: tens of millions of people are at risk of falling into extreme poverty, while the number of undernourished people, currently estimated at nearly 690 million, could increase by up to 132 million by the end of the year. This chapter analyses the impact of COVID-19 on livelihood of street vendors in India. The study was conducted in Vijayawada City, Andhra Pradesh, India. The study considered 100 street vendors covering all types of street vendors like food vendors, flower vendors, vegetable vendors, etc. Analysis of the data showed that COVID-19 had a significant impact on the street vendors in the selected cities. During COVID-19, street vendors' revenues, profits, savings, number of customers, and working hours have dropped significantly. At the same time, household spending, debt per provider, and healthcare costs have increased significantly.

DOI: 10.4018/978-1-6684-5274-5.ch010

INTRODUCTION

There is no modern-day equivalent to the COVID-19 crisis, which has resulted in over 379,259,420 confirmed cases and over 5,693,282 deaths worldwide (as on 01.02.2022). Contingency planning has resulted in a reduction in workforce across all economic sectors, resulting in many job losses. As a result, it has had a significant impact on human health and the global economy. In response to the pandemic, most governments agreed to close their borders in order to slow the spread of the virus and avoid having too many infected people. This policy was also aimed at preventing the health-care system from collapsing while also attempting to save many lives.

Countries are experiencing the second and third waves of the pandemic while battling the worst recession since World War II. Across countries, sectors, and segments, small businesses suffer the most, and India is no exception. More than 99 percent of businesses in India are classified as Micro, Small, and Medium, and 94 percent are unorganized.

The impact of the COVID-19 pandemic on street vendors in India began even before the lockdown was imposed, because weekly markets were closed one week before the lockdown and vendors were not permitted to operate. Women street vendors were disproportionately affected because they lacked access to assets and savings. Furthermore, it was revealed during the qualitative interviews that the pandemic was particularly harsh on women street vendors because the job requires constant mobility and interaction with customers, and mobility was restricted during the lockdown. Furthermore, without transportation, street vendors found it difficult to reach their vending locations, and eviction drives occurred during the lockout period.

Approximately 95% of enterprises were negatively impacted by the nationwide lockdown enforced in April 2020, and 70% of businesses were disrupted until August 2020 during the Covid19 period. According to statistics, about 40% of enterprises were still disrupted till the end of February 2021, even after incremental unlocking. (Tripati A. 2021).

REVIEW OF LITERATURE

The parallel street vending economy has an estimated daily turnover of Rs 80 crore, and each street entrepreneur/trader employs an average of three individuals as employees, partners, or commission workers. They all make a living, albeit a meager one. According to the National Hawkers Federation, 50% of street vendors sell food. Vendors sell at least 35 percent of the fruits and vegetables sold in urban areas and in far-flung, isolated rural locations. Clothing, plastic products, unbranded china, cutlery, and household goods are sold by the remaining 20% of vendors. The shutdown has had a significant economic impact on the supply chain and informal sector production lines, which have shut down as hawkers have left the streets Clothing, plastic products, unbranded china, cutlery, and household goods are sold by the remaining 20% of vendors. The shutdown has had a significant economic impact on the supply chain and informal sector production lines, which have shut down as hawkers have left the streets (Mukherjee, 2020). As self-employed entrepreneurs, street vendors operate in a “low circuit” economy, which has been completely disrupted by the lockdown. The shutdown was established when the COVID-19 pandemic unfolded as the key preventive strategy to halt the virus’s spread over the world. India also had one of the most severe nationwide lockdowns, with the informal sector employees bearing the brunt of the consequences. As self-employed entrepreneurs, street vendors operate in a “low circuit” economy, which has been completely disrupted by the lockdown. The shutdown was established when the COVID-19 pandemic unfolded as the key preventive strategy to halt the virus's spread over the world. India also had one of the most severe nationwide lockdowns, with the informal sector employees bearing the brunt of the consequences. (Sonu R. Meher et al.)

According to **Dun & Bradstreet (2021)**, more than 82 percent of businesses experienced a negative impact, and 70 percent believe it will take them nearly a year to return to pre-COVID-19 levels of demand. Around 60% of businesses polled expect more measures and assistance, including government interventions. According to the results of their survey, the top three challenges that may impede Small Businesses from scaling up are Market Access (42 percent), Improving Overall Productivity (37 percent), and Having Access to More Finance (34 percent).

It is a well-known fact that the crisis of the Corona pandemic and the subsequent lockdown has shown its worst face to the class of informal and street vendors in the country. This impact study reiterates the presence of inequality between class, gender, and the informal worker population. It attempts to evidence (and is part of a series of other reports on different sectors of informal work) about the sector of workers is involved in street vending with a special focus impact on the earnings, expenditure, savings, etc.

Need for the Study

The primary need of this study is to understand how street vendors are suffering from the Covid19 pandemic in their self-employment, how their business activities have changed, and what things they need to stabilize.

Objectives of the Study

The following are the primary objectives of this study

- To know the impact of Covid-19 on livelihood of street vendors
- To study the impact of Covid-19 on street vendors business, profits and expenses.
- To compare the income, expenditure, etc. before and during the Covid19 period.
- To know the monetary or non-monetary support received from the government during covid-19

Hypothesis of the Study

The hypothesis of the study are:

1. H_0: There is no significant Impact of Covid19 on Income of the street vendors:
   H_1: There is a significant impact of Covid19 on Income of the street vendors
2. H_0: There is no significant impact of Covid19 on number of Working hours of the street vendors
   H_1: There is a significant impact of Covid19 on number of Working hours of the street vendors
3. H_0: There is no significant impact of Covid19 on number of Customers of the street vendors
   H_1: There is a significant impact of Covid19 on number of Customers of the street vendors
4. H_0: There is no significant impact of Covid19 on Investment of the street vendors
   H_1: There is a significant impact of Covid19 on Investment of the street vendors
5. H_0: There is no significant impact of Covid19 on Profit of the street vendors

H_1: There is a significant impact of Covid19 on Profit of the street vendors

6. H_0: There is no significant impact of Covid19 on Savings of the street vendors
   H_1: There is a significant impact of Covid19 on Savings of the street vendors
7. H_0: There is no significant impact of Covid19 on Household expenditure of the street vendors
   H_1: There is a significant impact of Covid19 on Household expenditure of the street vendors
8. H_0: There is no significant impact of Covid19 on personal debt of the street vendors
   H_1: There is a significant impact of Covid19 on personal debt of the street vendors
9. H_0: There is no significant impact of Covid19 on Educational Expenditure of the street vendors
   H_1: There is a significant impact of Covid19 on Educational Expenditure of the street vendors
10. H_0: There is no significant impact of Covid19 on Health expenditure of the street vendors
    H_1: There is a significant impact of Covid19 on Health expenditure of the street vendors

METHODOLOGY OF THE STUDY

The information was gathered from 100 street vendors in Vijayawada, Andhra Pradesh, India. Income, expenditure, savings, and so on were all analyzed using descriptive statistics.

Delimitation of the study: The study was delimited to 100 street vendors in the Vijayawada City, Andhra Pradesh, India.

Population of the study: Population for the present study consists of all the 100 respondents who are doing small business in Vijayawada streets. The study includes all type of street vendors.

Sample of the study: In the current study, hundred street vendors were chosen using a random sampling technique, and the sample includes Flowers vendors, Food items vendors, Fruits vendors, Home Essentials vendors, Vegetable's vendors and other vendors were chosen at random as the sample for the current study. The sample respondents are in Vijayawada City of Andhra Pradesh, India. The total sample for the study is 100 respondents

Tools and Techniques

a) **Close ended questionnaire**: Researcher had constructed close ended Questionnaire regarding problem faced by street vendors relating to their income, expenditure, number of customers visited to their business points, etc. during the Covid10
b) **Open ended questionnaire:** The open-ended questions were developed on problems related to impact of Covid19 on the business of the respondents.
c) **Observation schedule**: Researcher had personally observed the business of the respondents and Covid19 precautions at their business points.

Period of the study: This project has done between the years December 2020 – November 2021 in consideration of Vijayawada city, Andhra Pradesh, India.

Data analysis Techniques & Software's used: the study has used descriptive statistics to know the relationships and paired 't' test for compare the impact of covid19 on the street vendors in the Vijayawada City, Andhra Pradesh. India. The study has used Ms Excel and SPSS software for data analysis purpose.

DATA ANALYSIS AND INTERPRETATION

Demographic Factors and Descriptive Statistics of the Study

Table - 1 presents the descriptive statistics demographic factors of the study. Out of 100 samples, 71 respondents are male vendors, and 29 respondents are female vendors. According to the age classification, 7% of respondents are younger than 20 years old, while 33% are between the ages of 21 and 30 years old. 32% of those polled are between the ages of 31 and 40. Only 2% of the respondents are over the age of 50, while 22% are between the ages of 40 and 50. Among total respondents 100 respondents, 18 per cent respondentare studied Intermediate, 4 per cent respondents are studied above intermediate. 50 per cent of the respondents are studied below 10th and 28 per cent of the respondents are illaturates. According to the type of business, 38 respondents are selling food items, 21% are selling vegetables, 9% are selling fruits, and 8% are selling flowers and 8% are selling home essentials.

Sixty-six percent of the 100 respondents started their business between 2016 and 2019, ten percent between 2012 and 2015, and twenty-four percent started in 2020. Among all respondents, 53% earn less than 1000 rupees per day, 45% earn between 1000 and 3000 rupees per day, and 2% earn between 3000-5000 rupees per day. Sixty percent of the respondents in the collected 100-person sample are investing less than 1000 rupees, 2% are investing 1000-3000 rupees, and 38% are investing 3000-5000 rupees. Among the 100 respondents, 55% have 3 to 4 dependents, 34% have 0 to 2 dependents, and 11% have 5 to 6 dependents.

Table 1. Demographic factors

Sl. No.		Options	Number of respondents
1	Gender	Male	79
		Female	21
		Total	100
2	Age of the respondents	**Age**	**Respondents**
		20-30	33
		30-40	32
		40-50	22
		50-60	4
		Above 50	2
		Below-20	7
		Total	100
3	Education qualification of respondents	10th-Intermediate	18
		Above Intermediate	4
		Below 10th	50
		Not educated	28
		Total	100

Continued on following page

Table 1. Continued

Sl. No.		Options	Number of respondents
4	Products selling by respondents	**Products**	**Respondents**
		Flowers vendors	8
		Food items vendors	38
		Fruits vendors	9
		Home Essentials vendors	8
		Vegetables vendors	21
		Other vendors	16
		Total	100
5	Years of experience in the business		
		More than 10 years	66
		5 to 10 years	10
		Less than 5	24
		Total	100
6	Income per day	**Income**	**Respondents**
		1000-3000	45
		3000-5000	2
		less than 1000	53
		Total	100
7	Investment of the respondents	**Investment**	**Respondents**
		less than 1000	60
		1000-3000	2
		3000-5000	38
		Total	100
8	Dependent members on the respondent	**Dependents**	**Respondents**
		0 to 2	34
		3 to 4	55
		5 to 6	11
		Total	100

Income of the Street Vendors Before and During the Covid19 Period

Prior to the Covid19 period, the respondents' minimum daily income was Rs.600, and their maximum daily income was Rs.9000. The respondents' average daily income is Rs.3366, with a standard deviation of Rs.1886.38. During the Covid19 period, respondents' minimum and maximum daily incomes are reduced to Rs. 450 and Rs. 7000, respectively. During the Covid19, the average income of the respondents fell from Rs.3366 to Rs.2700 per day, with a standard deviation of Rs. 1642.

Working Hours of the Street Vendors Before and During the Covid19 Period

Prior to Covid19, the average number of working hours per day was 10 hours. The minimum and maximum working hours per day are 8 and 14 hours, respectively. Numbers of working hours are decreased during the Covid19 due to government restrictions and customer availability. During the covid19, the average working hour was only 8.85 hours per day. Respondents work a minimum of 6 hours per day and a maximum of 12 hours per day.

Number of Customers of the Street Vendors Before and During the Covid19 Period

Covid19 has influenced the city's purchasing habits[16]. According to a study conducted prior to covid19, the average number of customers per shop is 200. The number of customers per shop is reduced to 128 per day during the covid19. Food vendors are getting more customers, and they used to get over 400 customers per day, but that number has dropped significantly during the Covid19 period.

Investments of the Street Vendors Before and During the Covid19 Period

Covid19 has had a significant impact on the street vendor business in the selected city of Andhra Pradesh, India. Prior to Covid19, the average daily wage was Rs. 2350, but during the Covid19 period, it was only Rs.1890. When compared to other vendors, food vendors invest more money per day, while flower vendors invest less.

Profit of the Street Vendors Before and During the Covid19 Period

During the Covid19 period, the average profit of respondents fell from 1890 to 1000. Food vendors' income is significantly lower when compared to other vendors, and food vendors are currently being impacted during the Covid19 period. Before the Covid19 period, the minimum profit was Rs. 180, but it was only Rs. 135 during the Covid19 period.

Savings of the Street Vendors Before and During the Covid19 Period

The average savings of respondents fell from Rs.170 per day to Rs.100 per day. The maximum savings before Covid19 were Rs. 500 per day, and the maximum savings during Covid19 are Rs. 360. During the Covid19 period, more than half of the respondents have no savings.

Household Expenditure of the Street Vendors Before and During the Covid19 Period

During the Covid19 period, the average household expenditure increased from Rs. 1059 to Rs. 1134, while the minimum household expenditure decreased from Rs. 192 to Rs. 19 per day. The maximum daily household expenditure increased from Rs.2560 to Rs.2940. According to the respondents' opening statements, household expenditure has increased as a result of rising prices for essential goods and services.

Debt of the Street Vendors Before and During the Covid19 Period

Covid19 has a greater influence on respondents' debt burden. According to respondents, their average debt has risen from Rs. 49685 to Rs. 61014. According to the respondents, the maximum debt has risen from Rs. 135000 to Rs. 165375.

Education Expenditure of the Street Vendors Before and During the Covid19 Period

Respondents spend an average of Rs.471.24 per month on education before, during, and after the Covid19 period. It was discovered that there was no increase or decrease in respondents' educational expenditure during the Covid19 period.

Health Expenditure of the Street Vendors Before and During the Covid19 Period

The respondents' average health expenditure has increased from Rs. 64 per month to Rs.175.76 per month. Respondents' maximum monthly health spending has been increased from Rs. 450 to Rs. 600. It was discovered that 40% of the respondents have high blood pressure, diabetes, or other health issues. It has also been discovered that 47% of respondents are infected with the Covid19 virus and are experiencing post-covid19 problems.

Table 2. Descriptive statistics of the study

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
Income before Covid19	100	8400	600	9000	3366.00	1886.380	3558428.283
Income during Covid19	100	6550	450	7000	2700	1642	2698686
Working hours before Covid19	100	6	8	14	10.85	2.042	4.169
Working hours during Covid19	100	6	6	12	8.85	2.042	4.169
Customers before Covid19	100	372	28	400	200.62	110.035	12107.652
Customers during Covid19	100	222	18	240	128.38	63.797	4070.036
Investment before Covid19	100	5880	420	6300	2356.20	1320.466	1743629.859
Investment during Covid19	100	4585	315	4900	1890.00	1149.938	1322356.566
Profit before Covid19	100	2520	180	2700	1009.80	565.914	320258.545
Profit during Covid19	100	1965	135	2100	810.00	492.830	242881.818
Savings before Covid19	100	500	0	500	170.50	129.703	16822.980
Savings during Covid19	100	360	0	360	100.00	110.746	12264.646
Household exp. before Covid19	100	2368	192	2560	1059.94	579.611	335948.481
Household exp. during Covid19	100	2751	189	2940	1134.00	689.963	476048.364
Debt before Covid19	100	135000	0	135000	49685.00	29612.877	876922500.000
Debt during Covid19	100	165375	0	165375	61014.35	36051.895	1299739131.947
Edu. Exp. before Covid19	100	1176	84	1260	471.24	264.093	69745.194
Edu. Exp. during Covid19	100	1176	84	1260	471.24	264.093	69745.194
Health exp. before Covid19	100	450	0	450	64.10	117.698	13852.717
Health exp. during Covid19	100	600	0	600	175.76	189.031	35732.839

Testing of Hypothesis

Table - 3 presents the results of hypothesis:

H_0: There is no significant Impact of Covid19 on Income of the street vendors
H_1: There is a significant impact of Covid19 on Income of the street vendors

The mean income of the sample was decreased from Rs.3384 in before Covid19 to Rs.2715 during the Covid19 period. Pair 't' statistics have a calculated value of 14.115. As a result, it is concluded that Covid19 has a significant impact on the income of street vendors in the selected city of Andhra Pradesh, India at a level of 0.005 level of significance. Hence reject the null hypothesis and accept the alternative hypothesis.

H_0: There is no significant impact of Covid19 on number of Working hours of the street vendors
H_1: There is a significant impact of Covid19 on number of Working hours of the street vendors

The mean working hours of the sample was decreased from 10.86 hours per day in before Covid19 to 8.86 hours per day during the Covid19 period. Pair 't' statistics have a calculated value of 14.136. As a result, it is concluded that Covid19 has a significant impact on the working hours of street vendors in the selected city of Andhra Pradesh, India at a 0.005% level of significance. Hence reject the null hypothesis and accept the alternative hypothesis.

H_0: There is no significant impact of Covid19 on number of Customers of the street vendors
H_1: There is a significant impact of Covid19 on number of Customers of the street vendors.

The mean number of customers visiting the shop was decreased from 200 customers per day in before Covid19 to 128 customers per day during the Covid19 period. Pair't' statistics have a calculated value of 5.407. As a result, it is concluded that Covid19 has a significant impact on the number of customers visiting their shop in the selected city of Andhra Pradesh, India at the 0.005% level of significance. Hence reject the null hypothesis and accept the alternative hypothesis.

H_0: There is no significant impact of Covid19 on Investment of the street vendors
H_1: There is a significant impact of Covid19 on Investment of the street vendors

The mean investment of the sample was decreased from Rs.2369 in before Covid19 to Rs.1900 during the Covid19 period. Pair 't' statistics have a calculated value of 14.115. As a result, it is concluded that Covid19 has a significant impact on business investment of street vendors in the selected city of Andhra Pradesh, India at a 0.005% level of significance. Hence reject the null hypothesis and accept the alternative hypothesis.

H_0: There is no significant impact of Covid19 on Profit of the street vendors
H_1: There is a significant impact of Covid19 on Profit of the street vendors

The mean profits of the sample were decreased from Rs.1015 per day in before Covid19 to Rs.814 per day during the Covid19 period. Pair 't' statistics have a calculated value of 12.125. As a result, it is concluded that Covid19 has a significant impact on the profits of street vendors in the selected city of Andhra Pradesh, India at the 0.005% level of significance. Hence reject the null hypothesis and accept the alternative hypothesis.

H_0: There is no significant impact of Covid19 on Savings of the street vendors
H_1: There is a significant impact of Covid19 on Savings of the street vendors

The mean savings of the sample was decreased from Rs.172 per day in before Covid19 to Rs.101 per day during the Covid19 period. Pair 't' statistics have a calculated value of 11.123. As a result, it is concluded that Covid19 has a significant impact on savings of street vendors in the selected city of Andhra Pradesh, India at the 0.005% level of significance. Hence reject the null hypothesis and accept the alternative hypothesis.

H_0: There is no significant impact of Covid19 on Household expenditure of the street vendors
H_1: There is a significant impact of Covid19 on Household expenditure of the street vendors

The mean income of the sample was increased from Rs.1066 in before Covid19 to Rs.1140 during the Covid19 period. Pair 't' statistics have a calculated value of -3.957. As a result, it is concluded that Covid19 has a significant impact on household expenditure of street vendors in the selected city of Andhra Pradesh, India at the 0.005% level of significance. Hence reject the null hypothesis and accept the alternative hypothesis.

H_0: There is no significant impact of Covid19 on personal debt of the street vendors
H_1: There is a significant impact of Covid19 on personal debt of the street vendors

The mean debt of the sample was increased from Rs.50186 in before Covid19 to Rs.61630 during the Covid19 period. Pair 't' statistics have a calculated value of -17.492. As a result, it is concluded that Covid19 has a significant impact on personal debt of street vendors in the selected city of Andhra Pradesh, India at a 0.005% level of significance. Hence reject the null hypothesis and accept the alternative hypothesis.

H_0: There is no significant impact of Covid19 on Educational Expenditure of the street vendors
H_1: There is a significant impact of Covid19 on Educational Expenditure of the street vendors

The mean expenditure on education of the sample was before and during the Covid19 period was Rs.472. Pair 't' statistics have a calculated value of 1.579. As a result, it is concluded that Covid19 has not having any significant impact on educational expenditure of street vendors in the selected city of Andhra Pradesh, India at the 0.005% level of significance. Hence accept the null hypothesis and reject the alternative hypothesis. It was also identified that, most of the school's colleges conducting online class and they haven't decreased their tuition fee in the studied area.

H_0: There is no significant impact of Covid19 on Health expenditure of the street vendors
H_1: There is a significant impact of Covid19 on Health expenditure of the street vendors

The mean expenditure on health of the sample was increased from Rs.64 per month to in before Covid19 to Rs.175 per month during the Covid19 period. Pair 't' statistics have a calculated value of -7.57. As a result, it is concluded that Covid19 has a significant impact on the expenditure on health of street vendors in the selected city of Andhra Pradesh, India at the 0.005% level of significance. Hence reject the null hypothesis and accept the alternative hypothesis.

Table 3. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pair 1	Income before Covid19	3384.85	99	1886.491		14.115	98	.000
	Income during Covid19	2715.151	99	1644.0904462	165.23			
Pair 2	Working hours before Covid19	10.86	99	2.050	.206	-14.136	98	.000
	Working hours during Covid19	8.86	99	2.050	.206			
Pair 3	Customers before Covid19	200.21	99	110.519	11.108	5.407	98	.000
	Customers during Covid19	128.54	99	64.102	6.443			
Pair 4	Investment before Covid19	2369.39	99	1320.544	132.720	14.115	98	.000
	Investment during Covid19	1900.61	99	1150.863	115.666			
Pair 5	Profit before Covid19	1015.45	99	565.947	56.880	12.125	98	.000
	Profit during Covid19	814.55	99	493.227	49.571			
Pair 6	Savings before Covid19	172.22	99	129.209	12.986	11.123	98	.000
	Savings during Covid19	101.01	99	110.845	11.140			
Pair 7	Household exp. before Covid19	1065.80	99	579.577	58.250	-3.952	98	.000
	Household exp. during Covid19	1140.36	99	690.518	69.400			
Pair 8	Debt before Covid19	50186.87	99	29333.027	2948.080	-17.492	98	.000
	Debt during Covid19	61630.66	99	35701.972	3588.183			
Pair 9	Edu. Exp. before Covid19	473.88	99	264.109	26.544	1.579	98	.128
	Edu. Exp. during Covid19	473.88	99	264.109	26.544			
Pair 10	Health exp. before Covid19	64.75	99	118.117	11.871	-7.579	98	.000
	Health exp. during Covid19	175.76	99	189.031	18.998			

OTHER FINDINGS OF THE STUDY

1. One hundred percent of respondents have received a single dose of Covid19 vaccination, and eighty-two percent have completed their second dose.
2. 87 percent of respondents are affected by Covid19, and nearly 40 percent are experiencing post-Covid19 problems.
3. 86 percent of the 100 respondents are aware of the Covid-19 guidelines, while 14 percent are unaware.
4. Only 17% of the 100 respondents are wearing gloves, while the remaining 83 percent are not wearing any gloves.
5. Half of the female and male vendors do not use the sanitizers on a regular basis. In addition, only 17 percent of all respondents use gloves.
6. Vendors who are uneducated are also unaware of the government schemes available to street vendors. Approximately 73 percent of respondents are unaware of any government-provided schemes. These schemes are well-known among vendors with less than a high school diploma.

7. From the collected 100 sample, 86% of respondents did not receive any financial services from the government, while only 14% received assistance from the government.
8. According to the collected data, 73% of respondents are unaware of any government schemes related to street vendors, while only 27% are aware of government schemes related to street vendors.
9. Most of the street vendors are indebted to unorganized sources. Most of the lenders are charging high interest rates (more than 24 per cent per Annam)
10. 92% of street vendors do not have identification cards.

CONCLUSION

The number of street vendors in India is increasing as they are given more opportunities by the central and state governments. However, because of the Covid-19 pandemic, they have fallen into deeper poverty, with a lot of debt and fewer opportunities. Furthermore, more than 20 respondents have begun the covid-19 pandemic due to the loss of their employment, which has caused them to cut off their regular income, leaving them with more debts and no savings. To alleviate the burden, the government and authorities should provide special financial schemes to street vendors.

Most vendors are unaware of the government-related financial benefits available to them, and they are also failing to take the necessary COVID-19 safety precautions. They are burdened by the losses and other expenses incurred because of the pandemic. According to the opinions of a few street vendors, most of them are struggling to meet their family's needs.

Based on the data analysis, it can be determined that more than 80% of respondents have suffered with the Covid19. The income, profits, savings, number of working hours per day, and number of customer visits of street vendors are all significantly reduced. At the same time, street vendors' expenditures, such as health, household, and educational expenditure, have increased significantly.

REFERENCES

Allison, N., & Rohel, J. (2020). Epilogue: A Roundtable on Street Vending. *Gastronomica*, *20*(1), 21–22. doi:10.1525/gfc.2020.20.1.21

Arsene, M. H. (2020). Understanding the roles of street vendors of agricultural commodities during the COVID-19 outbreak in the informal economy. *Open Journal of Social Sciences*, 115-129.

Bartik, A. W., Bertrand, M., Cullen, Z., Glaeser, E. L., Luca, M., & Stanton, C. (2020). The Impact of COVID-19 on Small Business Outcomes and Expectations. *Proceedings of the National Academy of Sciences of the United States of America*, *117*(30), 17656–17666. doi:10.1073/pnas.2006991117 PMID:32651281

Chakraborty & Ahuja. (2021). *Emerging from the Lockdown: Insights from Women Street Vendors' Lives in Delhi.* Institute of Social Studies Trust, Working Paper.

Dun & Bradstreet. (2021). *Impact of COVID-19 on Small Businesses in India and the Way Ahead.* White paper. https://www.dnb.co.in/file/reports/Whitepaper_Impact-of-COVID-19-on-Small-Businesses.pdf

Floreene & Laloo, . (2017). *Street vendors the inormal entrepreneurs, an analysis on realization of their goals and the consequences in their livelihood. International Journal of Pure and Applied Management Sciences*.

Ibelieve Isaac, Y. A. (2020). *Impacts of physical planning regulation on street trading livelihood: street traders right to the city perspective. Department of Urban and Regional Planning, Federal University of Technology*. Minna.

Kaur, G. (2020). *Impact of Covid 19 National lockdown on women vendors in Delhi*. Institute of Social Studies Trust.

Lu, Y., Wu, J., Peng, J., & Lu, L. (2020). The Perceived Impact of the Covid-19 Epidemic: Evidence from a Sample of 4807 SMEs in Sichuan Province, China. *Environmental Hazards*, *19*(4), 323–340. doi:10.1080/17477891.2020.1763902

Mallikarjun, P., & Shegunshi, M. (2020). COVID-19 impact on Indian Labour class. *Mukt Shabd Journal*, 6324-6330.

Meher, S. R., Ranjan, A., Shukla, P., & Atram, Y. (2021). Effect of COVID-19 lockdown on the livelihood of street vendors in Maharashtra, India. *International Journal of Community Medicine and Public Health*, *8*(11), 5297–5303. doi:10.18203/2394-6040.ijcmph20214263

Middha, B., & Lewis, T. (2022). Pop-up food provisioning as a sustainable third space: Reshaping eating practices at an inner urban university. *The Australian Geographer*, *0*(0), 1–18.

Miyakawa, D., Oikawa, K., & Ueda, K. (2021). Firm Exit during the COVID-19 Pandemic: Evidence from Japan. *Journal of the Japanese and International Economies*, *59*, 101118. doi:10.1016/j.jjie.2020.101118 PMID:35702632

Mohamed Buhejil, K. d. (2020). The extend of covid-19 pandemic socio-economic impact on global overty. A gobal integrative multidisciplinary review. *American Journal of Economics*.

MSMEs in India – Post Covid Scenario. (2021, Oct. 21). *The Times of India*.

Mukerjee. (2020). The Streets Are Empty. How Are Hawkers Surviving This Lockdown? *The Whire*, *23*.

Narendra Kiran, D. (2019). Problems and prospects of street vendors:A study with reference to viskhapatnam city. *International Journal of Management, Technology and Engineering*, 2500-2516.

Nitya Maniktala, T. J. (2020). State of street vendors in India: Pre and post COVID-19 Analysis. *International Journal of Policy Sciences and Law*, 542-560.

Reardon, T., Mishra, A., Nuthalapati, C. S. R., Bellemare, M. F., & Zilberman, D. (2020). COVID-19's Disruption of India's Transformed Food Supply Chains. *Economic and Political Weekly*, *55*(18), 18–22.

Richa Mukhra, K. K. (2020). *Agony of the labours and daily wagers during the covid-19 induced lockdown in India*. UGC Centre of Advanced Study.

Romero-Michel, Mokay-Ramírez, Delgado-Machuca, Delgado Enciso, Aurelien-Cabezas, & Tiburcio. (2021). Health and economic measures in response to the COVID-19 pandemic Effect on street vendors. *J Infect Dev Ctries*, *15*(2), 198-203. doi:10.3855/jidc.13465

Seerangarajan, L. (2019). Assessment of skill sets of street vendors in rural market at Dindigul district. *Journal of Analysis and Computation*.

Sharit, K., & Bhowmik, D. S. (2011). *Financial accessibility of the street vendors in India: Cases of inclusion and exclusion.* Mumbai: School of Management and Labour Studies.

Sohini Sengupta, M. K. (2020). Social policy, COVID-19 and impoverished migrants: Challenges and prospects in locked down India. *International Journal of Community and Social Development*, 153-172.

Sonobe, T., Takeda, A., Yoshida, S., & Truong, H. T. (2021). *The impact of the Covid-19 Pandemic on Micro, Small, and Medium Enterprises in Asia and Their Digitalization Reponses.* ADBI Working Paper Series, no. 1241, Asian Development Bank Institute.

Sonu, R. (n.d.). *Promise and reality*. Civil Society Initiative. https://im4change.org/upload/files/Citizen%27s%20Report%20on%20Tear%20Two%20of%20the%20NDA-II%20Government%202020-2021%20Promises %20and%20Reality. pdf

Vijayavhaskar, D. K. (2021). A socio-economic study on financial inclusion in India- Street vendor prespective. *Palarch's Journal of Archaeology of Egypt/Egyptology*.

Zukin, S., Kasinitz, P., & Chen, X. (2014). *Global Cities, Local Streets: Everyday Diversity from New York to Shanghai*. Routledge.

KEY TERMS AND DEFINITIONS

Attitude: Attitude may be defined as a learned predisposition to respond to an object in a consistently favorable or unfavorable manner.

Counterfeit Branded Products: Counterfeit branded products are the illegitimate facsimiles of genuine branded products. Such products encroach on the intellectual property rights owned by a legal manufacturer.

Non-Deceptive Counterfeiting: It is the form of counterfeiting in which consumers know the products that they are purchasing are counterfeits products, and not genuine products.

Purchase Intention: Purchase intention can be construed as the individual's subjective probability that he or she will purchase a given product.

Theory of Reasoned Action: Theory of reason action is an expectancy-value theory which holds that a given behavior is best predicted by behavioral intention, which is itself a function of attitude towards performing the behavior and subjective norms associated with performance of the behavior.

Chapter 11
Health Workforce Talent Management in a Post-COVID-19 Digital Age

Divya Aggarwal
Amity University, Noida, India

Vijit Chaturvedi
Amity University, Noida, India

Anandhi Ramachandran
International Institute of Health Management Research, India

ABSTRACT

The increased usage of digital technology at the workplace is in turn impacting the utilization of human resources in every sector. Technology has proven to be an effective boon in addressing various healthcare issues as evidenced during the recent pandemic. The pandemic has also impacted the healthcare providers and professionals in the way they work, their work-life balance, and their physical, financial, social, and mental wellbeing. While many health workers have lost their lives, those alive have been affected emotionally and have started to change their careers to non-healthcare sectors. With the existing shortage in the health workforce in India, there is a need to ensure the availability of an adequate number of healthcare professionals who are highly motivated and properly trained (aka talent management). This chapter draws on factors affecting the retention of a talented health workforce, influence of the pandemic in the changing healthcare paradigm, and increased adoption of digital technologies to assist human resource managers in developing holistic talent management in the upcoming years.

DOI: 10.4018/978-1-6684-5274-5.ch011

INTRODUCTION

In 21st century, healthcare services globally have been revolutionized due to globalization and external environment complexities which has impacted the demand and supply of the health workforce. This is further facilitated by increased patients cross border movement for care, healthcare professionals' migration, advancements in medical technology, mergers and acquisitions of hospitals, modernization and new customer centric strategies being adopted to deliver healthcare service. Healthcare can only function if the health workforce is accessible, available, acceptable, reliable and of quality. The recent Covid 19 pandemic has further skewed the human health workforce both in public and private domain. It has been stretched to its limits, with persistently high risk of exposure to infection and high levels and incidence of burnout, stress, anxiety, insomnia, and depression. A WHO study published in the year 2021 In the Seventy Fifth World Health Assembly (2022), it was brought to notice that the global pulse surveys conducted by WHO in August 2020, April 2021 and February 2022 confirmed that in most of the Member States, a lack of available health workers is the largest constraint to ensuring the continuity of essential health services during and after the pandemic waves, including the delivery of COVID-19 tools (vaccines, diagnostics and therapeutics). With ever increasing demands of the health system due to growing pathogens, increase in non-communicable diseases, aging population, climatic events, conflicts, migration, natural disasters and economic disturbances the demands on the health workforce keeps growing day by day (Liu et al., 2017). This is compounded by the mismatch between the education and employment strategies and difficulties in deployment and availability of the health workforce in rural, remote, and underserved areas especially in low- and middle-income countries. This necessitates the presence of trained, protected, well-equipped, and motivated workforce to provide equitable access and quality to healthcare. Understanding this, countries are adopting strategies to address the strengthening the health workforce (The White House, 2022).

Indian healthcare has become one of the major sectors in terms of the revenue generation and employment opportunities. Healthcare market in India is expected to reach US$ 372 billion by 2022 (IBEF, 2022), driven by increased private and public investments, government initiatives to strengthen services, coverage and digital advancements. This sector is much diversified with opportunities in every segment which includes providers, payers, medical devices, medical tourism, digital applications, and insurance sector. India's public healthcare expenditure in 2021-22 stood as 2.1% of its GDP as compared to 1.8% in 2020-21(Ministry of Finance, 2022). There has been a tremendous growth in the development of indigenous medical devices and products like testing kits, vaccines, ventilators, insulin pumps to such an extent that they could be exported outside the country. Medical tourism has also contributed to the growth of the sector. India was ranked 10th in the Medical Tourism Index among the top 47 destinations in 2020 – 2021 (Medical Tourism.com, 2020). A surge in the adoption of digital technology in healthcare spurred by Covid -19 has led to array of solutions like e-pharmacies, teleconsultation, e-diagnostics, videoconferencing flooding the market. These solutions are gaining increasing acceptance among the masses due to the increased availability of online services, growing internet penetration and growing adoption of e-commerce by the consumers. As of 2021, Indian healthcare sector was one of the largest employers with more than 4.7 million people working in this sector (IBEF, 2022). Considering the changes in the work environment and healthcare delivery processes, healthcare leaders across the country should look for avenues that can help to retain, build up and enhance the advantages gained by the sector in the pre-pandemic era. One such avenue it is to look towards development of a durable post covid talent management approach for strengthening the human health workforce in the country.

This aim of this chapter is to propose a broad health workforce talent management (TM) framework that can be easily adopted in post-covid digital age in hospitals across the country. This is based on the information gathered from various articles, news reports, blogs and websites. To get a comprehensive view, first talent management (TM) of health workforce has been explored. This is followed by the impact of COVID 19 pandemic on healthcare workforce TM and digital transformations during pandemic. The chapter finally concludes by highlighting the talent management through digital technology, opportunities of talent management in post-covid era and proposing a framework for the same. Implementing such strategy can not only help address pandemic-related talent management challenges but also allow organizations to thrive after the pandemic is over. We address the above in detail in the following sections.

What is Talent Management (TM)?

In today's competitive environment TM is absolute necessity for the success of any organization. What is Talent? It is referring to an individual's skill, their ability to work with respect to a specific requirement, a competency that distinguishes them form (Gallardo-Gallardo et al., 2013). The term 'Talent Management' has been used in varied context over the years. Lewis and Heckman (Lewis & Heckman, 2006) distinguished three different major approaches: i) set of different human resources functions and practices aiming for a more agile management that can be adopted across various sections; ii) a process more focused flow of employees towards key positions with due importance to selection; and iii) a generic TM view aimed at hiring the best talent available. Regardless of the targeted group (individual, middle level, key position etc.) TM involves activities related to talent attraction, identification, recruitment, development, deployment, retention that can help in strategic success of the organization (Collings & Mellahi, 2009; Eva Gallardo-Gellardo et al., 2020; Vaiman et al., 2017). TM has undergone lot of changes in the past few years due to changing demographics, globalization, changing economics, employee perception and technology changes (Claus, 2019; Wiblen & McDonnell, 2020). There are number of outcomes that are influenced by existing TM practices, to name a few: organizational performance (Aina & Atan, 2020; Arif et al., 2016; Yuniati et al., 2021), employee performance (Alruwaili, 2018; Bibi, 2019; El Achi & Sleilati, 2016), employee retention (Pandita & Ray, 2018; Saurombe & Barkhuizen, 2022) and psychological contract (Poisat et al., 2018; Robertson & Cooper, 2010). This may differ in context to the sector considered. In a study by Mensah, it was found that employees from banking institutions had more banking sector employees perceived TM practices more positively than parastatal sector employees (Mensah, 2018). Psychological contract fulfillment, commitment and organizational citizenship behavior was more in the former. While planning for TM every organization should consider the factors and outcome and develop a suitable strategy. People with potential talent have no barriers to travelling in search of a productive project or career. In a competitive world there is an ongoing 'Talent War', organizations seeking talent at all levels, taking necessary steps to lure then from their existing job, recruit and retain them (Chambers et al., 1998). If seeking and retaining talent goes beyond human resource concept and gets elevated to organization strategy it will improve the organization sustainability and performance (Huselid, 1995).

Talent Management in Healthcare

There are no health services without human resources for health. There is a growing recognition on the importance of human workforce for achieving global and national health priorities. At the same time there is also a clamoring to invest in the human health workforce and talent management. Different organizations define talent and TM in different ways and adopt TM strategies in their own context (Paul, 2017). TM activities are well documented to have impact on the healthcare sector outcomes in terms of performance, personnel and patient wellbeing (A El Dahshan et al., 2018; Al Amiri & Shawali, 2021; Bibi, 2019; Haines, 2013; Hosseinzadeh Nojedeh & Sattari Ardabili, 2015; Mitosis et al., 2021). Most of the studies have been conducted among nursing staff as attrition among nurses is generally more. A study in 2018 has shown high significant positive correlation between organization performance and three components of TM, viz. attraction, development, and retention (A El Dahshan et al., 2018). The study was conducted on the nursing workforce of two hospitals of Egypt. An overview of TM among nurses concludes that having efficient nurturing strategies in place results in increased clinical skills, greater satisfaction levels and improved overall efficiency of the organization (Hosseinzadeh Nojedeh & Sattari Ardabili, 2015). Other TM practices like strong leadership, transparent appraisal process, having clear career trajectories, increased engagement and involvement of the staff in decision making, as well as recognizing and rewarding nursing accomplishments result in greater staff retainment (Haines, 2013). TM also involves identifying and grooming suitable individual for key positions internally within organization. Such succession planning of key/ pivotal positions is generally lacking in healthcare organizations (mainly hospitals) in comparison to larger corporate organizations. Succession planning have found to have linkage with hospital performance metrics including patient satisfaction (Etemadian et al., 2020; Groves, 2019). Concept of mentoring has been highlighted as one of the TM practice for nurturing young employees in specific leadership roles within the hospital (Johnson et al., 2011). In spite of existing strategies for TM in healthcare sector especially in hospitals, the policies and strategies are very unclear and undefined (Al Amiri & Shawali, 2021; Taha et al., 2015). There are many strategies that are being proposed and adopted. Digital technologies are being utilized for implementing these strategies.

There are very few published articles related to TM practices in Indian hospital while most of the published articles are related to strengthening rural health workforce, the factors affecting attrition and strategies needed to be adopted in the public healthcare system. In a survey conducted in 2019 among 290 respondents from corporate hospitals in the southern state of Tamil Nadu, it was brought to notice that Talent Management was an emerging trend among corporate hospitals for increasing employee effectiveness.

Digital Talent Management (DTM)

Late 1990s was an era for Internet growth leading to exchange of data globally. Initially there the internet speed was just 64 kbps, currently the internet speed is around 20 Gigabits-per-second (5Generation or 5G). Further development is being carried out to move towards 6G standard with approx. 95 Gigabits-per-second. Such faster exchange of information has led to organizations adopting digital technologies or digital transformation as it is commonly called in all their functional areas irrespective of the sector they are in viz. banking, retail, tourism, healthcare etc. Understanding the potential of the digital technologies to enhance value, the human resources management (HRM) has also shifted to e- human resources management (e-HRM) consisting of integrated digital solutions for managing human resources from anywhere anytime. Technology has been applied for recruitment and selection process(Gupta et al., 2018; Nikolaou, 2021; Rhemananda et al., 2021), payroll management (Arora & Chakrabarti, 2013; Zhao & Rabiei, 2022), maintaining attendance, documentation (Martínez-Morán et al., 2021; Trigunait & Tatuna, 2020), and other related activities. Increasingly tools like videoconferencing for collaborating, training, social networks to attract job candidates (Holland & Jeske, 2017; Phillips-Wren et al., 2016), websites/ portals for unemployment management are in vogue. Cloud services, data analytics are used to collect and evaluate data and information (Black & van Esch, 2020; Zhao & Rabiei, 2022). While hiring simulations are utilized to test the perception and attitude of the potential applicant(Civico, 2019; Saphiro, 2018; Thiriot et al., 2011). During onboarding mobile solutions are provided for training the new recruits. Similarly for talent development digital tools are utilized that include concepts that are drawn from design thinking, gamification, have social elements. Documentation, contracts, onboarding documents, company data, and knowledge management all are being centralized, well-organized, and stored in cloud servers for ready access from anywhere (Rhemananda et al., 2021; Zhao & Rabiei, 2022).

While adoption of digital technologies for TM in prevalent in information technology, banking, retail, ecommerce, and other sectors the extent digital adoption in healthcare specifically for TM is not well established. Digital tools are generally being used for scouting and inviting potential candidates, to advertise for a potential opening (websites, social media), to accept candidates' applications (through portals) and other basic human resource functions (Rogiers, Viaene and Leysen, 2020). Large corporate institutions are known to employ data analytics for profiling the candidates (P Isson, JS Harriott, 2016). All these are not well documented. Healthcare sector has been adopting digital technologies for their day-to-day operations, patient information management, patient care, for decision making, department performance, marketing, computerized physician ordering, robotic surgeries, automation of workflow, mostly for administrative, financial, logistics and clinical functions (Gupta, V. P., & Arora, A. K., 2022). In the age of digital advances and unprecedented events like the recent pandemic healthcare organizations should imbibe the culture of TM through digital tools to keep up competitive advantage, sustainability, and wellness of its employees.

Covid 19 Pandemic and Healthcare Workforce

Impact of Pandemic on Human Health Workforce

Globally the health sector growth has been affected technically, financially, politically, operationally by the COVID -19 pandemic (Alam Khan, 2021). Its impact on all human lives and developmental activities are so deep that achievement of sustainable developmental goals by the global community has now taken a back seat in contrast to combating the pandemic and getting back to normal (Khetrapal & Bhatia, 2020). The pandemic brought out the vulnerabilities of the existing health system (Raman et al., 2021; Rhyan et al., 2020). In addition to lack of infrastructure, shortage of beds, ventilators, medicines, personal protection kits, the uncontrollable infection spread affected the lives of health workforce (***Figure 1***).

Figure 1. Factors affecting Healthcare Workforce

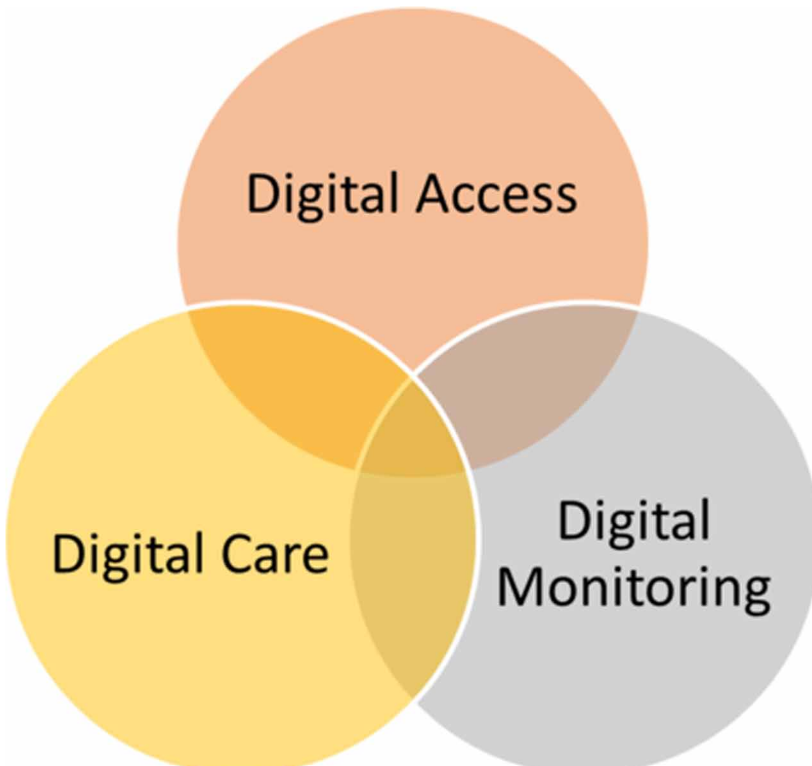
Health & Life: Physicians, nurses, paramedical staff any healthcare professional coming in close contact with the patient to provide care were at high risk of infection (Nguyen et al., 2020). The backbone of the pandemic management, control of burden of death has been the medical workers. WHO estimates that between 80 000 and 180 000 health and care workers could have died from COVID-19 in the period between January 2020 to May 2021(WHO, 2021).

Mental Health & Wellness: Despite the growing synergy between the health workers and the health system, in addition to loss of lives there has been negative impact in terms of mental depression, loss of job, stress and physical burnout among the healthcare workers (De Kock et al., 2021; Health WorkForce Department, 2021; Shaukat et al., 2020). In addition to the above they have been bearing the physical violence by the public due to lack of infrastructure and medical resources(Iyengar et al., 2022; Sambodhi, 2021).

Working Environment: Health is defined as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1946). As the pandemic is slowly easing out after third wave, it has become difficult for majority of the organizations to become fully functional offline due to unwillingness on their personal front. It has forced the management to reconsider the working environment at the same time maintain their productivity.

Adoption of digital tools for healthcare delivery has brought lot of changes in the working environment. Use of internet of things, advanced analytics, wearable sensors, cloud services, artificial intelligence, video-consultation, robots, remote monitoring, and telemedicine all have opened numerous opportunities that were unfathomable earlier. Consumers, patients, caregivers are becoming more aware of their health and are demanding for the same flexibility, convenience, and hassle-free interaction they have in ecommerce applications when they interact with their providers using digital tools. Digital Health in the form of accessibility, providing care and monitoring are the focus of digital transformation happening in healthcare.

Figure 2. Three components of Digital Transformation



Digital monitoring platforms are widely being adopted for remote monitoring of the patients (Enshaeifar et al., 2020; Kim & Yoon, 2020). Other than patients (users) and providers, the platforms include a clinical interface that is used by a monitoring team or healthcare coordinators (non- medicos) to view alerts and notification. Providing care at the hospital and or home (self- monitoring) is no more the traditional way. Digital tools are used to perform data analysis on the patient health data and take decisions for diagnosis or treatment. Clinical decision support systems are integrated into the workflow for taking decisions regarding the patient. Digital gadgets using Artificial Intelligence / Machine Learning tools are available to check sugar levels, blood pressure, blood oxygenation levels, calories burned, sleep patterns etc. These data are used by the patients to self-monitor themselves and at the same time shared with their providers. Accessibility to the providers and healthcare services (lab reports, second consultations, referrals) are availed through digital tools. For example, mobile phones have replaced telephones, emails, and pagers for communication. Videoconferencing is much preferred for internal discussions and consultations with patients instead of the hassle of travel, appointments, waiting for the concerned persons at location.

Social and Economic Structure: The pandemic has brought major changes to the social life of the health workforce and their economic stability. While clinical staff have all been brought in to tackle the pandemic on emergency basis, many small hospitals, clinics which were not equipped to handle covid cases have shut. Nonclinical health workers like administrative employees, housekeeping staff, security personnel have lost their jobs due to decrease in business. Pay cuts have been reported frequently. Family and social life of the providers, nurses, paramedical and all staff involved intreating and handling covid patients was disturbed due to lack of time. The demands of long working hours have been immense resulting in burnout and work-related stress(Llop-Gironés et al., 2021).

Availability and Distribution: Health workforce availability and distribution has been very much affected by the pandemic especially in the rural areas. Multiple factors have contributed like stress, burnout, vaccine mandates, and loss of life(Jazieh & Kozlakidis, 2020). Many hospitals have faced unprecedented difficulty in hiring and retaining physicians, registered nurses and critical support staff. A deficit of health care workers has resulted in suspension of hospital services such as obstetrics care, cancer treatment.

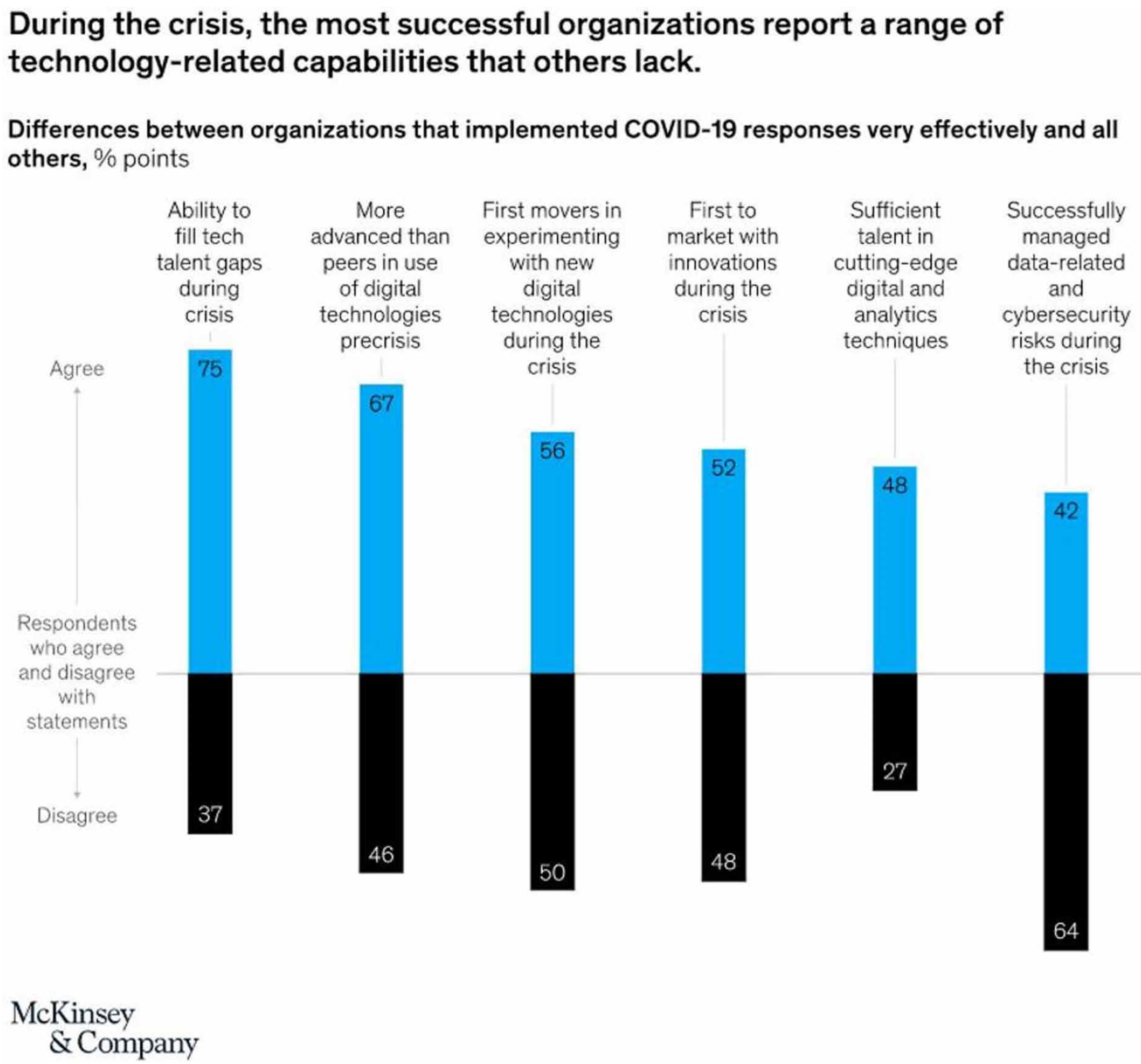
Talent Management in Post- Covid Era

The modern workplace is no more traditional where employees sit and work in their secluded designated areas (physical workplaces) in office hours and move about to exchange information or material. With ubiquitous internet access and organizations moving towards ‘work from home concept’, the distinction between physical office space and place where the employee works are getting blurred. The digital world has thrown open numerous avenues for the employees to communicate and collaborate. As organizations are moving towards digital transformation, it becomes imperative that organizations are not only concentrate on change management but also on the way in which they acquire and retain talent. These processes should be human centric and individualized as they affect the employees who in turn shape up the customer experiences with the organization. The future of health care is predicted will be data and technology driven. It will be more patient centered and more oriented towards early diagnoses and prevention with treatment being more accurate, specific, cheaper, and effective.

How does this affect the healthcare working environment? All these require a different digital skill set to be implemented, utilized, and monitored. As the healthcare landscape undergoes major upheavals, workplace culture undergoes changes it is important for the organization processes, dynamics, internal systems, and the workforce must adapt and upskill their digital skills to stay competitive. For example, if the hospital is providing a Telemedicine service to a chronic disease the human workforce should include resources skilled in technology to deliver the service in addition to the service providers and staff for patient engagement.

In recent HR trends report by McLean & Company (McLean & Company, 2021) largest gap related to talent management were reported in 4 major areas: recruiting and talent acquisition; retention of top talent and diverse talent; lack of visibility into employee capabilities; and workforce strategies not being aligned to business strategies. Many organizations have quickly realized these and have adopted to digital tools. There are number of digital solutions that are already available for hiring, training, managing and documentation (Moran et al 2021, Trigunait 2020). Cloud services, data analytics are used to collect and evaluate data and information. While hiring simulations are utilized to test the perception and attitude of the potential applicant. During onboarding mobile solutions s provided for training the new recruits. Similarly for talent development digital tools are utilized that include concepts that are drawn from design thinking, gamification, have social elements. Documentation, contracts, onboarding documents, company data, and knowledge management all are being centralized, well-organized, and stored in cloud servers for ready access from anywhere. McKinsey Company (2020) in a covid survey found that by adopting digital transformation 75% of the organizations they survey had a major change over in their business.

Figure 3. Covid and Digital Transformation (Source: McKinsey 2020)



Notable companies as Air Asia, Micron, NetApp, Microsoft, Walmart all use digital tools for their HR processes. Learning Management Systems are used for training the employees

Healthcare sector like many other businesses has been adopting to changes and restrictions and molding itself to the 'new norm' way of working thereby displaying a resilience that was unknown earlier. While it is proven beyond evidence that pandemic has changed the healthcare ecosystem forever, with restrictions being removed worldwide, vaccinations being rolled out for every new strain of the virus being reported or detected, patients coming back to hospitals and rapid digital adoption, healthcare organizations need to completely rethink the way they work and manage talent. This is important for three reasons. First a major shift in the perception of the healthcare workforce towards their day-to-day work situation and professional career in terms of work -life balance, job security, well-being and overall relationship between them and their employers has happened. Second due to sudden shift to remote working environment through use of technology. This has proven to be a great experience to some employees who have found themselves to be more productive while working from home without day-to-day distractions at office and commuting challenges. Some employees still prefer working in brick and motor environment where they get chance to be more personally interactive with other colleagues and staff. Third there is a growing demand for healthcare professionals not just limited to doctors, nurses, medical personnel, non-clinical staff also to administrators, clinical leaders, and digital technicians. This not just limited to hospital settings alone. Home health care service providers, retailers, technology, insurance, equity, and consulting firms are also seeking healthcare professionals thereby increasing the competition. All this mandates that healthcare organizations look towards a broader strategy for acquiring and retaining the talent in a broader scope rather than a piece meal approach. While the healthcare consumers have become more conscious towards their health status and upkeep, the healthcare organizations are looking towards new models and trends to satisfy their consumers, expand their business and overcome competition(Clark et al., 2021). To become successful in their strategies it is vital that their internal strength in terms of the resources, infrastructure and existing talent should be strengthened.

Healthcare organizations are facing considerable hinderances in managing their talent, especially in the post-COVID-19 scenario. The situation deteriorated as government-imposed lockdown measures to combat the pandemic. This forced organizations to use enterprise social network platforms to exchange knowledge that is instrumental in talent management(Haak-Saheem, 2020; Whittington, 2012). Enterprise social network is a talent management tool that includes "processes and practices through which knowledge is shared, integrated, translated, and transformed" (Sue Newell, Maxine Robertson, Harry Scarbrough, 2009). An Enterprise Social Network (ESN) is simply an internal, private network that organizations typically use to make communications and networking between their employees faster and more fluid (Chatterjee et al., 2022).

Healthcare organizations must plan acquisition, development, and engagement of their workforce in a radical manner along with digitization of processes and procedures. They must create contingency plan in case of any crisis in the future. This includes workforce planning, acquisition from different sources, development of workforce as per future skill set requirements. Healthcare professionals must be comfortable in providing virtual care, agreeable to be available 24 x 7 and be ready to accept the disruption in their work status quo.

As far as talent management is concerned, three domain areas need specific attention:

1. **Talent acquisition**: Hospitals should maintain inventory of outsourcing organizations to provide additional workforce as and when required. Additionally, HR department should continuously hire and redeploy the human resources. Recruitment parameters should include desirable skills that are necessary for the disease management.

2. **Talent Development**: The current workforce should be reskilled in the areas of Covid competencies like critical care, disaster management, counselling skills, digital and cognitive capabilities, social and emotional skills, and their adaptability and resilience. Hospitals should double their training budgets to avoid future disruptions. Knowledge sharing, job enrichment, job rotation can be adopted as strategies for developing the talent.
3. **Talent Retention**: Human resources are asset for any organization and especially for a sector like hospital, they are the most important component for provision of quality health care. Incentivization mechanism should be in place to keep the workforce motivated. Psychosocial support can be provided to all the employees as they undergo emotional and physical stress during disease management. Timely payment of monthly salaries should be ensured as monetary benefit is key motivator for the employees. To retain the talent giving health support to the family of the employees will provide the necessary motivation.

Staff of the hospital should be given assurance in terms of medical benefits for themselves as well as their families. Special attention can be provided to those female health workers who are at higher risk of getting infection due to age, ethnicity, disabling conditions including safety issues, decent working conditions and equal opportunities.

Framework for Talent Management in Post Covid Era

As mentioned earlier talent management in healthcare is the need of the hours especially post covid. Healthcare is no more confined between the providers and the patients within the confines of the hospitals. They have broken the barriers and are now entered into the digital world. Telehealth and mHealth are the key drivers of digitalization in hospitals. With more digital initiatives promoted by the Government there has been a growing focus towards innovation and use of digital tools for healthcare delivery in the country. Huge investments and mergers are dynamically changing the healthcare ecosystem in the country. Private sector with a focus on increased branding and market share are trying to improve the quality of the services, customer base and get accreditation by implementing latest digital technologies. Sharing of patient data for consultation, providing continuum of care, timely decisions, and follow up, maintaining patient data for long term all are being carried out through digital technologies like electronic health records, clinician decision support system, videoconferencing etc. (Kapoor & Acheson, 2022; Willis et al., 2022). Pandemic has given the needed drive in the country to adopt digital technologies in healthcare (Ramachandran & Sarbadhikari, 2021). Telehealth and telemedicine are used not only to counsel and provide preventive measures to the patients as experienced during pandemic also for the providers to collaborate and monitor remotely (Gachabayov et al., 2022). Artificial intelligence and machine learning are used for data analytics for preventive, diagnosis, and predictive medicine (Gama et al., 2022). Robots are used for surgery and for assisted living. The list goes on. All these require that the users of these technologies both new hires and existing staff, are capacitated in digital tools. This skilling which is part of talent development can be carried out through digital tools. Talent development is one important aspect of talent management as it provides motivation to the staff and influences their commitment to the organization. With expansion in healthcare industry there are numerous opportunities arising everyday with good salary benefits which is enabling the healthcare staff to shift jobs easily. Such attrition is a pain point for the healthcare HRs as it results in wastage of time and cost spent in hiring the staff and training them. Additionally, while offboarding there is documentation, finance settlement, exit interview all of which are complex processes and can be digitally carried out to ensure smooth completion. HR's now need to differentiate between the critical skills and roles. Earlier critical skills like digital knowledge and expertise were considered as those essential skill set needed to achieve the strategic goals and roles were assigned in relation to them. Post –covid there is a major disruption in the hospital workflows. Stakeholders of the Healthcare Industry both public and private are understanding that they need to harness digital tools to become a winner. Use of digital technologies have brought in major changes to the traditional way of doing things. Major part of the patient care can be provided remotely through digital technologies. Post-pandemic managing the talent it is important not to group or assign people based on roles rather than on the essential skills needed for a particular workflow. They need to motivate their employees to develop essentials skills that open multiple opportunities in their career growth. Humanitarian angle should be considered, and risk associated with employee work environment should be considered. Team culture should be developed rather than sectoral groups. Transparency demands were increasing earlier to pandemic. Now post-pandemic the clarion call to transparency has reached its pitch. If possible, talent sharing partnerships with other organizations can be considered for strengthening the workforce. The entire process for talent management should be towards developing resiliency rather than reinventing oneself.

Challenges Perceived

There are few challenges that can be perceived in adopting digital tools for talent management in healthcare. Hiring staff remotely without having face to face interactions may not result in right staff with right skill set. As more digital platforms are available for seeking job, potential recruits it is difficult to sort out and extract the best talent with right mix of skill set becomes difficult. With absence of offline onboarding sessions, it would be difficult for the employers to keep up the morale of the employees and maintaining productivity that is better than earlier. It will also be difficult for the employers to ensure that each employee is involved and smooth work from home happens. In healthcare every work cannot be carried out remotely. The healthcare staff who provide patient care would need to be available in the premises while certain administrative activities, documentation, counselling, patient follow up etc., can be carried out remotely. The collaboration and coordination between those working from home and staff in the premises need to be smooth and seamless.

Way Forward

Though there are numerous hurdles in combating the lingering effects of the pandemic and the hybrid system, organization should focus on having positive policies that motivate their employees. Emphasis should be on innovation and use of new technologies to increase employee productivity, quality, patient satisfaction and agility. Using digital tools for talent acquisition should be focus. At the same time technology should be used for enhancing the employee experience. The role played by technology and digitalization within the organization cannot be replaced in a remote working or hybrid working situation. One should assess the current state before employing digital tools. Digital strategy needs to be aligned with business goals and technology priorities. The digital tools selected should be appropriated with the strategy. In order to retain top talent and bring in digital transformation as required post covid, the organizations should inculcate supportive arrangements and a culture of inclusion g factor (Pyle & Roesch, 2021). Most importantly change management is a must whether it is for talent acquisition, development, or management. Once implemented the performance should be continuously monitored for further improvement to stay ahead in the dynamically changing healthcare sector.

REFERENCES

Aina, R., & Atan, T. (2020). The Impact of Implementing Talent Management Practices on Sustainable Organizational Performance. *Sustainability, 12*(20), 8372. doi:10.3390/su12208372

Al Amiri, N., & Shawali, A. A. (2021). Talent management strategies of a public uae hospital in the industry 4.0 ERA: A qualitative analysis. *Problems and Perspectives in Management*, *19*(2), 14–27. doi:10.21511/ppm.19(2).2021.02

Alam Khan, N. K., & M. S. (2021). The Economic Impact of COVID-19 from a Global Perspective. - Document - Gale Academic OneFile. *Contemporary Economics, 15*(1). https://go.gale.com/ps/i.do?id=GALE%7CA653470027&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=20840845&p=AONE&sw=w&userGroupName=anon~5eb94d09

Alruwaili, N. F. (2018). Talent Management And Talent Building In Upgrading Employee Performance. *European Journal of Sustainable Development*, *7*(1). Advance online publication. doi:10.14207/ejsd.2018.v7n1p98

Arif, A. A., Uddin, R., & Ahmad, A. (2016). Talent Management and Organizational Performance: An Empirical Study in Retail Sector in Sylhet City, Bangladesh. *Journal of Business and Management*, *18*(10), 11–18. doi:10.9790/487X-1810041118

Arora, M., & Chakrabarti, D. (2013). Application of business intelligence: A case on payroll management. *Proceedings - 2013 International Symposium on Computational and Business Intelligence, ISCBI 2013*, 73–76. 10.1109/ISCBI.2013.22

Bibi, M. (2019). Impact of Talent Management Practices on Employee Performance. *SEISENSE Journal of Management*, *2*(1), 22–32. doi:10.33215jom.v2i1.83

Black, J. S., & van Esch, P. (2020). AI-enabled recruiting: What is it and how should a manager use it? *Business Horizons*, *63*(2), 215–226. doi:10.1016/j.bushor.2019.12.001

Chambers, E. G., Foulon, M., Handfield-Jones, H., Hankin, S. M., & Michaels, E. (1998). (PDF) The War for Talent. *The McKinsey Quarterly*, *3*, 44–57. https://www.researchgate.net/publication/284689712_The_War_for_Talent

Chatterjee, S., Chaudhuri, R., Vrontis, D., Mahto, R. V., & Kraus, S. (2022). Global talent management by multinational enterprises post-COVID-19: The role of enterprise social networking and senior leadership. *Thunderbird International Business Review*, tie.22248. Advance online publication. doi:10.1002/tie.22248

Civico, M. (2019). The complexity of knowledge sharing in multilingual corporations: evidence from agent-based simulations. *Empirica, 46*(4), 767–795. doi:10.1007/s10663-019-09435-8

Clark, E., Shingal, S., & Weber, K. (2021). *Next-generation business models creating value | McKinsey*. https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/the-future-of-healthcare-value-creation-through-next-generation-business-models

Claus, L. (2019). HR disruption—Time already to reinvent talent management. *BRQ Business Research Quarterly*, *22*(3), 207–215. doi:10.1016/j.brq.2019.04.002

Collings, D. G., & Mellahi, K. (2009). Strategic talent management: A review and research agenda. *Human Resource Management Review*, *19*(4), 304–313. doi:10.1016/j.hrmr.2009.04.001

De Kock, J. H., Latham, H. A., Leslie, S. J., Grindle, M., Munoz, S. A., Ellis, L., Polson, R., & O'Malley, C. M. (2021). A rapid review of the impact of COVID-19 on the mental health of healthcare workers: Implications for supporting psychological well-being. *BMC Public Health*, *21*(1), 1–18. doi:10.118612889-020-10070-3 PMID:33422039

El Achi, S., & Sleilati, E. (2016). The effect of coaching on employee performance in the human resource management field: The case of the Lebanese banking sector. *International Journal of Trade and Global Markets*, *9*(2), 137–169. doi:10.1504/IJTGM.2016.076321

El Dahshan, M. E., Ismail Keshk, L., & Shehata Dorgham, L. (2018). Talent Management and Its Effect on Organization Performance among Nurses at Shebin El-Kom Hospitals. *International Journal of Nursing (New York, N.Y.)*, *5*(2), 108–123. doi:10.15640/ijn.v5n2a10

Enshaeifar, S., Barnaghi, P., Skillman, S., Sharp, D., Nilforooshan, R., & Rostill, H. (2020). A Digital Platform for Remote Healthcare Monitoring. *The Web Conference 2020 - Companion of the World Wide Web Conference, WWW 2020*, 203–206. 10.1145/3366424.3383541

Etemadian, M., Mosadeghrad, A. M., Soleimani, M. J., & Hedayati, S. P. (2020). Succession planning success factors in a hospital: A case study. *Health Monitor Journal of the Iranian Institute for Health Sciences Research*, *19*(1), 41–61. doi:10.29252/payesh.19.1.41

Gachabayov, M., Latifi, L. A., Parsikia, A., & Latifi, R. (2022). The Role of Telemedicine in Surgical Specialties During the COVID-19 Pandemic: A Scoping Review. *World Journal of Surgery*, *46*(1), 10–18. doi:10.100700268-021-06348-1 PMID:34743242

Gallardo-Gallardo, E., Dries, N., & González-Cruz, T. F. (2013). What is the meaning of "talent" in the world of work? *Human Resource Management Review*, *23*(4), 290–300. doi:10.1016/j.hrmr.2013.05.002

Gallardo-Gallardo, E., Thunnissen, M., & Scullion, H. (2020). Talent management: Context matters. *International Journal of Human Resource Management*, *31*(4), 457–473. doi:10.1080/09585192.2019.1642645

Gama, F., Tyskbo, D., Nygren, J., Barlow, J., Reed, J., & Svedberg, P. (2022). Implementation Frameworks for Artificial Intelligence Translation Into Health Care Practice: Scoping Review. *J Med Internet Res, 24*(1). doi:10.2196/32215

Groves, K. S. (2019). Examining the impact of succession management practices on organizational performance: A national study of U.S. hospitals. *Health Care Management Review*, *44*(4), 356–365. doi:10.1097/HMR.0000000000000176 PMID:28786881

Gupta, P., Fernandes, S. F., & Jain, M. (2018). Automation in recruitment: A new frontier. *Journal of Information Technology Teaching Cases*, *8*(2), 118–125. doi:10.105741266-018-0042-x

Gupta, V. P., & Arora, A. K. (2022). Automation in healthcare services. In *Research Anthology on Cross-Disciplinary Designs and Applications of Automation* (pp. 285–303). IGI Global. doi:10.4018/978-1-6684-3694-3.ch015

Haak-Saheem, W. (2020). Talent management in Covid-19 crisis: How Dubai manages and sustains its global talent pool. *Asian Business & Management*, *19*(3), 298–301. doi:10.105741291-020-00120-4

Haines, S. (2013). Applying talent management to nursing. *Nursing Times*, *109*(47), 12–15. https://europepmc.org/article/med/24380172 PMID:24380172

Health WorkForce Department. (2021). *The impact of COVID-19 on health and care workers: A closer look at deaths*. https://apps.who.int/iris/bitstream/handle/10665/345300/WHO-HWF-WorkingPaper-2021.1-eng.pdf

Holland, P., & Jeske, D. (2017). Changing Role of Social Media at Work: Implications for Recruitment and Selection. *Electronic HRM in the Smart Era*, 287–309. doi:10.1108/978-1-78714-315-920161011

Hosseinzadeh Nojedeh, S., & Sattari Ardabili, F. (2015). An Overview on Talent Management in Nursing. *Management Issues in Healthcare System*, *1*(1), 4–17. doi:10.33844/mihs.2015.60408

Huselid, M. A. (1995). The Impact Of Human Resource Management Practices On Turnover, Productivity, And Corporate Financial Performance. ©. *Academy of Management Journal*, *38*(3), 635–872.

IBEF. (2022). *Indian Healthcare Industry Analysis*. IBEF. https://www.ibef.org/industry/healthcare-presentation#

Isson, J. P., & Harriott, J. S. (2016). *People analytics in the era of big data: Changing the way you attract, acquire, develop, and retain talent*. John Wiley & Sons. doi:10.1002/9781119083856

Iyengar, K. P., Jain, V. K., & Vaishya, R. (2022). Current situation with doctors and healthcare workers during COVID-19 pandemic in India. *Postgraduate Medical Journal*, *98*(e2), e121–e122. doi:10.1136/postgradmedj-2020-138496 PMID:35232865

Jazieh, A. R., & Kozlakidis, Z. (2020). Healthcare Transformation in the Post-Coronavirus Pandemic Era. *Frontiers in Medicine*, *7*, 429. doi:10.3389/fmed.2020.00429 PMID:32850915

Johnson, J. E., Billingsley, M., Crichlow, T., & Ferrell, E. (2011). Professional development for nurses: Mentoring along the u-shaped curve. *Nursing Administration Quarterly*, *35*(2), 119–125. doi:10.1097/NAQ.0b013e31820f69c0 PMID:21403485

Kapoor, S., & Acheson, L. (2022). Developing nurse-friendly digital technology can enhance its use in healthcare. *Evidence-Based Nursing*, *25*(1), 31–31. doi:10.1136/ebnurs-2020-103332 PMID:33093179

Khetrapal, S., & Bhatia, R. (2020). Impact of COVID-19 pandemic on health system & Sustainable Development Goal 3. *The Indian Journal of Medical Research*, *151*(5), 395–399. doi:10.4103/ijmr.IJMR_1920_20 PMID:32611910

Kim, H.-S., & Yoon, K.-H. (2020). Lessons from Use of Continuous Glucose Monitoring Systems in Digital Healthcare. *Endocrinology and Metabolism (Seoul, Korea)*, *35*(3), 541–548. doi:10.3803/EnM.2020.675 PMID:32981296

Lewis, R. E., & Heckman, R. J. (2006). Talent management: A critical review. *Human Resource Management Review*, *16*(2), 139–154. doi:10.1016/j.hrmr.2006.03.001

Liu, J. X., Goryakin, Y., Maeda, A., Bruckner, T., & Scheffler, R. (2017). Global Health Workforce Labor Market Projections for 2030. *Human Resources for Health*, *15*(1), 1–12. doi:10.118612960-018-0335-3 PMID:28056998

Llop-Gironés, A., Vračar, A., Llop-Gironés, G., Benach, J., Angeli-Silva, L., Jaimez, L., Thapa, P., Bhatta, R., Mahindrakar, S., Bontempo Scavo, S., Nar Devi, S., Barria, S., Marcos Alonso, S., & Julià, M. (2021). Employment and working conditions of nurses: Where and how health inequalities have increased during the COVID-19 pandemic? *Human Resources for Health*, *19*(1), 1–11. doi:10.118612960-021-00651-7 PMID:34530844

Martínez-Morán, P. C., Urgoiti, J. M. F.-R., Díez, F., & Solabarrieta, J. (2021). The Digital Transformation of the Talent Management Process: A Spanish Business Case. *Sustainability*, *13*(4), 2264. doi:10.3390u13042264

McKinsey. (2020). *How COVID-19 has pushed companies over the technology tipping point—and transformed business forever*. https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/how-covid-19-has-pushed-companies-over-the-technology-tipping-point-and-transformed-business-forever

McLean & Company. (2021). *HR Trends Report for 2021*. https://hr.mcleanco.com/research/hr-trends-report-for-2021

Medical Tourism.com. (2020). *The Medical Tourism Index 2020-21*. https://www.medicaltourism.com/mti/home

Mensah, J. K. (2018). Talent Management and Employee Outcomes: A Psychological Contract Fulfilment Perspective. *Public Organization Review, 19*(3), 325–344. doi:10.1007/s11115-018-0407-9

Ministry of Finance, G. of I. (2022). *Economic Survey 2020-21*. Government of India.

Mitosis, K. D., Lamnisos, D., & Talias, M. A. (2021). Talent Management in Healthcare: A Systematic Qualitative Review. *Sustainability, 13*(8), 4469. doi:10.3390/su13084469

Newell, S., Robertson, M., & Scarbrough, H. J. S. (2009). *Managing Knowledge Work and Innovation Google Books*. Bloomsbury Publishing. https://books.google.co.in/books?hl=en&lr=&id=BbwcBQAAQBAJ&oi=fnd&pg=PR9&dq=Newell,+Robertson,+Scarbrough,+%26+Swan,+2009&ots=ntyCpCrapy&sig=wjjMXMNBobuNb8umjz4pBmOXvns&redir_esc=y#v=onepage&q=Newell%2CRobertson%2C Scarbrough%2C %26 Swan%2C 2009&f=false

Nguyen, L. H., Drew, D. A., Graham, M. S., Joshi, A. D., Guo, C. G., Ma, W., Mehta, R. S., Warner, E. T., Sikavi, D. R., Lo, C. H., Kwon, S., Song, M., Mucci, L. A., Stampfer, M. J., Willett, W. C., Eliassen, A. H., Hart, J. E., Chavarro, J. E., Rich-Edwards, J. W., ... Zhang, F. (2020). Risk of COVID-19 among front-line health-care workers and the general community: A prospective cohort study. *The Lancet. Public Health*, *5*(9), e475–e483. doi:10.1016/S2468-2667(20)30164-X PMID:32745512

Nikolaou, I. (2021). What is the Role of Technology in Recruitment and Selection? *The Spanish Journal of Psychology*, *24*, 1–6. doi:10.1017/SJP.2021.6 PMID:33536110

Pandita, D., & Ray, S. (2018). Talent management and employee engagement – a meta-analysis of their impact on talent retention. *Industrial and Commercial Training*, *50*(4), 185–199. doi:10.1108/ICT-09-2017-0073

Paul, T. (2017). *Talent Management in Healthcare: Exploring How the World's Health Service Organisations Attract, Manage and Develop Talent*. Springer.

Phillips-Wren, G., Doran, R., & Merrill, K. (2016). Creating a value proposition with a social media strategy for talent acquisition. *Journal of Decision Systems*, *25*(sup1), 450–462. doi:10.1080/12460125.2016.1187398

Poisat, P., Mey, M. R., & Sharp, G. (2018). Do talent management strategies influence the psychological contract within a diverse environment? *SA Journal of Human Resource Management*, *16*. Advance online publication. doi:10.4102ajhrm.v16i0.1044

Pyle, W. G., & Roesch, F. C. (2021). Recalibrating healthcare to create a more equitable post-pandemic work environment. *Healthcare Management Forum*, *35*(1), 39–42. doi:10.1177/08404704211054142 PMID:34702085

Ramachandran, A., & Sarbadhikari, S. N. (2021). Digital health for the post-COVID-19 pandemic in India: Emerging technologies for healthcare. *Proceedings of the 2021 8th International Conference on Computing for Sustainable Global Development, INDIACom 2021*, 244–249. 10.1109/INDIACom51348.2021.00043

Raman, R., Rajalakshmi, R., Surya, J., Ramakrishnan, R., Sivaprasad, S., Conroy, D., Thethi, J. P., Mohan, V., & Netuveli, G. (2021). Impact on health and provision of healthcare services during the COVID-19 lockdown in India: A multicentre cross-sectional study. *BMJ Open*, *11*(1), e043590. doi:10.1136/bmjopen-2020-043590 PMID:33468529

Rhemananda, H., Simbolon, D. R., & Fachrunnisa, O. (2021). Blockchain Technology to Support Employee Recruitment and Selection in Industrial Revolution 4.0. *Lecture Notes in Networks and Systems*, *149*, 305–311. doi:10.1007/978-981-15-7990-5_30

Rhyan, C., Turner, A., & Miller, G. (2020). Tracking the U.S. health sector: The impact of the COVID-19 pandemic. *Business Economics (Cleveland, Ohio)*, *55*(4), 267–278. doi:10.105711369-020-00195-z PMID:33191943

Robertson, I. T., & Cooper, C. L. (2010). Full engagement: The integration of employee engagement and psychological well-being. *Leadership and Organization Development Journal*, *31*(4), 324–336. doi:10.1108/01437731011043348

Rogiers, P., Viaene, S., & Leysen, J. (2020). The digital future of internal staffing: A vision for transformational electronic human resource management. *Intelligent Systems in Accounting, Finance & Management*, *27*(4), 182–196. doi:10.1002/isaf.1481

Sambodhi. (2021). *Impact of COVID-19 Pandemic on Medical Healthcare Workers in Mumbai City. India Study Report*.

Saphiro, D. (2018). *Using Simulations to Improve Physician Leadership Hiring*. NEJM Catalyst. https://catalyst.nejm.org/doi/abs/10.1056/CAT.18.0174

Saurombe, M. D., & Barkhuizen, E. N. (2022). *Talent management practices and work-related outcomes for South African academic staff*. doi:10.1080/14330237.2021.2002033

Shaukat, N., Ali, D. M., & Razzak, J. (2020). Physical and mental health impacts of COVID-19 on healthcare workers: A scoping review. *International Journal of Emergency Medicine*, *13*(1), 1–8. doi:10.118612245-020-00299-5 PMID:32689925

Taha, V. A., Gajdzik, T., & Zaid, J. A. (2015). Talent management in healthcare sector: Insight into the current implementation in Slovak organizations. *European Scientific Journal*, *1*. https://core.ac.uk/download/pdf/236412439.pdf

The White House. (2022). *Fact Sheet: The Biden-Harris Administration Global Health Worker Initiative*. https://www.whitehouse.gov/briefing-room/statements-releases/2022/05/11/fact-sheet-the-biden-harris-administration-global-health-worker-initiative/

Thiriot, S., Lewkovicz, Z., Caillou, P., & Kant, J. D. (2011). Referral Hiring and Labor Markets: A Computational Study. *Lecture Notes in Economics and Mathematical Systems*, *652*, 15–25. doi:10.1007/978-3-642-21108-9_2

Trigunait, R., & Tatuna. (2020). Innovative Practices of Talent Management in Digital Age : A Systematic Review. *Journal of Engineering Sciences, 11*(1), 7–15. www.jespublication.com

Vaiman, V., Collings, D. G., & Scullion, H. (2017). Contextualising talent management. *Journal of Organizational Effectiveness*, *4*(4), 294–297. doi:10.1108/JOEPP-12-2017-070

Whittington, R. (2012). *Big Strategy/Small Strategy*. doi:10.1177/1476127012452828

WHO. (1946). *Constitution of WHO*. https://apps.who.int/gb/bd/

WHO. (2021). *The impact of COVID-19 on health and care workers: A closer look at deaths.* Geneva: World Health Organization. https://apps.who.int/iris/handle/10665/345300

WHO. (2022). *Human resources for health Working for Health: draft 2022–2030 action plan*. Seventy Fifth World Health Assembly, Provisional Agenda item 15. https://apps.who.int/gb/ebwha/pdf_files/WHA75/A75_12-en.pdf

Wiblen, S., & McDonnell, A. (2020). Connecting 'talent' meanings and multi-level context: A discursive approach. *International Journal of Human Resource Management*, *31*(4), 474–510. doi:10.1080/09585192.2019.1629988

Willis, V. C., Thomas Craig, K. J., Jabbarpour, Y., Scheufele, E. L., Arriaga, Y. E., Ajinkya, M., Rhee, K. B., & Bazemore, A. (2022). Digital Health Interventions to Enhance Prevention in Primary Care: Scoping Review. *JMIR Medical Informatics*, *10*(1), e33518–e33518. doi:10.2196/33518 PMID:35060909

Yuniati, E., Soetjipto, B. E., Wardoyo, T., Sudarmiatin, S., & Nikmah, F. (2021). Talent management and organizational performance: The mediating role of employee engagement. *Management Science Letters*, *11*(9), 2341–2346. doi:10.5267/j.msl.2021.5.007

Zhao, M., & Rabiei, K. (2022). Feasibility of implementing the human resource payroll management system based on cloud computing. *Kybernetes*. doi:10.1108/K-07-2021-0554/FULL/XML

Chapter 12
Media Mediation on Academic Advancement for Youths' International Mobility Pursuing Higher Education

Md Tariqul Islam
https://orcid.org/0000-0002-4165-5594
BRAC University, Bangladesh

ABSTRACT

In this globalised world, students' international mobility pursuing higher education is considered important for the future policies and practices of both host and sending countries. This chapter explores young Bangladeshi students' decisions about overseas higher education by outlining the linkage between the factors related to education and media. The chapter follows a qualitative research methodology and an inductive data analysis approach. Data were collected through semi-structured interviews from purposively recruited 18 research participants studying in two Australian universities. Findings show that media informed the research participants about global education, culture, technology, and economics. Thus, they have become interested in developing the identity of the global citizen through mobility. Drawing upon the theorisation of Bauman and Appadurai, the author illustrated the politics of neoliberal consumerist dreams and desires that the academic environment and media create among young Bangladeshi students to be physically mobile to seek higher education in Australian universities.

INTRODUCTION

At present, screen-mediated communications bring the characteristics of globalization to the public. Globalization is identified as full of paradox, disordered, unpredictable, irreversible, and incomplete. Thus, globalization provides the conditions that unhook individuals from their traditional social and cultural structures (Sheller et al., 2014; Sheller & Urry, 2003; Urry, 2003, 2005). These mobility processes of globalization and their intersections change people's lives, aspirations, and imaginations about

DOI: 10.4018/978-1-6684-5274-5.ch012

their international mobilities. In the twenty-first century, 'global media' presents freedom of mobility as an evocative keyword that creates the context and effects of mobilities (Hannam et al., 2006; Urry, 2016). Further, Urry (2016, p. 4) identifies five interdependent mobilities "that are producing social life organized across multiple distances and which form (and reform) its contemporary contours". These mobilities refer to the physical travel of people, the physical movement of objects, the imaginative travel of places and people through media images, the virtual travel of people and objects, and the communicative travel of people.

In the competitive global education market, students' mobility in pursuing higher education is considered one of the critical issues related to universities' policies and practices (Islam, 2021). Analyzing the literature on international students' mobility, Islam (2019) identifies 3Cs – i.e., culture, course and career as the broad categories that cover most of the identified motivations behind mobility in international higher education. According to him, course or educational factors refer to the position of the university in the international ranking, English-speaking environment, institutional and program characteristics, learning environment, and educational and living expenses during the study period. In the last couple of decades, Australian universities have had their position confirmed as a crucial emerging destination for international students, especially among young Bangladeshi people. Young Bangladeshi students' mobility motivators comprise the influence of cultural practices in the local and international job markets (Islam, 2022b), their families (Islam, 2022a) and so on. In this chapter, a picture of those young students' decisions about overseas higher education is illustrated through outlining the linkage among academic and other advancement issues and media where the culture of the neoliberal consumerist world played a vital role. For this purpose, the role of media is showed to create the effect of Bangladeshi and Australian educational institutions on developing consumer desire in young students. These two different perspectives combine to form one goal: young students' international mobility. The two research questions that investigated through this chapter are:

- How do the educational factors motivated young Bangladeshi students to seek a qualification from Australian universities?
- How do the global media influence these young people to be motivated towards the educational factors?

Finally, the findings in this paper aim to inform researchers and policymakers in both host and sending countries about the politics and power related to mobilities by articulating a critical analysis on present practices in global media and academic institutions.

EDUCATION, MOBILITY AND MEDIA

Globalization influence education policies, structures, practices and the experiences that students bring with them to their education (Rizvi & Lingard, 2000). In the discussion of 'globalization and education' two major issues can be found. Firstly, the influence of global economic competitiveness on educational policy and decision making. Secondly, the role of education systems to prepare students to live well in the globalized world. In the twenty-first century, participation in higher education is essential for young people in many developed and developing nations. This means securing a place in a higher educational institution, and if possible, gaining admission to a top university. As a result, the number of international students is dramatically increasing worldwide.

In this process, universities are crucial actors as they promise to provide the best possible learning experience for students. Here, a critical aspect in the process of globalization of higher education is 'mobility'. Mobility features in the purposes and structures of higher education and is the consequence of the interplay of different forces and parties. Influencing actors and factors include market, policy, competition, national and regional regulating authorities, and consumer demand and satisfaction related to higher education. Knowledge and qualifications are also becoming increasingly associated with mobility. The production of knowledge depends on the demand of global market forces, and higher education institutions engage in producing this knowledge, accrediting qualifications for the purposes of making a profit. In Varghese's (2008, p. 9) words, higher education has become "a market-oriented activity attracting foreign capital, inviting competition, and producing a profit at times higher than that in other sectors". The international mobility higher education students have also had a significant impact on the policy and practices of higher education institutions. In this aspect, Bhandari and Blumenthal (2011), Chen (2017) and Robinson-Pant and Magyar (2018) in their studies find that universities and their agents are marketing their services to both physically and virtually mobile students in national campuses, overseas branches and cloud campuses. Many universities are also responding to the pressure from regional institutions (e.g. the European Commission) to increase their internationalization level within that region or from national governments to continue their influence over other countries (França et al., 2018). At the same time, many host countries are liberalizing their migration policies to increase the mobility of international students attracting them to their local labor market (Riaño et al., 2018), and universities are moving to address these policies through restructuring their programs and approaches.

Within neoliberal ideology, on the one hand, higher education institutions are facing increasing financial pressure and competition to attract and retain consumers (international students) (Choudaha, 2017; Tran & Vu, 2017). On the other hand, these institutions continuously face the question of quality from the students, parents and employers about their awarded certificates and qualifications. In the age of globalization, these consumers of education want to see the outcomes of higher education in faculty-student interaction, students' career aspirations and job placement (Altbach et al., 2010) while education providers are also concentrating on the support services that meet students career and employability expectations. In the literature, common factors and perspectives can be found considering students' motivation and aspirations of mobility through study abroad (e.g., Ahmad & Hussain, 2017; Cebolla-Boado et al., 2018; Chen, 2017; Gribble et al., 2017; Jiani, 2017; Liu, 2016; Macrander, 2017; Perez-Encinas & Rodriguez-Pomeda, 2018; Tran, 2016). These factors are the position of the university in international ranking, post-study employment in the host country or elsewhere, migration pathways and better living opportunities in the host country and so on.

The role of media is vital in disseminating information to prospective international students regarding the issues that are considered important in the global education market. In other words, the aspects that are considered important by the international universities to do better in the competitive education market and by the students and their guardians to be successful in their future life are mediated by the global media. Global media inform students about the best possible learning experience available in the international universities for them. Moreover, universities also highlight the liberal migration policies and their aligned restructured program and approaches for international students in the media content. Most importantly, in the global media, the support services of the international universities that meet students' career and employability expectations, post-study employment in the host country or elsewhere, migration pathways and better living opportunities in the host country and so on get emphasis. Thus, the global media mediate the academic advancement of the international universities that promote young students' international mobility in pursuing higher education.

Theoretical Underpinnings: Media Mediation for Mobility

In this chapter, the key arguments of Bauman and Appadurai are considered as the fundamental theoretical basis for understanding and analyzing the media mediation on academic advancement for Bangladeshi students' international mobility pursuing higher education. According to Bauman (1998b, p. 47), "globalization is geared to the tourists' dreams and desires". In this mobility process, international students become consumers of the global education market, imagining a better career where they enjoy the freedom of choice in education. Though Appadurai takes an anthropological perspective to explore globalization, his theorization on the changes of mass media and migration have also contributed to the field of sociology of education, especially regarding extensive changes in higher education (Jokila, 2015). Appadurai, in his theory of global process, defines the globalized world by the objects in motion where ideas, ideologies, people, goods, images, messages, technologies and techniques are in the global flows. Here, the international mobility of the students pursuing higher education is an important part of the objects of the globalization process (Jokila, 2015). Mass media and ICT, for Appadurai (1996), plays a vital role in making aspirations in different stages of mobility among people, i.e. planning for mobility, leading the life in the globalized society, planning for returning home or stay permanently in the host country, or move to another one. Here, he illustrates the changed relationships and situations between elites, producers and consumers, labor and family life, and local and national attachments in the globalized world. According to Appadurai (1996, p. 10):

Globalization has shrunk the distance between elites, shifted key relations between producers and consumers, broken many links between labour and family life, obscured the lines between temporary locales and imaginary national attachments.

According to Appadurai, the mass media of the globalized world influence young students of developing countries in their decision to become mobile and pursue higher education in a developed country.

METHODOLOGY

In this chapter, a qualitative methodology is followed to explore the ways media present the educational factors to the young Bangladeshi students and the influence of that presentation on their mobility pursuing higher education in Australian universities.

The Research Site and Participants

As the research site, two universities in Melbourne are selected purposively. In this case, the availability of Bangladeshi students is considered. In the selected universities, there is a large intake of Bangladeshi students, compared with other Australian universities. Pseudonyms i.e., Eastern University (EU) and Southern University (SU) are assigned to the universities to ensure their anonymity. So, when quoting an extract from the data, data analysis and articulating findings, the rules of anonymity and confidentiality are followed for the selected universities.

For this study, 18 young Bangladeshi students studying in the selected Australian universities are recruited as the key participants through snowball sampling (Creswell, 2013). Firstly, two participants are identified from two research sites. To be specific, a Bangladeshi acquaintance in Melbourne suggested the name of one participant from Eastern University and the author found another participant by searching ‘Bangladeshi student at Southern University, Melbourne’ through social media. Secondly, the author approached them to participate in the study and moreover, requested them to suggest more participants for the study if they knew any. In this process, 24 young Bangladeshi students were identified from two research sites through snowball sampling, with 18 (9 from each research site) of them participating in the study.

The Individual Interviews

The author involved the recruited young Bangladeshi students in semi-structured individual interviews to gather thick description (Brinkmann, 2013; Elliott & Urry, 2010) about the media and educational factors that motivated them pursuing higher education from Australian universities. The same semi-structured interview guide was applied for all interviews as a key technique for increasing the reliability of qualitative research with young students, which enables the researcher to follow the line of inquiry in an unbiased manner (Yin, 2003) and analyze the data from a comparative aspect (Flick, 2008). Besides, using the same interview guide strengthens the reliability of the collected data because any change in wording, context and emphasis would undermine the reliability of interview method (Flick, 2008; Louis et al., 2007; Yin, 2003). A private, neutral and distraction-free environment was ensured to guarantee the comfort of the young participants and to obtain high-quality information from them. Although all of the participants’ mother tongue is Bangla, the researcher interviewed them in English for two reasons: firstly, all of them are attending Australian universities where the medium of instruction is English, and secondly, the English language was used in all aspects of this study.

Data Analysis

The data collected through semi-structured individual interviews was analyzed in response to the research questions (Schmidt, 2004). In the data analysis process, the researcher examined and re-examined the research questions to be answered by the available data collected through individual interviews. In this paper, the thematic analysis approach was followed where the researcher examined each new piece of data considering the followed theoretical underpinnings and research questions to find out the answer to the questions. Following the inductive process, the interview data was organized from the ‘bottom-up’ and developed their codes and categories.

RESULTS AND DISCUSSION

Influence of Media on Young People

The influence of media on the research participants is revealed at the time of interview and in the interview data as well. To ensure the confidentiality and anonymity of the Bangladeshi international students, every participant was requested to suggest a pseudonym at the beginning of the interview. Seeking pseudonyms from the participants helps the study in two ways: firstly, to keep participants' identity anonymous, and secondly, to get some indications about their provided data regarding their international mobility. For example, 'Beatrix' is a proposed pseudonym of one of the female participants. To her, Beatrix Kiddo is a strong female character in her favorite Hollywood movie – 'Kill Bill' – who killed a number of people as a revenge for the wrongdoings they had committed against her. When the researcher asked for a pseudonym, 'Beatrix' came to the participant's mind because of the strong presence of the character in that movie. She aspires to be like 'Beatrix' and become independent in the future. She considers the movie a revelation for her, compared with Bollywood movies that create romantic dreams among young people. In other words, the influence of the media on young students in constructing their future aspirations is visible from her proposed pseudonym 'Beatrix'. The influence of media – what Appadurai (2006) refers as 'mediascapes' – is prominent in designing the future desire of the participant:

Beatrix Kiddo is the name of a character from my favourite movie Kill Bill. She is a very strong female. I really love her character because how strong she is. So when you ask me for a pseudonym, I choose that name. I do want to be independent and the reason I like this character. Because I aspire to be like her. And it kind of open up my eyes. (Beatrix)

Further, the images that television display develop dreams among young students to be part of Western society in the future. Jake who identifies himself as a 90's kid describes his media mediated childhood dream to move to a developed country from Bangladesh:

When I was in fifth or sixth grade, I told my parents I want to go abroad. Because Hollywood has a lot of impactions on us and as the 90's kids we grew up with the development of the world … I always wanted to be in a developed country. (Jake)

Academic Advancement

Like some Bangladeshi families (Islam, 2022a), many academic institutions play a significant role in fostering young students' motivation to become internationally mobile. In the collected data, three types of motivation were identified related to academic institutions that may drive young Bangladeshi students to become internationally mobile for higher education. Firstly, English medium schools follow the overseas curriculum and practice global culture from early grades in Bangladesh. These curricular and co-curricular practices develop a desire among Bangladeshi students to study abroad. Secondly, in general Bangla medium schools and local universities, students experience fewer facilities; moreover, these institutions enjoy very low global rankings, which do not allow students to practice their consumer rights. Thirdly, the investment of money and time in global high-ranked universities increases the possibilities for young students to achieve globally recognized certificates and obtain jobs in any country after completion of their degree. The author has decided to explain these three types of motivations from academic institutions as 'academic advancement'. The first stage is the 'motivations *of* academic advancement' where young students already experience an advanced academic environment, which creates motivation for further advancement. The second and third stages are the 'motivation *for* academic advancement' where young students have some experience of or fear of experiencing substandard academia, which generates a desire among them for academic advancement. In other words, the interplay of practiced education systems in Bangladesh and overseas universities in the neoliberal global education market generate consumerist dreams and desires among young Bangladeshi students to study at overseas universities. In this section, some of the interview data are analyzed and discussed that reflect the international mobility motivations of and for academic advancement among young Bangladeshi students.

Motivations of Academic Advancement

In Bangladesh, English medium and international schools are significant academic contributors to neoliberal consumerist culture. This is because they are understood to be supplying consumers to international universities. The role of English medium school culture and overseas curriculum in creating motivations among young students to be internationally mobile in the pursuit of higher education is manifested in the stories of Farhan, Pikachu, and Sam:

My desire was not specifically [to] come to Australia at first, because having studied in an English medium school [in Bangladesh], we were always planning on studying somewhere abroad. … we always plan on going [to] that global level. (Farhan)

Once I did get into an English medium [school], I think that had an influence on my education. Because everyone around me they were like - maybe we should go abroad and then maybe all my teachers it seemed it would be a better option to go abroad and get the study done from there. (Pikachu)

My parents sent me to an Australian school in my country. It was started from there. I was always fascinated with the Australian education system… I saw the Australian curriculum…So there on my fascination started with coming to Australia. (Sam)

From the analysis of the above data, it can be claimed that English medium and international schools are acting as the seedbeds for young Bangladeshi students' international mobility. Here, young students are growing in an environment where former students, peers and teachers play the role of motivators for the pursuit of overseas higher education. At the same time, exposure to an international curriculum from the early grades creates interest for further education in those settings, as well as developing a fear of coping with the local higher education system. Similar to the findings, Brooks and Waters (2010) found that top local schools play a mediating role in motivating students' international mobility by drawing examples of former students who pursued overseas education.

Motivation for Academic Advancement

While students from more privileged background have the chance to study at the 'top' English medium schools, not all young students in Bangladesh have the same seedbeds for cultivating their dreams of higher education. For example, among the eighteen research participants only Anisul did not attend an English medium school in Bangladesh. Anisul considers Australian education as an alternative strategy for securing a social advantage in the competition with those who graduated from "orderly, disciplined, clean and uniformed" (Connell, 2013, p. 105) English medium schools in Bangladesh. Waters (2007) identifies this strategy as securing 'distinction' for middle-class families. This alternative means trying to achieve greater certainty for the future, as explained by Anisul:

I decided to take a degree in an English-speaking country, wherever is it, Australia, America, UK, or Canada. I was always dreaming complete my bachelor in an English-speaking country so that I can improve my English. Because, if I want to get a job or want to do well in [the] job sector English is important everywhere. (Anisul)

Form the above statement, it can be argued that the dream of global higher education of the young Bangladeshi people who studied in local general educational institutions comes from the 'motivation for academic advancement'. They pursue an overseas education to overcome the drawbacks of 'hanged back' academia they participated in their own country. This is because an overseas degree will bring valuable social capital (Waters, 2005) for them as it represents their fluency in English, confidence in communication and cosmopolitan attitude.

Many students compete for very few places in top universities in Bangladesh and being admitted to those institutions has become more difficult for all. For example, in 2018, on average nearly 15 students applied for one undergraduate place in the Faculty of Arts and Social Sciences at the University of Dhaka (Shovon, 2018). While in a similar competition, only 10.98% of candidates passed the admission test for the Faculty of Business Studies in that university (Tribune Desk, 2018). This possibility of failure creates a feeling of disempowerment, frustration, and lack of educational and personal freedom among young students. Numerous studies suggest that to reproduce social advancement and to practice social and economic power and freedom, a large number of young students are seeking higher education outside of their home country (Altbach et al., 2009; Bhandari & Blumenthal, 2011; Lindgren-Gatfield & Hyde, 2005; Waters, 2012). In other words, overseas higher education addresses young Bangladeshi students' hope to go 'beyond the border of hassle' and escape the huge competition for admission at the top universities in their country. As a successful consumer and chooser of the global education market, Prince rationalizes his motivation for overseas higher education mentioning the current competition in top universities in Bangladesh:

I was up for the government universities in my country, and they are like lots of competitions, lots of students but fewer seats. Like only 300 seats and 100k's of students are giving the exam [admission test] for that … so it is better to go out [abroad] to study. (Prince)

There are 103 private universities listed with the University Grants Commission of Bangladesh (UGC, 2018). These private universities are offering a low number of programs (Alam et al., 2007) while overseas universities are better able to meet the discipline demand of young generations. The research participants Fariha and Sif explain the comparative supply and demand situation of their preferred discipline in Bangladeshi and Australian universities:

There are so many options of education here [in Australia]. In my country [Bangladesh], I do not think they have a Masters in Teaching. And there are some other study options here that we do not have in our country. (Fariha)

Specifically, what happens in our country is there is not much opportunity for post-grads. Because they are not offering a post-graduation degree in my specific subject. (Sif)

In addition to a variety of courses, a major attraction to Australian universities is 'the job-focused programs' they offer for the young students. For example, Pikachu mentions one of the internship programs of an Australian university as the motivation for her international mobility pursuing higher education:

Eastern University, as I am doing IT, they offer like a program called IBL [Industry-based Learning]. They bring you the internship, and you still have to go through the process like interview, workshops and whatever. If I do succeed in those interviews, I will get a call. So, that attracted me the most of [this university]. (Pikachu)

Besides institutional arrangements, Varghese (2008) mentions the positive relationship between the global ranking of universities of a country and young students' preference for that country as a study destination. The hypothesis of Varghese was reflected in the voices of the research participants:

I completed my college in my country. Then I thought like if I go for higher studies then why I should not go somewhere where the universities are good and top rankings in the world. (Tamal)

Studying in university which world ranking is after 500 and it is like studying in a university which world ranking is less than 50 or less than 100, it is a huge difference. (Sif)

The reason [Australian universities] … attract you the most. Because they are in the top 300 universities in the world. So, when you read about them, they will attract you anyway. (Fazi)

I looked around the world rankings of universities and IT discipline, then IT teachers and even their quality of studies. I did those things on the internet, I got interested, and I got impressed [about Australian universities]. (Imti)

Because it [one of the Australian universities] has overall high ranking and it has a nice campus though, a friendly campus. I talked with people before I studied. Then, they had a pleasant experience. (Topu)

This data supports the findings of Kim (2011), who claims that most Asian students choose developed countries where most of the top-ranked universities are operating. For instance, among 43 accredited universities in Australia, 37 Australian universities were included in the 2018 edition of the QS World University Rankings as the world's best universities (AEN, 2018; QS, 2018), which attracted the research participants. Though these rankings are methodologically problematic (Altbach et al., 2009), they are nevertheless very important to many young students for determining their study destination, as it has been well discussed in literature (Cebolla-Boado et al., 2018; Mazzarol & Soutar, 2002; Vernon et al., 2018). In addition to university rankings, young students are also concerned about the value of academic certificates conferred by Bangladeshi universities in the global job market. In this context, one of the research participants mentions her logic for academic advancement through achieving a 'rarer' (Waters, 2005) global degree from a developed university:

I did not want to do all these years of studying in Bangladesh, and then I will go to some other countries and then I have to do further studying to be accredited in that country. (Beatrix)

At present, most Bangladeshi graduates are facing the question of recognition of their achieved academic certificates in the Australian as well as in the global job market. Beatrix did not finish her Bachelor in Bangladesh but transferred a few credits of that program to an Australian university to address that concern. In fact, "Western academic credentials are assumed to represent far more than specific competencies, 'guaranteeing' a whole host of embodied characteristics tantamount to the possession of a 'general culture' by their holder" (Waters, 2006, p. 185, emphasis in original). In this context, many young Bangladeshi students chase after academic credentials to make themselves competitive by holding a very precious certificate in the job market among their fellow competitors. For example, Jake's motivation was for one of the best 'basic engineering' faculties in the world, and that made him globally mobile:

My major is mechanical engineering, and the world have only three countries that have the basic engineering faculties. They are the USA, UK and Australia, the only three countries. So, the most affordable at that moment was Australia. (Jake)

In a nutshell, the internationalized and commercialized (Altbach & Knight, 2007) accreditation process of academic certificates is gearing up by the neoliberal knowledge politics between global North and South. This globalized politics of certificate valuation motivates many Southern young students to purchase an academic certificate from the Northern education market.

One of the research participants, Dina, completed her bachelor's degree from a public engineering university in Bangladesh. Her motivation for academic advancement is not related to certificate accreditation. As a meritorious student from a top university in Bangladesh, she received a scholarship at Eastern University in Australia. Dina explains her motivation for overseas education identifying the limited resources available in Bangladesh for higher education, whereas developed countries have all required resources. According to her:

If you are studying something in technology you need that technology there [in university], you need that resource there, just only theory is not enough, so that is why I thought I need to go outside [overseas] to explore what resources they have and what they can offer me. (Dina)

For Dina, the development status of Australia and the availability of resources in Australian universities determine the quality of education. At present, people in developing countries believe that the quality of higher education at universities in developed countries is better than the universities in their own country. Based on this belief, most of the young students moving from developing countries like Bangladesh have a motivation for academic advancement, and they pursue overseas education in developed countries.

Some of the research participants completed a full or partial higher education program in Bangladesh. Most of them were not satisfied with the quality of teaching and learning arrangements in Bangladeshi universities. This dissatisfaction contradicted their consumer needs, and that made them more motivated for academic advancement. In other words, they wanted to stop racing towards grades and get the flavor of freedom in education through the teaching and assessment methods. Farhan and Shuvo's assessment reflect a comparative snapshot of the services of Bangladeshi and Australian universities to their clients:

I studied in [Bangladesh] for two semesters [at a private university], and I felt like the courses are not structured at all, it was thrown around, and people just try to pass, and if they want like really good grade, they just retake the exams at a really low cost. (Farhan)

Like, Australian university always researches, and they always upgrade their education, every semester they try to increase the output and all those things. (Shuvo)

This type of difference in institutional arrangements and services is not only true for Bangladesh and Australia but also most of the developing and developed countries. In the study of Waters (2006) and Bodycott (2009), students in Hong Kong and mainland China respectively express their dissatisfaction about their local higher education system and a positive impression of overseas universities. Likewise, many of the research participants find that the Bangladeshi higher education system does not meet international standards: they consider it too rigid and traditional, because it promotes rote learning towards examination and stifles learners' creativity.

In addition to the above-discussed factors, young Bangladeshi students' motivation for academic advancement through overseas higher education is also understood to be influenced by their future employability opportunities (Monitor, 2015). Waters (2012) explains that the employment prospects of young students can be enhanced because of overseas education. In this case, institutionalized cultural capital turns into economic capital in the future. At present, because of the lower quality of higher education in Bangladesh, many South Asian employers are inclined to recruit graduates from Bangladeshi universities (EIU, 2013). In this context, Sif, like other young students who have the neoliberal consumerist desires to achieve something extraordinary in the future, rationalizes his international mobility in 'degrees', i.e., good, better and extraordinary:

So, if you want to go for a good career, then obviously you can go for any degree in your home country. If you want a better career, you can go somewhere nearby your home country. That somewhere in Asia. But if you are looking for something extraordinary that opportunity [study in the developed country] will offer you something to take you somewhere [best]. (Sif)

In this context, it can be argued that the above-discussed motivations of and for academic advancement are visible in 3R factors, i.e., resource, ranking and recognition of academic institutions and degrees or internship programs. These motivations aligned with the consumerist dreams and desires of young students who want a better life through overseas advanced academia. As a result, the motivation of young students from developing countries for overseas higher education prompts further development for the universities of developed countries, and vice versa.

From the above discussion, it can be claimed that academic push-pull factors are motivating young Bangladeshi students to be globally mobile for higher education. Nevertheless, the problems (or push factors) in the education sector in Bangladesh and the possibilities (or pull factors) in Australian universities are the outcome of the neoliberal mechanism of global education market. Developed countries are investing money in the higher education sector to achieve a so-called international standard (Wei, 2013) that cannot be achieved by developing countries like Bangladesh. To maintain or upgrade the global rankings, universities of developed countries are also providing scholarships and other facilities to meritorious students from developing countries; in turn, these students' international mobility for academic advancement prevents developing countries from coming out of the vicious circle of academic dearth. That is how the difference between universities in developed and developing countries is increasing, and the dream of achieving the international standard for universities in developing countries is likely to remain challenging.

Media Mediation

In the age of globalization, the impact of the media can be seen on young students as one of the most powerful factors to influence their dreams and desires. The media effect is visible in the global consumerist culture, young students' family decisions concerning higher education and the dynamic changes of academic institutions. Most importantly, globalized media plays a direct role in developing young students' aspirations pursuing overseas higher education. In this section, some of the interview data will be analyzed and discussed that reflect how the media has influenced the motivations of young Bangladeshi people to participate in Australian higher education. The impact of media on the participants in motivating them to be globally mobile is a long-term process that started from their childhood and continued until their departure from Bangladesh. Through data analysis, three types of media are found (i.e., satellite television, education agents and the internet) that influence young Bangladeshi students to make them internationally mobile. These three major categories appear to be the most powerful media elements in the globalized world that are framing the dreams and desires about overseas higher education among young Southern students. Based on empirical data analysis, the author identifies the mechanisms of neoliberal global media and term these mechanisms as 'media mediation'. This phenomenon imposes consumerist dreams and desires on young Bangladeshi students that can be achieved only through international mobility.

In global media, the ideological underpinnings of globalization become more visible (Brooks & Waters, 2011). Employing Appadurai's (1996) theory of 'global processes', this ideological mobility of globalization can be better understood. In his theory, ideology typically includes some objects, e.g., ideas, people, goods, images, and media. In the global flow, these objects exist together with the new technologies of communication. We can consider these objects as the foundation of young students' mobility pursuing overseas higher education (Guruz, 2011; Jokila, 2015; Sheller, 2016; Sheller & Urry, 2006). In other words, the global mobility of information through the media contributes to the construction and expansion of the global higher education market (Singh et al., 2007); therefore, the ideology of globalization pervades all of these elements, including the motivations of young students who become internationally mobile. The global media creates feelings of distance between viewers and events (Appadurai, 1996) by staging private life on a public screen (Sheller & Urry, 2003). This media mechanism plays a significant role in establishing the global education market where the poor tend to be excluded from its promise – what Bauman (Bauman, 1998a) identifies as 'trickle-down' effect. In this context, young Bangladeshi students become motivated to be internationally mobile and pursue higher education, becoming part of the global education market that appears in the media. In this way, they want to avoid social deprivation of immobility (Bauman, 2013g) and enjoy freedom (Singh et al., 2007), which is blended with the daily life in the globalized society.

Satellite Television

In the collected data, satellite television is found to be one of the leading media formats that influences students' international mobility in the pursuit of higher education. Satellite television does not always explicitly display overseas universities to young students, but their programs portray a sense of modern, social advancement and freedom available in Western societies. The data suggest that young Bangladeshi students' desires to see themselves higher on the sociocultural ladder (Bauman, 2013f; Macrander, 2017) are not easy to achieve because of the first world's walls of immigration control (Bauman, 1998a). In this context, young Bangladeshi students consider overseas higher education as a means of obtaining access to the kind of Western society displayed on the television screen. One of the research participants echoes the perception of sociocultural positions of the Western world among young Bangladeshi students and their relationship with media:

The people who are living a foreign life they are living better because people are back in my country are mostly poor. And, they do not actually get the chance to do such things as we do in here….You watch TV, right? In mostly when we come across TVs and different shows that we watch, we see Western life, and we can compare it with our country live over here. So, we can tell things by that. (Imti)

From the above statement, it can be argued that young Bangladeshi students consider higher education as a means for international mobility. None of them identify their mobility as a means to achieve the 'real' purpose of education (Bauman, 2013g), i.e. develop critical decision in individual and social life. Through mobility, they are ready to break their traditional local bonds (Bauman, 2013d) and forget what they have learned in Bangladesh as ideal life. This mobility is not just a sense of being pushed away from a poor context, but also of being pulled towards "a vast land, oceans, beaches and inland mysteries, of an attractive physical environment that offered a relaxed lifestyle" (Lindgren-Gatfield & Hyde, 2005, p. 565), such as is representative of Australia. Like vagabonds, with the alter ego of tourists (Bauman, 1998a), they are choosing the life seen on television after having the chance of becoming free choosers. Young Bangladeshi students have no other images of a good life except what the media present to them. The media, therefore, presents an attractive and appealing set of images of 'the good life', which are underpinned by the ideologies of globalisation. The contrast of these images with the lived realities of local life in Bangladesh creates a tension between representation and reality.

Education Agent

Besides satellite television, the diverse marketing strategies of host universities are also playing an explicit role in Bangladeshi students' international mobility and university selection. Australian universities, like in other host countries, use a wide range of marketing strategies to motivate young students to move to their universities to study. In this context, Nghia (2015) finds that the central goal of these host countries and their universities through these marketing strategies is to recruit international students. Host universities arrange education fairs and university open days, and send their representative agents as institutionalized mobility systems to disseminate their information among young students to boost the number of consumers (Cairns et al., 2017; Chung et al., 2009; Robinson-Pant & Magyar, 2018). The collected data suggest that the mediation of university representative agents start from childhood, for some prospective young students. Sam describes how one Australian university representative agent implemented their strategies of marketing to motivate future Bangladeshi education consumers:

When we were in grade 9 or 10 or something, there were representatives from Eastern University who came to our school. Once I started selecting my universities, I knew I was going to do engineering, so I found that EU has many industry connections and they are involved in a lot of real-life projects, and their rank is pretty well, and it is in Melbourne, so all in all, I decided with EU. (Sam)

The above quote reflects that in selecting higher education institution, Sam values the aspects of industry connection with the academic program, university ranking and location of the university. Besides, education agents motivate young students by showing the course design and the percentages of graduate employment rates of their respective universities. For example, Fariha and Topu mention agents' motivation regarding course design and global employment opportunities:

I talked to the agent of Eastern University, and they told me about the design of the whole course and that make me interested in this course, and I liked it. (Fariha)

My agent suggested me. First, they said Eastern University has a high employment rate. Everywhere in the world. So that is the career opportunities. (Topu)

Education agents as a type of media motivate young Bangladeshi students concerning educational choice, increasing job opportunities, and other chances for them through overseas through global degrees. It can be argued that the participants' consideration of economic and other opportunities in Australia should be considered media-mediated factors in their international mobility. This argument about the role of education agents in young students' international mobility is also supported by the findings of Robinson-Pant and Magyar (2018) and Varghese (2008). The data suggest that education fairs and other marketing strategies of the host universities give the impression that their agents are like angels who want to bring young Bangladeshi students to the heaven (i.e., Australia).

Internet

At present, universities competing in the global education market are not only confined to satellite television and representative agents, but they also employ the latest technologies (Hannam et al., 2006; Sheller, 2016; Sheller & Urry, 2006), i.e. the internet and other systems, to mediate international students' mobility. Appadurai (2006) describes this use of latest technological innovations to accelerate mobility as 'technoscapes'. According to Bauman (1998a), the virtual distance between the two poles of the world is decreasing dramatically because of these technologies. Analyzing interview data, it can be observed that in the globalized world, first-world universities are 'banking' on the internet, which distributes information to young students in the second world to motivate them for overseas degrees. Information about the Australian education system and images of Australian culture and environment are available to young Bangladeshi students through the internet. This information, along with the capacity to purchase international higher education, cause the impression among them that the protective walls (Bauman, 2013a) between the first world and the developing world no longer exist. In the last couple of years, the tremendous growth of the ICT sector in Bangladesh (Khan & Taher, 2017) has had a substantial impact on young students' interest and capability to move internationally. The attractive features of Australian universities presented via the internet and young students' trust in this media emerge from Anisul's story:

When I searched for information about Southern University, it comes up with every information like it is a five-star rating university. On YouTube, I found many videos about this university. In those videos, they mention how they make their graduates, how they teach people there. So, they mentioned it several times that a Southern graduate is ready for the world. So, they make their student 'worldly'. So, that is the keyword. (Anisul)

The above quote shows that in order to select a higher education institution this participant valued what he accessed on the internet. The internet disseminated rankings and the promise of an Australian university to produce graduate global citizens, which developed the desire of the participant to move abroad to undertake higher education. Within the uncertainty brought by the globalization process, internet advertising of many universities presents job opportunities to young students whilst avoiding an unappealing life of immobility. For example, Pikachu describes her growing motivation to study at an Australian university when she read about their 'rare' internship program on the website:

I did not know that Eastern University has a programme called IBL, so I was googling all Australian universities. When I went to their website, then [saw that] they had this … It is a big deal, right? They are giving you this program; they advertise it well. (Pikachu)

The internship program as mentioned above creates an imagination of job certainty at the global level among prospective higher education students. Internet advertisement plays a major role in mediating the job-focused programs of Australian universities among Bangladeshi students. As conscious consumers of global education, young Bangladeshi students are not only considering future labor market possibilities beyond their national border, but also the attractive living standards in Australia. Young students' dependency on the internet to understand life overseas before taking a mobility decision is reflected in Imti's voice:

Those things you can know from articles, blogs, YouTube videos, university website and ads [available on the internet]. When I was browsing on the internet, a student was telling their life stories about in Southern University, and that is the main reason [of my mobility]. (Imti)

From this comment by Imti, it can be ascertained that when taking a significant life decision, i.e., selecting an institution for higher education, many young Bangladeshi students consider the internet as the only trustworthy source. They depend on the internet to overcome the uncertainty related to the university rankings, future job prospects and overseas life like other online consumers of consumerist products.

For the participants, satellite television seems to be the most influential source of positive images of Western society, culture, and economy. This mediation begins in their childhood. These images create a desire to see themselves in these frames. The second influential source seems to be the education agents who show them the practical steps they need to take to be a part of these images and situations. Finally, access to the internet gives them the most reliable opportunity to virtually know the global education and job market, as well as help to develop confidence in mobility. The cosmopolitanizing of taste (Sheller &

Urry, 2006) is created by these three major categories of media, which work as forces of the colonization process (Bauman, 2013b) in the globalized world. Here, both media images and young students' imaginaries are in simultaneous circulation and globally mobile. This circulation of public interest (Bauman, 2013c) in the media creates motivation among young Bangladeshi students for a top-quality higher education experience at a trusted overseas university. Thus, even before they leave Bangladesh, students may position themselves as potential global citizens through their use of media (especially the internet) to select the overseas university that they hope to attend. A small number of young students who are pursuing higher education internationally are enjoying unprecedented freedom from the physical obstacles that limit opportunities for many Bangladeshi citizens. Thus, media, strengthen the social and economic polarization (Bauman, 2013e) in the process of elimination of global distance.

CONCLUSION

In this chapter, through analyzing the interview data of some young Bangladeshi students' mobility pursuing higher education in Australian universities, it can be found that they are considering mobility as an essential value to have in the globalized world. From their point of view, media informed them about global education, events, culture, technology, and economics, and they have become interested in developing an identity of global citizen through mobility. Drawing upon the theorization of Bauman and Appadurai, the author illustrated the politics of neoliberal consumerist dreams and desires that academic environment and media create among young Bangladeshi students to be physically mobile to seek higher education in the Australian universities.

The visible neoliberal consumerist desires among young Bangladeshi students are the by-product of global media representations of the poor economic condition, political practices, and standard of life in Bangladesh on the one hand, and the alluring aspiration for unlimited possibilities of a better life in the developed countries on the other. The features of 'fabulous foreign' watched on the easily accessible global media gear their formulated desires and as a result, young students' international mobility becomes almost unavoidable. In this aspect, the educational opportunities in English medium schools can be considered as the invested capital that brings freedom of mobility. Through their practice of adopting overseas curriculum and recruiting foreign staff members, English medium schools in Bangladesh control new generations' future dreams, desires, and destinations from childhood. Also, the media-constructed dream of Western culture creates a desire among young students to be a part of the neoliberal globalized world in the name of higher education for global citizenship. Likewise, by selecting an Australian university and considering several attractive features over national educational institutions, young students prove that they have the capacity to be internationally mobile as successful consumers and choosers. In this context, young students' dreams, and desires to become mobile for consuming higher education can be described as 'trickled down dream and desire', developed in the macro imagination of globalization and reaching the individual young students through media. Young students' international mobility motivation does not reflect their dreams and desires about the moral aspects of education for global citizenship but rather their search for a better destiny through high ranked universities, global education, job experiences and PR opportunities imitate the economic strands.

Finally, these mobility motivations can be identified as the by-products of the neoliberal market mechanisms of the globalized world. These influencing factors are the outcome of the politics associated with the neoliberal ideology of globalization (Torres, 2015) that push young students to participate globally. In other words, these factors are developing under the shade of neoliberal consumerist values and motivating young Bangladeshi students towards socio-economic opportunities and power (Urry, 2002) available at home and abroad for international graduates. Similarly, Australian universities also promise to globalized young people through several media that their programs are designed to address the same neoliberal imaginaries. Thus, this chapter contributes to the exploration of the impact of macro forces of globalization on a micro level, i.e. on young Bangladeshi students who "seek to annex the global" (Appadurai, 1996, p. 4) through mobility pursuing higher education.

REFERENCES

AEN. (2018). *List of universities in Australia*. https://www.australianuniversities.com.au/list/

Ahmad, S. Z., & Hussain, M. (2017). An investigation of the factors determining student destination choice for higher education in the United Arab Emirates. *Studies in Higher Education*, *42*(7), 1324–1343.

Alam, M., Haque, M. S., & Siddique, S. F. (2007). Private higher education in Bangladesh. In N. V. Varghese (Ed.), *New trends in higher education*. International Institute for Educational Planning.

Altbach, P. G., & Knight, J. (2007). The internationalization of higher education: Motivations and realities. *Journal of Studies in International Education*, *11*(3–4), 290–305.

Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2009). *Trends in global higher education: Tracking an academic revolution*. UNESCO.

Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2010). Tracking a global academic revolution. *Change: The Magazine of Higher Learning*, *42*(2), 30–39.

Appadurai, A. (1996). *Modernity at large: Cultural dimensions of globalization*. University of Minnesota Press.

Appadurai, A. (2006). Disjuncture and difference in the global cultural economy. In M. G. Durham & D. M. Kellner (Eds.), *Media and cultural studies* (pp. 584–603). Blackwell Publishing.

Bauman, Z. (1998a). *Globalization: The human consequences*. Columbia University Press.

Bauman, Z. (1998b). On glocalization: Or globalization for some, localization for some others. *Thesis Eleven, 54*(1), 37–49.

Bauman, Z. (2013a). *Community: Seeking safety in an insecure world*. John Wiley & Sons.

Bauman, Z. (2013b). *Consuming life*. John Wiley & Sons.

Bauman, Z. (2013c). Liquid modernity. In *Polity*. Polity.

Bauman, Z. (2013d). Liquid times: Living in an age of uncertainty. *Polity*.

Bauman, Z. (2013e). *Postmodernity and its discontents*. New York University Press.

Bauman, Z. (2013f). *The art of life*. John Wiley & Sons.

Bauman, Z. (2013g). *The individualized society*. John Wiley & Sons.

Bhandari, R., & Blumenthal, P. (2011). Global student mobility and the twenty-first century silk road: National trends and new directions. In R. Bhandari & P. Blumenthal (Eds.), *International students and global mobility in higher education: National trends and new directions* (pp. 1–23). Palgrave Macmillan.

Bodycott, P. (2009). Choosing a higher education study abroad destination: What mainland Chinese parents and students rate as important. *Journal of Research in International Education*, *8*(3), 349–373.

Brinkmann, S. (2013). *Qualitative interviewing*. Oxford University Press.

Brooks, R., & Waters, J. (2010). Social networks and educational mobility: The experiences of UK students. *Globalisation, Societies and Education*, *8*(1), 143–157.

Brooks, R., & Waters, J. (2011). *Student mobilities, migration and the internationalization of higher education*. Palgrave Macmillan.

Cairns, D., Cuzzocrea, V., Briggs, D., & Veloso, L. (2017). *The consequences of mobility: Reflexivity, social inequality and the reproduction of precariousness in highly qualified migration*. Palgrave Macmillan.

Cebolla-Boado, H., Hu, Y., & Soysal, Y. N. (2018). Why study abroad? Sorting of Chinese students across British universities. *British Journal of Sociology of Education*, *39*(3), 365–380.

Chen, J. M. (2017). Three levels of push-pull dynamics among Chinese international students' decision to study abroad in the Canadian context. *Journal of International Students*, *7*(1), 113–135.

Choudaha, R. (2017). Three waves of international student mobility (1999–2020). *Studies in Higher Education*, *42*(5), 825–832.

Chung, K.-C., Holdsworth, D. K., Li, Y., & Fam, K.-S. (2009). Chinese "Little Emperor", cultural values and preferred communication sources for university choice. *Young Consumers*, *10*(2), 120–132.

Connell, R. (2013). The neoliberal cascade and education: An essay on the market agenda and its consequences. *Critical Studies in Education*, *54*(2), 99–112.

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches*. Sage Publications.

EIU. (2013). *Higher education in South Asia. Trends in Afghanistan*. British Council.

Elliott, A., & Urry, J. (2010). *Mobile lives*. Routledge.

Flick, U. (2008). *Designing qualitative research*. Sage Publications.

França, T., Alves, E., & Padilla, B. (2018). Portuguese policies fostering international student mobility: A colonial legacy or a new strategy? *Globalisation, Societies and Education*, *16*(3), 1–14.

Gribble, C., Rahimi, M., & Blackmore, J. (2017). International students and post-study employment: The impact of university and host community engagement on the employment outcomes of international students in Australia. In L. T. Tran & C. Gomes (Eds.), *International student connectedness and identity: Transnational perspectives* (pp. 15–39). Springer.

Guruz, K. (2011). *Higher education and international student mobility in the global knowledge economy*. State University of New York Press.

Hannam, K., Sheller, M., & Urry, J. (2006). Mobilities, immobilities and moorings. *Mobilities*, *1*(1), 1–22.

Islam, M. T. (2019). (Re)Searching for the development of a conceptual model of education for citizenship in the context of young people's globalised mobility in higher education. *Globalisation, Societies and Education*, *17*(2), 194–207. https://doi.org/10.1080/14767724.2019.1583093

Islam, M. T. (2021). Cultural cultivation for the mobility of Bangladeshi higher education students in Australia. *Higher Education Research & Development*, 41(5), 1572-1585. doi:10.1080/07294360.2021.1902950

Islam, M. T. (2022a). Bangladeshi students' family fertilization for pursuing higher education in Australia. Manuscript submitted for publication.

Islam, M. T. (2022b). (Un)employability and (un)employment issues towards international mobility for higher education. Manuscript submitted for publication.

Jiani, M. A. (2017). Why and how international students choose Mainland China as a higher education study abroad destination. *Higher Education*, *74*(4), 563–579.

Jokila, S. (2015). The internationalization of higher education with Chinese characteristics: Appadurai's ideas explored. *Asia Pacific Journal of Education*, *35*(1), 125–139.

Khan, M. R., & Taher, F. (2017). ICT opens up new prospects for Bangladesh. *The Daily Star*. https://www.thedailystar.net/drivers-economy/ict-opens-new-prospects-bangladesh-1364893

Kim, J. (2011). Aspiration for global cultural capital in the stratified realm of global higher education: Why do Korean students go to US graduate schools? *British Journal of Sociology of Education*, *32*(1), 109–126.

Lindgren-Gatfield, R., & Hyde, M. (2005). An examination of two case studies used in building a decision-making model. *International Education Journal*, *6*(5), 555–566.

Liu, W. (2016). The international mobility of chinese students: A cultural perspective. *Canadian Journal of Higher Education*, *46*(4), 41–59.

Louis, C., Lawrence, M., & Keith, M. (2007). *Research methods in education*. Routledge.

Macrander, A. (2017). Fractal inequality: A social network analysis of global and regional international student mobility. *Research in Comparative and International Education*, *12*(2), 243–268.

Mazzarol, T., & Soutar, G. N. (2002). "Push-pull" factors influencing international student destination choice. *International Journal of Educational Management*, *16*(2), 82–90.

Monitor. (2015). *Bangladesh struggling to keep up with demand for higher education*. ICEF Monitor. https://monitor.icef.com/2015/10/bangladesh-struggling-to-keep-up-with-demand-for-higher-education/

Nghia, T. L. H. (2015). Factors influencing prospective international students' motivation for overseas study and selection of host countries and institutions: The case of Vietnamese students. In C. Gomes, & S. Chang (Eds.), *26th ISANA International Education Association Conference Proceedings*. ISANA International Education Association Inc.

Perez-Encinas, A., & Rodriguez-Pomeda, J. (2018). International students' perceptions of their needs when going abroad: Services on demand. *Journal of Studies in International Education*, *22*(1), 20–36.

QS. (2018). *Top universities in Australia 2018*. https://www.topuniversities.com/university-rankings-articles/world-university-rankings/top-universities-australia-2018

Riaño, Y., Van Mol, C., & Raghuram, P. (2018). New directions in studying policies of international student mobility and migration. *Globalisation, Societies and Education*, *16*(3), 283–294.

Rizvi, F., & Lingard, B. (2000). Globalization and education: Complexities and contingencies. *Educational Theory*, *50*(4), 419–426.

Robinson-Pant, A., & Magyar, A. (2018). The recruitment agent in internationalized higher education: Commercial broker and cultural mediator. *Journal of Studies in International Education*, *22*(3), 225–241.

Schmidt, C. (2004). The analysis of semi-structured interviews. In U. Flick, E. von Kardoff, & I. Steinke (Eds.), *A companion to qualitative research* (pp. 253–258). Sage Publications.

Sheller, M. (2016). Mobilities. In A. de S. e Silva (Ed.), Dialogues on mobile communication (pp. 73–88). Routledge.

Sheller, M., Merriman, P., Hannam, K., Bissell, D., & Adey, P. (2014). Introduction. In P. Adey, D. Bissell, K. Hannam, P. Merriman, & M. Sheller (Eds.), *The Routledge handbook of mobilities* (pp. 21–40). Routledge.

Sheller, M., & Urry, J. (2003). Mobile transformations of "public" and "private" life. *Theory, Culture & Society*, *20*(3), 107–125.

Sheller, M., & Urry, J. (2006). The new mobilities paradigm. *Environment & Planning A*, *38*(2), 207–226.

Shovon, F. R. (2018, September 24). DU 'Kha' unit admission test results on Tuesday. *Dhaka Tribune*. https://www.dhakatribune.com/bangladesh/education/2018/09/24/du-kha-unit-admission-test-results-on-tuesday

Singh, M., Rizvi, F., & Shrestha, M. (2007). Student mobility and the spatial production of cosmopolitan identities. In K. N. Gulson & C. Symes (Eds.), *Spatial theories of education: Policy and geography matters* (pp. 195–214). Routledge.

Torres, C. A. (2015). Global citizenship and global universities. The age of global interdependence and cosmopolitanism. *European Journal of Education*, *50*(3), 262–279.

Tran, L. T. (2016). Mobility as 'becoming': A Bourdieuian analysis of the factors shaping international student mobility. *British Journal of Sociology of Education*, *37*(8), 1268–1289.

Tran, L. T., & Vu, T. T. P. (2017). 'Responsibility in mobility': International students and social responsibility. *Globalisation, Societies and Education*, *15*(5), 561–575.

Tribune Desk. (2018, September 17). 10.98% students pass DU 'Ga' unit admission test. *Dhaka Tribune*. https://www.dhakatribune.com/bangladesh/dhaka/2018/09/17/10-98-students-pass-du-ga-unit-admission-test

UGC. (2018). *List of private universitie*. http://www.ugc.gov.bd/en/home/university/private/75

Urry, J. (2002). Mobility and proximity. *Sociology*, *36*(2), 255–274.

Urry, J. (2003). Global complexities. Distant proximities: Dynamics beyond Globalization. By Rosenau James N.Princeton. *International Studies Review*, *5*(2), 250–252.

Urry, J. (2005). The complexity turn. *Theory, Culture & Society*, *22*(5), 1–14.

Urry, J. (2016). Does mobility have a future? In M. Grieco & J. Urry (Eds.), *Mobilities: New perspectives on transport and society* (pp. 21–38). Ashgate Publishing Limited.

Varghese, N. V. (2008). Globalization of higher education and cross-border student mobility. UNESCO, International Institute for Educational Planning.

Vernon, M. M., Balas, E. A., & Momani, S. (2018). Are university rankings useful to improve research? A systematic review. *PLoS One*, *13*(3), 1–15.

Waters, J. L. (2005). Transnational family strategies and education in the contemporary Chinese diaspora. *Global Networks*, *5*(4), 359–377.

Waters, J. L. (2006). Geographies of cultural capital: Education, international migration and family strategies between Hong Kong and Canada. *Transactions of the Institute of British Geographers*, *31*(2), 179–192.

Waters, J. L. (2007). "Roundabout routes and sanctuary schools": The role of situated educational practices and habitus in the creation of transnational professionals. *Global Networks*, *7*(4), 477–497.

Waters, J. L. (2012). Geographies of international education: Mobilities and the reproduction of social (dis)advantage. *Geography Compass*, *6*(3), 123–136.

Wei, H. (2013). An empirical study on the determinants of international student mobility: A global perspective. *Higher Education*, *66*(1), 105–122.

Yin, R. K. (2003). *Case study research: Design and methods*. Sage publications.

KEY TERMS AND DEFINITIONS

Employability: Employability can be understood as a set of achievements of the graduates that develop their knowledge, skills, and personal and social attributes that make them more likely to gain employment and be successful in their chosen occupations.

Global Higher Education Market: The global higher education market is spread all over the world where all tertiary institutes are in competition to attract international students to increase their income.

In this case, universities are taking various marketing and business strategies to enroll more international students.

Global Media: Global media includes television, newspapers, radio, social media (Facebook, YouTube, twitter, etc.) and all forms of mass communication that reach every corner of the world.

International Mobility: International mobility is an experience that provide people with the opportunities to get educational, professional, social and/or intercultural skills and increases employability as well as social cohesion.

International University: An international university is funded by the governments, regional and international organizations of many countries and thereby is controlled by the funding organizations. Now, irrespective of funding organization, a high international student population, a large proportion of international faculty, international collaboration abounds, and international outlooks are considered to identify a university as an international university.

Chapter 13
Transforming Universities for a More Competent Society:
Digitalization and Higher Education

Petek Tosun
https://orcid.org/0000-0002-9228-8907
Kadir Has University, Turkey

ABSTRACT

Digitalization has transformed the higher education sector. It is a significant factor that shapes the future of higher education. Universities are the primary institutions that must ensure the relevancy and actuality of their curricula and provide high-quality education programs by utilizing new methods and technologies in the rapidly changing environment. Business administration, a popular program for undergraduate and graduate students, must evolve with the dynamic education environment shaped by digital learning alternatives. The management programs must respond to the rapidly changing needs of the labor market, students, and society to provide students with the relevant skills. The chapter presents a literature synthesis, summarizes the new trends and priorities in designing and managing higher education, and points out practical implications and future research directions for higher education managers and researchers.

INTRODUCTION

The developments in digital technologies are transforming the world by changing the ways people communicate, consume, interact, and work. The new coronavirus (COVID-19) pandemic accelerated digitalization and required society to renew itself (García-Morales et al., 2021) by acting as a catalyst promoting online learning and assessment (Kundu and Bej, 2021). It transformed the higher education sector (Pavlova, 2020; Pelletier et al., 2021). The pandemic, online learning options, and digital technologies are among the significant factors that shape the future of higher education (Veletsianos et al., 2021). Many governments have focused on digitalization, as exemplified by the German Online Access

DOI: 10.4018/978-1-6684-5274-5.ch013

Act, which obliges the public authorities to give online educational services by 2022 (Bacharach et al., 2021). Thus, digital transformation is a prominent factor that will shape the future of higher education.

Digitalization can be explained as saving, processing, and displaying information by organizing it in bits (Hans and Crasta, 2019). Digital transformation can be defined as the changes that involve people, organizational structures, processes, and competitive dynamics facilitated by advancements in digital technology (Benavides et al., 2020). Digital transformation is a disruptive process that influences organizations and increases the importance of empathy, integrity, and humility in the new ways of doing business (Henderikx and Stoffers, 2022). Digitalization transforms higher education by reducing the importance of physical location and changing the dynamics of reaching and sharing information. The pandemic has accelerated universities' digitalization process, ensuring high-quality education in the competitive higher education environment (García-Morales et al., 2021; Neykova, 2021). A survey conducted on more than 1000 faculty members in the USA pointed out that the distance learning period during the pandemic will have a significant long-lasting effect on higher education and online learning (Veletsianos et al., 2021).

Besides the higher education sector, digitalization has brought new challenges at the individual level. People increasingly feel the pressure of continuous self-development to keep up with the rapid advancements in the digital world. Professionals, entrepreneurs, and business owners need life-long learning solutions more than ever due to the rapidly changing technological environment and frequent innovations in digital technologies. The need to keep up may stem from professional requirements, such as managing social media marketing and using artificial intelligence systems for campaign management. Besides professional needs, individuals increasingly need to keep up with the digital technology to manage their simple daily tasks such as shopping online, updating personal profiles on a social networking site, or using specific mobile banking applications. Thus, technological skills have an essential role in having and maintaining a high-quality, wealthy, and healthy life. From this perspective, formal education and life-long learning are crucial and linked with individuals' general well-being.

In that rapidly changing environment, even a bachelor's diploma may become insufficient a few years after university graduation unless the individual has a personal growth mindset. People must keep on learning to improve their job performance, facilitate their daily lives, and follow current digital technology developments. Within that context, universities may best track recent developments in digital technologies as they shape the future of science by producing information and extending the boundaries of science together with certain other institutions. The higher education system must adapt to the radical changes in its technological environment shaped by disruptive innovations (García-Morales et al., 2021). Many governments have also named the digitalization of education a strategic priority (Ljungqvist and Sonesson, 2021). According to the Horizon Report, remote learning, increased use of learning technologies, and online faculty development are among the macro trends that will shape education (Pelletier et al., 2021).

Continuous learning has brought together students, professionals, and universities to design, market, and manage life-long learning programs. Besides academic programs, many universities serve society and individuals by providing life-long learning certificate programs or sharing free content associated with their massive open online courses (MOOCs). Socio-economic development forecasts indicate that digitalization will contribute to workforce productivity in the upcoming decades (Vaskov et al., 2021). In addition, the World Economic Forum's Future of Jobs 2020 survey pointed out that increasing demand is estimated for technology-related job roles such as data scientists and digital marketing specialists. On the other hand, demand will decrease for job roles associated with routine tasks such as customer service representatives and accountants (WEF, 2020). So, numerous students or professionals are expected to seek online computer and data science courses.

In addition to online and continuous learning, active learning methods are considered the future trend in higher education (El-Azar, 2022). A traditional, knowledge-transmitting lecturing approach is no longer serving the needs of the highly uncertain and complex world. Due to the current research topics in higher education and teaching, higher education is evolving into student-centered and student-led (Park, 2020) and transforming from face-to-face to digital (Telukdarie and Munsamy, 2019). Universities must be the primary institutions that ensure the relevancy and actuality of their curricula and provide high-quality education programs by utilizing new methods and technologies.

While technical skills will be highly needed, experts also estimate increasing demand for non-technologic roles such as strategic advisors and organizational development specialists (WEF, 2020). People that are proper candidates for those roles are generally expected to have an undergraduate or graduate degree in business administration. Business administration is a popular and broad major covering relevant and essential topics such as strategic management, marketing, financial management, operations management, and human resources. It is among the prominent programs that need to remain current, competitive, and challenging. Research in business administration is also transforming in parallel with technological developments and digitalization; for example, big data and the internet are prominent topics (Lingyan and Yukun, 2022).

Higher education programs business administration programs must provide their graduates with the relevant and actual skills required. Higher education is considered an investment as it opens a new world for many students by widening their perspectives and preparing them for their future careers (Tun, 2020). While students seek good and prestigious jobs soon after graduation, business owners and professionals need well-educated talents. Therefore, high-quality education is essential from an individual and a societal perspective. Many universities provide double major programs as an opportunity for successful undergraduate students, where the business administration program is one of the favorite options. A similar pattern is observed for graduate studies in the MBA (Master of Business Administration) degree. Engineers, architects, or even medical and law school graduates increasingly pursue an MBA or develop themselves by getting additional training or certificates regarding managerial issues such as marketing or finance. Besides, it is crucial to examine business administration education in the online learning context because business schools generally face the inherent challenge of having more diverse students, better online learning capabilities, and proximity to business life (Brammer and Clark 2020). Although digitalization is a disruptive force that transforms higher education, studies focusing on the topic are scarce and more studies are needed (Telukdarie and Munsamy, 2019; Benavides et al., 2020). Therefore, this chapter will address this crucial topic, hoping to provide a brief overview for higher education institutions, academic staff, and students who need a relevant and actual summary of the new trends and challenges associated with digitalization. It examines the critical points in the digital transformation of higher education while linking the shift to the essential skills needed in business life.

DIGITALIZATION IN HIGHER EDUCATION

In line with the digitalization of education, higher education institutions must make a self-assessment and transform to continue well serving the society with research and teaching (Taşçı and Çelebi, 2020). Universities must rethink their academic programs and curriculum to better prepare their students for the future, shaped by rapid technological improvements such as artificial intelligence (Pelletier et al., 2021). Kohnová et al. (2021) have pointed out that the education system must develop students' technological skills by integrating digitalization and technology usage in programs. To support digital education, universities can incorporate artificial intelligence into their curriculum to prepare their students for professional life in almost all fields (Taşçı and Çelebi, 2020).

In the accelerated digitalization process in the COVID-19 pandemic, many universities were involved with a digital transformation by using various platforms such as Microsoft Teams, Zoom, Moodle, Blackboard, and Google Classroom (Neykova, 2021). The change is estimated to continue; ninety-five percent of the educational institutions will utilize big data analytics and cloud computing technologies by 2025 (WEF, 2020). Artificial intelligence, hybrid or online courses, and open academic sources are the leading technologies that significantly impact the future of education (Pelletier et al., 2021). Higher education institutions will increasingly adopt artificial intelligence both for teaching and student management purposes, such as providing customized teaching material per student and facilitating student participation and data analysis (Taşçı and Çelebi, 2020). Administrators can embed artificial intelligence in learning management systems such as student assessment and grading applications (Pelletier et al., 2021). Possible contributions of artificial intelligence can be automatizing quantifiable tasks such as creating student assessment reports or embedding simulations or gamification applications in learning management systems (Taşçı and Çelebi, 2020; Henderikx and Stoffers, 2022). In addition, e-learning, subscriptions to lifelong learning services, immersive digital learning environments with augmented and virtual reality, artificial intelligence and self-learning algorithms, and the nano-learning concept such as mini and modular video lectures up to 10 minutes are listed as the most critical trends in the education and training sector (Marr, 2022).

Digitalization is expected to empower learners, increase their learning motivation, and provide better outcomes (Ljungqvist and Sonesson, 2021). For example, integrating video assessment as an innovative and practical solution can enhance learning and develop digital and communication skills (Hawley and Allen, 2018). Students generally prefer functional course materials linked to real life and feel comfortable with hybrid (online and offline) learning methods (Kohnová et al., 2021). On the other hand, online learning necessitates students' more active participation and better self-organization skills (Frolova et al., 2021), which can be challenging. Besides, students must have computer literacy to succeed in using digital platforms. Computer self-efficacy and enjoyment positively influence students' intentions to continue using e-learning platforms (Wang et al., 2019).

Universities must increasingly provide flexible and hybrid programs that enable students to utilize both remote and on-campus learning (Pelletier et al., 2021). Active learning using digital platforms positively influences students' innovative work behavior and readiness for change (Aboobaker and Zakkariya, 2019). Through digitalization, universities can provide seamless access to university facilities without time and place restrictions (Moşteanu, 2021). Digital advancements such as cloud computing and e-learning platforms enable the interaction of students and lecturers without necessarily being in the same physical space (Hans and Crasta, 2019). Those developments act as pillars that improve students' technological skills and prepare them for their future careers.

Digitalization in education pushes lecturers to transform their roles from traditional teachers to facilitators of learning (Ljungqvist and Sonesson, 2021). A pure lecturing format that resembles a monologue is no longer sufficient and satisfying for today's students (Hans and Crasta, 2019). Rather than a lecturing format, active learning methods that include student participation, trial, and application improve learning outcomes (El-Azar, 2022). By flipping the class via active learning principles, students also have the chance to experience peer learning, in which they interact with their friends and learn together. In flipped learning, lecturers distinguish between the individual learning space, where the student can study alone, and the in-class (group) learning space, where the student can benefit from the rich and interactive learning environment with other students and the lecturer. Each lecture is introduced to students with the help of short pre-class learning material such as a video or text. This pre-class activity ensures that the student gets familiar with the topic, and activities that could be accomplished by the student alone do not spend the relatively valuable in-class time.

Digital technologies facilitate the design of flipped classrooms that encourage student participation and active learning (Hans and Crasta, 2019). In the active learning format, educators pass the control to students, act as a guide, and share the learning responsibility with students (Telli and Aydın, 2021). That approach is the best in keeping student attention high in the class since students become active participants rather than passive listeners. For example, showing students videos, including gamification elements in the virtual class, or asking them to join activities designed on some websites might be two examples that increase student involvement and lead to more effective learning (Telli and Aydın, 2021). In line with this, Frolova et al. (2021) have stated that student-to-student interaction and a game context can maintain student interest in online learning. Flipping the classes and applying the newly acquired knowledge is one of the best ways of learning and outperforms the traditional listening to a lecture format (El-Azar, 2022).

New trends in higher education also include student assessment. The traditional examination approach that measures the extent of knowledge retained in memory at the exam date is also changing and evolving into a more holistic evaluation and formative assessment methods that combine formal and informal assessment of the students throughout the learning experience (El-Azar, 2022). Such flexible assessment approaches support active learning and contribute to the learning outcomes. They enable students to apply their knowledge and express their creativity in their projects and presentations. Besides other assessment methods, digital platforms provide online examinations (e-assessment) for the lecturers who need formal exams. However, e-assessment can create additional stress on students. Kundu and Bej (2021) focused on this issue and pointed out that student perceptions of e-assessment were moderate; students think that online assessments are valid, practical, secure, and free from human errors; but they can be hesitant to take online exams as they do not feel confident in computer skills, feel stressed, and lose their concentration during the exam. To summarize the relevant findings regarding online learning, the conclusions of the literature are exemplified in Table 1.

Table 1. Example studies focused on online learning

Author(s)	Country	Research Participants	Finding
Aboobaker and Zakkariya (2019)	India	Post-graduate students	Digital learning orientation positively influences readiness for change and innovativeness. University students score high in digital learning orientation and readiness to change.
Almazova et al. (2020)	Russia	University teachers	The challenges of online learning during the COVID-19 pandemic were listed as the readiness for online education, university technological support, and computer literacy.
Frolova et al. (2021)	Russia	University students	Students may not successfully adapt to online learning. Students faced problems such as the lack of direct communication with lecturers and other students and readiness and organizational skills. Game contexts and peer-to-peer interaction may create exciting and engaging online courses.
Kohnová et al. (2021)	Slovakia	Generation Z members	Young people score high in learning new things, creativity, and digital applications.
Kundu and Bej (2021)	India	University students	Students think that e-assessment has both advantages and disadvantages. Their overall evaluation of e-assessment is moderate.
Neykova (2021)	Bulgaria	University lecturers and students	Lecturers and students managed to develop the skills for online learning in the COVID-19 pandemic. More than half of the participants were positive regarding the benefits and new opportunities associated with online learning.
Veletsianos et al. (2021)	USA	Faculty members	Most faculty think that the COVID-19 pandemic and online learning will transform higher education.
Wang et al. (2019)	Malaysia	University students	Computer self-efficacy and enjoyment positively influence students' intentions to continue using e-learning platforms.

Source: Prepared by the author.

From the lecturers' point of view, active learning and designing flipped classes require additional skills and effort. Lecturers must have the necessary motivation and skills to adapt their courses to active learning on digital platforms. Digital technologies may help prepare participative and creative courses that utilize rich educational materials and tasks (Neykova, 2021). The information, examples, case studies, and discussion topics must be exciting and engaging. Within that context, the teaching methods and personal preparation are different for online and in-class lectures (Almazova et al., 2020). Faculty members and instructors must have a digital competency set that enables them to effectively interact with students on a digital platform, create digital content, and handle technical problems at the user level (Vaskov et al., 2021). Faculty and lecturers must follow technological innovations and provide flexible and emotionally supportive instruction to respond to a diverse student portfolio (Pelletier et al., 2021). Instructors must combine their technical and emotional skills with innovative teaching methods. Students increasingly need instructors who understand, encourage participation, and provide feedback throughout the learning process (Kohnová et al., 2021).

This section has summarized the digital transformation in higher education. The following section will focus on the management education's specific needs.

Transforming the Business Administration Education

Business administration undergraduate programs provide graduates with a wide range of skills employable across many sectors and organizations, so business administration graduates are generally highly employable (Tun, 2020). Many students study management because of its vast and flexible employment opportunities. Besides, students prefer the business administration department due to the factors such as having a prestigious job with a high income and benefiting from career development objectives (Ülgen and Aksakal, 2022). To achieve those goals, management students must have a full agenda with networking activities, part-time or voluntary jobs, projects, and extra-curriculum self-development tasks (Tun, 2020). Besides bachelor's degrees, business administration programs offer MBA programs that appeal to many graduates and professionals across many sectors. MBA programs are generally top-rated since they add value to professionals, executives, and entrepreneurs (Bhatnagar, 2020).

According to the World Economic Forum's future estimations, critical thinking, self-management, and problem-solving will be crucial for business and academic success (WEF, 2020). In addition, emotional intelligence, efficient communication, and interpersonal skills are essential for employability (Bhatnagar, 2020). Those skills necessitate a well-balanced combination of cognitive and emotional capabilities, backed by physical health. Many courses in the management curriculum develop critical thinking and problem-solving. Accounting and finance problems, operations management, or marketing cases help students develop problem-solving skills. Emotions and active communication skills constitute the second pillar of the skill set. Good communication skills and fluency in a second relevant language are required to prepare MBA students for the job market (Bhatnagar, 2020). Management programs generally include courses such as business communication or some core courses that may improve self-awareness and interpersonal communication. According to the Horizon Report, demand for new skills such as transformative leadership, human-centered team management, and independently working in remote virtual environments are essential factors that will shape the transformation in the education system (Pelletier et al., 2021).

Another critical skill is self-management (WEF, 2020). The COVID-19 pandemic emphasized the importance of general well-being, self-management, and emotional resilience. Many students and faculty coped with the stress and faced the challenge of effective time management and self-regulation. After nearly two and a half years, higher education is still under the influence of the pandemic, evolving into hybrid models that combine face-to-face and online education alternatives. As a discipline closely linked to business practice, psychology, and human contact, management departments must integrate those skills with case studies, group projects, and internship programs. Many institutions are making strategic plans for remote working and are unlikely to return to pre-pandemic commuting methods (Pelletier et al., 2021). Therefore, flexibility, stress tolerance, and resilience, which are the primary self-management skills, will be the keys to the future success of students (WEF, 2020). Graduates must quickly adapt to remote work in more isolated and independent virtual contexts (Pelletier et al., 2021). Organizations increasingly need leaders who can deal with the rapid changes such as data-driven decision making and effectively manage digital communication and collaboration between teams (Hesse, 2018). A balanced combination of cognitive, emotional, and social skills is necessary for healthy and productive business life.

A business school in Europe initiated a new immersive and hybrid undergraduate program in 2021, in which students combine in-campus courses, online learning experiences, and practical experiences (El-Azar, 2022). Such initiatives are good examples of preparing students for the real-life expectations of business owners. The technological revolution shaped by artificial intelligence and big data promoted the change in business administration training (Lingyan and Yukun, 2022). Due to digitalization and the increased technical expectations of employers of all sectors, people seek online data science, coding, and information technology courses (WEF, 2020). That trend must call business schools to spare a more significant share for technical classes and computer skills. They can also collaborate with other faculties to design minor programs that conform with their learning outcomes. Business life increasingly needs highly skilled talents in innovation to successfully initialize ideas in the new digital era (Lingyan and Yukun, 2022). Therefore, business administration graduates have better gain coding (programming) skills. They must be comfortable using several package programs for reporting, presenting, data analysis and visualization, computational business modeling, text mining, and machine learning. They will need advanced skills such as basic coding, which will be required for many functions such as campaign management in marketing and running queries in customer relationship management, decision-support, or reporting systems. The association of business education fundamentals and real-life examples that will require digital skills are shown in Table 2.

Table 2. Digital technologies and business administration program fundamentals

Business Administration Program Fundamentals	Examples of Real-Life Tasks That Will Require Digital Skills
Accounting	Cash flow and revenue management
Corporate Finance	Financial decision-making
Managerial Economics	Mathematical modeling to solve management problems
Strategic Management	Strategic planning, scenario-based decision-making
Marketing	Optimizing offers in digital marketing, advertising budget management
Customer Relationship Management	Data mining in campaign management, database marketing, predictive modeling
Operations Management	Quantitative modeling for inventory management
Human Resources Management	Dynamic performance measurement, recruitment support
Management Information Systems	Strategic business unit profitability calculation

Source: Prepared by the author.

The fundamentals of business must be enriched with necessary computer skills because students must continuously adapt to innovations to acquire valuable skills (Ljungqvist and Sonesson, 2021). Although university students, who mainly belong to Gen Z (born between 1995-2010), assess themselves as scoring high in their ability to learn new things using mobile applications and online platforms (Kohnová et al., 2021), the curriculum must be enriched with courses that increase technical skills. According to WEF (2020) report, the time spent by machines and humans on job tasks is estimated to be equal by 2025. Within that context, high competence in technology is essential to remain competitive in the current job market.

Digital teaching innovations are not only technical but also structural, organizational, and academic (Benavides et al., 2020). In general, lecturers integrate technical aspects into their courses, or universities offer relevant courses such as programming or system training. Business administration programs must provide current and appropriate education to avoid the skill gap problem when graduates are unsatisfactory or missing the skills needed in business life (Bhatnagar, 2020). For example, digitalization is creating new challenges for leaders in business life (Cortellazzo et al., 2019), which necessitates a broader integration of digitalization in all management courses. Recent graduates recruited as management trainees must be comfortable using many technical platforms and software packages and knowledgeable enough to participate in product or service innovation projects. They must be robust in computer skills and management knowledge to cope with the new challenges raised by digitalization.

Business administration education must transform students' technology usage into valuable and practical outcomes such as innovative ideas and behaviors (Aboobaker and Zakkariya, 2019). However, it can be challenging for the students to internalize the technology and effectively use it. For example, a study on Italian entrepreneurship education labs showed that the most used digital technology was social media, and it was used mainly to communicate and promote project outcomes, whereas other technologies such as 3D labs, virtual reality, and augmented reality were used weakly (Secundo et al., 2020). Implementing knowledge into practice, such as designing applied technology courses or linking them to active business life through internships, may be effective. Vocational schools and universities that provide healthcare management and tourism and hospitality management programs need more collaboration with the sector. Increasing the course hours devoted to applied training may facilitate students' digital and technical skills. For example, Balula et al. (2019) have reported that using digital technologies in tourism education provides time and location flexibility, develops new technical skills, and leads to more engaging and authentic teaching.

Part-time work and internships provide students with unique skills that enhance business administration education. Many business administration programs have compulsory internships to push students into professional life as soon as possible (Tun, 2020). Management students can have a better skill set if they connect theoretical knowledge with real-life examples. Evans (2021) suggests integrating part-time working experience in management classes since it augments learning and assessment. In this way, part-time work and internships may help students connect the theory and organizational context and internalize the knowledge (Evans, 2021). Internships may facilitate students' understanding of using digital tools and coding in real business life. The tasks they face in their internships may lead them to realize their specific needs for self-growth. For example, a student who faced a challenge in an internship may decide to get additional training, such as life-long learning alternatives.

Providing Life-Long Training to Professionals and Managers

Continuous self-growth has become a new challenge in life due to the increasing speed of technological and environmental change. Active learning and adapting to rapidly changing technological, social, and business environments are of utmost importance for adults (WEF, 2020). Professionals, entrepreneurs, and business owners need lifelong learning solutions in the rapidly changing world. Distance learning, which is enabled by technology, has provided better educational opportunities for people who have full-time jobs (Neykova, 2021). Higher education, adult and continuing education, and workplace and professional training have been increasingly digitalized, which creates a new challenge for society (Bernhard-Skala, 2019; Mars, 2022). Swedish Digitalization Commission defines education as a coherent, automated, and flexible infrastructure for life-long learning led by individuals who feel a moral obligation to renew their skills (Ljungqvist and Sonesson, 2021). Digitalization increases efficiency in education by facilitating access to learning by eliminating time and place barriers, making learning more effective with the help of digital tools, and improving the digital skills of learners (Bernhard-Skala, 2019). Therefore, digital learning formats provided by public or private institutions contribute to life-long learning and continuous self-growth.

Digitalization facilitates life-long learning via various platforms while contributing to the need for continuous education. The distinction between university education and continuous life-long learning pursuing self-growth is becoming increasingly blurred. Some universities develop MOOCs depending on the United Nation's sustainable development goals, such as a business management course by Erasmus University Rotterdam (Weybrecht, 2021). Besides open online courses of universities, some other MOOC initiatives can be exemplified as edX, Coursera, and Udacity (Telli and Aydın, 2021). Mobile learning, blogging that supports collaborative online learning, and gamification elements such as scoreboards enhance the digital learning experience (Telukdarie and Munsamy, 2019). Thus, there is a significant increase in the number of people who look for online learning alternatives, employers who provide online learning alternatives to employees, and government-backed online learning programs (WEF, 2020).

In this dynamic landscape, many people can have the chance to develop and take some certificates for their new skills. People may take online courses to become better in their jobs, such as having better computer management skills. Besides, many people are interested in recreational learning and online courses relevant to their interests outside work (Mars, 2022). From this perspective, life-long learning is associated with an individual's well-being as it enhances life and increases the meaning of activities. Continuous and adult learning elevates students to a more active role that takes control of their learning goals. Instead of being a passive learner role who takes the given information and completes the necessary assignments to pass a course, active learning delivers richer and more satisfactory outcomes. Setting personal learning goals, actively engaging in digital course-related activities, searching for information, and interacting online with other learners leads to a self-fulfilling education experience regardless of age or educational background.

Strategic Management of Higher Education Institutions

The digital transformation of higher education must be participatory and inclusive by engaging students, professors, and researchers (García-Morales et al., 2021). However, shifting all faculty and lecturers to the digital teaching mindset is neither easy nor possible. Although the COVID-19 pandemic has dramatically forced this shift, teachers and students may still need time to develop the necessary skills and attitudes toward online learning. Teaching staff admitted they missed face-to-face communication with their students during the pandemic's compulsory digitalization and remote teaching period (Neykova, 2021). In that challenging context, they struggled to keep their family and friends safe while adapting to online teaching and working at a shockingly fast pace. The main challenges for online learning were listed as the lecturers' computer literacy, the technical support level provided by the university, and students' and lecturers' readiness (Almazova et al., 2020).

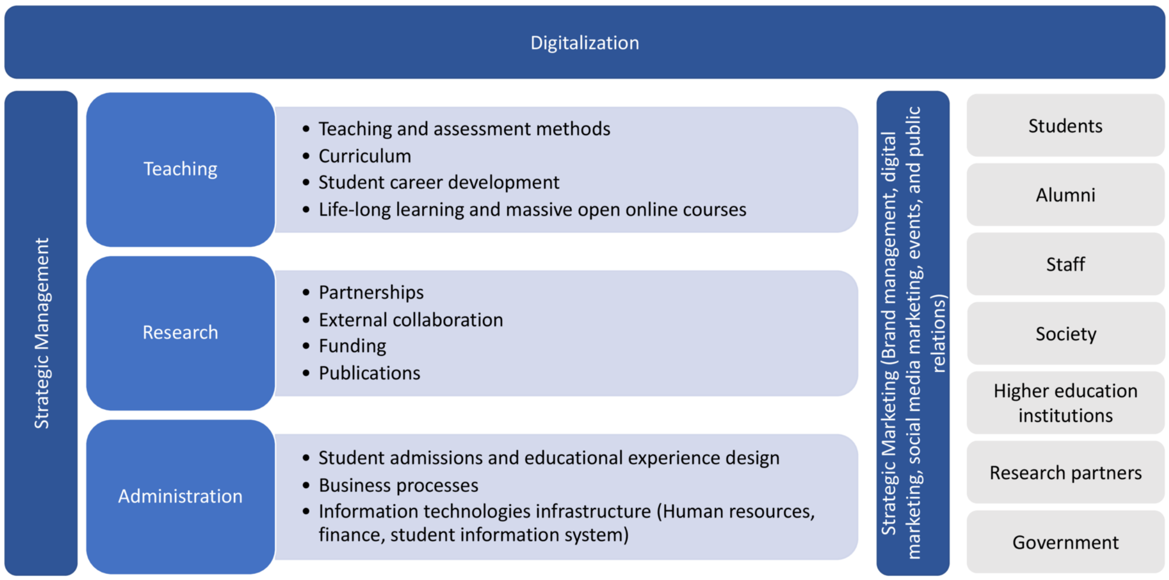
After two years, traditional face-to-face teaching and learning in physical classrooms is still the primary environment for many higher education institutions (Moşteanu, 2021). To ensure the internalization of the effective utilization of digital technologies and online teaching, firstly, faculty members must accept and adopt new technologies. Faculty buy-in and acceptance are crucial for integrating digital technologies into teaching methods (Pelletier et al., 2021). Faculty members and lecturers must have a positive attitude toward digitalization with the help of relevant, engaging, and valuable training in digital education tools (Vaskov et al., 2021) because online teaching necessitates new skills and demands more time (Bernhard-Skala, 2019). Professional development programs and university regulations protecting teaching staff from work overload while working online would help lecturers adapt to online and hybrid teaching (Almazova et al., 2020). The digital faculty survey conducted by Veletsianos et al. (2021) about the overall expectations over the next five years of higher education revealed that 48% of the faculty were optimistic, while 29% and 23% were neutral and pessimistic, respectively.

Flexibility, collaboration, and open learning systems bridge different higher education institutions worldwide (Pelletier et al., 2021). In this regard, distance learning and digitalization create an opportunity for many higher education institutions. First, the total cost of a virtual classroom is less than a traditional classroom due to the reductions in energy demand and personnel hours (Telukdarie and Munsamy, 2019). Opening a virtual lecture can provide many students without physical facilities, location, and time limitations. Second, the global talent pool of academicians and researchers has become reachable. Lecturers may work remotely across borders, or universities may hire experts all around the globe. Third, online learning and MOOC platforms are growing and open to new collaborations between higher education institutions, technology companies, and governments. The Horizon report predicts an increase in online globalization via additional investments and institutional cooperation for online learning globally (Pelletier et al., 2021). On the other hand, digitalization and distance learning have led to increased competition with foreign institutions in the higher education sector (Neykova, 2021). The competitive environment has become more complex, emphasizing the importance of strategic planning and management in universities.

The systematic literature review of Cortellazzo et al. (2019) has pointed out that leaders are the prominent agents for developing a digital culture. Managers of higher education institutions must firstly adopt new technologies and include them in their strategic plans for the efficient utilization of technologies (Taşçı and Çelebi, 2020). Such actions would be helpful for the faculty buy-in and facilitate the acceptance of technologies by the administrative staff. Besides planning, organizational structures must be adapted. Universities need to hire new staff and develop organizational structures for digital technologies (Bernhard-Skala, 2019). The skills and capabilities of higher education institutions must evolve in parallel to the rapid change in the technological and social environment. University administrators must integrate learning management, human resources, financial management, and research and development systems (Telukdarie and Munsamy, 2019). New organizational capabilities and technology-related factors will replace traditional competitive characteristics in the global higher education sector. Thus, integrating technological developments into the strategic marketing strategy of the university is necessary. For example, a remote student from another country may disregard a university's location or facilities on its physical campus, which were traditionally the main factors in university admissions. Campus or classroom space will not set a limitation for fully online students, so student and capacity planning must be reconsidered. The challenges and opportunities that digitalization brings must be fully integrated into higher education institutions' strategic marketing and brand management.

In addition to strategic marketing management, new technologies bring new opportunities for collaborative projects to serve society. In many countries, the elected politicians, leaders of technology companies, experts, and managers of education institutions show increased activity in promoting digitalization in education (Ljungqvist and Sonesson, 2021). Higher education institutions must reengineer their strategies by including the wide usage of combined digital technologies that enable collaborative exploration and idea generation (Aboobaker and Zakkariya, 2019). Digitalization allows universities to provide a modern environment for research, teaching, and meeting with industry experts (Moşteanu, 2021). Digitalization may allow for innovative projects and university-sector partnerships to benefit students and society. Those developments will support universities in reaching their goals to serve the students and community. University managers can create executive teams that will focus on collaboration opportunities and assist their faculty members in designing efficient projects. External technological integration with relevant institutions can facilitate external collaboration. Figure 1 summarizes the strategic management and marketing environment in higher education institutions in the digitalization context.

Figure 1. Digitalization and strategic management in higher education institutions
Source: Illustrated by the author



Support and security teams must be included in the digitalization of higher education institutions. Digitalization brings a security risk in many aspects. Although many people in the higher education sector fail to understand the security risk in digital platforms fully, it is a priority for managers of higher education institutions to create awareness and design institutional rules and policies about cybersecurity (Pavlova, 2020). Identifying students and verifying diplomas are the two prominent examples. To protect academic rigor, higher education institutions, government agencies, and private sector companies must design policies or criteria regarding the eligibility of MOOCs and standards to assess the success status of students who hold MOOC certificates. Those policies would facilitate the assessment of candidates for a job or higher education applications. Protection of personal data and student privacy can be other information security examples. Thus, robust information security systems must back up digital education services. University managers must consider new challenges associated with increased hardware and software investments, maintenance costs, and providing professional technical support to users (Bernhard-Skala, 2019).

Finally, sustainability is a topic that must be considered in the digitalization journeys of higher education institutions. Digitalization and increased awareness about sustainability are two interacting forces that shape the future of higher education. Given the increased environmental burden on our planet, sustainable business practices are getting improved attention. The impact of climate change on wildfires in the summer of 2020 and 2021 emphasized the urgency of the threat. Besides, the COVID-19 pandemic underlined the need for building healthy, safe, and sustainable marketing systems. The higher education system quickly responded to the pandemic by shifting to digital and taking this shock as a call to integrate social responsibility into their programs (Pucciarelli and Kaplan, 2021). Going to hybrid models by utilizing digitalization in education may help reduce the carbon footprint by reducing the environmental waste caused by transportation and paper and water usage. In addition, business administration programs must devote a more prominent place to sustainability and climate change in their curricula to prioritize the environmental and social consequences and aspects of business operations (Telukdarie and Munsamy, 2019; Mousa, 2021). Some higher education institutions have improved their practices and begun to add sustainability topics to their curriculum (Pucciarelli and Kaplan, 2021). On the other hand, for some institutions, Mousa (2021) reported that the online learning period during the pandemic did not affect the adoption of sustainability in management education in Egyptian business schools. Business schools that will lead the digital transformation and provide sustainable learning methods may have a competitive advantage.

FUTURE RESEARCH DIRECTIONS

The digitalization accelerated by the COVID-19 pandemic has transformed the higher education landscape. This transformation has also raised new questions for research. Some of the possible research topics are summarized in this section. First, digitalization has to be examined further from an educational perspective. Digitalization and new technologies will change the ways faculty members interact with students (Taşçı and Çelebi, 2020). So, there is a need for studies that examine the skills and specific training that must be given to faculty members and lecturers in higher education institutions. The effectiveness of interaction methods, platforms, and efficiency across different disciplines such as management, marketing, and finance can be examined. Hawley and Allen (2018) have pointed out the possible difference between individual and collaborative video creation for assessment as a future research priority. The differences between digital learning platforms and teaching or assessment activities can also be studied. Researchers can examine students' perceptions of online learning (Almazova et al., 2020). Although there is a general acceptance that students are inherently ready due to their familiarity with technology usage and social media platforms, taking a class on a digital platform can be different. Focusing on both the student and teacher perspectives and designing longitudinal studies may be helpful in this field.

Digitalization has transformed the management of higher education institutions in many aspects. Digitalization reduces the cost of traditional on-campus learning (Hans and Crasta, 2019) due to the reduction in water, electricity, paper, and transportation expenditures (Moşteanu, 2021). The extent to which it reduces costs is still under-researched. The profitability and sustainability of alternative business models that include governments, private sector experts, sponsor companies, and universities must be studied to facilitate the advancement and development of high-quality education systems. From a marketing management perspective, digitalization is an exciting research topic. Future studies can address the specific influence of digitalization in higher education and university brand management. The new dynamics of competition and how it influences university brand management is a primary issue.

MOOCs transformed the education system and redefined the rules of competition. Strategic marketing management has become more critical for higher education institutions. Future studies can focus on the impact of the digital transformation on the strategic direction of higher education institutions. The effects of digitalization and online learning on university brand image can be examined. Brand perceptions of students across different programs (pure online/pure in-campus) can also be different. Future studies can address the efficient and student-centric ways to design the university marketing strategy and communication programs. It is reported that international higher education is strikingly similar across cultural and geographical contexts such as Turkey, Australia, South Africa, and the U.S. (Pelletier et al., 2021). Cross-cultural similarities and differences and their interaction with local structural conditions can be studied.

From the perspective of human resources and organizational management, faculty buy-in and acceptance are crucial for adopting digital teaching tools (Pelletier et al., 2021). In addition to just accepting the importance of digitalization, faculty members and instructors must internalize and believe that digitalization will improve the teaching and learning experience and learning outcomes. If they internalize digitalization, they can effectively adapt their methods and design more creative, innovative, and engaging lectures. Thus, future studies can focus on organizational learning and change dynamics, efficient internal communication, and structural change methods.

Utilizing the benefits of digitalization has become the demand of many governments around the globe (Ljungqvist and Sonesson, 2021). The intersection of the digitalization of education with politics and economic development must be examined further by multidisciplinary studies. From a social perspective, the digital divide between students who have access to the internet and digital devices and students who cannot access even basic technological necessities will widen as higher education transforms into digital models (Pelletier et al., 2021). On the other hand, more students will be able to reach high-quality education and current knowledge thanks to open online courses and digital platforms. In that context, the profitable and sustainable business models that can be designed to include vulnerable and bottom-of-the-pyramid students in online and open education can be examined.

Digitalization brings many threats besides opportunities. Protecting personal information and valuable knowledge can be a primary issue in digital environments. Pavlova (2020) points out the importance of balancing the willingness to share information with the notion of cyber security in universities. Future studies can examine university management processes, organizational culture, and information technology structures. Finally, digitalization raises ethical concerns. For example, Pelletier et al. (2021) have pointed out the ethical challenges regarding using artificial intelligence in student admissions, assessment, and management. Further studies that examine digitalization as an element of ethical and sustainable higher education are needed.

REFERENCES

Aboobaker, N., & Zakkariya, K. A. (2019). Influence of digital learning orientation and readiness for change on innovative work behavior: Reflections from the higher education sector. *Development and Learning in Organizations*, *34*(2), 25–28. doi:10.1108/DLO-08-2019-0191

Almazova, N., Krylova, E., Rubtsova, A., & Odinokaya, M. (2020). Challenges and opportunities for Russian higher education amid COVID-19: Teachers' perspective. *Education Sciences*, *10*(12), 368. doi:10.3390/educsci10120368

Bacharach, G., Gottlieb, M., Norder, J. J., Pongratz, H., Steiper, R. D., Radenbach, W., . . . Waßmann, A. (2021). Progress on digitization of higher education processes towards standards EU & DE: Status and future perspectives. *EUNIS2021*. https://pim-plattform.de/wordpress/wp-content/uploads/2021/07/FINDE-03-EUNIS2021-full-2205.pdf

Balula, A., Moreira, G., Moreira, A., Kastenholz, E., Eusébio, C., & Breda, Z. (2019). Digital transformation in tourism education. *Tourism in Southern and Eastern Europe*, *5*, 61–72. doi:10.20867/tosee.05.45

Benavides, L. M. C., Tamayo Arias, J. A., Arango Serna, M. D., Branch Bedoya, J. W., & Burgos, D. (2020). Digital transformation in higher education institutions: A systematic literature review. *Sensors (Basel)*, *20*(11), 3291. doi:10.339020113291 PMID:32526998

Bernhard-Skala, C. (2019). Organizational perspectives on the digital transformation of adult and continuing education: A literature review from a German-speaking perspective. *Journal of Adult and Continuing Education*, *25*(2), 178–197. doi:10.1177/1477971419850840

Bhatnagar, N. (2020). Employability and skill gap among MBA graduates in India: A literature review. *Industrial and Commercial Training*, *53*(1), 92–104. doi:10.1108/ICT-10-2019-0098

Brammer, S., & Clark, T. (2020). COVID-19 and management education: Reflections on challenges, opportunities, and potential futures. *British Journal of Management*, *31*(3), 453–456. doi:10.1111/1467-8551.12425

Cortellazzo, L., Bruni, E., & Zampieri, R. (2019). The role of leadership in a digitalized world: A review. *Frontiers in Psychology*, *10*, 1938. doi:10.3389/fpsyg.2019.01938 PMID:31507494

El-Azar, D. (2022). *4 trends that will shape the future of higher education.* https://www.weforum.org/agenda/2022/02/four-trends-that-will-shape-the-future-of-higher-education/

Evans, C. (2021). Exploiting students' part-time work to enhance learning, teaching and assessment. *Industry and Higher Education*, *35*(1), 10–13. doi:10.1177/0950422220930182

Frolova, E. V., Rogach, O. V., Tyurikov, A. G., & Razov, P. V. (2021). Online student education in a pandemic: New challenges and risks. *European Journal of Contemporary Education*, *10*(1), 43–52.

García-Morales, V. J., Garrido-Moreno, A., & Martín-Rojas, R. (2021). The transformation of higher education after the COVID disruption: Emerging challenges in an online learning scenario. *Frontiers in Psychology*, *12*, 196. doi:10.3389/fpsyg.2021.616059 PMID:33643144

Hans, V. B., & Crasta, S. J. (2019). Digitalization in the 21st century–impact on learning and doing. *Journal of Global Economics*, *15*(1), 12–24. doi:10.1956/jge.v15i1.524

Hawley, R., & Allen, C. (2018). Student-generated video creation for assessment: Can it transform assessment within higher education? *International Journal for Transformative Research*, *5*(1), 1–11. doi:10.2478/ijtr-2018-0001

Henderikx, M., & Stoffers, J. (2022). An exploratory literature study into digital transformation and leadership: Toward future-proof middle managers. *Sustainability*, *14*(2), 687. doi:10.3390u14020687

Hesse, A. (2018). Digitalization and leadership-how experienced leaders interpret daily realities in a digital world. *Proceedings of the 51st Hawaii International Conference on System Sciences*, 1854-1863. 10.24251/HICSS.2018.234

Kohnová, L., Papula, J., & Salajová, N. (2021). Generation Z: Education in the world of digitization for the future of organizations. *Proceedings of INTED2021 Conference*, *8*, 10199-10208. 10.21125/inted.2021.2126

Kundu, A., & Bej, T. (2021). Experiencing e-assessment during COVID-19: An analysis of Indian students' perception. *Higher Education Evaluation and Development*, *15*(2), 114–134. doi:10.1108/HEED-03-2021-0032

Lingyan, L., & Yukun, G. (2022). Visual analysis of undergraduate teaching in business administration. *Procedia Computer Science*, *199*, 788–797. doi:10.1016/j.procs.2022.01.098

Ljungqvist, M., & Sonesson, A. (2021). *Selling out education in the name of digitalization: a critical analysis of Swedish policy*. *Nordic Journal of Studies in Educational Policy*. doi:10.1080/20020317.2021.2004665

Marr, B. (2022). *The five biggest education and training technology trends in 2022*. https://www.forbes.com/sites/bernardmarr/2022/02/18/the-five-biggest-education-and-training-technology-trends-in-2022/?sh=18e2cc4d2f4d

Moşteanu, N. R. (2021). Digital Campus–a future former investment in education for a sustainable society. E3S Web of Conferences, EDP Sciences, 234, 29. doi:10.1051/e3sconf/202123400029

Mousa, M. (2021). Responsible management education (RME) post COVID-19: What must change in public business schools? *Journal of Management Development*, *40*(2), 105–120. doi:10.1108/JMD-10-2020-0316

Neykova, M. (2021). Application of digital technologies for distance learning in higher education–problems & prospects. *Knowledge-International Journal*, *47*(3), 485–489.

Park, Y. E. (2020). Uncovering trend-based research insights on teaching and learning in big data. *Journal of Big Data*, *7*(1), 1–17. doi:10.118640537-020-00368-9

Pavlova, E. (2020). Enhancing the organizational culture related to cyber security during the university digital transformation. *Information & Security*, *46*(3), 239–249.

Pelletier, K., Brown, M., Brooks, D. C., McCormack, M., ... Mondelli, V. (2021). *2021 EDUCAUSE Horizon Report, Teaching and Learning Edition*. EDUCAUSE, https://library.educause.edu/resources/2021/4/2021-educause-horizon-report-teaching-and-learning-edition

Pucciarelli, F., & Kaplan, A. (2021). Transition to a hybrid teaching model as a step forward toward responsible management education? *Journal of Global Responsibility*, *13*(1), 7–20. doi:10.1108/JGR-12-2020-0111

Secundo, G., Rippa, P., & Meoli, M. (2020). Digital transformation in entrepreneurship education centers: Preliminary evidence from the Italian Contamination Labs network. *International Journal of Entrepreneurial Behaviour & Research*, *26*(7), 1589–1605. doi:10.1108/IJEBR-11-2019-0618

Taşçı, G., & Çelebi, M. (2020). Eğitimde yeni bir paradigma:"Yükseköğretimde yapay zeka [A new paradigm in education: "Artificial intelligence in higher education"]. *OPUS Uluslararası Toplum Araştırmaları Dergisi*, *16*(29), 2346–2370. doi:10.26466/opus.747634

Telli, S. G., & Aydın, S. (2021). Digitalization of marketing education: new approaches for universities in the post-Covid-19 era. *Üniversite Araştırmaları Dergisi, 4*(1), 61-74.

Telukdarie, A., & Munsamy, M. (2019). Digitization of higher education institutions. *2019 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)*, 716-721. 10.1109/IEEM44572.2019.8978701

Tun, W. M. (2020). Graduate tracer study on LPU-Laguna bachelor of science in business administration SY 2013-2015. *LPU-Laguna Journal of Multidisciplinary Research, 4*(1).

Ülgen, B., & Aksakal, N. Y. (2022). Why students prefer "business administration education"?: A qualitative research with the international students. In A. Zhuplev & R. Koepp (Eds.), *Global Trends, Dynamics, and Imperatives for Strategic Development in Business Education in an Age of Disruption* (pp. 189–213). IGI Global. doi:10.4018/978-1-7998-7548-2.ch010

Vaskov, M., Isakov, A., Bilovus, V., Bulavkin, A., & Mikhaylenko, N. (2021). Digital literacy of modern higher education teachers. E3S Web of Conferences, EDP Sciences, 273, 12035. doi:10.1051/e3sconf/202127312035

Veletsianos, G., Johnson, N., & Seaman, J. (2021). *Digital faculty: faculty expectations about the future of higher education*. Bay View Analytics. https://files.eric.ed.gov/fulltext/ED617095.pdf

Wang, L. Y. K., Lew, S. L., Lau, S. H., & Leow, M. C. (2019). Usability factors predicting continuance of intention to use cloud e-learning application. *Heliyon*, *5*(6), e01788. doi:10.1016/j.heliyon.2019.e01788 PMID:31198866

WEF. (2020). *The future of jobs report 2020.* https://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf

Weybrecht, G. (2021). How management education is engaging students in the sustainable development goals. *International Journal of Sustainability in Higher Education*, *22*(6), 1302–1315. doi:10.1108/IJSHE-10-2020-0419

ADDITIONAL READING

Brewer, R., & Movahedazarhouligh, S. (2018). Successful stories and conflicts: A literature review on the effectiveness of flipped learning in higher education. *Journal of Computer Assisted Learning*, *34*(4), 409–416. doi:10.1111/jcal.12250

Cerdá Suárez, L. M., Núñez-Valdés, K., & Quirós y Alpera, S. (2021). A systemic perspective for understanding digital transformation in higher education: Overview and subregional context in Latin America as evidence. *Sustainability*, *13*(23), 12956. doi:10.3390u132312956

Crittenden, W. F., Biel, I. K., & Lovely, W. A. III. (2019). Embracing digitalization: Student learning and new technologies. *Journal of Marketing Education*, *41*(1), 5–14. doi:10.1177/0273475318820895

Hwang, A., Fornaciari, C. J., Asarta, C. J., Arbaugh, J. B., & Ferrara, Z. (2021). An analysis of highly-cited scholarship in business and management education: Findings and future agendas. *International Journal of Management Education*, *19*(1), 100447. doi:10.1016/j.ijme.2020.100447

Johnson, M. (2021). Teaching excellence in the context of business and management education: Perspectives from Australian, British and Canadian universities. *International Journal of Management Education*, *19*(3), 100508. doi:10.1016/j.ijme.2021.100508

Papanastasiou, G., Drigas, A., Skianis, C., Lytras, M., & Papanastasiou, E. (2019). Virtual and augmented reality effects on K-12, higher and tertiary education students' twenty-first century skills. *Virtual Reality (Waltham Cross)*, *23*(4), 425–436. doi:10.100710055-018-0363-2

Sahin, M., & Kurban, C. F. (2016). The flipped approach to higher education. In *Flipped learning: A transformative approach designed to meet the needs of today's knowledge economies and societies* (pp. 15–24). Emerald Group Publishing Ltd.

Tiberius, V., Hoffmeister, L., & Weyland, M. (2021). Prospective shifts in executive education: An international Delphi study. *International Journal of Management Education*, *19*(3), 100514. doi:10.1016/j.ijme.2021.100514

Traxler, J. (2016). Inclusion in an age of mobility. *Research in Learning Technology*, *24*(1), 31372. doi:10.3402/rlt.v24.31372

KEY TERMS AND DEFINITIONS

Active Learning: A learning method in which students actively participate in learning by doing or experiencing rather than passively listening.

Augmented Reality: A technology that enriches real life by overlaying images or other computer-generated content.

E-Learning: The use of digital, cloud, internet, mobile, and multimedia technologies to provide high-quality, rich, and engaging remote learning.

EdTech: Educational technology.

Flipped Learning: A framework and methodology in which the course material is introduced before class to allocate valuable in-class time to discussions, applications, and active student participation.

Learning Management System: A software or application that enables instructors to upload the learning material, assess students through assignments, and interact with students via forums or discussion boards.

MOOC: Massive open online courses.

Sustainable Development Goals: The seventeen goals (such as quality education, decent work, and economic growth) that were accepted by the United Nations and relevant stakeholders.

Virtual Reality: A technology that allows users to have an immersive three-dimensional spatial experience.

Chapter 14
Competitive Edge Building in Business:
An Approach Through Ethical Marketing Practices

Charul Chaturvedi
SAGE University, Bhopal, India

Debesh Mishra
KIIT University (Deemed), Bhubaneswar, India

ABSTRACT

In today's competitive era, organisations adopt several practices to gain a competitive advantage. But the question that arises is: Are these practices based on the morals and values of our organisation? Thus, ethical practices are the solution to it. So, it becomes the moral responsibility of managers or the top management to adopt such practices, and therefore, companies must make social responsibility an integral component of every marketing decision. This chapter highlights the importance of using ethical marketing practices to gain a competitive edge over rivals. The chapter also highlights about importance of the responsible behaviour of producers towards society.

INTRODUCTION

The concept of marketing is to meet the needs of the target consumer more effectively than the competitors. This concept is sometimes incompatible with the welfare and interests of society. For example, products such as cigarettes and alcohol satisfy consumer needs but do harm, and many products that are easy to use, such as packaging products in disposable packaging materials, are contributing greatly to environmental degradation and climate change. The environment responds to all actions of the organization. Therefore, businesses should make social responsibility an integral part of every marketing decision. The marketing profession is multidimensional and dynamic which involves risk bearing and facing competition in fierce competitive environment. Market research related activities are conducted

DOI: 10.4018/978-1-6684-5274-5.ch014

to provide vital information for achieving organizational goals. Because of the performance pressures, ethical issues are central to marketing research activities, and therefore, market research professional are bound to formulate activities with the ethical issues framework.

In today`s competitive scenario, modern society demands for an ethically responsible behavior from organizations towards their stakeholders (Martin and Johnson, 2010; Olins, 2014). A more appropriate conceptualization of the traditional marketing concept, which balances the needs of society with the needs of the individuals and marketing organizations, is the Societal Marketing Concept (Kotler, 1972). This concept requires that all marketers must adhere to principles of social responsibility in the marketing of their products and services; that is, they should satisfy the needs and wants of their target markets in ways that preserve and enhance the wellbeing of consumers and society, while fulfilling the objectives of the organization. Ethical advertising is being created in a way which saves environmental standards. Companies that launch ethical ads use only eco-friendly and recyclable components, non-polluting methods in the nature. The advertisement will also do as much as possible to avoid the excessive waste of resources (Drumwright and Murphy, 2009). Maintaining a relationship with the consumer and building brand loyalty are major challenges in the current marketing environment (Melewar and Nguyen, 2017). According to the Societal Marketing Concept, food and restaurant businesses should develop foods that contain less fat and starch but more nutrients, and marketers should not advertise foods to young people in ways that encourage overeating or use professional athletes in liquor and tobacco advertisements,

PURPOSE AND OBJECTIVE

The purpose of this study is to underline and understand the reasons for using ethical practices adopted by an organization to gain a competitive edge other rival. The objective of this study lies in the significance of using ethical marketing practices. Following points can easily be understood as the objectives of this study:

1. To search reasons for an organization to adopt ethical practices
2. To find the recent trend in organizations for using these practices

METHODOLGY

To understand the objectives of this study, the data collection is done based on secondary data available from Journals, Articles, Newspapers, Books, and other material available with the related topic. Since, many researchers have been done on this topic there is abundant amount of literature available. So, with the help of that, importance, and benefits of using ethical practices is highlighted. The paper also tries to list down suggestions to managers for using such practices.

LITERATURE REVIEW

Meaning of Ethics and Ethical Marketing

Taylor (1975) defines ethics as an "inquiry into the nature and grounds of morality," where morality means "moral judgments, standards, and rules of conduct." In 1986, Vitell applied Taylor's definition of business ethics to define marketing ethics as "an inquiry into the nature and grounds of moral judgments, standards, and rules of conduct relating to marketing decisions and marketing situations". Similarly, Thompson (2005) defines ethics as the study of right and wrong; of the moral choices people make and the way in which they seek to justify them. Ethics is concerned with the nature of specific decisions made and the ――goodness or badness‖ of those decisions in terms of the consequences of those decisions (Chonko, 1995).

Ethics seeks to address the human moral issues. The fields of moral psychology, descriptive ethics, as well as value theory are all connected to ethical philosophy (Cooper, 1999). The words "ethics" or "morals" in the literature refer to a collection of moral standards (Resnik, 2011). Ethics is also closely related to social responsibility because social responsibility relating to ethics includes social relationships within society, in which enterprises work (Goolsby and Hunt, 1982; Hur *et al.*, 2014; Sen *et al.*, 2006; Stanaland *et al.*, 2011).

Above definitions clearly states that the term ethics can be used interchangeably with morals. The terms ethics and ethical refer to the study of moral conduct or to the code one follows. Corporations adopting and applying ethical codes responsibly are widely recognized as trustworthy and present their commitment to ethical conduct. A well-defined ethical code featuring corporate connection with consumers, employees, host governments, environmental issues, legal concerns and relations with stakeholders would present a clear corporate vision of an international business before a host country society, also with inspiring a sense of social responsibility and confidence (Stohl *et al.*, 2009; Rodriguez-Dominguez *et al.*, 2009; Sevensson *et al.*, 2009; Godos-Diez *et al.*, 2011). Gaski (1999) defined ethical marketing as "a code of morals and conduct used in marketing practices". Ethical marketing drives companies make marketing decisions that are morally acceptable in terms of ties between marketing managers and other stakeholders including customers, employees, competitors, and general public. Ethical marketing is an important subject for both academia and practitioners because ethical principles require companies abide by the minimum standards of liability and conduct their marketing activities in ways that make business transparent and acceptable to all. Corporate ethics requires setting and maintaining minimum standards of responsibility and behavior that companies should follow or a system of accountability for a company's implementation of its ethical role (Donaldson and Werhane, 1983). Being more formal, Marketing ethics can be defined in two ways: a) as a discipline that involves systematic study of the moral evaluation of marketing decisions, practices, and institutions; b) as the standards or norms applied in the judgment of marketing activities as morally right and wrong (Smith and Murphy, 2012).

Ethical marketing practices include product-related ethics, price-related ethics, place-related ethics, and promotion-related ethics. Product-related ethics includes product safety, product liability, and product imitation, which are subject to legal regulations. The marketing mix strategies from ethical issues have been emphasized by 'Sustainability' as studied by several researchers (Bretcu, 2013; Hur *et al.*, 2014; Nill and Schibrowsky, 2007; Brubaker, 2007; Jeurissen and Van De Ven, 2006; Low and Davenport, 2005; Ludlum and Johnson, 2015; Malhotra and Miller, 1998).

Ethical issues are categorized for marketing mix strategy as product-related, price-related, place-related, and promotion-related ethics (Bretcu, 2013; Low and Davenport, 2005; Malhotra and Miller, 1998; Ford and Richardson, 1994; Camenisch, 1991; Aguilar, 1994).

- Product-related ethical issues constitute the level of product safety, quality, eco-friendliness, packaging and branding, and warranty (e.g., Is the product safety information clearly indicated on the packaging?).
- Price-related ethical issues constitute using predatory pricing strategies, illegal pricing and fraudulent or false pricing (e.g., Does the manufacturer refrain from using a predatory pricing strategy of intentionally lowering prices to eradicate competitors?).
- Place-related ethical issues constitute the degree of the sales policy, level of partnership, and degree of transparent transaction (e.g., Does the manufacturer refrain from controlling transactions by abusing its status?).
- Promotion-related ethical issues constitute advertising under legal legislation and degree of misleading or deceptive aspects (e.g., Does the manufacturer refrain from providing fraudulent, false, and exaggerated advertisements to consumers)

Other ethical issues result in subjects as retailing decisions, direct marketing, and supply and channel management. Ethical issues in direct marketing are the subjects which are privacy, confidentiality, and intrusion (Chonko, 1995).

Importance of Ethical Marketing

The significance of ethical marketing is further highlighted by the fact that consumers in modern societies continue to require high quality products and prefer socially renowned brands even though they may acquire those products at higher prices (McGuire *et al.*, 1988). Islam *et al.* (2020) explained how companies cannot just rely on informing customers about their products/services, rather they also must provide exceptional customer experiences to make them sustainably loyal over a period. This loyal base of customers will serve as a sustainable competitive advantage for companies across industries. Ethical marketing practices provide directions to managers and marketers on how to deal with an ethical issue (Reidenbach *et al.*, 1991). The importance of ethics in the advancement of business sustainability, and general marketing issues (including product safety, price tags and advertising) has duly been recognized by corporate managers and vendors (Lee and Jin, 2019). For example, Promotional ethics issues can be analyzed in marketing and personal sales. Promotional ethics covers questions of marketing, sales, and public relations (Dudiak, 2001). Ethical marketing practices are aimed at promoting the ethical values of firms so that consumers are attracted to buy from such firms (Schlegelmilch and Öberseder, 2010). In this regard, it is useful to note that consumers have been observed to respond positively to socially responsible companies (Lämsä *et al.*, 2008). But at the same time, it has also been observed that such companies have traditionally witnessed a relatively smaller market share (Boulstridge and Carrigan, 2000). In the classical sense, Brenner and Molander (1977) described many examples of undesirable activities carried out by firms. Ethical marketing practices enable you to meet your customers' physical needs as well as their spiritual needs. This leads to increased sales, which helps organizations build customer loyalty. It also increases the value of the company in the eyes of its employees. It is also an additional incentive for self-development and work efficiency improvement (Preston, 2010). From several research done, it can easily ne concluded that ethical marketing practices are the most viable areas in the company`s diverse activities which a consumer observes. Moreover, ethical marketing practices are important factors that influences and effects consumer perception about the brand.

As F. Taylor, the founder of an ethical approach to marketing, claimed in his works, the solution of social problems not only does not contradict the interests of business, but on the contrary, is in direct relationship with the latter. For example, improving the welfare of the population by saving resources provides an increase in effective demand for other goods (Kotler, 1972).

Ethical Marketing v/s Unethical Marketing

Ethical marketing and unethical marketing both have different principles. What all ethical advertising cares about is the truth about the product, the production process and the company's working condition. Ethical advertising does not attempt to adorn actual products or cover up defects in those products (Keith *et al.*, 2008). You do not display advertisements that seek to sell something that is not clear or that is completely different from what is presented and what you own (Drumwright and Murphy, 2009). Ethical and unethical advertising contributes in the opposite direction to product differences. When it comes to ethical advertising, always create specific logos, images, or advertisements to emphasize your uniqueness. Their goal is to show the difference between their product and the competition. All logos are distinguishable and easily recognizable. Images and logos allow buyers to recognize a particular brand among dozens of products in the same niche category. Unethical advertising is something entirely different. It will pursue to find a way to give their product the same look as any brands in same category. Unethical advertising will take advantage of confusing among customers because customers may not notice the difference between fake and original product as it will all look similar or even the same. That way, companies with unethical principles will make money by cheating and lying to the wide audience. Studies have also suggested that lack of use and enforcement of code of ethics in the marketing research industry is perceived to lead to unethical behavior (Yallop, 2012). Ethical advertising must be socially conscious unlike unethical advertising. It does not manipulate common humans` emotions such as envy, greed, or fear. He will do his best to provide a bright and positive atmosphere. We also do not support controversial stereotypes related to age, religion, gender, or race. In addition, many companies that follow ethical principles hire everyone regardless of gender, background, race, or religious beliefs. Ethical advertising prioritizes avoiding issues or misunderstandings pertaining to minorities (Keith *et al.*, 2008). Unethical advertising goes the other way. It will attempt to manipulate people's emotions and desires and will prey on people who accept flash advertisements depicting people's fears and the like (Crane, 1999). Useful information was provided on key ethical issues related to consumer marketing that can be used to evaluate a company's marketing practices, as identified by Smith and Murphy (2012).

Several studies have shown that consumers are not always willing to pay more, despite perceptions of ethically produced products. However, in some cases, they may be willing to pay a little more for such products, which are an ongoing concern of marketers (Stanforth and Hauck, 2010). Moreover, as consumers may not have sufficient knowledge and time to compare prices, businesses may resort to unfair pricing practices for quick profits, which can ultimately negatively impact the sustainability of such businesses (Khandelwal and Bajpai, 2012).

Theories of Ethical Marketing

Cavanagh *et al.* (1981) divided the theories of ethics into 3 categories: (1) utilitarian theories —comparing behavior in phrases in their effects; (2) theories of rights — emphasizing the entitlements or rights of individuals, which includes the proper to lose consent, the proper to privacy, the proper to freedom of conscience, the proper to lose speech, and the proper to due process; (3) theories of justice — focusing at the distributional consequences of actions. Ross (1930) believes that it's miles vital to introduce effects into moral choice making at the same time as insisting that effects on my own do now no longer make an act proper. Ross contends that there are responsibilities or responsibilities which bind us morally. In any moral choice, we ought to weigh alternatives with appreciate to the responsibilities involved, and from the options decide the responsibility this is maximum obligatory. Chonko and Hunt (1985) surveyed the moral ideals of advertising managers. Their outcomes display that: (a) bribery is the most customarily cited trouble confronted via way of means of advertising managers observed via way of means of fairness, honesty, and pricing strategy; (b) moral struggle is in particular felt once they attempted to stability the needs of the organization in opposition to client needs; (c) advertising managers understand lots of possibilities of their groups to have interaction in unethical behavior, but, in general, such behavior does now no longer cause success; and (d) the lifestyles of moral codes isn't always associated with the quantity of unethical behavior via way of means of advertising managers. In marketing and marketing, we can see that unethical practices are extra common, or managers use unethical practices in marketing and marketing for gaining aggressive gain via way of means of attracting consumers. However, if moral practices in marketing are hired than it can serve the motive of attracting client in a higher way. Several new subjects have surfaced with inside the vicinity of marketing and marketing ethics. Consoli (1976) advocates that advertiser in recent times shows a excessive fashionable of ethics in the use of Comparative marketing and marketing. Other than using moral practices on ethical grounds, or now no longer harming others; there's every other form of view to it as defined via way of means of Simon *et al.* (1972), is the affirmative responsibility to assault social troubles of poverty, discrimination, or city decay. Organizations with widely wide-spread moral requirements gift a higher performance; revel in a wonderful picture earlier than the society and this will accommodate to set up more potent family members with the feasible stakeholders with inside the lengthy run (Aydın, 2003; Burnaz *et al.*, 2009; Rodriguez-Dominguez *et al.*, 2009; Lamberton and Minor, 1995; Certo and Certo, 2006; McDaniel and Gitman, 2008). Marketing ethics examines systematically advertising and advertising morality, associated with 4P-problems together with risky products, misleading pricing, misleading marketing and marketing or bribery, discrimination in distribution (Smith and Quelch, 1993). Other problems are associated with exploitation of customer weak point or the use of PR for stopping crucial journalism and public debate. Business ethics outline the look at of what's proper, wrong, fair, affordable, and suitable with inside the enterprise world. Situations with inside the discipline of enterprise toward moral worries had been with inside the upward push for many years associated with numerous troubles, sectors, and countries. Consumers can make "moral" purchases that offer AIDS capsules via the RED campaign, play vocabulary video games that supply rice to the hungry via the UN World Food Program, re-tweet pics in their favorite humanitarian movie star or release a caricature superhero to Africa and donate a pc to an African baby via General Mills "Win One Give One" campaign (Richey and Ponte, 2014). Since Prothero`s (1998) unique issue, the inexperienced advertising literature has grown to be intertwined with the geographical regions of eco-advertising, sustainable advertising, social advertising, and moral consumption. Consumers` expertise of moral problems may also be formed via way of means of their demographic historical past in phrases of age, income, education, etc. It has been determined that, with growing age and maturity, humans show greater inclination toward ethically stimulated decisions (Chiu, 2003). As advertising is still criticized for exciting unsustainable tiers of consumption, we would argue that the extra interest our field offers to inexperienced/moral advertising, the higher it is able to be for societal well-being with inside the lengthy term. Therein lies the justification for revisiting the sphere of inexperienced/moral advertising each from a theoretical and practice-primarily totally based perspective. As Prothero (1998) predicted, the sphere of inexperienced/moral advertising suggests no signal of diminishing.

Ethical Marketing Issues and Global Perspective

Ethical problems and controversies in international business ethics pose a great concern and require different point of views and solutions for each case. Besides, when the situation is considered from an economics and business point of view, business ethics is generally considered a subject contrary to business and economics issues rested on interests, upholding certain values in the first instance, and based on a wide range of principles and its own philosophy (Burnaz *et al.*, 2009; Choi *et al.*, 2010). Business functions in today`s century is global. Therefore, the need to understand the moral values, culture, and ethics of different parts of the world in which it is operating is required. It is possible that moral and ethical values may differ in different countries. Therefore, the best course to adjust indigenous ethical and cultural standards is to adopt a contingency inclination on the cultural, morale, historical and individual basis rather than a universal point of view to influence ethical conduct positively (Tsalikis, 2007; Tsalikis *et al.*, 2008; Helin and Sandström, 2008). There is a general conviction that the developed countries enjoy a higher level of ethical awareness when compared to the developing ones owing to the economic realities since the economically developed countries are supposed to have sound ethical standards to keep the process ever sustainable. Besides, transparency and the scope of ethical climate also matter. Businesses done in the most transparent and moral manners would inspire more confidence on both business and consumers thus expanding the volume of trade and economic power. McDonald and Nijhof (1999) develop a framework for implementing an ethics program as this implementation framework may stimulate morally responsible behavior in organizations and combined with a code of ethics, could increase the ethicalness in the employees` actions and behavior. It is proposed that for an organizational program to be effective, five dominant conditions are necessary: (1) Awareness of formal organizational goals and corresponding informal norms; (2) Suitable procedures for decision-making; (3) Correct distribution of resources; (4) Existence of necessary skills; and (5) Personal intentions for ethical behavior. Thus, organizational elements, such as codes of ethics have a great importance if brought together with other individual, personal values and intentions to generate an ethical behavior in the organization. On a similar note, Doig and Wilson (1998) raise questions about the use of codes of ethics as frameworks for defining ethical conduct and suggest that the use of codes alone may be less effective and may have less impact on managers and employees than expected.

The Table 1 below underlines some of the common practices in Marketing Foods which are unethical and are used to induce children, a vulnerable element, or an unaware consumer, in advertising.

Table 1. Common practices in marketing foods to children online that are generally forbidden under federal or self-regulation

Sl. No.	Variables
1	Promoting foods of low nutritional quality; not providing enough nutritional labelling; misleading nutritional claims
2	Embedding food ads in games and facilitating children's learning to consume the food advertised
3	Creating 'BUZZ' about the products and encouraging children to send ads to their friends (i.e., viral marketing)
4	Offering children brand-related items that they can use after leaving the Websites and tying the online advertising with other exposures to the brands
5	Not including 'ad breaks' and reminders that the content watched is advertising
6	Offering children that may be too young opportunities and prizes if they register at the Websites
7	Offering direct inducement to purchase (e.g., access to a secret site)

Organizations nowadays, perform with a view on ethical behavior is that when individuals operate with a conviction on the ethical soundness of their position, their minds and energies are freed for maximum productivity and creativity. On the other hand, when practicing unethical behavior, persons find it necessary to engage in exhausting subterfuge, resulting in diminished effectiveness and reduced success. Further, a well communicated commitment to ethics sends a powerful message that ethical behavior is a business imperative. The chart below underlines some of the common practices in "Marketing Foods" which are unethical and are used to induce children, a vulnerable element, or an unaware consumer, in advertising. Sustainable marketing has been discussed in terms of a mere logical extension of the mainstream, managerial, marketing concept (Crane and Desmond, 2002; Kilbourne, 1998). Henion and Kinnear (1976) introduced ecological marketing, which is concerned with all marketing activities: (1) activities that have served to help cause environmental problems, and (2) activities that may serve to provide a remedy for environmental problems. The purpose of introducing this concept was to help marketers respond to social and environmental challenges to maintain corporate legitimacy in the face of changing social values and the rise of civic movements (Crane, 2000).

CONCLUSION AND INTERPRETATION

Ethical problems will arise if shoddy or fictional data are gathered. This can be avoided by installing quality standards and controls, and by filtering the concern for high quality down to the actual interviewers. This research has also attempted to raise the issue of increasing consumer awareness about the ethical conduct of businesses. An organization must be ethical in its behavior because it must exist in competitive world. Going through the available secondary literature available, following reasons have been identified for an organization to be ethical:

- To protect its own interest
- To protect the interests of the business community so that the public will have trust in it
- To keep its commitment to society to act ethically
- To meet stakeholder expectations
- To prevent harm to public

- To build trust with key stakeholder groups
- To protect themselves from abuse of unethical employees and competitors
- To protect their own reputations
- To protect their own employees
- To create an environment in which workers can act in ways consistent with their values

Ethics within organization is a must. It should be initiated by the top management, and percolate to the bottom of the hierarchy. Moreover, environmental ethics may offer a valuable perspective and a set of useful conceptual tools for the further theoretical development of sustainable marketing. Each of these ethical approaches to sustainable marketing tends to ascribe somewhat different roles, rights and responsibilities for different market actors which acknowledge that sustainability is a complex issue, which entails complex political, socioeconomic, and moral questions. This study took into consideration significant ethical issues from consumer marketing as presented in the marketing ethics continuum. (Calle, 2000; Ferrell *et al.*, 2019; Stanforth and Hauck, 2010; Tanveer *et al.*, 2021), which is a valuable contribution to the marketing literature. Ethical behavior for any organization is a series of those practices & processes by which the company operations are regulated and monitored. It encompasses a correct balance to maintain the interests of employees, shareholders, customers, suppliers, financers, community, and the government. Organizations that follow unethical practices are likely to face downfall in their business. Thus, the image of the organization and brand suffers a setback in customer`s mind.

IMPLICATION TO MANAGERS

Each company and marketing manager must work out a philosophy of socially responsible and ethical behavior. Under the social marketing concept, each manager must look beyond what is legal and allowed and develop standards based on personal integrity, corporate conscience, and long run consumer welfare. The future holds many challenges and opportunities for marketing managers as they move into the new millennium. Technological advances in every area, from telecommunication, I.T. and the internet to health care and entertainment, provide abundant marketing opportunities. However, forces in the socio economic, cultural, and natural environments increase the limits under which marketing can be carried out. Organizations need to be watchful in their marketing actions, as customer perceptions and intentions are significantly affected by the ethical obligations and promises made by the company. Companies that can create new customer value in a socially responsible way will have a world to conquer.

Moreover, companies have also understood the need of hour to adopt such practices that help to create an identity of its own as being socially responsible. It has also been concluded through the study that there is a significant correlation between ethical marketing practices, which form the basis of transactions and relationship quality. While using the product, customer also gets a sense of contributing towards society in a responsible way. A corporate environment in which competition is increasingly intense and standardization of technology is difficult to achieve, a effective marketing practices can be laid down with a proper blend of ethical practices. Therefore, it should be realized that there is a supreme need for companies to maintain ethics in their marketing practices when operating in developing economies.

REFERENCES

Aguilar, F. J. (1994). Managing Corporate Ethics: Learning From America's Ethical Companies How To Supercharge Business Performance. Oxford University Press.

Aydin, I. (2003). *Managerial, Occupational And Organizational Ethics*. Pegem Press.

Boulstridge, E., & Carrigan, M. (2000). Do Consumers Really Care About Corporate Responsibility? Highlighting The Attitude - Behaviour Gap. *Journal of Communication Management (London)*, *4*(4), 355–368. doi:10.1108/eb023532

Brenner, S. N., & Molander, E. A. (1977). Is The Ethics Of Business Changing? *Harvard Business Review*, *55*(1), 57–71.

Bretcu, A. (2013). Marketing Ethics And Postmodern Era. Analele Universitatii 'Eftimie Murgu'. *Resita Fascicola Ii Studii Economice*, *2013*(1), 202–209.

Brubaker, S. (2007). Ethics And Regulation In Direct Marketing. *Direct Mark. Int. J.*, *1*(1), 55–58. doi:10.1108/17505930710734134

Burnaz, S., Atakan, M. G. S., Topcu, Y. I., & Singhapakdi, A. (2009). An Exploratory Cross-Cultural Analysis Of Marketing Ethics: The Case Of Turkish, Thai, And American Businesspeople. *Journal of Business Ethics*, *90*(3), 371–382. doi:10.100710551-010-0422-4

Calle, J. (2000). *Ethics In Business.* Available At: http://Accounting.Smartpros.Com/X12209.Xml

Camenisch, P. F. (1991). Marketing Ethics: Some Dimensions Of The Challenge. *Journal of Business Ethics*, *10*(4), 245–248. doi:10.1007/BF00382961

Cavanagh, G. F., Dennis, J. M., & Manuel, V. (1981). The Ethics Of Organizational Politics. *Academy of Management Review*, *6*(3), 363–374.

Certo, S., & Certo, S. T. (2006). *Modern Management*. Prentice Hall.

Chiu, R. K. (2003). Ethical Judgment And Whistleblowing Intention: Examining The Moderating Role Of Locus Of Control. *Journal of Business Ethics*, *43*(1-2), 65–74. doi:10.1023/A:1022911215204

Choi, J. C., Kim, S. W., & Kim, J. B. (2010). Globalizing Business Ethics Research And The Ethical Need To Include The Bottom Of The Pyramid Countries: Redefining The Global Triad As Business Systems And Institutions. *Journal of Business Ethics*, *94*(2), 299–306. doi:10.100710551-009-0258-y

Chonko, L. B. (1995). Ethical Decision Making. In *Marketing*. Sage Publications.

Chonko, L. B., & Hunt, S. D. (1985). Ethics And Marketing Management: An Empirical Examination. *Journal of Business Research*, *13*(4), 339–359. doi:10.1016/0148-2963(85)90006-2

Consoli, J. (1976). *Comparative Print Ads More Credible*. Academic Press.

Cooper, J. M. (1999). Reason And Emotion: Essays On Ancient Moral Psychology And Ethical Theory. Princeton University Press.

Crane, A. (1999). Are You Ethical? Please Tick Yes Or No: On Researching Ethics In Business Organizations. *Journal of Business Ethics*, *20*(3), 237–248. doi:10.1023/A:1005817414241

Crane, A. (2000). Marketing And The Natural Environment: What Role For Morality. *Journal of Macromarketing*, *20*(2), 144–154. doi:10.1177/0276146700202004

Crane, A., & Desmond, J. (2002). Societal Marketing And Morality. *European Journal of Marketing*, *36*(5/6), 548–569. doi:10.1108/03090560210423014

Doig, A., & Wilson, J. (1998). The Effectiveness Of Codes Of Conduct. *Business Ethics (Oxford, England)*, *7*(3), 140–149. doi:10.1111/1467-8608.00100

Donaldson, T., & Werhane, P. H. (1983). Ethical Issues In Business. Pearson Prentice Hall.

Drumwright, M. E., & Murphy, P. E. (2009). The Current State Of Advertising Ethics: Industry And Academic Perspectives. *Journal of Advertising*, *38*(1), 83–108. doi:10.2753/JOA0091-3367380106

Dudiak, J. (2001). T*he Intrigue Of Ethics: A Reading Of The Idea Of Discourse In The Thought Of Emmanuel Levinas.* Fordham University Press.

Ferrell, O. C., Harrison, D. E., Ferrell, L., & Hair, J. F. (2019). Business Ethics, Corporate Social Responsibility, And Brand Attitudes: An Exploratory Study. *Journal of Business Research*, *95*, 491–501. doi:10.1016/j.jbusres.2018.07.039

Ford, R. C., & Richardson, W. D. (1994). Ethical Decision Making: A Review Of The Empirical Literature. *Journal of Business Ethics*, *13*(3), 205–221. doi:10.1007/BF02074820

Gaski, J. F. (1999). Does Marketing Ethics Really Have Anything To Say? A Critical Inventory Of The Literature. *Journal of Business Ethics*, *18*(3), 315–334. doi:10.1023/A:1017190829683

Godos-Diez, J.-L., Fernandez-Gago, R., & Martinez-Campillo, A. (2011). How Important Are Ceos To Csr Practices? An Analysis Of The Mediating Effect Of The Perceived Role Of Ethics In Social Responsibility. *Journal of Business Ethics*, *98*(4), 531–548. doi:10.100710551-010-0609-8

Goolsby, J. R., & Hunt, S. D. (1982). Cognitive Moral Development And Marketing. *Journal of Marketing*, *56*(1), 55–68. doi:10.1177/002224299205600106

Helin, S., & Sandström, J. (2008). Codes, Ethics And Cross-Cultural Differences: Stories From The Implementation Of A Corporate Code Of Ethics In A Mnc Subsidiary. *Journal of Business Ethics*, *82*(2), 281–291. doi:10.100710551-008-9887-9

Henion, K. E., & Kinnear, T. C. (Eds.). (1976). *Ecological Marketing*. American Marketing Association. https://Www.Tandfonline.Com/Doi/Full/10.1080/07393148.2017.1304737

Hur, W. M., Kim, H., & Woo, J. (2014). How Csr Leads To Corporate Brand Equity: Mediating Mechanisms Of Corporate Brand Credibility And Reputation. *Journal of Business Ethics*, *125*(1), 75–86. doi:10.100710551-013-1910-0

Islam, J. U., Shahid, S., Rasool, A., Rahman, Z., Khan, I., & Rather, R. A. (2020). Impact Of Website Attributes On Customer Engagement In Banking: A Solicitation Of Stimulus-Organism-Response Theory. *International Journal of Bank Marketing*, *38*(6), 1279–1303. doi:10.1108/IJBM-12-2019-0460

Jeurissen, R., & Van De Ven, B. (1996). Developments In Marketing Ethics. *Business Ethics Quarterly*, *16*, 427–439. doi:10.5840/beq200616335

Keith, N., Petto, J. C., & Burnett, M. (2008). Ethics In Advertising: Differences In Industry Values And Student Perceptions. *Academy of Marketing Studies Journal*, *27*, 33–47.

Khandelwal, U., & Bajpai, N. (2012). Price Fairness And Its Linear Dependence On Consumer AttiTude: A Comparative Study In Metro And Non Metro City. *European Journal of Business and Management*, *4*(10), 94–10.

Kilbourne, W. E. (1998). Green Marketing: A Theoretical Perspective. *Journal of Marketing Management*, *14*(6), 641–655. doi:10.1362/026725798784867743

Kotler, P. (1972). A Generic Concept Of Marketing. *Journal of Marketing*, *36*(April), 46–54. doi:10.1177/002224297203600209

Lamberton, H., & Minor, L. (1995). *Human Relations: Strategies For Success*. Irwin.

Lämsä, A. M., Vehkaperä, M., Puttonen, T., & Pesonen, H. L. (2008). Eff Ect Of Business Education On Women And Men Students' Attitudes On Corporate Responsibility In Society. *Journal of Business Ethics*, *82*(1), 45–58. doi:10.100710551-007-9561-7

Lee, J. Y., & Jin, C. H. (2019). The Role Of Ethical Marketing Issues In Consumer-Brand Relationship. *Sustainability*, *11*(23), 6536. doi:10.3390u11236536

Low, W., & Davenport, E. (2005). Has The Medium (Roast) Become The Message? *International Marketing Review*, *22*(5), 494–511. doi:10.1108/02651330510624354

Ludlum, M., & Johnson, J. B. (2015). Ethics And Law School Marketing Practices. *South. J. Bus. Ethics*, *7*, 89–104.

Malhotra, N. K., & Miller, G. L. (1998). An Integrated Model For Ethical Decisions In Marketing Research. *Journal of Business Ethics*, *17*(3), 263–280. doi:10.1023/A:1005711311426

Martin, K. D., & Johnson, J. L. (2010). Ethical Beliefs And Information Asymmetries In Supplier Relationships. *Journal of Public Policy & Marketing*, *29*(1), 38–51. doi:10.1509/jppm.29.1.38

Mcdaniel, C., & Gitman, L. (2008). *The Essential Of The Future Of Business*. South-Western Cengage Learning.

Mcdonald, G., & Nijhof, A. (1999). Beyond Codes Of Ethics: An Integrated Framework For stimulating Morally Responsible Behaviour. *Organizations Leadership and Organization Development Journal*, *20*(3), 133–147. doi:10.1108/01437739910268406

Mcguire, J. B., Sundgren, A., & Schneeweis, T. (1988). Corporate Social Responsibility And Firm Financial Performance. *Academy of Management Journal*, *31*, 854–872.

Melewar, T. C., & Nguyen, B. (2017). Five Areas To Advance Branding Theory And Practice. *Journal of Brand Management*, *21*(9), 758–769. doi:10.1057/bm.2014.31

Nill, A., & Schibrowsky, J. A. (2007). Research On Marketing Ethics: A Systematic Review Of The Literature. *Journal of Macromarketing*, *27*(3), 256–273. doi:10.1177/0276146707304733

Olins, W. (2014). Brand New: The Shape Of Brands To Come. Thames & Hudson.

Preston, I. (2010). Interaction Of Law And Ethics In Matters Of Advertisers' Responsibility For Protecting Consumers. *The Journal of Consumer Affairs*, *44*(1), 257–264. doi:10.1111/j.1745-6606.2010.01166.x

Prothero, A. (1998). Green Marketing: The 'Fad' That Won't Slip Slide Away. *Journal of Marketing Management*, *14*(6), 507–512. doi:10.1362/026725798784867680

Reidenbach, R. E., Robin, D. P., & Dawson, L. (1991). An Application And Extension Of A Multidimensional Ethics Scale To Selected Marketing Practices And Marketing Groups. *Journal of the Academy of Marketing Science*, *19*(2), 83–92. doi:10.1007/BF02726000

Resnik, D. B. (2011). What Is Ethics In Research And Why Is It Important. National Institute of Health.

Riche, L. A., & Ponte, S. (2014). Buying Into Development? Brand Aid Forms Of Cause-Related Marketing. *Third World Quarterly*, *35*(1), 65–87. doi:10.1080/01436597.2014.868985

Rodriguez-Dominguez, L., Gallego-Alvarez, I., & Garcia-Sanchez, I. M. (2009). Corporate Governance And Codes Of Ethics. *Journal of Business Ethics*, *90*(2), 187–202. doi:10.100710551-009-0035-y

Ross, W. D. (1930). *The Right And The Cood*. Clarendon Press.

Schlegelmilch, B. B., & Öberseder, M. (2010). Half A Century Of Marketing Ethics: Shifting Perspectives And Emerging Trends. *Journal of Business Ethics*, *93*(1), 1–19. doi:10.100710551-009-0182-1

Sen, S., Bhattacharya, C. B., & Korschun, D. (2006). The Role Of Corporate Social Responsibility In Strengthening Multiple Stakeholder Relationships: A Field Experiment. *Journal of the Academy of Marketing Science*, *34*(2), 158–166. doi:10.1177/0092070305284978

Sevensson, G., Wood, G., Singh, J., & Callaghan, M. (2009). Implementation, Communication And Benefits Of Corporate Codes Of Ethics: An International And Longitudinal Approach For Australia, Canada And Sweden. *Business Ethics (Oxford, England)*, *18*(4), 389–398. doi:10.1111/j.1467-8608.2009.01571.x

Simon, J., Charles, W. P., & Jon, P. G. (1972). *The Ethical Investor: Universities And Corporate Responsibility*. Yale University Press.

Smith, N. C., & Quelch, A. A. (Eds.). (1993). Ethics In Marketing. Irwin.

Smith & Murphy. (2012). A Marketing Ethics: A review of the Field. In *Marketing Ethics*. SAGE Publications.

Stanaland, A. J., Lwin, M. O., & Murphy, P. E. (2011). Consumer Perceptions Of The Antecedents And Consequences Of Corporate Social Responsibility. *Journal of Business Ethics*, *102*(1), 47–55. doi:10.100710551-011-0904-z

Stanforth, N., & Hauck, W. (2010). The Effects Of Ethical Framing On Consumer Price Perceptions. *Journal of Fashion Marketing and Management*, *14*(4), 615–623. doi:10.1108/13612021011081779

Stohl, C., Stohl, M., & Popova, L. (2009). A New Generation Of Corporate Code Of Ethics. *The Journal of Business*.

Tanveer, M., Khan, N., & Ahmad, A. R. (2021). AI Support Marketing: Understanding The Customer Journey Towards The Business Development. *Proceedings Of The 2021 1st International Conference On Artificial Intelligence And Data Analytics (Caida)*, 144-150. 10.1109/CAIDA51941.2021.9425079

Taylor, P. W. (1975). *Principles of Ethia: An Introduction*. Dickerson Publishing Co., Inc.

Thompson, M. (2005). Ethical Theory (Access To Philosophy) (2nd Ed.). Hodder & Stoughton.

Tsalikis, J., & Seaton, B. (2007). The International Business Ethics Index: European Union. *Journal of Business Ethics*, *75*(3), 229–238. doi:10.100710551-006-9249-4

Tsalikis, J., Seaton, B., & Li, T. (2008). The International Business Ethics Index: Asian Emerging Economies. *Journal of Business Ethics*, *80*(4), 643–651. doi:10.100710551-007-9459-4

Vitell, S. J. Jr. (1986). Marketing Ethics: Conceptual And Empirical Foundations Of A Positive Theory Of Decision Making. In *Marketing Situations Having Ethical Content', Unpublished Dissention*. Texas Tech University.

Yallop, A. (2012). The Use And Effectiveness Of Code Of Ethics – A Literature Review. *International Conference 'Marketing – From Information To Decision, 5.*

KEY TERMS AND DEFINITIONS

Business Ethics: It is the study of appropriate business policies and practices regarding potentially controversial subjects including corporate governance, insider trading, bribery, discrimination, corporate social responsibility, and fiduciary responsibilities.

Competition: It is the contest between organizations that provide similar products or services or that target the same audience of consumers.

Competitive Advantage: A condition or circumstance that puts a company in a favourable or superior business position.

Societal Marketing: Marketing with a social dimension or marketing that includes non-economic criteria.

Society: People in general living together in an organized way, making decisions about how to do things, and sharing the work that needs to be done.

Compilation of References

•Prusty, R. K., Gouda, J., & Pradhan, M. R. (2015). Inequality in the Utilization of Maternal Healthcare Services in Odisha, India. International Journal of Population Research, 2015(2), 1–10.

Aboobaker, N., & Zakkariya, K. A. (2019). Influence of digital learning orientation and readiness for change on innovative work behavior: Reflections from the higher education sector. *Development and Learning in Organizations*, *34*(2), 25–28. doi:10.1108/DLO-08-2019-0191

Abraham, S. (2014). Development of Employee Engagement Programme on the basis of Employee Satisfaction Development of Employee Engagement Programme on the basis of Employee Satisfaction Survey. *Journal of Economic Development, 4*(1). https://www.researchgate.net/publication/256187156

Abu-elezz, I., Hassan, A., Nazeemudeen, A., Househ, M., & Abd-alrazaq, A. (2020). The benefits and threats of blockchain technology in healthcare: A scoping review. *International Journal of Medical Informatics*, *142*, 104246. doi:10.1016/j.ijmedinf.2020.104246 PMID:32828033

Adam, I. O., & Alhassan, M. D. (2021). The role of social media in the diffusion of e-government and e-commerce. *Information Resources Management Journal*, *34*(2), 63–79. doi:10.4018/IRMJ.2021040104

Adorno, T. W. (1947). Kültür endüstrisi: Kültür yönetimi [Culture industry: Culture management]. Iletisim Publishing.

AEN. (2018). *List of universities in Australia*. https://www.australianuniversities.com.au/list/

Aguilar, F. J. (1994). Managing Corporate Ethics: Learning From America's Ethical Companies How To Supercharge Business Performance. Oxford University Press.

Ahmadi, V., Benjelloun, S., El Kik, M., Sharma, T., Chi, H., & Zhou, W. (2020). Drug Governance: IoT-based Blockchain Implementation in the Pharmaceutical Supply Chain. *2020 Sixth International Conference on Mobile And Secure Services (MobiSecServ)*, 1–8. doi:10.1109/MobiSecServ48690.2020.9042950

Ahmad, S. Z., & Hussain, M. (2017). An investigation of the factors determining student destination choice for higher education in the United Arab Emirates. *Studies in Higher Education*, *42*(7), 1324–1343.

Ahmed, I., & Nawaz, M. M. (2010). A mediation of customer satisfaction relationship between service quality and repurchase intentions for the telecom sector in Pakistan: A case study of university students. *African Journal of Business Management*, *4*(16), 3457–3462.

Ahmed, M., Taconet, C., Ould, M., Chabridon, S., & Bouzeghoub, A. (2021). IoT Data Qualification for a Logistic Chain Traceability Smart Contract. *Sensors (Basel)*, *21*(6), 2239. https://doi.org/10.3390/s21062239

Aina, R., & Atan, T. (2020). The Impact of Implementing Talent Management Practices on Sustainable Organizational Performance. *Sustainability, 12*(20), 8372. doi:10.3390/su12208372

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. doi:10.1016/0749-5978(91)90020-T

Al Amiri, N., & Shawali, A. A. (2021). Talent management strategies of a public uae hospital in the industry 4.0 ERA: A qualitative analysis. *Problems and Perspectives in Management*, *19*(2), 14–27. doi:10.21511/ppm.19(2).2021.02

Alam Khan, N. K., & M. S. (2021). The Economic Impact of COVID-19 from a Global Perspective. - Document - Gale Academic OneFile. *Contemporary Economics, 15*(1). https://go.gale.com/ps/i.do?id=GALE%7CA653470027&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=20840845&p=AONE&sw=w&userGroupName=anon~5eb94d09

Alam, M., Haque, M. S., & Siddique, S. F. (2007). Private higher education in Bangladesh. In N. V. Varghese (Ed.), *New trends in higher education*. International Institute for Educational Planning.

Alavi, S., & Ahuja, V. (2016). An empirical segmentation of users of mobile banking apps. *Journal of Internet Commerce*, *15*(4), 390–407. doi:10.1080/15332861.2016.1252653

Ali, H. (2019). Measurement of e-services quality: An empirical study of University of Bahrain. *Edu. and Info. Tech.*, *24*(3), 1907–1924. doi:10.100710639-018-9775-6

Alkema, L., Chou, D., Hogan, D., Zhang, S., Moller, A. B., Gemmill, A., Fat, D. M., Boerma, T., Temmerman, M., Mathers, C., & Say, L. (2016). Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: A systematic analysis by the UN maternal mortality estimation inter-agency group. *Lancet*, *387*(10017), 462–474. doi:10.1016/S0140-6736(15)00838-7 PMID:26584737

Allison, N., & Rohel, J. (2020). Epilogue: A Roundtable on Street Vending. *Gastronomica*, *20*(1), 21–22. doi:10.1525/gfc.2020.20.1.21

Almazova, N., Krylova, E., Rubtsova, A., & Odinokaya, M. (2020). Challenges and opportunities for Russian higher education amid COVID-19: Teachers' perspective. *Education Sciences*, *10*(12), 368. doi:10.3390/educsci10120368

Alotaibi, B. (2019). Utilizing Blockchain to Overcome Cyber Security Concerns in the Internet of Things: A Review. *IEEE Sensors Journal*, *19*(23), 10953–10971. https://doi.org/10.1109/JSEN.2019.2935035

Alruwaili, N. F. (2018). Talent Management And Talent Building In Upgrading Employee Performance. *European Journal of Sustainable Development*, *7*(1). Advance online publication. doi:10.14207/ejsd.2018.v7n1p98

Altbach, P. G., & Knight, J. (2007). The internationalization of higher education: Motivations and realities. *Journal of Studies in International Education*, *11*(3–4), 290–305.

Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2009). *Trends in global higher education: Tracking an academic revolution*. UNESCO.

Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2010). Tracking a global academic revolution. *Change: The Magazine of Higher Learning*, *42*(2), 30–39.

Andersen, K., & Berzowska, J. (2006). Worn technology the alteration of social space. *Open*, *11*, 148–157.

Ang, S. H., Cheng, P. S., Lim, E. A. C., & Tambyah, S. K. (2001). Spot the difference: Consumer responses towards counterfeits. *Journal of Consumer Marketing*, *18*(3), 219–233. doi:10.1108/07363760110392967

Appadurai, A. (1996). *Modernity at large: Cultural dimensions of globalization*. University of Minnesota Press.

Appadurai, A. (2006). Disjuncture and difference in the global cultural economy. In M. G. Durham & D. M. Kellner (Eds.), *Media and cultural studies* (pp. 584–603). Blackwell Publishing.

Arif, A. A., Uddin, R., & Ahmad, A. (2016). Talent Management and Organizational Performance: An Empirical Study in Retail Sector in Sylhet City, Bangladesh. *Journal of Business and Management*, *18*(10), 11–18. doi:10.9790/487X-1810041118

Arni, P., & Laddha, S. (2017). Adoption of digital marketing in health industry. *SIES Journal of Management, 13*(1).

Arora, M., & Chakrabarti, D. (2013). Application of business intelligence: A case on payroll management. *Proceedings - 2013 International Symposium on Computational and Business Intelligence, ISCBI 2013*, 73–76. 10.1109/ISCBI.2013.22

Arora, T., & Agarwal, B. (2020). An empirical study on determining the effectiveness of social media advertising: A case on Indian millennials. *International Journal of E-Business Research*, *16*(2), 47–68. doi:10.4018/IJEBR.2020040104

Arsene, M. H. (2020). Understanding the roles of street vendors of agricultural commodities during the COVID-19 outbreak in the informal economy. *Open Journal of Social Sciences*, 115-129.

Arun, T. G., & Nixson, F. I. (2000). The disinvestment of public sector enterprises: The Indian experience. *Oxford Development Studies*, *28*(1), 19–32. doi:10.1080/713688302

Asante, M., Epiphaniou, G., Maple, C., Al-Khateeb, H., Bottarelli, M., & Ghafoor, K. Z. (2021). Distributed Ledger Technologies in Supply Chain Security Management: A Comprehensive Survey. *IEEE Transactions on Engineering Management*, 1–27. doi:10.1109/TEM.2021.3053655

Astill, J., Dara, R. A., Campbell, M., Farber, J. M., Fraser, E. D. G., Sharif, S., & Yada, R. Y. (2019). Transparency in food supply chains: A review of enabling technology solutions. *Trends in Food Science & Technology*, *91*, 240–247. https://doi.org/10.1016/j.tifs.2019.07.024

Atelier des Lumieres. (2022). *Atelier des Lumieres an historic area.* https://www.atelier-lumieres.com/en/un-peu-dhistoire

Aydin, I. (2003). *Managerial, Occupational And Organizational Ethics*. Pegem Press.

Bacharach, G., Gottlieb, M., Norder, J. J., Pongratz, H., Steiper, R. D., Radenbach, W., . . . Waßmann, A. (2021). Progress on digitization of higher education processes towards standards EU & DE: Status and future perspectives. *EUNIS2021.* https://pim-plattform.de/wordpress/wp-content/uploads/2021/07/FINDE-03-EUNIS2021-full-2205.pdf

Back, J., Bedwell, B., Benford, S., Eklund, L., Løvlie, A. S., Preston, W., Rajkowska, P., Ryding, K., Spence, J., Thorn, E. C., Waern, A., & Wray, T. (2018). GIFT: Hybrid museum experiences through gifting and play. *CEUR Workshop Proceedings*, *2235*(4), 31–40.

Bai, J., & Liu, J. (2018). A Study on the Influence of Career Growth on Work Engagement among New Generation Employees. *Open Journal of Business and Management*, *06*(02), 300–317. doi:10.4236/ojbm.2018.62022

Balamurugan, S., Ayyasamy, A., & Joseph, K. S. (2021). IoT-Blockchain driven traceability techniques for improved safety measures in food supply chain. *International Journal of Information Technology*. doi:10.1007/s41870-020-00581-y

Balula, A., Moreira, G., Moreira, A., Kastenholz, E., Eusébio, C., & Breda, Z. (2019). Digital transformation in tourism education. *Tourism in Southern and Eastern Europe*, *5*, 61–72. doi:10.20867/tosee.05.45

Banu, N. M. M., Rr, V. D., Sujatha, C., & Department, E. (2017). IoT Architecture a Comparative Study. *International Journal of Pure and Applied Mathematics*, *117*(8), 45–49. https://doi.org/10.12732/ijpam.v117i8.10

Barnes, S. J., & Vidgen, R. (2001). An evaluation of cyber-bookshops: The WebQual method. *Int. J. of Elect. Comm.*, *6*(1), 11–30.

Barnes, S. J., & Vidgen, R. T. (2002). An integrative approach to the assessment of e-commerce quality. *Journal of Electronic Commerce Research*, *3*(3), 114–127.

Bartik, A. W., Bertrand, M., Cullen, Z., Glaeser, E. L., Luca, M., & Stanton, C. (2020). The Impact of COVID-19 on Small Business Outcomes and Expectations. *Proceedings of the National Academy of Sciences of the United States of America*, *117*(30), 17656–17666. doi:10.1073/pnas.2006991117 PMID:32651281

Basu, P. K. (1994). Demystifying privatization in developing countries. *International Journal of Public Sector Management*, *7*(3), 44–55. doi:10.1108/09513559410061740

Bauer, H. H., Falk, T., & Hammerschmidt, M. (2006). eTransQual: A transaction process-based approach for capturing service quality in online shopping. *Journal of Business Research*, *59*(7), 866–875. doi:10.1016/j.jbusres.2006.01.021

Bauman, Z. (1998b). On glocalization: Or globalization for some, localization for some others. *Thesis Eleven, 54*(1), 37–49.

Bauman, Z. (1998a). *Globalization: The human consequences*. Columbia University Press.

Bauman, Z. (2013a). *Community: Seeking safety in an insecure world*. John Wiley & Sons.

Bauman, Z. (2013b). *Consuming life*. John Wiley & Sons.

Bauman, Z. (2013c). Liquid modernity. In *Polity*. Polity.

Bauman, Z. (2013d). Liquid times: Living in an age of uncertainty. *Polity*.

Bauman, Z. (2013e). *Postmodernity and its discontents*. New York University Press.

Bauman, Z. (2013f). *The art of life*. John Wiley & Sons.

Bauman, Z. (2013g). *The individualized society*. John Wiley & Sons.

Bautista, S. S. (2013). *Museums in the digital age: changing meanings of place, community, and culture*. Altamira Press.

BCG Global. (2021). *Internet of Things*. BCG Global. https://www.bcg.com/capabilities/digital-technology-data/internet-of-things

Beale, K. (Ed.). (2011). *Museums at play – Games, interaction and learning*. MuseumsEtc.

Bedford, L. (2014). *The art of museum exhibitions: How story and imagination create aesthetic experiences.* Routledge.

Bedno, J., & Bedno, E. (1999). *Museum exhibitions: Past imperfect, future tense*. Museum News the American Association of Museums.

Bekir, I., el Harbi, S., & Grolleau, G. (2011). (Deceptive) status seeking strategies in France and Tunisia. *Journal of Economic Issues*, *45*(3), 717–732. doi:10.2753/JEI0021-3624450311

Bello, A., Omofowa, S., Nwachukwu, C., & Nguyen, A. V. H. (2021). Relationship between Organizational Politics and Organizational Commitment. *Webology, 18*(4), 278–287. doi:10.14704/WEB/V18SI04/WEB18128

Benavides, L. M. C., Tamayo Arias, J. A., Arango Serna, M. D., Branch Bedoya, J. W., & Burgos, D. (2020). Digital transformation in higher education institutions: A systematic literature review. *Sensors (Basel)*, *20*(11), 3291. doi:10.339020113291 PMID:32526998

Benjamin, W. (1935). Pasajlar [The arcades project]. Istanbul: Yapı Kredi Publishing.

Benjamin, W. (1935). Teknik olarak yeniden üretilebilirlik çağında sanat yapıtı [The work of art in the age of mechanical reproduction]. Istanbul: Zeplin Publishing.

Bernhard-Skala, C. (2019). Organizational perspectives on the digital transformation of adult and continuing education: A literature review from a German-speaking perspective. *Journal of Adult and Continuing Education*, *25*(2), 178–197. doi:10.1177/1477971419850840

Berridge, K. C. (2005). Espresso reward learning, hold the dopamine: Theoretical comment on Robinson et al. (2005). Behavioral Neuroscience, 119(1), 336–341. doi:10.1037/0735-7044.119.1.336

Bhandari, R., & Blumenthal, P. (2011). Global student mobility and the twenty-first century silk road: National trends and new directions. In R. Bhandari & P. Blumenthal (Eds.), *International students and global mobility in higher education: National trends and new directions* (pp. 1–23). Palgrave Macmillan.

Bhasin, N. K., & Rajesh, A. (2022). The role of emerging banking technologies for risk management and mitigation to reduce non-performing assets and bank Frauds in the Indian Banking System. *International Journal of e-Collaboration (IJeC), 18*(1), 1-25.

Bhatia, V. (2018). Examining consumers' attitude towards purchase of counterfeit fashion products. *Journal of Indian Business Research*, *10*(2), 193–207. doi:10.1108/JIBR-10-2017-0177

Bhatnagar, N. (2020). Employability and skill gap among MBA graduates in India: A literature review. *Industrial and Commercial Training*, *53*(1), 92–104. doi:10.1108/ICT-10-2019-0098

Bhattacharya, D. (2012). E-service quality model for Indian government portals: citizens' perspective. *J. of Enter. Info. Manage.*

Bian, X., & Haque, S. (2020). Counterfeit versus original patronage: Do emotional brand attachment, brand involvement, and past experience matter? *Journal of Brand Management*, *27*(4), 438–451. doi:10.105741262-020-00189-4

Bian, X., & Moutinho, L. (2009). An investigation of determinants of counterfeit purchase consideration. *Journal of Business Research*, *62*(3), 368–378. doi:10.1016/j.jbusres.2008.05.012

Bibi, M. (2019). Impact of Talent Management Practices on Employee Performance. *SEISENSE Journal of Management*, *2*(1), 22–32. doi:10.33215jom.v2i1.83

Bigirimana, J. B., & Luginaah, I. (2020). Timely Access to Maternal, Neonatal and Child Healthcare for Rural Communities in Rwanda: Job Satisfaction of Community Health Workers Delivering Community Based Maternal, Newborn and Child Healthcare. *Electronic Thesis and Dissertation Repository*.

Black, G. (2012). *The engaging museum: Developing museums for visitor involvement*. Routledge. doi:10.4324/9780203559277

Black, J. S., & van Esch, P. (2020). AI-enabled recruiting: What is it and how should a manager use it? *Business Horizons*, *63*(2), 215–226. doi:10.1016/j.bushor.2019.12.001

Black, M., & Hein, G. E. (2003). You're taking us where? Reaction and response to a guided art museum fieldtrip. In M. Xanthoudaki, L. Tickle, & V. Sekules (Eds.), *Researching visual arts education in museums and galleries*. Kluwer Publishers.

Bloch, P. H., Bush, R. F., & Campbell, L. (1993). Consumer "Accomplices" in Product Counterfeiting: A Demand-Side Investigation. *Journal of Consumer Marketing*, *10*(4), 27–36. doi:10.1108/07363769310047374

Blockchain in the Food and Beverage Industry. (2019). *Blockchain in the Food and Beverage Industry*. Siemens. https://new.siemens.com/global/en/markets/food-beverage/exclusive-area/whitepaper-blockchain.html

Blut, M. (2016). E-service quality: Development of a hierarchical model. *Journal of Retailing*, *92*(4), 500–517. doi:10.1016/j.jretai.2016.09.002

Blut, M., Chowdhry, N., Mittal, V., & Brock, C. (2015). E-service quality: A meta-analytic review. *Journal of Retailing*, *91*(4), 679–700. doi:10.1016/j.jretai.2015.05.004

Bobade, P., & Alex, A. (2020). Study The Effect of Covid-19 in Indian Banking Sector. *JournalNX*, 179-184.

Bodkhe, U., Tanwar, S., Parekh, K., Khanpara, P., Tyagi, S., Kumar, N., & Alazab, M. (2020). Blockchain for Industry 4.0: A Comprehensive Review. *IEEE Access: Practical Innovations, Open Solutions*, *8*, 79764–79800. https://doi.org/10.1109/ACCESS.2020.2988579

Bodycott, P. (2009). Choosing a higher education study abroad destination: What mainland Chinese parents and students rate as important. *Journal of Research in International Education*, *8*(3), 349–373.

Botcha, K. M., Chakravarthy, V. V., & Anurag. (2019). Enhancing Traceability in Pharmaceutical Supply Chain using Internet of Things (IoT) and Blockchain. *2019 IEEE International Conference on Intelligent Systems and Green Technology (ICISGT)*, 45–453. doi:10.1109/ICISGT44072.2019.00025

Boulstridge, E., & Carrigan, M. (2000). Do Consumers Really Care About Corporate Responsibility? Highlighting The Attitude - Behaviour Gap. *Journal of Communication Management (London)*, *4*(4), 355–368. doi:10.1108/eb023532

Brammer, S., & Clark, T. (2020). COVID-19 and management education: Reflections on challenges, opportunities, and potential futures. *British Journal of Management*, *31*(3), 453–456. doi:10.1111/1467-8551.12425

Bray, J. (2008). *Consumer Behaviour Theory: Approaches and Models* [Unpublished manuscript]. Bournemouth University. Retrieved from http://eprints.bournemouth.ac.uk/10107/1/Consumer_Behaviour_Theory_-_Approaches_&_Models.pdf

Brenner, S. N., & Molander, E. A. (1977). Is The Ethics Of Business Changing? *Harvard Business Review*, *55*(1), 57–71.

Bressolles, G., Durrieu, F., & Senecal, S. (2014). A consumer typology based on e-service quality and e-satisfaction. *J. of Retail. and Con. Services*, *21*(6), 889–896. doi:10.1016/j.jretconser.2014.07.004

Bretcu, A. (2013). Marketing Ethics And Postmodern Era. Analele Universitatii 'Eftimie Murgu'. *Resita Fascicola Ii Studii Economice*, *2013*(1), 202–209.

Brinkmann, S. (2013). *Qualitative interviewing*. Oxford University Press.

Brooks, R., & Waters, J. (2010). Social networks and educational mobility: The experiences of UK students. *Globalisation, Societies and Education*, *8*(1), 143–157.

Brooks, R., & Waters, J. (2011). *Student mobilities, migration and the internationalization of higher education*. Palgrave Macmillan.

Brown, J., Cairncross, S. & Ensink, J.H.J. (2013). Water, sanitation, Hygiene and Enteric Infections in Children. *Archives of Disease in Childhood*, *98*(8), 629–634.

Brown, S. P., & Leigh, T. W. (1996). A new look at psychological climate and its relationship to job involvement, effort, and performance. *The Journal of Applied Psychology*, *81*(4), 358–368. doi:10.1037/0021-9010.81.4.358 PMID:8751453

Brubaker, S. (2007). Ethics And Regulation In Direct Marketing. *Direct Mark. Int. J.*, *1*(1), 55–58. doi:10.1108/17505930710734134

Bumblauskas, D., Mann, A., Dugan, B., & Rittmer, J. (2020). A blockchain use case in food distribution: Do you know where your food has been? *International Journal of Information Management*, *52*, 102008. https://doi.org/10.1016/j.ijinfomgt.2019.09.004

Burgess, S. M., & Steenkamp, J.-B. E. M. (2006). Marketing renaissance: How research in emerging markets advances marketing science and practice. *International Journal of Research in Marketing*, *23*(4), 337–356. Advance online publication. doi:10.1016/j.ijresmar.2006.08.001

Burnaz, S., Atakan, M. G. S., Topcu, Y. I., & Singhapakdi, A. (2009). An Exploratory Cross-Cultural Analysis Of Marketing Ethics: The Case Of Turkish, Thai, And American Businesspeople. *Journal of Business Ethics*, *90*(3), 371–382. doi:10.100710551-010-0422-4

Cairns, D., Cuzzocrea, V., Briggs, D., & Veloso, L. (2017). *The consequences of mobility: Reflexivity, social inequality and the reproduction of precariousness in highly qualified migration*. Palgrave Macmillan.

Calle, J. (2000). *Ethics In Business.* Available At: http://Accounting.Smartpros.Com/X12209.Xml

Camenisch, P. F. (1991). Marketing Ethics: Some Dimensions Of The Challenge. *Journal of Business Ethics*, *10*(4), 245–248. doi:10.1007/BF00382961

Cao, Y., Jia, F., & Manogaran, G. (2020). Efficient Traceability Systems of Steel Products Using Blockchain-Based Industrial Internet of Things. *IEEE Transactions on Industrial Informatics*, *16*(9), 6004–6012. https://doi.org/10.1109/TII.2019.2942211

Carasco-Saul, M., Kim, W., & Kim, T. (2015). Leadership and Employee Engagement. *Human Resource Development Review*, *14*(1), 38–63. doi:10.1177/1534484314560406

Casino, F., Kanakaris, V., Dasaklis, T. K., Moschuris, S., & Rachaniotis, N. P. (2019). Modeling food supply chain traceability based on blockchain technology. *IFAC-PapersOnLine*, *52*(13), 2728–2733. https://doi.org/10.1016/j.ifacol.2019.11.620

Castaño, R., & Eugenia Perez, M. (2014). A matter of love: Consumers' relationships with original brands and their counterfeits. *Journal of Consumer Marketing*, *31*(6/7), 475–482. doi:10.1108/JCM-05-2014-0970

Castells, M. (1996). *The rise of the network society*. Blackwell Publishers.

Cavanagh, G. F., Dennis, J. M., & Manuel, V. (1981). The Ethics Of Organizational Politics. *Academy of Management Review*, *6*(3), 363–374.

Cebolla-Boado, H., Hu, Y., & Soysal, Y. N. (2018). Why study abroad? Sorting of Chinese students across British universities. *British Journal of Sociology of Education*, *39*(3), 365–380.

Certo, S., & Certo, S. T. (2006). *Modern Management*. Prentice Hall.

Chakraborty & Ahuja. (2021). *Emerging from the Lockdown: Insights from Women Street Vendors' Lives in Delhi.* Institute of Social Studies Trust, Working Paper.

Chambers, E. G., Foulon, M., Handfield-Jones, H., Hankin, S. M., & Michaels, E. (1998). (PDF) The War for Talent. *The McKinsey Quarterly*, *3*, 44–57. https://www.researchgate.net/publication/284689712_The_War_for_Talent

Chanana, N., & Sangeeta. (2021). Employee engagement practices during COVID-19 lockdown. *Journal of Public Affairs*, *21*(4). Advance online publication. doi:10.1002/pa.2508 PMID:33041656

Chandani, A., Mehta, M., Mall, A., & Khokhar, V. (2016). Employee Engagement: A Review Paper on Factors Affecting Employee Engagement. *Indian Journal of Science and Technology*, *9*(15). Advance online publication. doi:10.17485/ijst/2016/v9i15/92145

Chand, V. S., & Fei, C. (2021). Self-brand connection and intention to purchase a counterfeit luxury brand in emerging economies. *Journal of Consumer Behaviour*, *20*(2), 399–411. doi:10.1002/cb.1871

Chang, E. (2006). Interactive experiences and contextual learning in museums. *Studies in Art Education a Journal of Issues and Research*, *47*(2), 170–186. doi:10.1080/00393541.2006.11650492

Chang, H. H., Wang, Y. H., & Yang, W. Y. (2009). The impact of e-service quality, customer satisfaction and loyalty on e-marketing: Moderating effect of perceived value. *Total Quality Management*, *20*(4), 423–443. doi:10.1080/14783360902781923

Chang, M. K. (1998). Predicting Unethical Behavior: A Comparison of the Theory of Reasoned Action and the Theory of Planned Behavior. *Journal of Business Ethics*, *17*(16), 1825–1834. doi:10.1023/A:1005721401993

Chanson, M., Bogner, A., Bilgeri, D., Fleisch, E., & Wortmann, F. (2019). Blockchain for the IoT: Privacy-Preserving Protection of Sensor Data. *Journal of the Association for Information Systems*, 1272–1307. doi:10.17705/1jais.00567

Chatterjee, S., Chaudhuri, R., Vrontis, D., Mahto, R. V., & Kraus, S. (2022). Global talent management by multinational enterprises post-COVID-19: The role of enterprise social networking and senior leadership. *Thunderbird International Business Review*, tie.22248. Advance online publication. doi:10.1002/tie.22248

Chaudhry, P. E., & Stumpf, S. A. (2011). Consumer complicity with counterfeit products. *Journal of Consumer Marketing*, *28*(2), 139–151. doi:10.1108/07363761111115980

Chen, J. M. (2017). Three levels of push-pull dynamics among Chinese international students' decision to study abroad in the Canadian context. *Journal of International Students*, *7*(1), 113–135.

Chen, T., Ding, K., Hao, S., Li, G., & Qu, J. (2020). Batch-based traceability for pork: A mobile solution with 2D barcode technology. *Food Control*, *107*, 106770. https://doi.org/10.1016/j.foodcont.2019.106770

Chhajer, R., Rose, E. L., & Joseph, T. (2018). Role of Self-efficacy, Optimism and Job Engagement in Positive Change: Evidence from the Middle East. *Vikalpa*, *43*(4), 222–235. doi:10.1177/0256090918819396

Chhibber, A., & Gupta, S. (2018). Public sector undertakings: Bharat's other Ratnas. *International Journal of Public Sector Management*, *31*(2), 113–127. doi:10.1108/IJPSM-02-2017-0044

Chibber, P. K., & Majumdar, S. K. (1998). State as Investor and State as Owner: Consequences for Firm Performance in India. *Economic Development and Cultural Change*, *46*(3), 561–580. doi:10.1086/452358

Chittoor, R., Sarkar, M. B., Ray, S., & Aulakh, P. S. (2009). Third-world copycats to emerging multinationals: Institutional changes and organizational transformation in the Indian pharmaceutical industry. *Organization Science*, *20*(1), 187–205. doi:10.1287/orsc.1080.0377

Chiu, R. K. (2003). Ethical Judgment And Whistleblowing Intention: Examining The Moderating Role Of Locus Of Control. *Journal of Business Ethics*, *43*(1-2), 65–74. doi:10.1023/A:1022911215204

Choi, J. C., Kim, S. W., & Kim, J. B. (2010). Globalizing Business Ethics Research And The Ethical Need To Include The Bottom Of The Pyramid Countries: Redefining The Global Triad As Business Systems And Institutions. *Journal of Business Ethics*, *94*(2), 299–306. doi:10.100710551-009-0258-y

Chonko, L. B. (1995). Ethical Decision Making. In *Marketing*. Sage Publications.

Chonko, L. B., & Hunt, S. D. (1985). Ethics And Marketing Management: An Empirical Examination. *Journal of Business Research*, *13*(4), 339–359. doi:10.1016/0148-2963(85)90006-2

Choudaha, R. (2017). Three waves of international student mobility (1999–2020). *Studies in Higher Education*, *42*(5), 825–832.

Chung, K.-C., Holdsworth, D. K., Li, Y., & Fam, K.-S. (2009). Chinese "Little Emperor", cultural values and preferred communication sources for university choice. *Young Consumers*, *10*(2), 120–132.

CIDOC. (2020). *Digital transformation in cultural heritage institutions.* https://cidoc.mini.icom.museum/archive/past-conferences/cidoc-2020-geneva/

Ciolfi, L., & Bannon, L. J. (2007). Designing hybrid places: Merging interaction design, ubiquitous technologies and geographies of the museum space. *CoDesign*, *3*(3), 159–180. doi:10.1080/15710880701524559

Civico, M. (2019). The complexity of knowledge sharing in multilingual corporations: evidence from agent-based simulations. *Empirica, 46*(4), 767–795. doi:10.1007/s10663-019-09435-8

Clark, E., Shingal, S., & Weber, K. (2021). *Next-generation business models creating value | McKinsey*. https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/the-future-of-healthcare-value-creation-through-next-generation-business-models

Claus, L. (2019). HR disruption—Time already to reinvent talent management. *BRQ Business Research Quarterly*, *22*(3), 207–215. doi:10.1016/j.brq.2019.04.002

Coelho, F., & Easingwood, C. (2008). A model of the antecedents of multiple channel usage. *Journal of Retailing and Consumer Services*, *15*(1), 32–41. doi:10.1016/j.jretconser.2007.03.002

Cold Chain Federation. (2020). *What is the cold chain?* Cold Chain Federation. https://www.coldchainfederation.org.uk/what-is-the-cold-chain/

Collier, J. E., & Bienstock, C. C. (2006). Measuring service quality in e-retailing. *J. of service res.*, *8*(3), 260–275. doi:10.1177/1094670505278867

Collings, D. G., & Mellahi, K. (2009). Strategic talent management: A review and research agenda. *Human Resource Management Review*, *19*(4), 304–313. doi:10.1016/j.hrmr.2009.04.001

Connell, R. (2013). The neoliberal cascade and education: An essay on the market agenda and its consequences. *Critical Studies in Education*, *54*(2), 99–112.

Consoli, J. (1976). *Comparative Print Ads More Credible*. Academic Press.

Contractor, S. Q., Das, A., Dasgupta, J., & Van Belle, S. (2018). Beyond the template: The Needs of Tribal Women and Their Experiences with Maternity Services in Odisha, India. *International Journal for Equity in Health*, *17*(1). Advance online publication. doi:10.118612939-018-0850-9 PMID:30244683

Cooper, J. M. (1999). Reason And Emotion: Essays On Ancient Moral Psychology And Ethical Theory. Princeton University Press.

Cortellazzo, L., Bruni, E., & Zampieri, R. (2019). The role of leadership in a digitalized world: A review. *Frontiers in Psychology*, *10*, 1938. doi:10.3389/fpsyg.2019.01938 PMID:31507494

Costello, A. B., & Osborne, J. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation*, *10*.

Cox, J., & Dale, B. (2001). Service quality and e-commerce: An exploratory analysis. *Manag. Service Qua. International Journal*.

Crane, A. (1999). Are You Ethical? Please Tick Yes Or No: On Researching Ethics In Business Organizations. *Journal of Business Ethics*, *20*(3), 237–248. doi:10.1023/A:1005817414241

Crane, A. (2000). Marketing And The Natural Environment: What Role For Morality. *Journal of Macromarketing*, *20*(2), 144–154. doi:10.1177/0276146700202004

Crane, A., & Desmond, J. (2002). Societal Marketing And Morality. *European Journal of Marketing*, *36*(5/6), 548–569. doi:10.1108/03090560210423014

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches*. Sage Publications.

Cristobal, E. (2007). Perceived e-service quality (PeSQ). *Mana. Service Qua. International Journal*.

Culturespaces. (2022). *Atelier des Lumieres the first digital art centre in Paris.* https://www.culturespaces.com/en/sites/atelier-lumieres

D'souza, J., & Megginson, W. L. (1999). The financial and operating performance of privatized firms during the 1990s. *The Journal of Finance*, *54*(4), 1397–1438. doi:10.1111/0022-1082.00150

Daqar, M. A. M. A., & Smoudy, A. K. A. (2019). Employee Engagement Level: The Transform from Employee to Partner. *Modern Applied Science*, *13*(7), 115. doi:10.5539/mas.v13n7p115

Dasaklis, T. K., Casino, F., & Patsakis, C. (2019). Defining granularity levels for supply chain traceability based on IoT and blockchain. *Proceedings of the International Conference on Omni-Layer Intelligent Systems*, 184–190. doi:10.1145/3312614.3312652

Dash, T., & Panda, H. (2017). A diagnosis model for job motivation of public health workers in rural Odisha India. *International Journal of Health Sciences and Research*, *7*(4), 442–452.

Das, S. (2020). Innovations in digital banking service brand equity and millennial consumerism. In *Digital transformation and innovative services for business and learning* (pp. 62–79). IGI Global. doi:10.4018/978-1-7998-5175-2.ch004

Davidson, A., Nepomuceno, M. V., & Laroche, M. (2019). Shame on You: When Materialism Leads to Purchase Intentions Toward Counterfeit Products. *Journal of Business Ethics*, *155*(2), 479–494. doi:10.100710551-017-3479-5

de Haro-Olmo, F. J., Varela-Vaca, Á. J., & Álvarez-Bermejo, J. A. (2020). Blockchain from the Perspective of Privacy and Anonymisation: A Systematic Literature Review. *Sensors (Basel)*, *20*(24), 7171. https://doi.org/10.3390/s20247171

de Klerk, S., & Stander, M. W. (2014). Leadership empowerment behaviour, work engagement and turnover intention: The role of psychological empowerment. *Journal of Positive Management*, *5*(3), 28. doi:10.12775/JPM.2014.018

De Kock, J. H., Latham, H. A., Leslie, S. J., Grindle, M., Munoz, S. A., Ellis, L., Polson, R., & O'Malley, C. M. (2021). A rapid review of the impact of COVID-19 on the mental health of healthcare workers: Implications for supporting psychological well-being. *BMC Public Health*, *21*(1), 1–18. doi:10.118612889-020-10070-3 PMID:33422039

de Matos, C. A., Ituassu, C. T., & Rossi, C. A. V. (2007). Consumer attitudes toward counterfeits: A review and extension. *Journal of Consumer Marketing*, *24*(1), 36–47. doi:10.1108/07363760710720975

Dehury, R. K. (2016). Health System Competency for Maternal Health Services in Balasore District and Jaleswar Block, Balasore, Odisha, India: An Assessment. *Journal of Clinical and Diagnostic Research*, *10*(8). Advance online publication. doi:10.7860/JCDR/2016/16781.8329 PMID:27656464

Dehury, R. K., & Chatterjee, S. C. (2018). Assessment of Health Management Information System for monitoring of maternal health in Jaleswar Block of balasore district, Odisha, India. *Indian Journal of Public Health*, *62*(4), 259. doi:10.4103/ijph.IJPH_203_17 PMID:30539886

Demestichas, K., Peppes, N., Alexakis, T., & Adamopoulou, E. (2020). Blockchain in Agriculture Traceability Systems: A Review. *Applied Sciences (Basel, Switzerland)*, *10*(12), 4113. https://doi.org/10.3390/app10124113

Denyer, D., & Tranfield, D. (2009). *Producing a systematic review. The Sage handbook of organizational research methods*. Sage Publications.

Dhingra, S., & Gupta, S. (2020). Behavioural intention to use mobile banking: An extension of UTAUT2 model. *International Journal of Mobile Human Computer Interaction*, *12*(3), 1–20. doi:10.4018/IJMHCI.2020070101

Dinc, I. S., & Gupta, N. (2011). The decision to privatize: Finance and politics. *The Journal of Finance*, *66*(1), 241–269. doi:10.1111/j.1540-6261.2010.01631.x

Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of Price, Brand, and Store Information on Buyers' Product Evaluations. *JMR, Journal of Marketing Research*, *28*(3), 307–319. doi:10.1177/002224379102800305

Doig, A., & Wilson, J. (1998). The Effectiveness Of Codes Of Conduct. *Business Ethics (Oxford, England)*, *7*(3), 140–149. doi:10.1111/1467-8608.00100

Donald, I., & Cooper, S. R. (2001). A facet approach to extending the normative component of the theory of reasoned action. *British Journal of Social Psychology*, *40*(4), 599–621. doi:10.1348/014466601165000 PMID:11795070

Donaldson, T., & Werhane, P. H. (1983). Ethical Issues In Business. Pearson Prentice Hall.

Donaldson, S. I., & Grant-Vallone, E. J. (2002). Understanding Self-Report Bias in Organizational Behavior Research. *Journal of Business and Psychology*, *17*(2), 245–260. doi:10.1023/A:1019637632584

Drumwright, M. E., & Murphy, P. E. (2009). The Current State Of Advertising Ethics: Industry And Academic Perspectives. *Journal of Advertising*, *38*(1), 83–108. doi:10.2753/JOA0091-3367380106

Dua, S., Singh, I., & Das, S. (2021). Banking innovative service with digital brand equity for new age consumers: Internet banking and millennial consumerism. In *Innovations in digital branding and content marketing* (pp. 134–159). IGI Global. doi:10.4018/978-1-7998-4420-4.ch007

Dudiak, J. (2001). T*he Intrigue Of Ethics: A Reading Of The Idea Of Discourse In The Thought Of Emmanuel Levinas.* Fordham University Press.

Dun & Bradstreet. (2021). *Impact of COVID-19 on Small Businesses in India and the Way Ahead.* White paper. https://www.dnb.co.in/file/reports/Whitepaper_Impact-of-COVID-19-on-Small-Businesses.pdf

Du, S., Cao, Y., Zhou, T., Setiawan, A., Thandar, M., Koy, V., Nurumal, M. S., Anh, H., Kunaviktikul, W., & Hu, Y. (2019). The knowledge, ability, and skills of primary health care providers in SEANERN countries: A multi-national cross-sectional study. *BMC Health Services Research*, *19*(1), 602. Advance online publication. doi:10.118612913-019-4402-9 PMID:31455377

Dwivedi, S. K., Amin, R., & Vollala, S. (2020). Blockchain based secured information sharing protocol in supply chain management system with key distribution mechanism. *Journal of Information Security and Applications*, *54*, 102554. https://doi.org/10.1016/j.jisa.2020.102554

Eagly, A. H., & Chaiken, S. (2007). The advantages of an inclusive definition of attitude. *Social Cognition*, *25*(5), 582–602. doi:10.1521oco.2007.25.5.582

Economic Times. (2019). *Udaan valuation soars to $2.8 billion post $585 mn funding*. https://economictimes.indiatimes.com/small-biz/startups/newsbuzz/udaan-valuation-soars-to-2-8-billion-post-585-mn-funding/articleshow/71416118.cms

Economic Times. (2022). https://retail.economictimes.indiatimes.com/news/food-entertainment/personal-care-pet-supplies-liquor/colgate-initiates-talks-with-fmcg-distributors-boycotting-its-products-in-maha-other-states/88724088

Economic Times. Brand Equity. (2019). *Distribution 4.0: Re-Imagining FMCG distribution in India 2030*. https://brandequity.economictimes.indiatimes.com/news/business-of-brands/distribution-4-0-re-imagining-fmcg-distribution-in-india-2030/70166977

Eisend, M. (2019). Morality Effects and Consumer Responses to Counterfeit and Pirated Products: A Meta-analysis. *Journal of Business Ethics*, *154*(2), 301–323. doi:10.100710551-016-3406-1

Eisend, M., Hartmann, P., & Apaolaza, V. (2017). Who Buys Counterfeit Luxury Brands? A Meta-Analytic Synthesis of Consumers in Developing and Developed Markets. *Journal of International Marketing*, *25*(4), 89–111. doi:10.1509/jim.16.0133

EIU. (2013). *Higher education in South Asia. Trends in Afghanistan*. British Council.

El Achi, S., & Sleilati, E. (2016). The effect of coaching on employee performance in the human resource management field: The case of the Lebanese banking sector. *International Journal of Trade and Global Markets*, *9*(2), 137–169. doi:10.1504/IJTGM.2016.076321

El Dahshan, M. E., Ismail Keshk, L., & Shehata Dorgham, L. (2018). Talent Management and Its Effect on Organization Performance among Nurses at Shebin El-Kom Hospitals. *International Journal of Nursing (New York, N.Y.)*, *5*(2), 108–123. doi:10.15640/ijn.v5n2a10

El-Azar, D. (2022). *4 trends that will shape the future of higher education.* https://www.weforum.org/agenda/2022/02/four-trends-that-will-shape-the-future-of-higher-education/

Elliott, A., & Urry, J. (2010). *Mobile lives*. Routledge.

Elsevier. (2021). *Why choose Scopus—Scopus benefits*. https://www.elsevier.com/solutions/scopus/why-choose-scopus

Enshaeifar, S., Barnaghi, P., Skillman, S., Sharp, D., Nilforooshan, R., & Rostill, H. (2020). A Digital Platform for Remote Healthcare Monitoring. *The Web Conference 2020 - Companion of the World Wide Web Conference, WWW 2020*, 203–206. 10.1145/3366424.3383541

Eryilmaz, U., Dijkman, R., van Jaarsveld, W., van Dis, W., & Alizadeh, K. (2020). Traceability Blockchain Prototype for Regulated Manufacturing Industries. *Proceedings of the 2020 2nd International Electronics Communication Conference*, 9–16. doi:10.1145/3409934.3409937

Etemadian, M., Mosadeghrad, A. M., Soleimani, M. J., & Hedayati, S. P. (2020). Succession planning success factors in a hospital: A case study. *Health Monitor Journal of the Iranian Institute for Health Sciences Research*, *19*(1), 41–61. doi:10.29252/payesh.19.1.41

European Commission. (2018). *Innovation & cultural herritage conference report*. https://ec.europa.eu/info/sites/default/files/conferences/ki-02-18-531-en-n.pdf

Evans, C. (2021). Exploiting students' part-time work to enhance learning, teaching and assessment. *Industry and Higher Education*, *35*(1), 10–13. doi:10.1177/0950422220930182

Fake vaccine warning. (2021). https://www.chinadaily.com.cn/a/202103/27/WS605e54eea31024ad0bab1ef3.html

Falagas, M. E., Pitsouni, E. I., Malietzis, G. A., & Pappas, G. (2008). Comparison of PubMed, Scopus, Web of Science, and Google Scholar: Strengths and weaknesses. *The FASEB Journal*, *22*(2), 338–342. https://doi.org/10.1096/fj.07-9492LSF

Falk, J. H., & Dierking, L. D. (1992). *The museum experience*. Whalesback Books.

Falk, J. H., & Dierking, L. D. (2000). *Learning from museums: Visitor experiences and the making of meaning*. Altamira Press.

Falk, J. H., & Dierking, L. D. (2012). *The museum experience revisited*. Routledge.

Feldman, J. M., & Lynch, J. G. (1988). Self-generated validity and other effects of measurement on belief, attitude, intention, and behavior. *The Journal of Applied Psychology*, *73*(3), 421–435. doi:10.1037/0021-9010.73.3.421

Feng, H., Wang, X., Duan, Y., Zhang, J., & Zhang, X. (2020). Applying blockchain technology to improve agri-food traceability: A review of development methods, benefits and challenges. *Journal of Cleaner Production*, *260*, 121031. https://doi.org/10.1016/j.jclepro.2020.121031

Fernandez-Carames, T. M., & Fraga-Lamas, P. (2018). A Review on the Use of Blockchain for the Internet of Things. *IEEE Access: Practical Innovations, Open Solutions*, *6*, 32979–33001. https://doi.org/10.1109/ACCESS.2018.2842685

Ferrell, O. C., Harrison, D. E., Ferrell, L., & Hair, J. F. (2019). Business Ethics, Corporate Social Responsibility, And Brand Attitudes: An Exploratory Study. *Journal of Business Research*, *95*, 491–501. doi:10.1016/j.jbusres.2018.07.039

Festinger, L., & Carlsmith, J. M. (1959). Cognitive consequences of forced compliance. *Journal of Abnormal and Social Psychology*, *58*(2), 203–210. Advance online publication. doi:10.1037/h0041593 PMID:13640824

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention and behavior: An introduction to theory and research. Addison-Wesley Pub (Sd).

Flick, U. (2008). *Designing qualitative research*. Sage Publications.

Floreene & Laloo, . (2017). *Street vendors the inormal entrepreneurs, an analysis on realization of their goals and the consequences in their livelihood*. *International Journal of Pure and Applied Management Sciences*.

Ford, G., Compton, M., Millett, G., & Tzortzis, A. (2016). The role of Digital Disruption in Healthcare Service Innovation. *Service Business Model Innovation in Healthcare and Hospital Management,* 57–70. doi:10.1007/978-3-319-46412-1_4

Ford, R. C., & Richardson, W. D. (1994). Ethical Decision Making: A Review Of The Empirical Literature. *Journal of Business Ethics*, *13*(3), 205–221. doi:10.1007/BF02074820

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *JMR, Journal of Marketing Research*, *18*(1), 39–50. doi:10.1177/002224378101800104

França, T., Alves, E., & Padilla, B. (2018). Portuguese policies fostering international student mobility: A colonial legacy or a new strategy? *Globalisation, Societies and Education*, *16*(3), 1–14.

Frolova, E. V., Rogach, O. V., Tyurikov, A. G., & Razov, P. V. (2021). Online student education in a pandemic: New challenges and risks. *European Journal of Contemporary Education*, *10*(1), 43–52.

Fu Tsang, N. K., Lai, M. T., & Law, R. (2010). Measuring e-service quality for online travel agencies. *Journal of Travel & Tourism Marketing*, *27*(3), 306–323. doi:10.1080/10548401003744743

Gachabayov, M., Latifi, L. A., Parsikia, A., & Latifi, R. (2022). The Role of Telemedicine in Surgical Specialties During the COVID-19 Pandemic: A Scoping Review. *World Journal of Surgery*, *46*(1), 10–18. doi:10.100700268-021-06348-1 PMID:34743242

Gallardo-Gallardo, E., Dries, N., & González-Cruz, T. F. (2013). What is the meaning of "talent" in the world of work? *Human Resource Management Review*, *23*(4), 290–300. doi:10.1016/j.hrmr.2013.05.002

Gallardo-Gallardo, E., Thunnissen, M., & Scullion, H. (2020). Talent management: Context matters. *International Journal of Human Resource Management*, *31*(4), 457–473. doi:10.1080/09585192.2019.1642645

Gama, F., Tyskbo, D., Nygren, J., Barlow, J., Reed, J., & Svedberg, P. (2022). Implementation Frameworks for Artificial Intelligence Translation Into Health Care Practice: Scoping Review. *J Med Internet Res, 24*(1). doi:10.2196/32215

Gandolfi, E. (2009). Spaces of freedom. *Archit Design*, *79*, 78-81.

García-Morales, V. J., Garrido-Moreno, A., & Martín-Rojas, R. (2021). The transformation of higher education after the COVID disruption: Emerging challenges in an online learning scenario. *Frontiers in Psychology*, *12*, 196. doi:10.3389/fpsyg.2021.616059 PMID:33643144

Garg, P. (2020). Impact of digitization on commercial banking services. In *Technological Innovations for Sustainability and Business Growth* (pp. 71–90). IGI Global.

Gaski, J. F. (1999). Does Marketing Ethics Really Have Anything To Say? A Critical Inventory Of The Literature. *Journal of Business Ethics*, *18*(3), 315–334. doi:10.1023/A:1017190829683

Gassenheimer, J. B., Hunter, G. L., & Siguaw, J. A. (2006). An evolving theory of hybrid distribution: taming a hostile supply network. *Industrial Marketing Management*. https://retail.economictimes.indiatimes.com/re-tales/how-omni-channel-retail-format-can-help-fmcg-industry-to-grow-bigger/5187 doi:10.1016/j.indmarman.2006.02.007

Geismar, H. (2018). *Museum object lessons for the digital age*. UCL Press. doi:10.2307/j.ctv1xz0wz

Gentry, J. W., Putrevu, S., & Shultz, C. J. (2006). The effects of counterfeiting on consumer search. *Journal of Consumer Behaviour*, *5*(3), 245–256. doi:10.1002/cb.176

George, G., & Joseph, B. (2015). A study on the relationship between Employee engagement and organizational citizenship with reference to employees working in travel organizations. *Atna - Journal of Tourism Studies*, *10*(2), 33–44. doi:10.12727/ajts.14.3

Ghosh, S. (2008). Does divestment matter for firm performance? evidence from the Indian experience. *Economic Systems*, *32*(4), 372–388. doi:10.1016/j.ecosys.2008.03.002

Giannini, T., & Bowen, J. P. (2019). Museums and digitalism. In T. Giannini & J. P. Bowen (Eds.), *Museums and Digital Culture New Perspectives and Research*. Springer. doi:10.1007/978-3-319-97457-6_2

GinotraP. (2019). *Innovations in Indian Banking Sector*. Available at SSRN 3438918.

Giusto, E., Vakili, M. G., Gandino, F., Demartini, C., & Montrucchio, B. (2020). Quantum Pliers Cutting the Blockchain. *IT Professional*, *22*(6), 90–96. https://doi.org/10.1109/MITP.2020.2974690

Glass, N. R. (1997). Theory and practice in the experience of art: John Dewey and the Barnes Foundation. *Journal of Aesthetic Education*, *31*(3), 91–105. doi:10.2307/3333490

Global Observatory for eHealth. Directory of eHealth policies. (n.d.). *World Health Organization*. Error! Hyperlink reference not valid.

Godos-Diez, J.-L., Fernandez-Gago, R., & Martinez-Campillo, A. (2011). How Important Are Ceos To Csr Practices? An Analysis Of The Mediating Effect Of The Perceived Role Of Ethics In Social Responsibility. *Journal of Business Ethics*, *98*(4), 531–548. doi:10.100710551-010-0609-8

Golpîra, H., Khan, S. A. R., & Safaeipour, S. (2021). A review of logistics Internet-of-Things: Current trends and scope for future research. *Journal of Industrial Information Integration*, *22*, 100194. https://doi.org/10.1016/j.jii.2020.100194

Gong, T., & Yi, Y. (2018). The effect of service quality on customer satisfaction, loyalty, and happiness in five Asian countries. *Psy. & Mark.*, *35*(6), 427–442. doi:10.1002/mar.21096

Goolsby, J. R., & Hunt, S. D. (1982). Cognitive Moral Development And Marketing. *Journal of Marketing*, *56*(1), 55–68. doi:10.1177/002224299205600106

Gouri, G. (1996). Privatisation and public sector enterprises in India: Analysis of impact of a nonpolicy. *Economic and Political Weekly*, *31*(48), M63–M74.

Gouri, G. (1997). The new economic policy and privatization in India. *Journal of Asian Economics*, *8*(3), 455–479. doi:10.1016/S1049-0078(97)90049-X

Grecuccio, J., Giusto, E., Fiori, F., & Rebaudengo, M. (2020). Combining Blockchain and IoT: Food-Chain Traceability and Beyond. *Energies*, *13*(15), 3820. https://doi.org/10.3390/en13153820

Gribble, C., Rahimi, M., & Blackmore, J. (2017). International students and post-study employment: The impact of university and host community engagement on the employment outcomes of international students in Australia. In L. T. Tran & C. Gomes (Eds.), *International student connectedness and identity: Transnational perspectives* (pp. 15–39). Springer.

Grossman, G. M., & Shapiro, C. (1988). Foreign Counterfeiting of Status Goods. *The Quarterly Journal of Economics*, *103*(1), 79–100. doi:10.2307/1882643

Groves, K. S. (2019). Examining the impact of succession management practices on organizational performance: A national study of U.S. hospitals. *Health Care Management Review*, *44*(4), 356–365. doi:10.1097/HMR.0000000000000176 PMID:28786881

Groves, T., Hong, Y., McMillan, J., & Naughton, B. (1994). Autonomy and incentives in Chinese state enterprises. *The Quarterly Journal of Economics*, *109*(1), 183–210. doi:10.2307/2118432

Gupta, S. (2010). *Financial performance of public sector enterprises in India with focus on disinvestment and MOU* (Doctoral dissertation). IIT Delhi.

Gupta, K. L., & Kaur, H. (2004). *New Indian economy and reforms*. Deep and Deep Publication Pvt Ltd.

Gupta, K. S., & Rokade, V. (2016). Importance of quality in health care sector. *Journal of Health Management*, *18*(1), 84–94. doi:10.1177/0972063415625527

Gupta, N. (2005). Partial privatization and firm performance. *The Journal of Finance*, *60*(2), 987–1015. doi:10.1111/j.1540-6261.2005.00753.x

Gupta, N. (2019). A study towards the digitalization of Indian banking sector. *Asian Journal of Multidimensional Research*, *8*(2), 87–94. doi:10.5958/2278-4853.2019.00034.X

Gupta, P., Fernandes, S. F., & Jain, M. (2018). Automation in recruitment: A new frontier. *Journal of Information Technology Teaching Cases*, *8*(2), 118–125. doi:10.105741266-018-0042-x

Gupta, R. (2021). Industry 4.0 Adaption in Indian Banking Sector—A review and agenda for future research. *Vision (Basel)*.

Gupta, S., Aggarwal, A., & Mittal, A. (2021). Modelling the motivations of millennials' online shopping intentions: A PLS-SEM approach. *International Journal of Business and Globalisation*, *29*(1), 135–147. doi:10.1504/IJBG.2021.117409

Gupta, S., Jain, P. K., Yadav, S. S., & Gupta, V. K. (2011). Financial performance of disinvested central public sector enterprises in India: An empirical study on select dimensions. *Journal of Applied Finance & Banking*, *1*(4), 57–106.

Gupta, S., & Kumar, R. (2017). Effectiveness of digital marketing a descriptive analysis. *International Journal of Applied Business and Economic Research*, *15*(2), 1–8.

Gupta, V. P., & Arora, A. K. (2022). Automation in healthcare services. In *Research Anthology on Cross-Disciplinary Designs and Applications of Automation* (pp. 285–303). IGI Global. doi:10.4018/978-1-6684-3694-3.ch015

Guruz, K. (2011). *Higher education and international student mobility in the global knowledge economy*. State University of New York Press.

Haak-Saheem, W. (2020). Talent management in Covid-19 crisis: How Dubai manages and sustains its global talent pool. *Asian Business & Management*, *19*(3), 298–301. doi:10.105741291-020-00120-4

Haggerty, E. (2017). Healthcare and Digital Transformation. *Network Security*, *2017*(8), 7–11. doi:10.1016/S1353-4858(17)30081-8

Haines, S. (2013). Applying talent management to nursing. *Nursing Times*, *109*(47), 12–15. https://europepmc.org/article/med/24380172 PMID:24380172

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th ed.). Prentice Hall.

Hamelin, N., Nwankwo, S., & el Hadouchi, R. (2013). 'Faking brands': Consumer responses to counterfeiting. *Journal of Consumer Behaviour*, *12*(3), 159–170. doi:10.1002/cb.1406

Hannam, K., Sheller, M., & Urry, J. (2006). Mobilities, immobilities and moorings. *Mobilities*, *1*(1), 1–22.

Hans, V. B., & Crasta, S. J. (2019). Digitalization in the 21st century–impact on learning and doing. *Journal of Global Economics*, *15*(1), 12–24. doi:10.1956/jge.v15i1.524

Haroon, A., Basharat, M., Khattak, A. M., & Ejaz, W. (2019). Internet of Things Platform for Transparency and Traceability of Food Supply Chain. *2019 IEEE 10th Annual Information Technology, Electronics and Mobile Communication Conference (IEMCON)*, 13–19. doi:10.1109/IEMCON.2019.8936158

Harter, J. K., Schmidt, F. L., & Keyes, M. C. L. (n.d.). *Well-being in the workplace and its relationship to business outcomes: A review of the Gallup studies*. https://www.researchgate.net/publication/237670380

Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *The Journal of Applied Psychology*, *87*(2), 268–279. doi:10.1037/0021-9010.87.2.268 PMID:12002955

Hawley, R., & Allen, C. (2018). Student-generated video creation for assessment: Can it transform assessment within higher education? *International Journal for Transformative Research*, *5*(1), 1–11. doi:10.2478/ijtr-2018-0001

Health WorkForce Department. (2021). *The impact of COVID-19 on health and care workers: A closer look at deaths*. https://apps.who.int/iris/bitstream/handle/10665/345300/WHO-HWF-WorkingPaper-2021.1-eng.pdf

Hein, H. (2006). *Public art: Thinking museums differently*. Altamira Press.

Helin, S., & Sandström, J. (2008). Codes, Ethics And Cross-Cultural Differences: Stories From The Implementation Of A Corporate Code Of Ethics In A Mnc Subsidiary. *Journal of Business Ethics*, *82*(2), 281–291. doi:10.100710551-008-9887-9

Henderikx, M., & Stoffers, J. (2022). An exploratory literature study into digital transformation and leadership: Toward future-proof middle managers. *Sustainability*, *14*(2), 687. doi:10.3390u14020687

Henion, K. E., & Kinnear, T. C. (Eds.). (1976). *Ecological Marketing*. American Marketing Association. https://Www.Tandfonline.Com/Doi/Full/10.1080/07393148.2017.1304737

Herstein, R., Drori, N., Berger, R., & Barnes, B. R. (2015). Anticounterfeiting Strategies and Their Influence on Attitudes of Different Counterfeit Consumer Types. *Psychology and Marketing*, *32*(8), 842–859. doi:10.1002/mar.20822

Hesse, A. (2018). Digitalization and leadership-how experienced leaders interpret daily realities in a digital world. *Proceedings of the 51st Hawaii International Conference on System Sciences*, 1854-1863. 10.24251/HICSS.2018.234

Hinkin, T. R., Tracey, J. B., & Enz, C. A. (1997). Scale Construction: Developing Reliable and Valid Measurement Instruments. *Journal of Hospitality & Tourism Research (Washington, D.C.)*, *21*(1), 100–120. doi:10.1177/109634809702100108

Hobsbawm, E. J. (2020). *Kısa 20. yüzyıl 1914-1991 aşırılıklar çağı* [The age of extremes: The short twentieth century, 1914–1991]. Everest Publishing.

Ho, C. I., & Lee, Y. L. (2007). The development of an e-travel service quality scale. *Tourism Management*, *28*(6), 1434–1449. doi:10.1016/j.tourman.2006.12.002

Holland, P., & Jeske, D. (2017). Changing Role of Social Media at Work: Implications for Recruitment and Selection. *Electronic HRM in the Smart Era*, 287–309. doi:10.1108/978-1-78714-315-920161011

Hooper-Greenhill, E. (1999). *The educational role of the museum*. Routledge.

Hoque, A. S. M. M., Awang, Z., Siddiqui, B. A., & Sabiu, M. S. (2018). Role of Employee Engagement on Compensation System and Employee Performance Relationship among Telecommunication Service Providers in Bangladesh. *International Journal of Human Resource Studies*, *8*(3), 19. doi:10.5296/ijhrs.v8i3.13081

Hosseini Bamakan, S. M., Ghasemzadeh Moghaddam, S., & Dehghan Manshadi, S. (2021). Blockchain-enabled pharmaceutical cold chain: Applications, key challenges, and future trends. *Journal of Cleaner Production*, *302*, 127021. https://doi.org/10.1016/j.jclepro.2021.127021

Hosseinzadeh Nojedeh, S., & Sattari Ardabili, F. (2015). An Overview on Talent Management in Nursing. *Management Issues in Healthcare System*, *1*(1), 4–17. doi:10.33844/mihs.2015.60408

Huang, J. H., Lee, B. C. Y., & Ho, S. H. (2004). Consumer attitude toward gray market goods. *International Marketing Review*, *21*(6), 598–614. doi:10.1108/02651330410568033

Huang, L. (2020). Social media-based data collection and analysis in educational research. In *Advancing Educational Research with Emerging Technology* (pp. 54–77). IGI Global. doi:10.4018/978-1-7998-1173-2.ch004

Huawei Technologies, . (2018). *Huawei Blockchain Whitepaper*. https://www.huaweicloud.com/content/dam/cloudbu-site/archive/hk/en-us/about/analyst-reports/images/4-201804-Huawei%20Blockchain%20Whitepaper-en.pdf

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*(1), 1–55. doi:10.1080/10705519909540118

Hume, M., Mort, G. S., & Winzar, H. (2007). Exploring repurchase intention in a performing arts context: Who comes? and why do they come back? *International Journal of Nonprofit and Voluntary Sector Marketing*, *12*(2), 135–148. doi:10.1002/nvsm.284

Hur, W. M., Kim, H., & Woo, J. (2014). How Csr Leads To Corporate Brand Equity: Mediating Mechanisms Of Corporate Brand Credibility And Reputation. *Journal of Business Ethics*, *125*(1), 75–86. doi:10.100710551-013-1910-0

Huselid, M. A. (1995). The Impact Of Human Resource Management Practices On Turnover, Productivity, And Corporate Financial Performance. ©. *Academy of Management Journal*, *38*(3), 635–872.

Hwang, W.J., & Park, Y.M. (2019). Factors Influencing the Accessibility of Maternal Health Service in Cambodia. *International Journal of Environmental Research and Public Health*, *16*(16).

Iacobucci, D. (2009). Everything you always wanted to know about SEM (structural equations modeling) but were afraid to ask. *Journal of Consumer Psychology*, *19*(4), 673–680. doi:10.1016/j.jcps.2009.09.002

Iacobucci, D. (2010). Structural equations modeling: Fit Indices, sample size, and advanced topics. *Journal of Consumer Psychology*, *20*(1), 90–98. Advance online publication. doi:10.1016/j.jcps.2009.09.003

IBEF. (2019). *Indian FMCG Industry in India Industry Report (February 2019).* India Brand Equity Foundation (IBEF). Retrieved from https://www.ibef.org/download/fmcg-feb-2019.pdf

IBEF. (2022). *Indian FMCG Industry in India Industry Report (March 2022).* India Brand Equity Foundation (IBEF). Retrieved from https://www.ibef.org/industry/fmcg

IBEF. (2022). *Indian Healthcare Industry Analysis*. IBEF. https://www.ibef.org/industry/healthcare-presentation#

Ibelieve Isaac, Y. A. (2020). *Impacts of physical planning regulation on street trading livelihood: street traders right to the city perspective. Department of Urban and Regional Planning, Federal University of Technology*. Minna.

Ibrahim, A. U., & Daniel, C. O. (2019). Impact of Performance Appraisal on Employee Productivity in Nigeria Breweries Plc. *International Journal of Business and Management*, *7*(5). Advance online publication. doi:10.24940/theijbm/2019/v7/i5/BM1905-044

Ibrahim, E. E., Joseph, M., & Ibeh, K. I. (2006). Customers' perception of electronic service delivery in the UK retail banking sector. *International Journal of Bank Marketing*, *24*(7), 475–493. doi:10.1108/02652320610712094

ICOM. (2007). *Museum definition.* ICOM Statutes, 22nd General Assembly, Vienna, Austria. https://icom.museum/en/resources/standards-guidelines/museum-definition/

Ilieva, J., Baron, S., & Healey, N. M. (2002). Online Surveys in Marketing Research. *International Journal of Market Research*, *44*(3), 1–14. doi:10.1177/147078530204400303

Ilozumba, O., Van Belle, S., Dieleman, M., Liem, L., Choudhury, M., & Broerse, J. E. W. (2018). The effect of a community health worker utilized mobile health application on maternal health knowledge and behavior: A quasi-experimental study. *Frontiers in Public Health*, *6*, 133. Advance online publication. doi:10.3389/fpubh.2018.00133 PMID:29868541

Indian Public Health Standards. (2012). *Guidelines for Primary Health Centers*. Directorate General of Health Services. Ministry of Health and Family Welfare. Government of India. Available from: http://www.nhm.gov.in/images/pdf/guidelines/iphs/iphs-revised-guidlines-2012/primay-health-centres.pdf

Islam, M. T. (2021). Cultural cultivation for the mobility of Bangladeshi higher education students in Australia. *Higher Education Research & Development*, 1–14. doi:10.1080/07294360.2021.1902950

Islam, M. T. (2022a). Family fertilization: The mobility motivation for Bangladeshi higher education students in Australia. Manuscript submitted for publication.

Islam, M. T. (2022b). International mobility for higher education: (Un)employability and (un)employment issues in Bangladesh. Manuscript submitted for publication.

Islam, J. U., Shahid, S., Rasool, A., Rahman, Z., Khan, I., & Rather, R. A. (2020). Impact Of Website Attributes On Customer Engagement In Banking: A Solicitation Of Stimulus-Organism-Response Theory. *International Journal of Bank Marketing*, *38*(6), 1279–1303. doi:10.1108/IJBM-12-2019-0460

Islam, M. T. (2019). (Re)Searching for the development of a conceptual model of education for citizenship in the context of young people's globalised mobility in higher education. *Globalisation, Societies and Education*, *17*(2), 194–207. https://doi.org/10.1080/14767724.2019.1583093

Isson, J. P., & Harriott, J. S. (2016). *People analytics in the era of big data: Changing the way you attract, acquire, develop, and retain talent*. John Wiley & Sons. doi:10.1002/9781119083856

Iyengar, K. P., Jain, V. K., & Vaishya, R. (2022). Current situation with doctors and healthcare workers during COVID-19 pandemic in India. *Postgraduate Medical Journal*, *98*(e2), e121–e122. doi:10.1136/postgradmedj-2020-138496 PMID:35232865

Jain, P. K., & Yadav, S. S. (2005). *Financial management practices: A study of public sector enterprises in India*. Hindustan Publishing Corporation.

Jain, N. (2011). Application of disinvestment on PSEs. *International Journal of Commerce and Business Management*, *4*(1), 74–92.

Jaiyen, J., Pongnumkul, S., & Chaovalit, P. (2020). A Proof-of-Concept of Farmer-to-Consumer Food Traceability on Blockchain for Local Communities. *2020 International Conference on Computer Science and Its Application in Agriculture (ICOSICA)*, 1–5. doi:10.1109/ICOSICA49951.2020.9243172

Jat, T. R., Ng, N., & San Sebastian, M. (2011). Factors Affecting the Use of Maternal Health Services in Madhya Pradesh State of India: A Multilevel Analysis. *International Journal for Equity in Health*, *10*(1), 59. doi:10.1186/1475-9276-10-59 PMID:22142036

Jazieh, A. R., & Kozlakidis, Z. (2020). Healthcare Transformation in the Post-Coronavirus Pandemic Era. *Frontiers in Medicine*, *7*, 429. doi:10.3389/fmed.2020.00429 PMID:32850915

Jeurissen, R., & Van De Ven, B. (1996). Developments In Marketing Ethics. *Business Ethics Quarterly*, *16*, 427–439. doi:10.5840/beq200616335

Jiani, M. A. (2017). Why and how international students choose Mainland China as a higher education study abroad destination. *Higher Education*, *74*(4), 563–579.

Johnson, J. E., Billingsley, M., Crichlow, T., & Ferrell, E. (2011). Professional development for nurses: Mentoring along the u-shaped curve. *Nursing Administration Quarterly*, *35*(2), 119–125. doi:10.1097/NAQ.0b013e31820f69c0 PMID:21403485

Jokila, S. (2015). The internationalization of higher education with Chinese characteristics: Appadurai's ideas explored. *Asia Pacific Journal of Education*, *35*(1), 125–139. http://ezproxy.deakin.edu.au/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=101515268&site=eds-live&scope=site

Joseph, E., & Dhanabhakyam, M. M. (2022). Role of Digitalization Post-Pandemic for Development of SMEs. In *Research Anthology on Business Continuity and Navigating Times of Crisis* (pp. 727–747). IGI Global. doi:10.4018/978-1-6684-4503-7.ch036

Kalaisel, V. I. S. (2020). A Study on Role of E-Banking Services Towards Digital India. *Journal of Interdisciplinary Cycle Research*, *12*(2), 939–951.

Kapoor, S., & Acheson, L. (2022). Developing nurse-friendly digital technology can enhance its use in healthcare. *Evidence-Based Nursing*, *25*(1), 31–31. doi:10.1136/ebnurs-2020-103332 PMID:33093179

Kassahun Bekele, M. & Champion, E. (2019). A comparison of immersive realities and interaction methods: Cultural learning in virtual heritage. *Frontiers in Robotics and AI*. . doi:10.3389/frobt.2019.00091

Katsikouli, P., Wilde, A. S., Dragoni, N., & Høgh-Jensen, H. (2021). On the benefits and challenges of blockchains for managing food supply chains. *Journal of the Science of Food and Agriculture*, *101*(6), 2175–2181. https://doi.org/10.1002/jsfa.10883

Kaufmann, H. R., Petrovici, D. A., Filho, C. G., & Ayres, A. (2016). Identifying moderators of brand attachment for driving customer purchase intention of original vs counterfeits of luxury brands. *Journal of Business Research*, *69*(12), 5735–5747. doi:10.1016/j.jbusres.2016.05.003

Kaur, G. (2020). *Impact of Covid 19 National lockdown on women vendors in Delhi*. Institute of Social Studies Trust.

Kaur, S. (2020). Social and financial performance of Indian banking sector. *International Journal of Public Sector Performance Management*, *6*(4), 435–455. doi:10.1504/IJPSPM.2020.109301

Kayser, C. (2019). Dyaspace dialogic perception and aesthetic experience in digital exhibits A multidisciplinary approach involving humanities and neuroscience. *Hal Open Science*.

Keith, N., Petto, J. C., & Burnett, M. (2008). Ethics In Advertising: Differences In Industry Values And Student Perceptions. *Academy of Marketing Studies Journal*, *27*, 33–47.

Keller, K. L. (2001). *Building customer-based brand equity: A blueprint for creating strong brands*. Marketing Science Institute.

Kenny, D. A., Kaniskan, B., & McCoach, D. B. (2014). The Performance of RMSEA in Models With Small Degrees of Freedom. *Sociological Methods & Research*, *44*(3), 486–507. doi:10.1177/0049124114543236

Kesterton, A. J., Cleland, J., Sloggett, A., & Ronsmans, C. (2010). Institutional Delivery in Rural India: The Relative Importance of Accessibility and Economic Status. *BMC Pregnancy and Childbirth*, *10*(1), 30. doi:10.1186/1471-2393-10-30 PMID:20525393

Khan, M. R., & Taher, F. (2017). ICT opens up new prospects for Bangladesh. *The Daily Star*. https://www.thedailystar.net/drivers-economy/ict-opens-new-prospects-bangladesh-1364893

Khandelwal, U., & Bajpai, N. (2012). Price Fairness And Its Linear Dependence On Consumer AttiTude: A Comparative Study In Metro And Non Metro City. *European Journal of Business and Management*, *4*(10), 94–10.

Khandeparkar, K., & Motiani, M. (2018). Fake-love: Brand love for counterfeits. *Marketing Intelligence & Planning*, *36*(6), 661–677. doi:10.1108/MIP-11-2017-0278

Khan, K. S., Kunz, R., Kleijnen, J., & Antes, G. (2003). Five Steps to Conducting a Systematic Review. *Journal of the Royal Society of Medicine*, *96*(3), 118–121. https://doi.org/10.1177/014107680309600304

Khan, M. A., & Salah, K. (2018). IoT security: Review, blockchain solutions, and open challenges. *Future Generation Computer Systems*, *82*, 395–411. https://doi.org/10.1016/j.future.2017.11.022

Khatib. (2019). Factors of E-service Quality among Malaysian Millennial Streaming Service Users. *Int. J. of Eco. & Manage*, *13*(1).

Khetrapal, S., & Bhatia, R. (2020). Impact of COVID-19 pandemic on health system & Sustainable Development Goal 3. *The Indian Journal of Medical Research*, *151*(5), 395–399. doi:10.4103/ijmr.IJMR_1920_20 PMID:32611910

Kilbourne, W. E. (1998). Green Marketing: A Theoretical Perspective. *Journal of Marketing Management*, *14*(6), 641–655. doi:10.1362/026725798784867743

Kim, C., Ko, E., & Koh, J. (2016). Consumer attitudes and purchase intentions toward fashion counterfeits: Moderating the effects of types of counterfeit goods and consumer characteristics. *Journal of Global Fashion Marketing*, *7*(1), 15–29. doi:10.1080/20932685.2015.1105109

Kim, H., & Karpova, E. (2010). Consumer attitudes toward fashion counterfeits: Application of the theory of planned behavior. *Clothing & Textiles Research Journal*, *28*(2), 79–94. doi:10.1177/0887302X09332513

Kim, H.-S., & Yoon, K.-H. (2020). Lessons from Use of Continuous Glucose Monitoring Systems in Digital Healthcare. *Endocrinology and Metabolism (Seoul, Korea)*, *35*(3), 541–548. doi:10.3803/EnM.2020.675 PMID:32981296

Kim, J. (2011). Aspiration for global cultural capital in the stratified realm of global higher education: Why do Korean students go to US graduate schools? *British Journal of Sociology of Education*, *32*(1), 109–126.

Kim, J.-H. (2018). Conceptualization and assessment of E-service quality for luxury brands. *Service Industries Journal*. Advance online publication. doi:10.1080/02642069.2018.1517755

Kitapci, O., Akdogan, C., & Dortyol, İ. T. (2014). The impact of service quality dimensions on patient satisfaction, repurchase intentions and word-of-mouth communication in the public healthcare industry. *Procedia: Social and Behavioral Sciences*, *148*, 161–169. doi:10.1016/j.sbspro.2014.07.030

Kluitenberg, E. (2006). The network of waves: Living and acting in a hybrid space. *Hybrid Space, 11*, 6-16.

Koay, K. Y. (2018). Understanding consumers' purchase intention towards counterfeit luxury goods. *Asia Pacific Journal of Marketing and Logistics*, *30*(2), 495–516. doi:10.1108/APJML-05-2017-0100

Kocsis, A., & Kenderdine, S. (2014). I sho u: An innovative method for museum visitor evaluation. In H. Din & S. Wu (Eds.), *Digital heritage and culture: Strategy and implementation*. World Scientific Publishing. doi:10.1142/9789814522984_0016

Kohnová, L., Papula, J., & Salajová, N. (2021). Generation Z: Education in the world of digitization for the future of organizations. *Proceedings of INTED2021 Conference*, *8*, 10199-10208. 10.21125/inted.2021.2126

Koleva, B., Spence, J., Benford, S., Kwon, H., Schnädelbach, H., Thorn, E., Preston, W., Hazzard, A., Greenhalgh, C., Adams, M., Row Farr, J., Tandavanitj, N., Angus, A., & Lane, G. (2020). Designing hybrid gifts. *ACM Transactions on Computer-Human Interaction*, *27*(5), 1–33. doi:10.1145/3398193

Kostkova, P. (2015). Grand Challenges in Digital Health. *Frontiers in Public Health*, *3*. Advance online publication. doi:10.3389/fpubh.2015.00134 PMID:26000272

Kotler, P. (1972). A Generic Concept Of Marketing. *Journal of Marketing*, *36*(April), 46–54. doi:10.1177/002224297203600209

Kotler, P., & Armstrong, G. (2014). *Principles of marketing*. Pear. Edu.

Kuhn, M., Funk, F., & Franke, J. (2021). Blockchain architecture for automotive traceability. *Procedia CIRP*, *97*, 390–395. https://doi.org/10.1016/j.procir.2020.05.256

Kuhn, M., Funk, F., Zhang, G., & Franke, J. (2021). Blockchain-based application for the traceability of complex assembly structures. *Journal of Manufacturing Systems*, *59*, 617–630. https://doi.org/10.1016/j.jmsy.2021.04.013

Kumar, P. (2014). Impact of Disinvestment on profitability of selected Public Sector Units. *International Journal of Reviews, Surveys and Research*, *3*(2), 28–42.

Kumar, S., & Choudhury, S. (2021). Migrant workers and human rights: A critical study on India's COVID-19 lockdown policy. *Social Sciences & Humanities Open*, *3*(1), 100130. doi:10.1016/j.ssaho.2021.100130

Kundu, A., & Bej, T. (2021). Experiencing e-assessment during COVID-19: An analysis of Indian students' perception. *Higher Education Evaluation and Development*, *15*(2), 114–134. doi:10.1108/HEED-03-2021-0032

Kwok, A. O. J., & Koh, S. G. M. (2020). Neural Network Insights of Blockchain Technology in Manufacturing Improvement. *2020 IEEE 7th International Conference on Industrial Engineering and Applications (ICIEA)*, 932–936. doi:10.1109/ICIEA49774.2020.9101957

Kwong, K. K., Yau, O. H. M., Lee, J. S. Y., Sin, L. Y. M., & Tse, A. C. B. (2003). The Effects of Attitudinal and Demographic Factors on Intention to Buy Pirated CDs: The Case of Chinese Consumers. *Journal of Business Ethics*, *47*(3), 223–235. doi:10.1023/A:1026269003472

Lahbib, A., Toumi, K., Laouiti, A., Laube, A., & Martin, S. (2019). Blockchain based trust management mechanism for IoT. *2019 IEEE Wireless Communications and Networking Conference (WCNC)*, 1–8. doi:10.1109/WCNC.2019.8885994

Lamberton, H., & Minor, L. (1995). *Human Relations: Strategies For Success*. Irwin.

Lämsä, A. M., Vehkaperä, M., Puttonen, T., & Pesonen, H. L. (2008). Eff Ect Of Business Education On Women And Men Students' Attitudes On Corporate Responsibility In Society. *Journal of Business Ethics*, *82*(1), 45–58. doi:10.100710551-007-9561-7

Lassar, W. M., & Kerr, J. L. (1996). Strategy and control in supplier distributor relationships: An agency perspective. *Strategic Management Journal*, *17*(8), 613–632. doi:10.1002/(SICI)1097-0266(199610)17:8<613::AID-SMJ836>3.0.CO;2-B

Lee, G. G., & Lin, H. F. (2005). Customer perceptions of e-service quality in online shopping. *Int. J. of Ret. & Dis. Manage.*

Lee, J. Y., & Jin, C. H. (2019). The Role Of Ethical Marketing Issues In Consumer-Brand Relationship. *Sustainability*, *11*(23), 6536. doi:10.3390u11236536

Leong, C., Viskin, T., & Stewart, R. (2019). *Tracing the supply chain*. Accenture. https://www.accenture.com/_acnmedia/PDF-93/Accenture-Tracing-Supply-Chain-Blockchain-Study-PoV.pdf#zoom=50

Lewis, R. E., & Heckman, R. J. (2006). Talent management: A critical review. *Human Resource Management Review*, *16*(2), 139–154. doi:10.1016/j.hrmr.2006.03.001

Liang, H., Saraf, N., Hu, Q., & Xue, Y. (2007). Assimilation of Enterprise Systems: The Effect of Institutional Pressures and the Mediating Role of Top Management. *Management Information Systems Quarterly*, *31*(1), 59–87. doi:10.2307/25148781

Lim, W. M., Gupta, S., Aggarwal, A., Paul, J., & Sadhna, P. (2021). How do digital natives perceive and react toward online advertising? Implications for SMEs. *Journal of Strategic Marketing*, 1–35. doi:10.1080/0965254X.2021.1941204

Lin, J., Shen, Z., & Miao, C. (2017). Using Blockchain Technology to Build Trust in Sharing LoRaWAN IoT. *Proceedings of the 2nd International Conference on Crowd Science and Engineering*, 38–43. doi:10.1145/3126973.3126980

Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *The Journal of Applied Psychology*, *86*(1), 114–121. doi:10.1037/0021-9010.86.1.114 PMID:11302223

Lindgren-Gatfield, R., & Hyde, M. (2005). An examination of two case studies used in building a decision-making model. *International Education Journal*, *6*(5), 555–566.

Lingyan, L., & Yukun, G. (2022). Visual analysis of undergraduate teaching in business administration. *Procedia Computer Science*, *199*, 788–797. doi:10.1016/j.procs.2022.01.098

Li, P., Fu, J.-B., Li, K.-F., Liu, J.-N., Wang, H.-L., Liu, L.-J., Chen, Y., Zhang, Y.-L., Liu, S.-L., Tang, A., Tong, Z.-D., & Yan, J.-B. (2020). Transmission of COVID-19 in the terminal stages of the incubation period: A familial cluster. *International Journal of Infectious Diseases*, *96*, 452–453. doi:10.1016/j.ijid.2020.03.027 PMID:32194239

Liu, J. X., Goryakin, Y., Maeda, A., Bruckner, T., & Scheffler, R. (2017). Global Health Workforce Labor Market Projections for 2030. *Human Resources for Health*, *15*(1), 1–12. doi:10.118612960-018-0335-3 PMID:28056998

Liu, W. (2016). The international mobility of chinese students: A cultural perspective. *Canadian Journal of Higher Education*, *46*(4), 41–59.

Ljungqvist, M., & Sonesson, A. (2021). *Selling out education in the name of digitalization: a critical analysis of Swedish policy*. *Nordic Journal of Studies in Educational Policy*. doi:10.1080/20020317.2021.2004665

Llop-Gironés, A., Vračar, A., Llop-Gironés, G., Benach, J., Angeli-Silva, L., Jaimez, L., Thapa, P., Bhatta, R., Mahindrakar, S., Bontempo Scavo, S., Nar Devi, S., Barria, S., Marcos Alonso, S., & Julià, M. (2021). Employment and working conditions of nurses: Where and how health inequalities have increased during the COVID-19 pandemic? *Human Resources for Health*, *19*(1), 1–11. doi:10.118612960-021-00651-7 PMID:34530844

Loewenson, R. (2002). Book Review: Imrana Qadeer, Kasturi Sen and K.R. Nayar (Eds), Public Health and the Poverty of Reforms: The South Asian Predicament. New Delhi: Sage Publications, 2001. 548 pp. ISBN 0–7619–9518–8; £39.99 (hbk). *Global Social Policy*, *2*(3), 361–364. doi:10.1177/14680181020020030701

Loiacono, E. T., Watson, R. T., & Goodhue, D. L. (2002). WebQual: A measure of website quality. *Mark. Theory and App., 13*(3), 432-438.

Long, M., & McMellon, C. (2004). Exploring the determinants of retail service quality on the Internet. *Journal of Services Marketing*, *18*(1), 78–90. doi:10.1108/08876040410520726

Louis, C., Lawrence, M., & Keith, M. (2007). *Research methods in education*. Routledge.

Løvlie, A. S., Ryding, K., Spence, J., Rajkowska, P., Waern, A., Wray, T., Benford, S., Preston, W. & Clare-Thorn, E. (2021). Playing games with Tito: Designing hybrid museum experiences for critical play. *Journal on Computing and Cultural Heritage, 14*(2). . doi:10.1145/3446620

Low, W., & Davenport, E. (2005). Has The Medium (Roast) Become The Message? *International Marketing Review*, *22*(5), 494–511. doi:10.1108/02651330510624354

Ludlum, M., & Johnson, J. B. (2015). Ethics And Law School Marketing Practices. *South. J. Bus. Ethics*, *7*, 89–104.

Lu, Y., Wu, J., Peng, J., & Lu, L. (2020). The Perceived Impact of the Covid-19 Epidemic: Evidence from a Sample of 4807 SMEs in Sichuan Province, China. *Environmental Hazards*, *19*(4), 323–340. doi:10.1080/17477891.2020.1763902

Macey, W. H., & Schneider, B. (2008). The Meaning of Employee Engagement. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, *1*(1), 3–30. doi:10.1111/j.1754-9434.2007.0002.x

Macrander, A. (2017). Fractal inequality: A social network analysis of global and regional international student mobility. *Research in Comparative and International Education*, *12*(2), 243–268.

Madden, T. J., Ellen, P. S., & Ajzen, I. (1992). A Comparison of the Theory of Planned Behavior and the Theory of Reasoned Action. *Personality and Social Psychology Bulletin*, *18*(1), 3–9. doi:10.1177/0146167292181001

Malhotra, N. K., & Miller, G. L. (1998). An Integrated Model For Ethical Decisions In Marketing Research. *Journal of Business Ethics*, *17*(3), 263–280. doi:10.1023/A:1005711311426

Malik, A., Merunka, D., Akram, M. S., Barnes, B. R., & Chen, A. (2020). Self-concept, individual characteristics, and counterfeit consumption: Evidence from an emerging market. *Psychology and Marketing*, *37*(10), 1378–1395. doi:10.1002/mar.21386

Mallikarjun, P., & Shegunshi, M. (2020). COVID-19 impact on Indian Labour class. *Mukt Shabd Journal*, 6324-6330.

Malraux, A. (1978). Museum without walls. In The voices of silence. Princeton University Press.

Marques, I. C., & Ferreira, J. J. (2019). Digital transformation in the area of Health: Systematic Review of 45 years of evolution. *Health and Technology*, *10*(3), 575–586. doi:10.100712553-019-00402-8

Marr, B. (2022). *The five biggest education and training technology trends in 2022*. https://www.forbes.com/sites/bernardmarr/2022/02/18/the-five-biggest-education-and-training-technology-trends-in-2022/?sh=18e2cc4d2f4d

Marticotte, F., & Arcand, M. (2017). Schadenfreude, attitude and the purchase intentions of a counterfeit luxury brand. *Journal of Business Research*, *77*, 175–183. doi:10.1016/j.jbusres.2016.12.010

Martínez-Morán, P. C., Urgoiti, J. M. F.-R., Díez, F., & Solabarrieta, J. (2021). The Digital Transformation of the Talent Management Process: A Spanish Business Case. *Sustainability*, *13*(4), 2264. doi:10.3390u13042264

Martin, K. D., & Johnson, J. L. (2010). Ethical Beliefs And Information Asymmetries In Supplier Relationships. *Journal of Public Policy & Marketing*, *29*(1), 38–51. doi:10.1509/jppm.29.1.38

Martín-Martín, A., Orduna-Malea, E., Thelwall, M., & Delgado López-Cózar, E. (2018). Google Scholar, Web of Science, and Scopus: A systematic comparison of citations in 252 subject categories. *Journal of Informetrics*, *12*(4), 1160–1177. https://doi.org/10.1016/j.joi.2018.09.002

Mathew, V. (2021). Prospects, Challenges, and Opportunities of Digital Financial Services in Developing Countries. *Managerial Issues in Digital Transformation of Global Modern Corporations*, 69-88.

Mazzarol, T., & Soutar, G. N. (2002). "Push-pull" factors influencing international student destination choice. *International Journal of Educational Management*, *16*(2), 82–90.

Mcdaniel, C., & Gitman, L. (2008). *The Essential Of The Future Of Business*. South-Western Cengage Learning.

Mcdonald, G., & Nijhof, A. (1999). Beyond Codes Of Ethics: An Integrated Framework For stimulating Morally Responsible Behaviour. *Organizations Leadership and Organization Development Journal*, *20*(3), 133–147. doi:10.1108/01437739910268406

McDonald, H., & Adam, S. (2003). A comparison of online and postal data collection methods in marketing research. *Marketing Intelligence & Planning*, *21*(2), 85–95. doi:10.1108/02634500310465399

McFarlane, P. D. (2018). *Industrial Internet of Things*. Academic Press.

Mcguire, J. B., Sundgren, A., & Schneeweis, T. (1988). Corporate Social Responsibility And Firm Financial Performance. *Academy of Management Journal*, *31*, 854–872.

McKinsey. (2020). *How COVID-19 has pushed companies over the technology tipping point—and transformed business forever*. https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/how-covid-19-has-pushed-companies-over-the-technology-tipping-point-and-transformed-business-forever

McLean & Company. (2021). *HR Trends Report for 2021*. https://hr.mcleanco.com/research/hr-trends-report-for-2021

Medical Tourism.com. (2020). *The Medical Tourism Index 2020-21*. https://www.medicaltourism.com/mti/home

Medlin, B., & Green, K. W. Jr. (2009). Enhancing performance through goal setting, engagement, and optimism. *Industrial Management & Data Systems*, *109*(7), 943–956. doi:10.1108/02635570910982292

Meher, S. R., Ranjan, A., Shukla, P., & Atram, Y. (2021). Effect of COVID-19 lockdown on the livelihood of street vendors in Maharashtra, India. *International Journal of Community Medicine and Public Health*, *8*(11), 5297–5303. doi:10.18203/2394-6040.ijcmph20214263

Mekonnen, Y., & Mekonnen, A. (2003). Factors Influencing the Use of Maternal Healthcare Services in Ethiopia. *Journal of Health, Population and Nutrition*, *21*(4), 374–382. PMID:15038593

Melewar, T. C., & Nguyen, B. (2017). Five Areas To Advance Branding Theory And Practice. *Journal of Brand Management*, *21*(9), 758–769. doi:10.1057/bm.2014.31

Mensah, J. K. (2018). Talent Management and Employee Outcomes: A Psychological Contract Fulfilment Perspective. *Public Organization Review, 19*(3), 325–344. doi:10.1007/s11115-018-0407-9

Mensch, P. V. (2019). Copies as authentic evidence the medium is the message. *CIDOC Newsletter*. https://cidoc.mini.icom.museum/wp-content/uploads/sites/6/2020/11/CIDOC-Newsletter-2019_FINAL-2.pdf

Merriam-Webster Dictionary. (2021). *Definition of experience*. Accessed at: https://www.merriam-webster.com/dictionary/experience

Messner, W. (2013). Effect of organizational culture on employee commitment in the Indian IT services sourcing industry. *Journal of Indian Business Research*, *5*(2), 76–100. doi:10.1108/17554191311320764

Mhaisen, N., Fetais, N., Erbad, A., Mohamed, A., & Guizani, M. (2020). To chain or not to chain: A reinforcement learning approach for blockchain-enabled IoT monitoring applications. *Future Generation Computer Systems*, *111*, 39–51. https://doi.org/10.1016/j.future.2020.04.035

Michaelidou, N., & Christodoulides, G. (2011). Antecedents of attitude and intention towards counterfeit symbolic and experiential products. *Journal of Marketing Management*, *27*(9–10), 976–991. doi:10.1080/0267257X.2010.549189

Middha, B., & Lewis, T. (2022). Pop-up food provisioning as a sustainable third space: Reshaping eating practices at an inner urban university. *The Australian Geographer*, *0*(0), 1–18.

Mingers, J., & Yang, L. (2017). Evaluating journal quality: A review of journal citation indicators and ranking in business and management. *European Journal of Operational Research*, *257*(1), 323–337. https://doi.org/10.1016/j.ejor.2016.07.058

Ministry of Finance, G. of I. (2022). *Economic Survey 2020-21*. Government of India.

Ministry of Health & Family Welfare-Government of India. (n.d.). *National Health Profile (NHP) of India-2019*. Ministry of Health and Family Welfare. http://www.cbhidghs.nic.in/showfile.php?lid=1147

Mission Directorate. (2021). *Guideline on primary health center (new) in PPP mode*. nrhmorissa.gov.in

Mitic, M., & Kapoulas, A. (2012). Understanding the role of social media in bank marketing. *Marketing Intelligence & Planning*, *30*(7), 668–686. doi:10.1108/02634501211273797

Mitosis, K. D., Lamnisos, D., & Talias, M. A. (2021). Talent Management in Healthcare: A Systematic Qualitative Review. *Sustainability, 13*(8), 4469. doi:10.3390/su13084469

Miyakawa, D., Oikawa, K., & Ueda, K. (2021). Firm Exit during the COVID-19 Pandemic: Evidence from Japan. *Journal of the Japanese and International Economies*, *59*, 101118. doi:10.1016/j.jjie.2020.101118 PMID:35702632

Mohamed Buhejil, K. d. (2020). The extend of covid-19 pandemic socio-economic impact on global overty. A gobal integrative multidisciplinary review. *American Journal of Economics*.

Monitor. (2015). *Bangladesh struggling to keep up with demand for higher education*. ICEF Monitor. https://monitor.icef.com/2015/10/bangladesh-struggling-to-keep-up-with-demand-for-higher-education/

Monje Amor, A., Xanthopoulou, D., Calvo, N., & Abeal Vázquez, J. P. (2021). Structural empowerment, psychological empowerment, and work engagement: A cross-country study. *European Management Journal*, *39*(6), 779–789. doi:10.1016/j.emj.2021.01.005

Montoya, G. N., Santos, J. B. S., Jr., Novaes, A. G. N., & Lima, O. F. (2018). Internet of Things and the Risk Management Approach in the Pharmaceutical Supply Chain. In M. Freitag, H. Kotzab, & J. Pannek (Eds.), Dynamics in Logistics (pp. 284–288). Springer International Publishing. https://doi.org/10.1007/978-3-319-74225-0_38.

Moriarty, R., & Moran, U. (1990). Managing hybrid marketing systems. *Harvard Business Review*, *68*(6), 146–155. PMID:10107959

Morrison, J. (2021). Hybrid museums: Enhancing visitor experiences. *Calvium.* https://calvium.com/hybrid-museums-enhancing-visitor-experiences/

Moşteanu, N. R. (2021). Digital Campus–a future former investment in education for a sustainable society. E3S Web of Conferences, EDP Sciences, 234, 29. doi:10.1051/e3sconf/202123400029

Mousa, M. (2021). Responsible management education (RME) post COVID-19: What must change in public business schools? *Journal of Management Development*, *40*(2), 105–120. doi:10.1108/JMD-10-2020-0316

Mowday, R. T., Steers, R. M., & Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*, *14*(2), 224–247. doi:10.1016/0001-8791(79)90072-1

MSMEs in India – Post Covid Scenario. (2021, Oct. 21). *The Times of India*.

Mukerjee. (2020). The Streets Are Empty. How Are Hawkers Surviving This Lockdown? *The Whire*, *23*.

Mulky, A. G. (2013). Distribution challenges and workable solutions. *IIMB Management Review*, *25*(3), 136. doi:10.1016/j.iimb.2013.06.010

Mustafa, A., & Shekhar, C. (2021). Is quality and availability of facilities at Primary Health Centers (phcs) associated with healthcare-seeking from phcs in rural India: An exploratory cross-sectional analysis. *Clinical Epidemiology and Global Health*, *9*, 293–298. doi:10.1016/j.cegh.2020.10.001

N., N. P., A. R. B., S., C. M., S., Goud, G. B., Sajjan, S., & C. (2017). Assessment of utilization of maternal health care services in rural field practice areas of VIMS, Ballari. *International Journal of Community Medicine and Public Health, 5*(1), 170. doi:10.18203/2394-6040.ijcmph20175777

Naib, S. (2004). Disinvestment in India: Policies, procedure, practices. *Sage (Atlanta, Ga.)*.

Naik, S.D. (2001, Aug. 22). Decade of reforms: Privatization: A dismal report card. *Business Line*.

Nair, M., Ariana, P., & Webster, P. (2012). What influences the decision to undergo institutional delivery by skilled birth attendants? A cohort study in rural Andhra Pradesh, India. *Rural and Remote Health*, *12*, 2311. doi:10.22605/RRH2311 PMID:23148477

NakamotoS. (2021). In *Wikipedia*. https://en.wikipedia.org/w/index.php?title=Satoshi_Nakamoto&oldid=1059079841

Narendra Kiran, D. (2019). Problems and prospects of street vendors:A study with reference to viskhapatnam city. *International Journal of Management, Technology and Engineering*, 2500-2516.

National Health Policy 2017. (2017). *Ministry of Health and Family Welfare*, Government of India.

Negroponte, N. (1995). *Being digital*. Alfred A. Knopf Inc.

Newell, S., Robertson, M., & Scarbrough, H. J. S. (2009). *Managing Knowledge Work and Innovation Google Books*. Bloomsbury Publishing. https://books.google.co.in/books?hl=en&lr=&id=BbwcBQAAQBAJ&oi=fnd&pg=PR9&dq=Newell,+Robertson,+Scarbrough,+%26+Swan,+2009&ots=ntyCpCrapy&sig=wjjMXMNBobuNb8umjz4pBmOXvns&redir_esc=y#v=onepage&q=Newell%2CRobertson%2C Scarbrough%2C %26 Swan%2C 2009&f=false

Neykova, M. (2021). Application of digital technologies for distance learning in higher education–problems & prospects. *Knowledge-International Journal*, *47*(3), 485–489.

Nghia, T. L. H. (2015). Factors influencing prospective international students' motivation for overseas study and selection of host countries and institutions: The case of Vietnamese students. In C. Gomes, & S. Chang (Eds.), *26th ISANA International Education Association Conference Proceedings*. ISANA International Education Association Inc.

Nguyen, L. H., Drew, D. A., Graham, M. S., Joshi, A. D., Guo, C. G., Ma, W., Mehta, R. S., Warner, E. T., Sikavi, D. R., Lo, C. H., Kwon, S., Song, M., Mucci, L. A., Stampfer, M. J., Willett, W. C., Eliassen, A. H., Hart, J. E., Chavarro, J. E., Rich-Edwards, J. W., ... Zhang, F. (2020). Risk of COVID-19 among front-line health-care workers and the general community: A prospective cohort study. *The Lancet. Public Health*, *5*(9), e475–e483. doi:10.1016/S2468-2667(20)30164-X PMID:32745512

Nikolaou, I. (2021). What is the Role of Technology in Recruitment and Selection? *The Spanish Journal of Psychology*, *24*, 1–6. doi:10.1017/SJP.2021.6 PMID:33536110

Nill, A., & Schibrowsky, J. A. (2007). Research On Marketing Ethics: A Systematic Review Of The Literature. *Journal of Macromarketing*, *27*(3), 256–273. doi:10.1177/0276146707304733

Nitya Maniktala, T. J. (2020). State of street vendors in India: Pre and post COVID-19 Analysis. *International Journal of Policy Sciences and Law*, 542-560.

OECD/EUIPO. (2019). *Trends in Trade in Counterfeit and Pirated Goods, Illicit Trade. OECD Publishing*. European Union Intellectual Property Office., doi:10.1787/g2g9f533-

Olins, W. (2014). Brand New: The Shape Of Brands To Come. Thames & Hudson.

Olson, J. E., & Granzin, K. L. (1992). Economic development and channel structure: a multinational study. *Journal of Macromarketing, 10*, 61-77.

Organization, W. H. (2020). *Getting your workplace ready for COVID-19*. https://www.who.int/teams/risk-communication/employers-and-workers?gclid=EAIaIQobChMI04XCqvXW9QIVcJFmAh3ZiAelEAAYASAAEgIu-PD_BwE

Ota, R., Agarwal, S., & Majhi, P. R. (2021). Accessibility of Primary Healthcare Services at Primary Health Centre Level in Northern and Central Zones of Odisha. *International Journal of Management Practice*, *14*(4), 428. doi:10.1504/IJMP.2021.116583

Ouweneel, E., Schaufeli, W. B., & le Blanc, P. M. (2013). Believe, and You Will Achieve: Changes over Time in Self-Efficacy, Engagement, and Performance. *Applied Psychology. Health and Well-Being*, *5*(2), 225–247. doi:10.1111/aphw.12008 PMID:23616308

Pallasmaa, J. (2011). *The embodied image imagination and imaginary in architecture*. John Wiley & Sons Ltd. Publication.

Pallikadavath, S., Foss, M., & Stones, R. W. (2004). Antenatal care: Provision and Inequality in Rural North India. *Social Science & Medicine*, *59*(6), 1147–1158. doi:10.1016/j.socscimed.2003.11.045 PMID:15210087

Panda, P. K., & Subudhi, C. (2020). Pattern and Determinants of Maternal and Child Healthcare Services among Tribals: With a Special Reference to Tribal Regions of Odisha. *Journal of Development Policy and Practice*, *5*(2), 167–183. doi:10.1177/2455133320935536

Pandey, P., & Litoriya, R. (2021). Securing E-health Networks from Counterfeit Medicine Penetration Using Blockchain. *Wireless Personal Communications*, *117*(1), 7–25. https://doi.org/10.1007/s11277-020-07041-7

Pandita, D., & Ray, S. (2018). Talent management and employee engagement – a meta-analysis of their impact on talent retention. *Industrial and Commercial Training*, *50*(4), 185–199. doi:10.1108/ICT-09-2017-0073

Papadomichelaki, X., & Mentzas, G. (2012). e-GovQual: A multiple-item scale for assessing e-government service quality. *Govt. Info. Quar.*, *29*(1), 98–109. doi:10.1016/j.giq.2011.08.011

Parasuraman, A. (2005). ES-QUAL: A multiple-item scale for assessing electronic service quality. *J. of service res.*, *7*(3), 213–233. doi:10.1177/1094670504271156

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, *49*(4), 41–50. doi:10.1177/002224298504900403

Parent, J. D., & Lovelace, K. J. (2018). Employee engagement, positive organizational culture and individual adaptability. *On the Horizon*, *26*(3), 206–214. doi:10.1108/OTH-01-2018-0003

Park, Y. E. (2020). Uncovering trend-based research insights on teaching and learning in big data. *Journal of Big Data*, *7*(1), 1–17. doi:10.118640537-020-00368-9

Parry, R. (2013). The end of the beginning: Normativity in the postdigital museum. *Museum Worlds*, *1*(1), 24-39. https://search.proquest.com/docview/1699271092?accountid=16568

Parry, R. (2007). *Recoding the museum: Digital heritage and the technologies of change*. Routledge. doi:10.4324/9780203347485

Parry, R. (2010). Digital heritage and the rise of theory in museum computing. In R. Parry (Ed.), *Museums in a Digital Age*. Routledge.

Parvatiyar, A., & Sheth, J. N. (2001). Customer relationship management: Emerging practice, process, and discipline. *Journal of Economic & Social Research*, *3*(2).

Paul, J., Gupta, S., & Tyagi, S. (2021). Theory of dogmatism, personality traits and shopping behavior. *European Management Journal*. Advance online publication. doi:10.1016/j.emj.2021.10.009

Paul, T. (2017). *Talent Management in Healthcare: Exploring How the World's Health Service Organisations Attract, Manage and Develop Talent*. Springer.

Pavlova, E. (2020). Enhancing the organizational culture related to cyber security during the university digital transformation. *Information & Security*, *46*(3), 239–249.

Pelletier, K., Brown, M., Brooks, D. C., McCormack, M., ... Mondelli, V. (2021). *2021 EDUCAUSE Horizon Report, Teaching and Learning Edition*. EDUCAUSE, https://library.educause.edu/resources/2021/4/2021-educause-horizon-report-teaching-and-learning-edition

Penz, E., Schlegelmilch, B. B., & Stottinger, B. (2009). Voluntary purchase of counterfeit products: Empirical evidence from four countries. *Journal of International Consumer Marketing*, *21*(1), 67–84. doi:10.1080/08961530802125456

Perez-Encinas, A., & Rodriguez-Pomeda, J. (2018). International students' perceptions of their needs when going abroad: Services on demand. *Journal of Studies in International Education*, *22*(1), 20–36.

Perwej, A. (2020). The impact of pandemic COVID-19 on the Indian Banking System. *International Journal of Recent Scientific Research*, *11*(10), 39873–39883.

Pharma. (2020). *From visionto decision Pharma 2020*. PwC. https://www.pwc.com/gx/en/pharma-life-sciences/pharma2020/assets/pwc-pharma-success-strategies.pdf

Phau, I., & Liang, J. (2012). Downloading digital video games: Predictors, moderators and consequences. *Marketing Intelligence & Planning*, *30*(7), 740–756. doi:10.1108/02634501211273832

Phau, I., & Teah, M. (2009). Devil wears (counterfeit) Prada: A study of antecedents and outcomes of attitudes towards counterfeits of luxury brands. *Journal of Consumer Marketing*, *26*(1), 15–27. doi:10.1108/07363760910927019

Phillips-Wren, G., Doran, R., & Merrill, K. (2016). Creating a value proposition with a social media strategy for talent acquisition. *Journal of Decision Systems*, *25*(sup1), 450–462. doi:10.1080/12460125.2016.1187398

Pine, B. J., & Gilmore, J. H. (1998, July–August). Welcome to the experience economy. *Harvard Business Review*, 97–105. http://enlillebid.dk/mmd/wp-content/uploads/2012/03/Welcome-to-the-Experience-Economy-Pine-and-Gilmore.pdf PMID:10181589

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, *88*(5), 879–903. doi:10.1037/0021-9010.88.5.879 PMID:14516251

Poisat, P., Mey, M. R., & Sharp, G. (2018). Do talent management strategies influence the psychological contract within a diverse environment? *SA Journal of Human Resource Management*, *16*. Advance online publication. doi:10.4102ajhrm.v16i0.1044

Potts, J., Hartley, J., Banks, J., Burgess, J., Cobcroft, R., Cunningham, S., & Montgomery, L. (2008). Consumer co-creation and situated creativity. *Industry and Innovation*, *15*(5), 459–474. doi:10.1080/13662710802373783

Prachitha, J., Dhume, A., & Subramanian, S. (2019). India in pursuit of Millennium Development Goals: Were the targets really feasible? *Journal of Developing Societies*, *35*(1), 105–133. doi:10.1177/0169796X19826737

Prameswari, G. A. (2019). The effects of job characteristics on work engagement. *Russian Journal of Agricultural and Socio-Economic Sciences*, *85*(1), 475–479. doi:10.18551/rjoas.2019-01.58

Pratt, S., & Zeng, C. Y. H. (2019). The economic value and determinants of tourists' counterfeit purchases: The case of Hong Kong. *Tourism Economics*, *26*(1), 155–178. doi:10.1177/1354816619834482

Prescribing a paperless society. (2017). *PwC*. https://www.pwc.co.uk/healthcare/assets/documents/prescribing-paperless-society.pdf

Preston, I. (2010). Interaction Of Law And Ethics In Matters Of Advertisers' Responsibility For Protecting Consumers. *The Journal of Consumer Affairs*, *44*(1), 257–264. doi:10.1111/j.1745-6606.2010.01166.x

Priporas, C.-V., Chen, Y., Zhao, S., & Tan, H. (2020). An exploratory study of the upper middle-class consumer attitudes towards counterfeiting in China. *Journal of Retailing and Consumer Services*, *53*, 101959. doi:10.1016/j.jretconser.2019.101959

Prothero, A. (1998). Green Marketing: The 'Fad' That Won't Slip Slide Away. *Journal of Marketing Management*, *14*(6), 507–512. doi:10.1362/026725798784867680

Pucciarelli, F., & Kaplan, A. (2021). Transition to a hybrid teaching model as a step forward toward responsible management education? *Journal of Global Responsibility*, *13*(1), 7–20. doi:10.1108/JGR-12-2020-0111

PwC's Global Blockchain Survey 2018. (2018). *PwC*. https://www.pwccn.com/en/research-and-insights/publications/global-blockchain-survey-2018/global-blockchain-survey-2018-report.pdf

Pyle, W. G., & Roesch, F. C. (2021). Recalibrating healthcare to create a more equitable post-pandemic work environment. *Healthcare Management Forum*, *35*(1), 39–42. doi:10.1177/08404704211054142 PMID:34702085

QS. (2018). *Top universities in Australia 2018*. https://www.topuniversities.com/university-rankings-articles/world-university-rankings/top-universities-australia-2018

Quoquab, F., Pahlevan, S., Mohammad, J., & Thurasamy, R. (2017). Factors affecting consumers' intention to purchase counterfeit product. *Asia Pacific Journal of Marketing and Logistics*, *29*(4), 837–853. doi:10.1108/APJML-09-2016-0169

Rai, A., Ghosh, P., Chauhan, R., & Mehta, N. K. (2017). Influence of job characteristics on engagement: Does support at work act as moderator? *The International Journal of Sociology and Social Policy*, *37*(1/2), 86–105. doi:10.1108/IJSSP-10-2015-0106

Ramachandran, A., & Sarbadhikari, S. N. (2021). Digital health for the post-COVID-19 pandemic in India: Emerging technologies for healthcare. *Proceedings of the 2021 8th International Conference on Computing for Sustainable Global Development, INDIACom 2021*, 244–249. 10.1109/INDIACom51348.2021.00043

Raman, R., Rajalakshmi, R., Surya, J., Ramakrishnan, R., Sivaprasad, S., Conroy, D., Thethi, J. P., Mohan, V., & Netuveli, G. (2021). Impact on health and provision of healthcare services during the COVID-19 lockdown in India: A multicentre cross-sectional study. *BMJ Open*, *11*(1), e043590. doi:10.1136/bmjopen-2020-043590 PMID:33468529

Randall, D. M., & Gibson, A. M. (1991). Ethical decision making in the medical profession: An application of the theory of planned behavior. *Journal of Business Ethics*, *10*(2), 111–122. doi:10.1007/BF00383614

Randhawa, P., Calantone, R. J., & Voorhees, C. M. (2015). The pursuit of counterfeited luxury: An examination of the negative side effects of close consumer-brand connections. *Journal of Business Research*, *68*(11), 2395–2403. doi:10.1016/j.jbusres.2015.02.022

Randive, B., Diwan, V. & De Costa, A. (2013). India's Conditional Cash Transfer Programme (the JSY) to Promote Institutional Birth: Is There an Association between Institutional Birth Proportion and Maternal Mortality? *PLoS ONE*, *8*(6).

Randive, B., San Sebastian, M., De Costa, A. & Lindholm, L. (2014). Inequalities in institutional delivery uptake and maternal mortality reduction in the context of cash incentive program, Janani Suraksha Yojana: Results from nine states in India. *Social Science & Medicine*, *123*, 1–6.

Reardon, T., Mishra, A., Nuthalapati, C. S. R., Bellemare, M. F., & Zilberman, D. (2020). COVID-19's Disruption of India's Transformed Food Supply Chains. *Economic and Political Weekly*, *55*(18), 18–22.

Reddy, M. (2022, May 13). *Digital Transformation in Healthcare in 2022: 7 key trends*. Digital Authority Partners. Retrieved June 22, 2022, from https://www.digitalauthority.me/resources/state-of-digital-transformation-healthcare/

Reddy, S. (2020, August 14). *Financial express*. Retrieved April 13, 2022, from https://www.financialexpress.com/opinion/national-digital-health-blueprint-a-blueprint-to-transform-healthcare/2055627/

Reddy, Y. V. (1988). Privatization of public enterprises: scope and limits. In T. L. Sankar & Y. V. Reddy (Eds.), *Privatization: diversification of ownership of public enterprises* (pp. 79–116). Institute of Public Enterprises and Bobolinks Corp.

Reidenbach, R. E., Robin, D. P., & Dawson, L. (1991). An Application And Extension Of A Multidimensional Ethics Scale To Selected Marketing Practices And Marketing Groups. *Journal of the Academy of Marketing Science*, *19*(2), 83–92. doi:10.1007/BF02726000

Reise, S. P., Waller, N. G., & Comrey, A. L. (2000). Factor analysis and scale revision. *Psychological Assessment*, *12*(3), 287–297. Advance online publication. doi:10.1037/1040-3590.12.3.287 PMID:11021152

Rejeb, A. (2018). Halal Meat Supply Chain Traceability based on HACCP, Blockchain and Internet of Things. *Acta Technica Jaurinensis*, *11*(4), 218–247. https://doi.org/10.14513/actatechjaur.v11.n4.467

Resick, C. J., Baltes, B. B., & Shantz, C. W. (2007). Person-Organization Fit and Work-Related Attitudes and Decisions: Examining Interactive Effects With Job Fit and Conscientiousness. *The Journal of Applied Psychology*, *92*(5), 1446–1455. doi:10.1037/0021-9010.92.5.1446 PMID:17845097

Resnik, D. B. (2011). What Is Ethics In Research And Why Is It Important. National Institute of Health.

RGI-CGHR. (2006). *Sample Registration System Maternal Mortality in India: 1997-2003 Trends, Causes and Risk Factors*. Registrar General, India.

Rhemananda, H., Simbolon, D. R., & Fachrunnisa, O. (2021). Blockchain Technology to Support Employee Recruitment and Selection in Industrial Revolution 4.0. *Lecture Notes in Networks and Systems*, *149*, 305–311. doi:10.1007/978-981-15-7990-5_30

Rhoades, L., Eisenberger, R., & Armeli, S. (2001). Affective commitment to the organization: The contribution of perceived organizational support. *The Journal of Applied Psychology*, *86*(5), 825–836. doi:10.1037/0021-9010.86.5.825 PMID:11596800

Rhyan, C., Turner, A., & Miller, G. (2020). Tracking the U.S. health sector: The impact of the COVID-19 pandemic. *Business Economics (Cleveland, Ohio)*, *55*(4), 267–278. doi:10.105711369-020-00195-z PMID:33191943

Riaño, Y., Van Mol, C., & Raghuram, P. (2018). New directions in studying policies of international student mobility and migration. *Globalisation, Societies and Education*, *16*(3), 283–294.

Rich, B. L. (2014). *Job engagement: Antecedents and effects on job performance*. https://www.researchgate.net/publication/258130125

Richa Mukhra, K. K. (2020). *Agony of the labours and daily wagers during the covid-19 induced lockdown in India*. UGC Centre of Advanced Study.

Riche, L. A., & Ponte, S. (2014). Buying Into Development? Brand Aid Forms Of Cause-Related Marketing. *Third World Quarterly*, *35*(1), 65–87. doi:10.1080/01436597.2014.868985

Rius-Ulldemolins, J. (2016). The rise of the hybrid model of art museums and cultural institutions. The case of Barcelona. *Museum Management and Curatorship*, *31*(2), 178–192. doi:10.1080/09647775.2015.1107853

Rizvi, F., & Lingard, B. (2000). Globalization and education: Complexities and contingencies. *Educational Theory*, *50*(4), 419–426.

Robertson, I. T., & Cooper, C. L. (2010). Full engagement: The integration of employee engagement and psychological well-being. *Leadership and Organization Development Journal*, *31*(4), 324–336. doi:10.1108/01437731011043348

Robinson, H. (2019). *Interpreting objects in the hybrid museum*. Routledge. doi:10.4324/9780429454400

Robinson-Pant, A., & Magyar, A. (2018). The recruitment agent in internationalized higher education: Commercial broker and cultural mediator. *Journal of Studies in International Education*, *22*(3), 225–241.

Rodriguez-Dominguez, L., Gallego-Alvarez, I., & Garcia-Sanchez, I. M. (2009). Corporate Governance And Codes Of Ethics. *Journal of Business Ethics*, *90*(2), 187–202. doi:10.100710551-009-0035-y

Rogiers, P., Viaene, S., & Leysen, J. (2020). The digital future of internal staffing: A vision for transformational electronic human resource management. *Intelligent Systems in Accounting, Finance & Management*, *27*(4), 182–196. doi:10.1002/isaf.1481

Romero-Michel, Mokay-Ramírez, Delgado-Machuca, Delgado Enciso, Aurelien-Cabezas, & Tiburcio. (2021). Health and economic measures in response to the COVID-19 pandemic Effect on street vendors. *J Infect Dev Ctries*, *15*(2), 198-203. doi:10.3855/jidc.13465

Ross, W. D. (1930). *The Right And The Cood*. Clarendon Press.

Rurkkhum, S., & Bartlett, K. R. (2012). The relationship between employee engagement and organizational citizenship behaviour in Thailand. *Human Resource Development International*, *15*(2), 157–174. doi:10.1080/13678868.2012.664693

Sachdev, J. C. (1976). Disinvestment: A corporate failure or a strategic success. *International Studies of Management & Organization*, *6*(1/2), 112–130. doi:10.1080/00208825.1976.11656199

Sadawi, A. A., Hassan, M. S., & Ndiaye, M. (2021). A Survey on the Integration of Blockchain With IoT to Enhance Performance and Eliminate Challenges. *IEEE Access: Practical Innovations, Open Solutions*, *9*, 54478–54497. https://doi.org/10.1109/ACCESS.2021.3070555

Sahoo, S. (2018). Bridging the Health Divide: Use of Mobile Phone Technology for Health Care Service Delivery in Odisha. *J Mass Communication Journalism*, *8*(05), 391. doi:10.4172/2165-7912.1000391

Sahu, P. R. (2017). The State of the State Odisha. *India Today*. Available at: http://www.ihdindia.org/pdf/Att3.pdf

Saks, A. M. (2006). Antecedents and consequences of employee engagement. *Journal of Managerial Psychology*, *21*(7), 600–619. doi:10.1108/02683940610690169

Sambodhi. (2021). *Impact of COVID-19 Pandemic on Medical Healthcare Workers in Mumbai City*. *India Study Report*.

Sangeetha, A. S., Shunmugan, S., & Murugan, G. (2020). Blockchain for IoT Enabled Supply Chain Management—A Systematic Review. *2020 Fourth International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC)*, 48–52. doi:10.1109/I-SMAC49090.2020.9243371

Sankar, T. L., Mishra, R. K., & Lateef Syed Mohammed, A. (1994). Divestments in public enterprises: The Indian experience. *International Journal of Public Sector Management*, *7*(2), 69–88. doi:10.1108/09513559410055242

Santis, L. D., Paciello, V., & Pietrosanto, A. (2020). Blockchain-Based Infrastructure to enable Trust in IoT environment. *2020 IEEE International Instrumentation and Measurement Technology Conference (I2MTC)*, 1–6. doi:10.1109/I2MTC43012.2020.9128817

Santos, J. (2003). E-service quality: A model of virtual service quality dimensions. *Mana. Service Qua. International Journal*.

Saphiro, D. (2018). *Using Simulations to Improve Physician Leadership Hiring*. NEJM Catalyst. https://catalyst.nejm.org/doi/abs/10.1056/CAT.18.0174

Saurombe, M. D., & Barkhuizen, E. N. (2022). *Talent management practices and work-related outcomes for South African academic staff*. doi:10.1080/14330237.2021.2002033

Sawhney, A., & Ahuja, V. (2021). Drivers of Social Media Content Marketing in the Banking Sector: A Literature Review. *International Journal of Service Science, Management, Engineering, and Technology*, *12*(3), 54–72. doi:10.4018/IJSSMET.2021050104

Schlegelmilch, B. B., & Öberseder, M. (2010). Half A Century Of Marketing Ethics: Shifting Perspectives And Emerging Trends. *Journal of Business Ethics*, *93*(1), 1–19. doi:10.100710551-009-0182-1

Schmidt, C. (2004). The analysis of semi-structured interviews. In U. Flick, E. von Kardoff, & I. Steinke (Eds.), *A companion to qualitative research* (pp. 253–258). Sage Publications.

Schuler, R., Mellahi, K., McDonnell, A., & Collings, D. G. (2017). Talent management: A systematic review and future prospects. *European Journal of International Management*, *11*(1), 86. doi:10.1504/EJIM.2017.081253

Schuster, J. M. (1998). Neither public nor private: The hybridization of museums. *Journal of Cultural Economics*, *22*(2–3), 127–150. doi:10.1023/A:1007553902169

Scimago Journal & Country Rank. (2021). https://www.scimagojr.com/

Secundo, G., Rippa, P., & Meoli, M. (2020). Digital transformation in entrepreneurship education centers: Preliminary evidence from the Italian Contamination Labs network. *International Journal of Entrepreneurial Behaviour & Research*, *26*(7), 1589–1605. doi:10.1108/IJEBR-11-2019-0618

Seerangarajan, L. (2019). Assessment of skill sets of street vendors in rural market at Dindigul district. *Journal of Analysis and Computation*.

Semper, R. (1997). Hybrid spaces, networked places: New media and museums. *Journal of Museum Education*, *22*(1), 17–18. doi:10.1080/10598650.1997.11510344

Sen, S., Bhattacharya, C. B., & Korschun, D. (2006). The Role Of Corporate Social Responsibility In Strengthening Multiple Stakeholder Relationships: A Field Experiment. *Journal of the Academy of Marketing Science*, *34*(2), 158–166. doi:10.1177/0092070305284978

Sevensson, G., Wood, G., Singh, J., & Callaghan, M. (2009). Implementation, Communication And Benefits Of Corporate Codes Of Ethics: An International And Longitudinal Approach For Australia, Canada And Sweden. *Business Ethics (Oxford, England)*, *18*(4), 389–398. doi:10.1111/j.1467-8608.2009.01571.x

Shahzad, A., Zhang, K., & Gherbi, A. (2021). Privacy-preserving smart grid traceability using blockchain over IoT connectivity. *Proceedings of the 36th Annual ACM Symposium on Applied Computing*, 699–706. doi:10.1145/3412841.3441949

Shainesh, G., & Sheth, J. N. (2005). *Customer Relationship Management: A Strategic Perspective*. Macmillan.

Sharit, K., & Bhowmik, D. S. (2011). *Financial accessibility of the street vendors in India: Cases of inclusion and exclusion.* Mumbai: School of Management and Labour Studies.

Sharma, H. B., Vanapalli, K. R., Cheela, V. S., Ranjan, V. P., Jaglan, A. K., Dubey, B., Goel, S., & Bhattacharya, J. (2020). Challenges, opportunities, and innovations for effective solid waste management during and post COVID-19 pandemic. *Resources, Conservation and Recycling*, *162*, 105052. https://doi.org/10.1016/j.resconrec.2020.105052

Sharma, J., Leslie, H. H., Regan, M., Nambiar, D., & Kruk, M. E. (2018). Can India's primary care facilities deliver? A cross-sectional assessment of the Indian Public Health System's capacity for basic delivery and newborn services. *BMJ Open*, *8*(6), e020532. Advance online publication. doi:10.1136/bmjopen-2017-020532 PMID:29866726

Sharma, P., & Chan, R. Y. K. (2016). Demystifying deliberate counterfeit purchase behaviour: Towards a unified conceptual framework. *Marketing Intelligence & Planning*, *34*(3). Advance online publication. doi:10.1108/MIP-12-2014-0228

Sharma, R., Shastri, S., & Rathore, J. S. (2020). Exploring E-CRM in Indian banking sector. *International Journal of Public Sector Performance Management*, *6*(5), 653–663. doi:10.1504/IJPSPM.2020.110136

Shaukat, N., Ali, D. M., & Razzak, J. (2020). Physical and mental health impacts of COVID-19 on healthcare workers: A scoping review. *International Journal of Emergency Medicine*, *13*(1), 1–8. doi:10.118612245-020-00299-5 PMID:32689925

Shaw, N. (2014). The mediating influence of trust in the adoption of the mobile wallet. *Journal of Retailing and Consumer Services*, *21*(4), 449–459. doi:10.1016/j.jretconser.2014.03.008

Sheller, M. (2016). Mobilities. In A. de S. e Silva (Ed.), Dialogues on mobile communication (pp. 73–88). Routledge.

Sheller, M., Merriman, P., Hannam, K., Bissell, D., & Adey, P. (2014). Introduction. In P. Adey, D. Bissell, K. Hannam, P. Merriman, & M. Sheller (Eds.), *The Routledge handbook of mobilities* (pp. 21–40). Routledge.

Sheller, M., & Urry, J. (2003). Mobile transformations of “public” and “private” life. *Theory, Culture & Society*, *20*(3), 107–125.

Sheller, M., & Urry, J. (2006). The new mobilities paradigm. *Environment & Planning A*, *38*(2), 207–226.

Shovon, F. R. (2018, September 24). DU ‘Kha’ unit admission test results on Tuesday. *Dhaka Tribune*. https://www.dhakatribune.com/bangladesh/education/2018/09/24/du-kha-unit-admission-test-results-on-tuesday

Shridhar, R., & Sharma, A. (2019). Marketing Strategy and its Influence in Banking Sector. *Asian Journal of Management*, *10*(4), 346–348. doi:10.5958/2321-5763.2019.00052.0

Shudes, C., Shukla, M., Chang, C., Appleby, C., Hendricks, J., & Wurz, J. (2021, November 2). *Digital Transformation*. Deloitte Insights. Retrieved June 22, 2022, from https://www2.deloitte.com/us/en/insights/industry/health-care/digital-transformation-in-healthcare.html

Simon, J., Charles, W. P., & Jon, P. G. (1972). *The Ethical Investor: Universities And Corporate Responsibility*. Yale University Press.

Singh, A. (2019). *Awareness of Internet and Internet Banking in Indian Banks*. Academic Press.

Singh, J., & Arumugam, T. (2021). Article in Global Business and Management Research. *An International Journal*. https://www.researchgate.net/publication/349108911

Singh, D. P., Kastanakis, M. N., Paul, J., & Felix, R. (2021). Non-deceptive counterfeit purchase behavior of luxury fashion products. *Journal of Consumer Behaviour*, *20*(5), 1078–1091. Advance online publication. doi:10.1002/cb.1917

Singh, G., & Paliwal, D. (2010). Impact of Disinvestment on the Financial and Operating Performance of Competitive and Monopoly Units of Indian Public Sector Enterprises. *International Journal of Research in Commerce and Management*, *1*(2), 40–57.

Singh, J., & Chittedi, K. R. (2010). Performance of public sector enterprises in India: Pre and post liberalization scenario. *The IUP Journal of Managerial Economics*, *9*(3), 7–25.

Singh, M., Rizvi, F., & Shrestha, M. (2007). Student mobility and the spatial production of cosmopolitan identities. In K. N. Gulson & C. Symes (Eds.), *Spatial theories of education: Policy and geography matters* (pp. 195–214). Routledge.

Singh, R., Neogi, S. B., Hazra, A., Irani, L., Ruducha, J., Ahmad, D., Kumar, S., Mann, N., & Mavalankar, D. (2019). Assessment of utilization of maternal health care services in rural field practice areas of VIMS, Ballari. *Journal of Health, Population and Nutrition*, *38*(1).

Singh, S., Kumar, R., Panchal, R., & Tiwari, M. K. (2020). Impact of COVID-19 on logistics systems and disruptions in food supply chain. *International Journal of Production Research*, *0*(0), 1–16. https://doi.org/10.1080/00207543.2020.1792000

Skudder-Hill, L. (2019). Maternal mortality and sustainable development. Encyclopedia of the UN Sustainable Development Goals, 461–471. doi:10.1007/978-3-319-69627-0_42-1

Smith & Murphy. (2012). A Marketing Ethics: A review of the Field. In *Marketing Ethics*. SAGE Publications.

Smith, N. C., & Quelch, A. A. (Eds.). (1993). Ethics In Marketing. Irwin.

Sohini Sengupta, M. K. (2020). Social policy, COVID-19 and impoverished migrants: Challenges and prospects in locked down India. *International Journal of Community and Social Development*, 153-172.

Sohn, C., & Tadisina, S. K. (2008). Development of e-service quality measure for internet-based financial institutions. *Total Quality Management*, *19*(9), 903–918. doi:10.1080/14783360802224412

Sonobe, T., Takeda, A., Yoshida, S., & Truong, H. T. (2021). *The impact of the Covid-19 Pandemic on Micro, Small, and Medium Enterprises in Asia and Their Digitalization Reponses.* ADBI Working Paper Series, no. 1241, Asian Development Bank Institute.

Sonu, R. (n.d.). *Promise and reality*. Civil Society Initiative. https://im4change.org/upload/files/Citizen%27s%20Report%20on%20Tear%20Two%20of%20the%20NDA-II%20Government%202020-2021%20Promises %20and%20Reality. pdf

Srivastava. (2014). Disinvestment in India: An empirical study. *International Journal on Management, 5*(4), 19-24.

Stanaland, A. J., Lwin, M. O., & Murphy, P. E. (2011). Consumer Perceptions Of The Antecedents And Consequences Of Corporate Social Responsibility. *Journal of Business Ethics*, *102*(1), 47–55. doi:10.100710551-011-0904-z

Stanforth, N., & Hauck, W. (2010). The Effects Of Ethical Framing On Consumer Price Perceptions. *Journal of Fashion Marketing and Management*, *14*(4), 615–623. doi:10.1108/13612021011081779

Steenkamp, J.-B. E. M., de Jong, M. G., & Baumgartner, H. (2010). Socially Desirable Response Tendencies in Survey Research. *JMR, Journal of Marketing Research*, *47*(2), 199–214. doi:10.1509/jmkr.47.2.199

Stephenson, R., & Tsui, A. O. (2002). Contextual Influences on Reproductive Health Service Use in Uttar Pradesh, India. *Studies in Family Planning*, *33*(4), 309–320. doi:10.1111/j.1728-4465.2002.00309.x PMID:12561780

Stern, L. W., El-Ansary, A. I., & Coughlan, A. T. (1996). *Marketing Channels* (5th ed.). Prentice-Hall.

Stohl, C., Stohl, M., & Popova, L. (2009). A New Generation Of Corporate Code Of Ethics. *The Journal of Business*.

Suggs, L. S. (2006). A 10-year retrospective of Research in new technologies for health communication. *Journal of Health Communication*, *11*(1), 61–74. doi:10.1080/10810730500461083 PMID:16546919

Sun, L., & Bunchapattanasakda, C. (2019). Employee Engagement: A Literature Review. *International Journal of Human Resource Studies*, *9*(1), 63. doi:10.5296/ijhrs.v9i1.14167

Sunny, J., Undralla, N., & Madhusudanan Pillai, V. (2020). Supply chain transparency through blockchain-based traceability: An overview with demonstration. *Computers & Industrial Engineering*, *150*, 106895. https://doi.org/10.1016/j.cie.2020.106895

Sylim, P., Liu, F., Marcelo, A., & Fontelo, P. (2018). Blockchain Technology for Detecting Falsified and Substandard Drugs in Distribution: Pharmaceutical Supply Chain Intervention. *JMIR Research Protocols*, *7*(9), e10163. https://doi.org/10.2196/10163

Symon, A., McFadden, A., White, M., Fraser, K., & Cummins, A. (2018). Adapting the quality maternal and newborn care (QMNC) framework to evaluate models of Antenatal Care: A pilot study. *PLoS One*, *13*(8), e0200640. Advance online publication. doi:10.1371/journal.pone.0200640 PMID:30106961

Tabassum, M., Perumal, S., Mohanan, S., Suresh, P., Cheriyan, S., & Hassan, W. (2021). IoT, IR 4.0, and AI Technology Usability and Future Trend Demands: Multi-Criteria Decision-Making for Technology Evaluation. In *Design methodologies and tools for 5G network development and application* (pp. 109–144). IGI Global. doi:10.4018/978-1-7998-4610-9.ch006

Taha, V. A., Gajdzik, T., & Zaid, J. A. (2015). Talent management in healthcare sector: Insight into the current implementation in Slovak organizations. *European Scientific Journal*, *1*. https://core.ac.uk/download/pdf/236412439.pdf

Tallon, L. (2019). Foreword. In T. Giannini & J. P. Bowen (Eds.), *Museums and digital culture new perspectives and research*. Springer.

Tan, S. Y., Taeihagh, A., & Tripathi, A. (2021). Tensions and antagonistic interactions of risks and ethics of using robotics and autonomous systems in long-term care. *Technological Forecasting and Social Change, 167*. doi:10.1016/j.techfore.2021.120686

Tan, B. (2002). Understanding consumer ethical decision making with respect to purchase of pirated software. *Journal of Consumer Marketing*, *19*(2), 96–111. doi:10.1108/07363760210420531

Tanveer, M., Khan, N., & Ahmad, A. R. (2021). AI Support Marketing: Understanding The Customer Journey Towards The Business Development. *Proceedings Of The 2021 1st International Conference On Artificial Intelligence And Data Analytics (Caida)*, 144-150. 10.1109/CAIDA51941.2021.9425079

Taşçı, G., & Çelebi, M. (2020). Eğitimde yeni bir paradigma:"Yükseköğretimde yapay zeka [A new paradigm in education: "Artificial intelligence in higher education"]. *OPUS Uluslararası Toplum Araştırmaları Dergisi*, *16*(29), 2346–2370. doi:10.26466/opus.747634

Taylor, P. W. (1975). *Principles of Ethia: An Introduction*. Dickerson Publishing Co., Inc.

Telli, S. G., & Aydın, S. (2021). Digitalization of marketing education: new approaches for universities in the post-Covid-19 era. *Üniversite Araştırmaları Dergisi, 4*(1), 61-74.

Telukdarie, A., & Munsamy, M. (2019). Digitization of higher education institutions. *2019 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)*, 716-721. 10.1109/IEEM44572.2019.8978701

The Economic Times. (2020, July 30). *Counterfeit products create Rs 1-lakh-cr hole in economy, incidents up 24% in 2019: Report*. https://economictimes.indiatimes.com/news/economy/finance/counterfeit-products-create-rs-1-lakh-cr-hole-in-economy-incidents-up-24-in-2019-report/articleshow/77259432.cms?from=mdr

The White House. (2022). *Fact Sheet: The Biden-Harris Administration Global Health Worker Initiative*. https://www.whitehouse.gov/briefing-room/statements-releases/2022/05/11/fact-sheet-the-biden-harris-administration-global-health-worker-initiative/

Thiriot, S., Lewkovicz, Z., Caillou, P., & Kant, J. D. (2011). Referral Hiring and Labor Markets: A Computational Study. *Lecture Notes in Economics and Mathematical Systems*, *652*, 15–25. doi:10.1007/978-3-642-21108-9_2

Thompson, M. (2005). Ethical Theory (Access To Philosophy) (2nd Ed.). Hodder & Stoughton.

Ting, M. S., Goh, Y. N., & Isa, S. M. (2016). Determining consumer purchase intentions toward counterfeit luxury goods in Malaysia. *Asia Pacific Management Review*, *21*(4), 219–230. doi:10.1016/j.apmrv.2016.07.003

Torres, C. A. (2015). Global citizenship and global universities. The age of global interdependence and cosmopolitanism. *European Journal of Education*, *50*(3), 262–279.

Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review. *British Journal of Management*, *14*(3), 207–222. https://doi.org/10.1111/1467-8551.00375

Tran, L. T. (2016). Mobility as 'becoming': A Bourdieuian analysis of the factors shaping international student mobility. *British Journal of Sociology of Education*, *37*(8), 1268–1289.

Tran, L. T., & Vu, T. T. P. (2017). 'Responsibility in mobility': International students and social responsibility. *Globalisation, Societies and Education*, *15*(5), 561–575.

Tribune Desk. (2018, September 17). 10.98% students pass DU ‘Ga’ unit admission test. *Dhaka Tribune*. https://www.dhakatribune.com/bangladesh/dhaka/2018/09/17/10-98-students-pass-du-ga-unit-admission-test

Trigunait, R., & Tatuna. (2020). Innovative Practices of Talent Management in Digital Age : A Systematic Review. *Journal of Engineering Sciences, 11*(1), 7–15. www.jespublication.com

Trivedi, S., & Malik, R. (2022). Social Media Marketing as New Marketing Tool. In Research Anthology on Social Media Advertising and Building Consumer Relationships (pp. 18-33). IGI Global. doi:10.4018/978-1-6684-6287-4.ch002

Tsalikis, J., & Seaton, B. (2007). The International Business Ethics Index: European Union. *Journal of Business Ethics*, *75*(3), 229–238. doi:10.100710551-006-9249-4

Tsalikis, J., Seaton, B., & Li, T. (2008). The International Business Ethics Index: Asian Emerging Economies. *Journal of Business Ethics*, *80*(4), 643–651. doi:10.100710551-007-9459-4

Tsang, Y. P., Choy, K. L., Wu, C. H., Ho, G. T. S., & Lam, H. Y. (2019). Blockchain-Driven IoT for Food Traceability With an Integrated Consensus Mechanism. *IEEE Access: Practical Innovations, Open Solutions*, *7*, 129000–129017. https://doi.org/10.1109/ACCESS.2019.2940227

Tsawe, M., Moto, A., Netshivhera, T., Ralesego, L., Nyathi, C., & Susuman, A. S. (2015). Factors Influencing the Use of Maternal Healthcare Services and Childhood Immunization in Swaziland. *International Journal for Equity in Health*, *14*(1), 32. doi:10.118612939-015-0162-2 PMID:25889973

Tuan, Y. F. (1977). Space and place: The perspective of experience. University of Minnesota Press.

Tun, W. M. (2020). Graduate tracer study on LPU-Laguna bachelor of science in business administration SY 2013-2015. *LPU-Laguna Journal of Multidisciplinary Research, 4*(1).

UGC. (2018). *List of private universitie*. http://www.ugc.gov.bd/en/home/university/private/75

Ülgen, B., & Aksakal, N. Y. (2022). Why students prefer “business administration education”?: A qualitative research with the international students. In A. Zhuplev & R. Koepp (Eds.), *Global Trends, Dynamics, and Imperatives for Strategic Development in Business Education in an Age of Disruption* (pp. 189–213). IGI Global. doi:10.4018/978-1-7998-7548-2.ch010

United Nations. (2013). *The Millennium Development Goals Report*. United Nations.

Urry, J. (2002). Mobility and proximity. *Sociology*, *36*(2), 255–274.

Urry, J. (2003). Global complexities. Distant proximities: Dynamics beyond Globalization. By Rosenau James N.Princeton. *International Studies Review*, *5*(2), 250–252.

Urry, J. (2005). The complexity turn. *Theory, Culture & Society*, *22*(5), 1–14.

Urry, J. (2016). Does mobility have a future? In M. Grieco & J. Urry (Eds.), *Mobilities: New perspectives on transport and society* (pp. 21–38). Ashgate Publishing Limited.

Vaiman, V., Collings, D. G., & Scullion, H. (2017). Contextualising talent management. *Journal of Organizational Effectiveness*, *4*(4), 294–297. doi:10.1108/JOEPP-12-2017-070

Varghese, N. V. (2008). Globalization of higher education and cross-border student mobility. UNESCO, International Institute for Educational Planning.

Vaskov, M., Isakov, A., Bilovus, V., Bulavkin, A., & Mikhaylenko, N. (2021). Digital literacy of modern higher education teachers. E3S Web of Conferences, EDP Sciences, 273, 12035. doi:10.1051/e3sconf/202127312035

Veletsianos, G., Johnson, N., & Seaman, J. (2021). *Digital faculty: faculty expectations about the future of higher education*. Bay View Analytics. https://files.eric.ed.gov/fulltext/ED617095.pdf

Vellakkal, S., Reddy, H., Gupta, A., Chandran, A., Fledderjohann, J., & Stuckler, D. (2017). A qualitative study of factors impacting accessing of institutional delivery care in the context of India's cash incentive program. *Social Science & Medicine*, *178*, 55–65. doi:10.1016/j.socscimed.2017.01.059 PMID:28199860

Veloutsou, C., & Bian, X. (2008). A cross-national examination of consumer perceived risk in the context of non-deceptive counterfeit brands. *Journal of Consumer Behaviour*, *7*(1), 3–20. doi:10.1002/cb.231

Venkatesh, V. G., Kang, K., Wang, B., Zhong, R. Y., & Zhang, A. (2020). System architecture for blockchain based transparency of supply chain social sustainability. *Robotics and Computer-integrated Manufacturing*, *63*, 101896. https://doi.org/10.1016/j.rcim.2019.101896

Vergo, P. (Ed.). (1989). The new museology. Reaktion Books.

Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Qi Dong, J., Fabian, N., & Haenlein, M. (2021). Digital Transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, *122*, 889–901. doi:10.1016/j.jbusres.2019.09.022

Verma, S., Kumar, R., & Yadav, S. K. (2018). An Empirical Study on Consumers' Buying Intentions of Counterfeit Products in India. *Journal of Intellectual Property Rights*, *23*, 250–260. http://nopr.niscair.res.in/handle/123456789/47338

Vernon, M. M., Balas, E. A., & Momani, S. (2018). Are university rankings useful to improve research? A systematic review. *PLoS One*, *13*(3), 1–15.

Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, *28*(2), 118–144. doi:10.1016/j.jsis.2019.01.003

Vida, I., Koklič, M. K., Kukar-Kinney, M., & Penz, E. (2012). Predicting consumer digital piracy behavior: The role of rationalization and perceived consequences. *Journal of Research in Interactive Marketing*, *6*(4), 298–313. doi:10.1108/17505931211282418

Vidgen, R., Mortenson, M., & Powell, P. (2019). Invited Viewpoint: How well does the Information Systems discipline fare in the Financial Times' top 50 Journal list? *The Journal of Strategic Information Systems, 28*(4), 101577. doi:10.1016/j.jsis.2019.101577

Vijayavhaskar, D. K. (2021). A socio-economic study on financial inclusion in India- Street vendor prespective. *Palarch's Journal of Archaeology of Egypt/Egyptology*.

Vitell, S. J. Jr. (1986). Marketing Ethics: Conceptual And Empirical Foundations Of A Positive Theory Of Decision Making. In *Marketing Situations Having Ethical Content', Unpublished Dissention*. Texas Tech University.

Vivaldi, F., Melai, B., Bonini, A., Poma, N., Salvo, P., Kirchhain, A., Tintori, S., Bigongiari, A., Bertuccelli, F., Isola, G., & Di Francesco, F. (2020). A temperature-sensitive RFID tag for the identification of cold chain failures. *Sensors and Actuators. A, Physical*, *313*, 112182. https://doi.org/10.1016/j.sna.2020.112182

Vora, K.S., Mavalankar, D.V., Ramani, K.V., Upadhyaya, M., Sharma, B., Iyengar, S., Gupta, V., & Iyengar, K. (2009). Maternal health situation in India: a case study. *Journal of Health, Population, and Nutrition*, *27*(2), 184–201.

Vorina, A., Simonič, M., & Vlasova, M. (2017). An Analysis of the Relationship Between Job Satisfaction and Employee Engagement. *Economic Themes*, *55*(2), 243–262. doi:10.1515/ethemes-2017-0014

Walker, K. (2008). Structuring visitor participation. In L. Tallon & K. Walker (Eds.), *Digital technologies and the museum experience: Handheld guides and other media*. Altamira Press.

Walsh, P. (2007). Rise and fall of the post-photographic museum: Technology and the transformation of Art. In F. Cameron & S. Kenderdine (Eds.), *Theorizing digital cultural heritage: A critical discourse*. The MIT Press. doi:10.7551/mitpress/9780262033534.003.0002

Wang, C., Sang, X., & Gao, L. (2021). A Cross-chain Gateway for Efficient Supply Chain Data Management. In W. Gao, K. Hwang, C. Wang, W. Li, Z. Qiu, L. Wang, A. Zhou, W. Qian, C. Jin, & Z. Zhang (Eds.), *Intelligent Computing and Block Chain* (Vol. 1385, pp. 318–333). Springer Singapore. doi:10.1007/978-981-16-1160-5_25

Wang, F., Zhang, H., Zang, H., & Ouyang, M. (2005). Purchasing pirated software: An initial examination of Chinese consumers. *Journal of Consumer Marketing*, *22*(6), 340–351. doi:10.1108/07363760510623939

Wang, L. Y. K., Lew, S. L., Lau, S. H., & Leow, M. C. (2019). Usability factors predicting continuance of intention to use cloud e-learning application. *Heliyon*, *5*(6), e01788. doi:10.1016/j.heliyon.2019.e01788 PMID:31198866

Ward, P., Clark, T., Zabriskie, R., & Morris, T. (2014). Paper/Pencil Versus Online Data Collection. *Journal of Leisure Research*, *46*(1), 84–105. doi:10.1080/00222216.2014.11950314

Waters, J. (2015). Snowball sampling: A cautionary tale involving a study of older drug users. *International Journal of Social Research Methodology*, *18*(4), 367–380. doi:10.1080/13645579.2014.953316

Waters, J. L. (2005). Transnational family strategies and education in the contemporary Chinese diaspora. *Global Networks*, *5*(4), 359–377.

Waters, J. L. (2006). Geographies of cultural capital: Education, international migration and family strategies between Hong Kong and Canada. *Transactions of the Institute of British Geographers*, *31*(2), 179–192.

Waters, J. L. (2007). "Roundabout routes and sanctuary schools": The role of situated educational practices and habitus in the creation of transnational professionals. *Global Networks*, *7*(4), 477–497.

Waters, J. L. (2012). Geographies of international education: Mobilities and the reproduction of social (dis)advantage. *Geography Compass*, *6*(3), 123–136.

Webb, K. L., & Hogan, J. E. (2002). Hybrid channel conflict: Causes and effects on channel performance. *Journal of Business and Industrial Marketing*, *17*(5), 338–356. doi:10.1108/08858620210439031

Wee, C.-H., Tan, S.-J., & Cheok, K.-H. (1995). Non-price determinants of intention to purchase counterfeit goods: An exploratory study. *International Marketing Review*, *12*(6), 19–46. doi:10.1108/02651339510102949

WEF. (2020). *The future of jobs report 2020.* https://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf

Wei, L. (2018). *DHL: Smart Management is Smart Business*. Huawei. https://www.huawei.com/uk/technology-insights/publications/huawei-tech/84/dhl-smart-iot-smart-logistics

Wei, H. (2013). An empirical study on the determinants of international student mobility: A global perspective. *Higher Education*, *66*(1), 105–122.

Wei, L., Wu, J., Long, C., & Lin, Y.-B. (2019). The Convergence of IoE and Blockchain: Security Challenges. *IT Professional*, *21*(5), 26–32. https://doi.org/10.1109/MITP.2019.2923602

Weybrecht, G. (2021). How management education is engaging students in the sustainable development goals. *International Journal of Sustainability in Higher Education*, *22*(6), 1302–1315. doi:10.1108/IJSHE-10-2020-0419

What is video streaming service? (2013, December 1). www.techtarget.com. https://www.techtarget.com/whatis/definition/video-streaming-service#:~:text=A%20video%20streaming%20service%20is,either%20per%20view%20or%20 subscription

Whittington, R. (2012). *Big Strategy/Small Strategy*. doi:10.1177/1476127012452828

WHO Library. (2016). *Standards for improving quality of maternal and newborn care in health facilities.* World Health Organization. Retrieved June 22, 2022, from https://cdn.who.int/media/docs/default-source/mca-documents/qoc/quality-of-care/standards-for-improving-quality-of-maternal-and-newborn-care-in-health-facilities.pdf?sfvrsn=3b364d8_4

WHO. (1946). *Constitution of WHO*. https://apps.who.int/gb/bd/

WHO. (2010). *Trends in Maternal mortality: 1990 to 2008*. Available at: https://www.who.int/reproductivehealth/publications/monitoring/9789241500265/en/

WHO. (2021). *Global strategy on digital health 2020-2025*. World Health Organization.

WHO. (2021). *The impact of COVID-19 on health and care workers: A closer look at deaths.* Geneva: World Health Organization. https://apps.who.int/iris/handle/10665/345300

WHO. (2022). *Human resources for health Working for Health: draft 2022–2030 action plan*. Seventy Fifth World Health Assembly, Provisional Agenda item 15. https://apps.who.int/gb/ebwha/pdf_files/WHA75/A75_12-en.pdf

Wiblen, S., & McDonnell, A. (2020). Connecting 'talent' meanings and multi-level context: A discursive approach. *International Journal of Human Resource Management*, *31*(4), 474–510. doi:10.1080/09585192.2019.1629988

Wiedmann, K.-P., Hennigs, N., & Klarmann, C. (2012). Luxury consumption in the trade-off between genuine and counterfeit goods: What are the consumers' underlying motives and value-based drivers? *Journal of Brand Management*, *19*(7), 544–566. doi:10.1057/bm.2012.10

Williams, D. (1987). A brief history of museum computerization. In R. Parry (Ed.), *Museums in a digital age* (Vol. 2010). Routledge.

Willis, V. C., Thomas Craig, K. J., Jabbarpour, Y., Scheufele, E. L., Arriaga, Y. E., Ajinkya, M., Rhee, K. B., & Bazemore, A. (2022). Digital Health Interventions to Enhance Prevention in Primary Care: Scoping Review. *JMIR Medical Informatics*, *10*(1), e33518–e33518. doi:10.2196/33518 PMID:35060909

Wolfinbarger, M., & Gilly, M. C. (2003). eTailQ: Dimensionalizing, measuring and predicting etail quality. *Journal of Retailing*, *79*(3), 183–198. doi:10.1016/S0022-4359(03)00034-4

World Health Organization. (2016). *Global Observatory for eHealth. Global diffusion of eHealth: Making universal health coverage achievable*. Geneva: World Health Organization. http://apps.who.int/iris/bitstream/10665/252529/1/9789241511780-eng.pdf?ua=1

World Health Organization. (2019). *Trends in maternal mortality 2000 to 2017: estimates by WHO, UNICEF: UNFPA*. World Bank Group and the United Nations Population Division.

Wu, M., Wang, K., Cai, X., Guo, S., Guo, M., & Rong, C. (2019). A Comprehensive Survey of Blockchain: From Theory to IoT Applications and Beyond. *IEEE Internet of Things Journal, 6*(5), 8114–8154. doi:10.1109/JIOT.2019.2922538

Wu, G. J., Bagozzi, R. P., Anaza, N. A., & Yang, Z. (2019). A goal-directed interactionist perspective of counterfeit consumption: The role of perceived detection probability. *European Journal of Marketing*, *53*(7), 1311–1332. doi:10.1108/EJM-07-2017-0455

Xiao, Y., Becerik-Gerber, B., Lucas, G., & Roll, S. C. (2021). Impacts of Working From Home During COVID-19 Pandemic on Physical and Mental Well-Being of Office Workstation Users. *Journal of Occupational and Environmental Medicine*, *63*(3), 181–190. doi:10.1097/JOM.0000000000002097 PMID:33234875

Xu, J., & Cooper Thomas, H. (2011). How can leaders achieve high employee engagement? *Leadership and Organization Development Journal*, *32*(4), 399–416. doi:10.1108/01437731111134661

Yallop, A. (2012). The Use And Effectiveness Of Code Of Ethics – A Literature Review. *International Conference 'Marketing – From Information To Decision, 5.*

Yang, Z. (2004). Online service quality dimensions and their relationships with satisfaction. *Int. J. of Service Ind. Manage*.

Yang, K., Shen, H., Forte, D., Bhunia, S., & Tehranipoor, M. (2018). Hardware-Enabled Pharmaceutical Supply Chain Security. *ACM Transactions on Design Automation of Electronic Systems*, *23*(2), 1–26. https://doi.org/10.1145/3144532

Yin, R. K. (2003). *Case study research: Design and methods*. Sage publications.

Yoo, B. (2001). Developing a scale to measure the perceived quality of an Internet shopping site (SITEQUAL). *Quar. J.l of Elect. Comm.*, *2*(1), 31–45.

Yoo, B., & Lee, S. H. (2012). Asymmetrical effects of past experiences with genuine fashion luxury brands and their counterfeits on purchase intention of each. *Journal of Business Research*, *65*(10), 1507–1515. doi:10.1016/j.jbusres.2011.10.018

Yuniati, E., Soetjipto, B. E., Wardoyo, T., Sudarmiatin, S., & Nikmah, F. (2021). Talent management and organizational performance: The mediating role of employee engagement. *Management Science Letters*, *11*(9), 2341–2346. doi:10.5267/j.msl.2021.5.007

Zeithaml, V. A. (2000). A conceptual framework for understanding e-service quality: implications for future research and managerial practice. *Mark. Sci. Inst.*

Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing*, *60*(2), 31–46. doi:10.1177/002224299606000203

Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2000). Service quality delivery through web sites: A critical review of extant knowledge. *Journal of the Academy of Marketing Science*, *30*(4), 362–375. doi:10.1177/009207002236911

Zelalem Ayele, D., Belayihun, B., Teji, K. & Admassu Ayana, D. (2014). Factors Affecting Utilization of Maternal Health Care Services in Kombolcha District, Eastern Hararghe Zone, Oromia Regional State, Eastern Ethiopia. *International Scholarly Research Notices*, 1–7.

Zhang, Y., Liu, Y., Jiong, Z., Zhang, X., Li, B., & Chen, E. (2021). Development and assessment of blockchain-IoT-based traceability system for frozen aquatic product. *Journal of Food Process Engineering*, *44*(5). https://doi.org/10.1111/jfpe.13669

Zhao, M., & Rabiei, K. (2022). Feasibility of implementing the human resource payroll management system based on cloud computing. *Kybernetes*. doi:10.1108/K-07-2021-0554/FULL/XML

Zhao, G., Liu, S., Lopez, C., Lu, H., Elgueta, S., Chen, H., & Boshkoska, B. M. (2019). Blockchain technology in agri-food value chain management: A synthesis of applications, challenges and future research directions. *Computers in Industry*, *109*, 83–99. https://doi.org/10.1016/j.compind.2019.04.002

Zhou, M. (2021). *Now spreading in US: Fake vaccine cards*. https://www.chinadaily.com.cn/a/202105/13/WS609c7f4fa31024ad0babd914.html

Zhou, F., Wang, Y., Liu, Y., Liu, X., Gu, L., Zhang, X., Pu, Z., Yang, G., Liu, B., Nie, Q., Xue, B., Feng, J., Guo, Q., Liu, J., Fan, H., Chen, J., Zhang, Y., Xu, Z., Pang, M., ... Cao, B. (2019). Disease severity and clinical outcomes of community-acquired pneumonia caused by non-influenza respiratory viruses in adults: A multicentre prospective registry study from the CAP-China Network. *The European Respiratory Journal*, *54*(2), 1802406. doi:10.1183/13993003.02406-2018 PMID:31164430

Zhou, N., & Belk, R. W. (2004). Chinese Consumer Readings of Global and Local Advertising Appeals. *Journal of Advertising*, *33*(3), 63–76. doi:10.1080/00913367.2004.10639169

Zichichi, M., Ferretti, S., & D'Angelo, G. (2020). Are distributed ledger technologies ready for intelligent transportation systems? *Proceedings of the 3rd Workshop on Cryptocurrencies and Blockchains for Distributed Systems*, 12–17. doi:10.1145/3410699.3413789

Zukin, S., Kasinitz, P., & Chen, X. (2014). *Global Cities, Local Streets: Everyday Diversity from New York to Shanghai*. Routledge.

About the Contributors

Sanjeev Bansal is Dean FMS & Director of Amity Business School, Amity University Uttar Pradesh. He is an admired academician with a Ph.D. and D. Litt degree. In an acclaimed career span of about 33 years in teaching, research, and consultancy, he has been invited to be a part of several prestigious academic / professional bodies and in his advisory capacity, has steered them to success. He is an avid researcher and has more than 225+ research papers in prestigious journals to his credit. He has authored 53 books which have been exceptionally well received. He has successfully guided 28 research scholars to produce works of immense educational impact so far and eight scholars are working with him. He is on board of many National and International journal. He has been awarded many awards including Lifetime Achievement Award by GBIT and SIBF, Dr. Sarvepalli Radhakrishnan Lifetime Achievement National Award and Rashtra Ratan National Award by IRDP, "Best Outstanding Academic Leader National Award 2020" from KIER and Excellence in Academics award by ESN in 2021.

Vandana Ahuja works as Dean-Academics and Professor at Jaipuria Institute of Management, Indirapuram, Ghaziabad. She has over 23 years of experience and is the author of the book on Digital Marketing - published by Oxford University Press. She is the proud recipient of the ILDC-AMP award for excellence in Management Teaching and has researched the domain of the collaborative web, with focus on its contributions to the fields of Marketing and CRM. She has published several manuscripts in International and National Journals and also serves on the Editorial Board of several International Journals. She has organised and chaired several International conferences and has guided Ph.D. students in the domain of CRM, Branding and Online Marketing. She teaches Digital Marketing and Marketing Analytics. Prior to her present stint at Jaipuria, she has worked with Amity University, IILM and Jaypee Business School.

Vijit Chaturvedi currently associated as Professor of OB, HR &Psychology with Amity Business School, Amity University, Noida, India. She has specialization in Human resource Management and Strategic Management and a blended experience of Industry and Academics of 19 years. Her research interests includes-Training Assessment, Industrial Psychology, Perception assessment, Talent Change Management, Leadership effectiveness with role of Spirituality in Leadership. She has authored 88 papers, 6 books. An accredited Trainer from ISTD, she has conducted sessions on Behavioral and HR aspects with PSU'S and private organization. She is also member of ISTD, NHRD, AIMA and the Editorial board member of reputed journals.

Vinamra Jain is an Assistant Professor at Amity Business School, Noida. He has more than twenty years of experience in the areas of academics, manufacturing, services, and retail industries both in India and Overseas. He has held important administrative posts like Program Coordinator and In-charge Internationalization cell. He has successfully organized 6 International Research Conferences in the past. He has been instrumental in the design, development and restructuring of many Courses & Curriculums being run at the Amity campuses in India and Dubai. He has to his credit 03 books and more than 25 research publications in journals of international repute and has presented his work at many National & International Conferences. He is also part of the editorial and review teams of a few international journals and appointed as a guest editor. He is a certified Case Study Method Teacher by Harvard, Cambridge, MA, USA.

* * *

Supriti Agrawal is an Assistant Professor at Amity Business School in the area of Marketing with 22 years of industry and academic experience. She completed her Ph.D. in the year 2013 from BITS, MESRA Ranchi in the areas of pharmaceutical marketing. Her current areas of research interest include Consumer Behavior, Health care service Marketing, and Pharmaceutical Marketing. She has to her credit 50 plus national and international conference papers, published research papers, and case studies in both National and International Journals. She also wrote nine chapters in different books. She is a certified trainer from LSSSDC for training B. Pharma students for the profile of Medical Sales Representative

Divya Aggarwal has graduated from Delhi University in the field of Instrumentation. After that, she did her M.B.A specializing in Human Resources and Finance from Guru Gobind Singh Indraprastha University, Delhi. She has more than 18 years of Academic and consultancy experience and has diverse knowledge of the corporate world. Divya is an expert on long-term success. For the past decade she devoted her energy to the investigation of long-living corporations - how they grow, adapt, and consistently beat their competitors. Under her supervision, nine post graduate students carried out research work in the area of Zoonoses which was funded by International organization. She had carried out research project on workload assessment of ANMs funded by UNICEF and has carried out various projects related to strategy and HR viz., strategy evaluation, workforce planning, competency mapping, talent retention strategies at the corporate level. She conducted Attitude Survey of Employees of Hongkong & Shanghai Banking Corporation (HSBC Bank Ltd) on 16 parameters on All India Basis and made Action Plan. She has conducted various trainings and workshops on areas related to Organizational behavior in various organizations and b-schools. Besides this, she has written various research papers in the journal of national and international repute

Imran Ali is a Senior Lecturer of Logistics and Supply Chain Management at Huddersfield Business School, University of Huddersfield. Imran engages widely with the industry and has research interests in digitalisation of supply chains, supply chain data analytics, industry 4.0 applications (AI, IoT, Blockchain, Digital Twin) and innovation. He is currently conducting research in the usage of technologies broadly in the logistics and supply chain to make the data-driven decisions with more accuracy and efficiency. He has published in academic and managerial journals including International Journal of Production Economics, International Journal of Production Research, International Business Review, Computers and Operations Research.

Swati Bhatnagar is an Asst. Professor at New Delhi Institute of Management, Delhi. She graduated from Delhi University & did her MBA from ICFAI Business School, ICFAI University. She is UGC NET qualified & is a Ph. d doctorate from Delhi Technological University. Ms. Bhatnagar has financial industry experience of 5 years and academic experience of more than 13 years. Her area of academic specialization & research is sales, behavioral and structural dimensions of Distribution Channel Management.She has presented papers in various national and international conferences and has contributed 'Scopus' indexed research papers in journals of Sage and Inderscience publications.

Gamze Ergin graduated from the Interior Architecture Department of Mimar Sinan Fine Arts University (MSFAU) Istanbul in 2012. Gamze Ergin received her MSc degree in interior architecture from MSFAU in 2016. She worked as a research assistant at Maltepe University, Istanbul, from 2013 to 2016. In 2016 she started working as a faculty member at MSFAU and is currently working as a researcher in the interior architecture department. Additionally, she conducted her Ph.D. thesis research at Sapienza Università di Roma, Italy, for a year. She received her Ph.D. in interior architecture from MSFAU in 2020. Personal interests in the academic field are contemporary museology, museum experience, adaptive reuse, and sustainable urban development.

Rajat Gera is Professor and Dean, School of Management and Commerce, K R Mangalam University. he has been associated with IMT Ghaziabad, Fore School of Management, New Delhi, BIMTECH and various leading universities and Institutes in India and abroad. He is Ph.D. in Management (2014) from Guru Gobindh Singh Indraprastha University,New Delhi and PGDRM (Marketing) from Institute of Rural Management Anand (IRMA),.(1990-1992, Full Time) and B.Tech. from Allahabad University. He has over 40 International and National publications and is the author of two books. He has authored cases published by Richard Ivey Business School and (and London Business School, UK. He is visiting faculty for Fontys University, Eindhoven, Netherlands, and at ISS KIMEP, Almaty, Kazakhstan. He has been associated with Management development programs for BP, BHEL, BEL, NTPC, ONGC, Airtel, Vodaphone, and various other organizations of repute. Some of his achievements are Associate Fellow-Euro Med Academy of Business, 2013-2014, Euro Med Research Institute, Greece, Third ranked case in Case competition by Aditya Birla Centre, London business school, 2010. (Gera, R., "Quatrro BPO Solutions: Developing Outsourcing Solutions Innovatively" and Erasmus Mundus scholarship for teaching in 2010. He was co-author of outstanding Business and Management article award for 2017, Tenth Annual Excellence in Research Journal Awards, by IGI Global.

Rahul Gupta is an Associate Professor in the area of Marketing at Amity Business School, Amity University Uttar Pradesh. He is an MBA with a specialization in Marketing and a Ph.D. in Retail Management. He has also completed FDPM from IIM Ahmedabad. He carries over two decades of experience out of which 11 years were in corporate particularly in the area of Industrial Marketing & Sales covering organizations such as Magna Industrial Co. Ltd, Ador Fontech Ltd, and Sahara India Commercial Corporation Ltd.

Md Tariqul Islam is an Assistant Professor at BRAC Institute of Educational Development (BRAC IED), BRAC University. His research interest largely focuses on the sociology of education with particular attention to the global citizenship experience of young students in the globalised world. Tariq earned his PhD in Education from Deakin University, Australia. He received his Bachelor (Hons) and Master's in

Education from the University of Dhaka, Bangladesh. As a researcher, he worked with several national and international organisations, e.g., BRAC, NAEM, FREPD, UNESCO, UNICEF, ActionAid. Dr Tariq's current research focuses on education for global citizenship, higher education and employability, education in emergencies, teaching and learning in higher education, teachers' professional development, ICT in education, and educational inclusion and exclusion, education for sustainable development, and play for learning and socio-emotional development.

Rajesh Jampala has 30 years of experience in teaching Financial Management and Marketing for MBA students. Presented more than 75 papers in national and international seminars and published more than 75 papers in national journals and magazines of repute. Guiding research scholars, for leading to M.Phil and Ph.D and 10 Research Scholars completed M.Phil. also Co-Authored five textbooks in the area of Management, Human Resource Management, and Marketing Management.

Debesh Mishra has more than 50 research publications in journals, conferences and book chapters. He has also coauthored 4 international books of repute.

Adi Lakshmi P. has over three decades of experience in teaching Human Resource Management and Marketing for MBA students. Presented more than 40 papers in national and international seminars and published more than 50 papers in national journals and edited volumes of repute. Guiding research scholars, for leading to M.Phil and Ph.D and also Co-Authored five text books in the area of Management, Human Resource Management, and Marketing Management.

Rachita Ota is Asst. Professor - Marketing & General Management in Amity Global Business School Bhubaneswar. Her research interests include Healthcare Management, marketing, and general management. She has over Thirteen years of experience in the field of teaching and a few years of corporate.

Tushar Prabhakar received his Master of Commerce from DAV College, Panjab University, Chandigarh in 2020. He is currently pursuing his Ph.D. in Marketing specialization at University Business School, Panjab University, Chandigarh. His research interests include the areas of consumer behavior, counterfeit consumption, marketing, and consumer psychology. He has attended two national level conferences, one organized by IIT, Kharagpur and the other by Amity University, Noida.

Sushree Sangita Ray is Asst. Professor – Human Resource Management and Information Technology in Amity Global Business School, Bhubaneswar. Her research interests include Quality Management, Strategic Human Resources, and Information Technology in Marketing Management. She has more than twenty-two years of experience in the field of teaching. Has been coordinating Computer Literacy Project for the marginalized women under Sankalp. She is a life member of ISTD.

Charul Chaturvedi is an Assistant Professor at School of Management, Sage University, Bhopal, India. She has over 7 years of experience in teaching Marketing subjects. She is an avid researcher with research interests in Consumer Behavior and Marketing.

Puja Sareen is a Doctorate in the area of Human Resource Management with 17 years of industry and academic experience. She has expertise in teaching OB/HRM subjects. She has been certified by IICA, Ministry of Corporate Affairs as a Master Trainer for their Certificate Programme in CSR. A University Topper in B.Com (H) and MBA, she has extensive experience in curriculum development. Conducting soft skills training is her forte. She has published several papers and case studies in international and national journals and conference proceedings.

Aastha Sawhney is a Research Scholar at Amity Business School, Amity University Noida, Uttar Pradesh.

Wenqian Shao is born in Ningbo, Zhejiang province, China. She received the B.S.C degree in Management and Organisational Behaviour from Lancaster University, UK in 2020 and the M.S.C degree in Procurement and Supply Chain Management from Cranfield University, UK in 2021. She is currently staying at home, and looking for a job while studying Chinese ancient and traditional forecasting (related to Yi-ching and Yin-yang) in terms of four-columns-and-eight-characters and six-hexagram.

Petek Tosun is an assistant professor of marketing at the Business Administration Department, Kadir Has University, Istanbul, Turkey. She received her undergraduate degree from Bilkent University Economics department in 2000. She has worked as a product and product development manager, segment manager, and vice president of marketing in the financial services sector between 2000 and 2016. After completing her MBA at Istanbul Bilgi University in 2013, she has received her Ph.D. in Marketing from Istanbul Bilgi University in 2018. She has been teaching consumer behavior, brand management, and marketing management since 2015. Her research fields include consumer behavior, financial services marketing, brand management, and sustainability.

Rajan Yadav is Professor and head Delhi School of Management, Delhi Technological University. He graduated from Delhi University and obtained his Master's Degree in Business Management from MD University and awarded Ph.D. in the area of Organized Retail. Prof. Yadav is actively involved in teaching, research, and administration. He has been teaching MBA students for more than 18 years and prior to joining DTU; he has held the position of associate professor with Indraprastha Engineering College where he was instrumental in setting-up the management department. His interest area includes behavioural dimensions of technology diffusion, online social networks, and student community-related social marketing issues.

Index

A

Accessibility 118, 120, 125, 128, 131-132, 135, 138-139, 142, 188, 195
Active Learning 230, 232-235, 238-239, 247
Artcodes 58, 69
Artificial Intelligence (AI) 51, 69
Atelier des Lumieres 51-52, 60-66
Attitude 3, 87-91, 95-102, 104, 135-136, 156-157, 188, 193, 197, 215, 239, 257, 259
Augmented Reality (AR) 51, 69

B

Blockchain Technology 1-4, 14-16, 19-27, 29-30, 205
Brand Identity 38-39, 45, 47, 50
Business Ethics 99-100, 102-103, 248, 250, 253-254, 257-261

C

Channel Conflict 70, 74, 77, 80, 83, 85
Competition 44, 70, 74, 76-77, 80, 83, 110, 113, 115, 198, 210, 215, 228, 240, 242, 248, 252, 256, 261
Competitive Advantage 193, 242, 248, 251, 261
Consumer Segmentation 41, 47
Consumer Targeting 48
Counterfeit Branded Products 87-92, 95-99, 104, 188
Counterfeiting 87-89, 91-92, 97-101, 103-104, 188
COVID-19 21, 29, 45, 47, 53, 71, 157-158, 161-162, 169, 171-176, 185-188, 190, 194, 201-206, 230, 233, 236, 239, 241-245
Crowd-Sourced Data Collection 59, 64-65, 69
Customer Satisfaction 143-144, 146-147, 149-151, 153-154, 156

D

Digital Interventions 118-119, 123, 133
Digital Technologies 51-52, 54-57, 59, 64, 68, 124, 129, 189, 192-193, 199-200, 230-231, 234-235, 237-240, 245
Digital Transformation 31, 45-46, 54, 66, 118-119, 124, 128-129, 138, 140-141, 192, 195-197, 200, 204, 231-233, 235, 239, 242, 244-246
Digital Transformation of Museums 54
Disinvestment 105-107, 109-117
Distributor 22, 70, 72, 74, 76-77, 82-85

E

EdTech 247
E-Learning 233, 246-247
Electronic Health Records 124-125, 141, 199
Emerging Economy 88, 97
Employability 210, 218, 226, 228-229, 236, 244
Employee Engagement 119, 157-162, 164, 169-173, 205, 207
Employee Performance 157, 171, 191, 201-202
E-Service Quality 143-146, 148, 153-156
Expanded Visitor Experience 51, 59, 61-64
Expenditure 174, 176-177, 180-181, 184, 186, 190

F

Flipped Learning 230, 234, 246-247
FMCG sector 70-72, 77-78, 80, 82-83

G

General Trade 70-72, 76-77, 80, 82-83
Global Higher Education Market 219, 228
Global Media 209-211, 219, 223, 229
Globalisation 46, 208, 220, 225-227

H

Health Workforce Retention 189

Healthcare 12, 16, 24, 28, 118-125, 128-140, 142, 145, 155, 163, 174, 189-196, 198-206, 238
Higher Education 208-213, 215-228, 230-236, 238-247
Human-Computer Interaction (HCI) 55, 69
Hybrid Museum 51-52, 57-61, 63-65, 67

I

Immersive Museum 51
Income 37, 90, 95-96, 105, 130, 162, 164, 174, 176-177, 179-180, 182, 184, 186, 228, 236, 254
Indian Banking Sector 31, 44-47
International Mobility 208-211, 213-214, 216, 218-221, 223, 226, 229
International University 229
Internet of Things (IoT) 1-4, 6-8, 10, 13, 15-16, 20-30, 47
Internet Penetration 31-32, 78, 80, 190
IT Sector 157

L

Leadership 157, 159-160, 167, 170-171, 173, 192, 201, 205-206, 236, 244, 259
Learning Management System 247
Location-Based Storytelling 59, 69

M

Management Education 157, 230, 235, 242, 244-247
Maternal Health Services 118-122, 132-133, 135-138
Maternal Mortality and Morbidity 118-120, 135-136
MBA 230, 232, 236, 244
Media 31-50, 54-55, 57-58, 63, 68, 73, 141, 144, 148, 193, 203, 205, 208-213, 219-224, 229, 231, 238, 242
M-Health 118, 125, 137, 142
Mixed-Reality (MR) 69
MOOC 239-241, 247
Multi-Channel Customer Management 86
Museum Experience 51-52, 55-61, 63-66, 68
M-Wallets 43

N

Non-Deceptive Counterfeiting 88, 104, 188

O

Odisha 118-120, 122-123, 125, 128, 132-135, 137, 139-140
Omni-Channel Management 86
Online channels 70, 83
Online Learning 230-236, 239-240, 242, 244
Organised trade 70
OTT platform 143

P

Pharmaceutical 1-4, 6-8, 11-12, 14-16, 20-25, 27-30, 71, 116, 119, 124
Physical Space Experience 51, 57, 59, 61-64
Post-pandemic era 31, 189
Primary health centers 122, 130, 135, 138-139
Profits 22, 74, 112, 169, 174, 176, 183, 186, 252
Public Sector 31, 34, 37, 46-47, 105-107, 110, 115-117
Public Sector Disinvestment Review Indian Government 105
Public Sector Enterprise 106-107, 117
Purchase Intention 87, 89-91, 95-99, 101, 104, 188

R

Relationship Banking 37, 45, 48
Repurchase Intentions 143, 145-147, 152-156

S

Showrooming 86
Social Media 31-50, 55, 63, 73, 144, 148, 193, 203, 205, 212, 229, 231, 238, 242
Social Media Marketing 47, 231
Societal Marketing 248-249, 258, 261
Society 8, 21, 27-28, 38, 52, 54-57, 66, 188, 211, 213, 219-220, 222, 225, 227-228, 230-232, 238, 240, 245, 248-250, 253, 255-256, 259, 261
Strategies 31, 33, 41, 44, 73, 75, 83, 98-99, 101, 106, 110, 119, 143, 168, 170, 189-190, 192, 196, 198-199, 201, 205, 220-221, 228-229, 240, 250-251, 259
Streaming Services 143-149, 153, 156
Street Vendors 174-177, 179-188
Supply Chain 1, 3-4, 6-8, 10, 12-17, 20-30, 77, 158, 162, 175
Sustainable Development Goals 124, 140, 169, 239, 246-247
Systematic Literature Review 1, 3-4, 24, 26, 240, 244

T

Talent Management 173, 189-192, 196, 198-207
Telemedicine 118, 124-125, 132, 137, 142, 195-196, 199, 202
Theory of Reasoned Action 87-89, 99-100, 102, 104, 188
Traceability 1-4, 6-8, 11, 13-17, 20-30

V

Video Streaming Services 143-144, 146-149, 153
Virtual Reality (VR) 51, 55, 58, 69

Y

Young People 208-209, 213, 224, 226, 249