

**ANALYSING CONSUMER BEHAVIOUR TOWARDS ONLINE
SHOPPING IN THE CONTEXT OF DEMONETISATION IN INDIA**

**For the degree of Doctor of Philosophy
Submitted by: Savita Gupta**

(Roll No. 901610009)

Under the Guidance of

Dr. Rakesh K. Sharma

Associate Professor
Department of Humanities and Social
Sciences

Dr. (Ms.) Ravi Kiran

Professor & Former Head
Department of Humanities and Social
Sciences



THAPAR INSTITUTE
OF ENGINEERING & TECHNOLOGY
(Deemed to be University)

Submitted to

**DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES,
THAPAR INSTITUTE OF ENGINEERING & TECHNOLOGY
DEEMED TO BE UNIVERSITY,
PATIALA-147004, PUNJAB, INDIA**

December 2023

DECLARATION

I hereby declare that this **thesis** “**ANALYSING CONSUMER BEHAVIOUR TOWARDS ONLINE SHOPPING IN THE CONTEXT OF DEMONETISATION IN INDIA**” is an original work done by me for Degree of Doctor of Philosophy in Management. I also declare that thesis or any other part of it has not been submitted by me award of any other degree, diploma, title or recognition before.

PATIALA

December 20, 2023

*Savita
Gupta*

SAVITA GUPTA

CERTIFICATE

Certified that the thesis titled "**ANALYSING CONSUMER BEHAVIOUR TOWARDS ONLINE SHOPPING IN THE CONTEXT OF DEMONETISATION IN INDIA**" which is being submitted by Ms. Savita Gupta in fulfillment of the requirements for the award of degree of Doctor of Philosophy in Management, Thapar Institute of Engineering and Technology, Patiala is the record of the candidate's own work carried out under my supervision and guidance. The matter embodied in the thesis has not been submitted in part or full to any other institution or university for any other degree.



Dr. Rakesh Kumar Sharma
Associate Professor
Department of Humanities and Social
Sciences,
Thapar Institute of Engineering &
Technology, Patiala



Dr. (Ms.) Ravi Kiran
Professor & Former Head
Department of Humanities and Social
Sciences,
Thapar Institute of Engineering &
Technology, Patiala

Acknowledgement

“The woods are lovely, dark, and deep. But I have promises to keep, and miles to go before I sleep,” Robert Frost

Today I am reaching the milestone I always dreamt of, and I am indebted to all who have stood by me through thick and thin and supported me in this entire journey. Sometimes you feel like you are passing through a dark tunnel but as there is light at the end of every tunnel; the destination of being doctorate is beautiful.

First and foremost, I am thankful to the Almighty for blessing me with strength and guidance throughout this incredible and exciting journey. In this journey of life, I hold dear to the conviction that your prayers are always answered in an unexpected manner by the God. So keep on doing the good deed and you will be rewarded while coming down the valley in the journey of life.

I am profoundly thankful to my esteemed supervisors, Dr. (Ms) Ravi Kiran and Dr. Rakesh Kumar Sharma. Dr. (Ms) Ravi Kiran is a Professor and Former Head of the Department of Humanities and Social Sciences at Thapar Institute of Engineering and Technology. Her boundless patience, profound wisdom and extensive expertise have profoundly enriched and illuminated my journey. Her unwavering encouragement, calmness and insightful guidance have been priceless assets. Dr. Rakesh Kumar Sharma is an Associate Professor at the Department of Humanities and Social Sciences at Thapar Institute of Engineering and Technology. I am privileged to be a student of such a knowledgeable guide. His always ready to help attitude has made my journey easier and enriching in many ways.

I extend my gratitude to Prof. Padmakumar Nair, Director, Thapar Institute of Engineering and Technology, Patiala, Prof. Kaustuv Roy, Head, Department of Humanities and Social Sciences, Thapar Institute of Engineering & Technology, Dr. N. Tejo Prakash, Dean (Research and Development Cell), Dr. B.N. Chudasama Associate Dean (Research and

Development Cell), for providing an environment conducive to quality research and continuous learning. I am also thankful to the members of my Doctoral Committee for their valuable input.

My parents, late Sh. Tirath Ram Gupta and Smt. Laj Rani, deserve eternal gratitude. They affectionately envisioned me as Dr. Savita and I worked tirelessly to turn that vision into reality. Even before I recognized the academician and researcher within myself, they believed in my potential and have been strong in their support of my dreams. Their steadfast belief in me has become the driving force behind my journey, serving as an endless source of inspiration.

A special mention goes to my husband, Mr. Vivek Gupta. He supported me throughout this journey and his solid support and faith in me kept me going, even during the toughest times. I cannot thank him enough for standing by my side and sacrificing so many things to see me succeed. Inevitable part of this journey had been my son Dhruv Gupta who though tender in age always understood my discouragement and motivated me to do better.

I wish to convey my deep appreciation to my brother Tarun Gupta who has been a strong pillar throughout my journey and without whose support this journey would have been impossible. This acknowledgement would be incomplete without mentioning my friends Dr. Alka Pandita and Dr. Urvashi Tandon for being there as and when I needed their guidance. My sincere thanks go out to all my respondents, friends, colleagues and everyone who has contributed in any capacity to this research endeavor.

As I finalize this work, I realize that some moments in life are beyond words to express. This research journey has been an inspirational experience that fills my heart with deep gratitude.

Savita Gupta
Savita Gupta

Table of Contents

CHAPTER 1	1
INTRODUCTION	
1.1 E Commerce	3
1.2 Evolution and Development of Online Shopping	3
1.3 Current Scenario of Online Shopping in India	8
1.4 Theoretical Background	8
Table 1.1: Related Theories of online shopping	11
Table 1.2: Variables and their sources	12
1.5 Rationale of the Study	14
1.6 Key objectives of the Study	14
1.7 Organization of the Thesis	14
1.8 Concluding Remarks	16
CHAPTER 2	17
REVIEW OF LITERATURE AND HYPOTHESES DEVELOPMENT	17
2.1: Online shopping: Global and Indian Scenario	17
2.2 Consumer behaviour towards online shopping in context of Demonetisation	18
2.3.1 Drivers of online shopping - Drivers of UTAUT	19
TABLE 2.1. Past Literature on UTAUT AND UTAUT2	22
2.3.2 Digital Payment Mode as new driver of Online Shopping	23
2.3.3 Technology Interface Drivers	26
2.4 Behavioral Intention and Sustained Intention	27
2.5 Hypotheses Development	27
2.5.1. Drivers of UTAUT2	28
2.5.2. Technology Interface Drivers	30
Chatbots	30
Virtual Try-On Technology	30

2.5.3. Digital Payment Drivers	31
2.5.4. Sustained Intention	31
2.6 Chapter Summary	32
CHAPTER 3	33
RESEARCH DESIGN AND METHODOLOGY	33
3.1 Research Design	34
3.1.1 Survey Instrument	34
Table 3.1. UTUAT-2 Scale with literature support	37
Table 3.2 Digital Payment Mode Scale with literature support	40
Table 3.3: Technology Interface Scale with literature support	41
3.2 Sources of data	41
3.3 Data collection procedure and pilot study	42
3.4 Tools and Techniques Used	42
3.5 Proposed Model	45
3.6 Research framework	46
3.7 Chapter Summary	47
CHAPTER 4	48
RESULTS AND DISCUSSION	48
4.1 Demographic profile of the respondents	48
4.2 Characteristics of sample respondents:	52
4.3 Analysis	54
Table 4.3.1: Factor analysis of the digital payment mode drivers	56
4.4 Discussion	67
CHAPTER 5	70
CONCLUSION, LIMITATIONS, AND IMPLICATIONS	70
5.1 Major Findings of the Study	70
5.2 Revising the objectives	72
Table 5.1. Status of Hypotheses	75

5.3 Implications of the Study	76
5.3.1 Theoretical Implications	76
5.3.2 Practical Implications for Industry practitioners and policy makers	78
5.4 Limitations and Future Research Orientations	79
5.5 Conclusions	80
References	81-95
Annexure1: Questionnaire	
Annexure2: List of Publications	

ABSTRACT

The current study incorporates drivers for digital payments and technology interfaces as additional drivers along with the Unified Theory of Acceptance and Use of Technology (UTAUT2) to investigate their impact on online shoppers' Behavioral Intention (BI). In light of the Indian government's demonetisation initiative, the study uses digital payment drivers as a new force behind online shopping. This research area is unexplored and needs more research because there aren't many studies examining how digital payment modes affect behavioral intention in developing nations like India. It's one of the first studies to expand on UTAUT2 by examining digital payment methods as an extra factor influencing online shopping behaviour. Chatbots (CBs) and Virtual try-on (VTO) technologies are examples of technology interface drivers, included in this study.

In order to determine whether behavioral intention leads to repeat online purchases, this study also examines the relationship between sustained intention and behaviour. The research is predicated on a survey instrument that employs snowball sampling, obtaining data from 600 respondents residing in three northern Indian states, namely Punjab, Haryana, and Himachal Pradesh. The study gauges the relationship of UTAUT2 drivers, Technology Interface drivers, and Digital Payment mode drivers using PLS-SEM with behavioral intention and links it with sustained intention.

The findings indicate that UTAUT2 drivers, digital payment modes and technology interface drivers are positively and significantly related with behavioral intention. The largest impact was caused by UTAUT2 drivers (β : 0.465), which were followed by drivers for digital payments and technology interfaces (β : 0.263 and β : 0.211). Additional analysis indicates that Behavioral Intention has a favourable effect on Sustained Intention (β : 0.868). The results show that 69.5% of the variation in behavioral intention could be explained by the model and with sustained intention the explanatory power increases to 75.4%. The study's findings confirm that in UTAUT2 drivers, hedonic motivation, performance expectations, facilitating conditions, and habit all have a positive and significant impact on behavioural intention.

According to the study, in order to make online shopping a pleasurable experience, Indian managers should implement DPM as a support service. The coefficient for technology interface

drivers is relatively lower, suggesting that consumer adoption of these technologies in India has not yet reached its peak. In order to help improve the customer experience, efforts to convert behavioral intentions into sustained or recurring online purchases could be very beneficial. These efforts would also help to establish a robust and dedicated community of online sellers.

List of Abbreviations

IBEF	India brand equity foundation
UTAUT	Unified Theory of Acceptance and Use of Technology
TI	Technology Interface
SI	Sustained Intention
GDP	Gross domestic product
POD	Pay-on-Delivery
TPB	Theory of Planned Behaviour
TRA	Theory of Reasonable Action
DOI	Diffusion of Innovation
ECM	Expectation Confirmation theory
ISS	Information System Success
NFI-SE	Need for interaction with a service employee
PE	Performance Expectancy
HM	Hedonic Motivation
3PLs	Third-party logistics providers
CRM	Customer relationship management
PLS	Partial Least Squares
VTO	Virtual try-on technology
BI	Behavioral Intention
CR	Composite Reliability
AVE	Average Variance Extracted
CBs	chatbots
AR	Augmented reality

CHAPTER 1

INTRODUCTION

Online shopping has gained momentum in the digital world, and triggered researchers across the globe to analyse the impact of diverse drivers of online shopping on consumers' Behavioral Intention (BI). People from developing economies like India are fascinated by the new trend, and marketers of online shopping want to target this wider population to enlarge their imprint. A rise in e-commerce has induced retailers to adopt different retail strategies to survive. China, the US, and India had a large online shopper base of 140 million people in 2020 (IBEF 2020), and by 2030, this is expected to be worth USD 350 billion. Diverse theoretical models have been used intensely by researchers to understand the user acceptance behavior of online shoppers. Pioneering research by (Venkatesh et al.2003; Venkatesh et al.2012) with the UTAUT(Unified Theory of Acceptance and Use of Technology) and UTAUT2 models has impelled others to examine how online shopping has been influenced by technology adoption, mode of payment (Tandon and Kiran 2018) trust and repurchase intention (Ha *et al.* 2010; Al-Hattami 2021). There were divergent results attributed to slow penetration, preference for physical shopping, and cultural differences in studies conducted in developing nations (Kandpal and Mehrotra, 2019).

Recently, various researchers have introduced and validated interactive tools like chatbots (Wirtz et al. 2018) and virtual try-on technology (Zhang et al.2019;Tandon 2023) while using UTAUT2. Given the increasing impact of technology, retailers could harness these interactive tools to gain a competitive advantage in this digitized era. Keeping the above-mentioned points in mind, this study not only focuses on the variables of UTAUT2, but also intends to involve two new constructs, Technology Interface (TI) and Digital Payment mode (DPM) drivers, to examine the combined influence of all these drivers on BI. Further, it moves to examine whether BI translates into Sustained Intention (SI). Recent revolutions in technology and demonetisation drivers have transformed the online purchasing landscape in India. The World Bank statistics for India pointed out that 22.2% of Gross domestic product) (GDP)emerged from the shadow economy, compared to 12.7% in China and 11% in Japan (Schneider et al. 2010; Rajakumar and Shetty, 2016) In view of this growing challenge, the government of India announced a demonetisation move. Demonetisation, whether successful or disastrous, has at least hastened the pace to shift to

an online payment system. Thus, in the present study, along with UTAUT2 drivers, we examine how Digital Payment mode (DPM) drivers are casting their impact on BI. Against this backdrop, the current study adds value by considering the impact of DPM drivers, too. This becomes important in view of researchers like (Muthumani et al.2017) indicating how user-supportive payment mechanisms like cash on delivery and return and exchange facilities trigger a positive impact on online shopping. The authors of (Tandon et al. 2017) introduced pay-on-delivery (POD); however, we are including DPM drivers, because of their increased relevance today. The affectionate reaction of people toward any new technology is a significant area of research. For broader applicability in emerging economies, this study further validates the effect of Technology Interface (TI) drivers on BI. These scales have been individually scrutinized in the literature, but we wanted to integrate them into this model to present a holistic picture. As e-commerce is developing at a faster pace, there is a need for further development of the existing set of literature. The current research pioneers consolidating the drivers of online shopping through the lens of extending UTAUT2 drivers with TI drivers and DPM drivers to examine their influence on BI. Consequently, it was thought to examine whether BI results in SI, as this would help in increasing consumers' links and adding a sustainability perspective to e-business. Further, as endorsed by Sambhanthan et al. (2017), business sustainability not only benefits the environment but also the organization as a whole. Though discussed in academic forums, they lack focus, and academic research on them is still in its infancy. Thus, comprehensive research has been undertaken in this study.

As this chapter introduces the research problem, it provides the base of the thesis. Section 1.1 outlines the research area by giving a brief about the ecommerce and its various aspects thereby introducing the topic in general. Section 1.2 talks about the growth and evolution of online shopping at a global level. In Section 1.3, current Indian scenario of online shopping has been highlighted. Section 1.4 presents the theoretical background and models of technology acceptance. Section 1.5 focuses on the objectives of the research. This is followed by section 1.6 which presents the rationale of the study. Organization of the thesis is presented in Section 1.7.

1.1 E Commerce

E commerce has become a global phenomenon due to rapid development of information technology (Zabukovšek, 2015). The digital revolution has changed the buyer's behaviour

towards online shopping in a drastic manner. This change is not eventual but is a gradual process resulting from various reforms undertaken in India. Further the journey of e-commerce has not been less than a roller coaster ride, as often people tried online shopping just for fun purpose (Handa et al.2008); rather than having actual intentions of buying the product. Distinct transformation was visible, as the perspective of the young generation changed towards online shopping and they started taking it more seriously (Handa and Gupta, 2014) and now in today's time the height of change is that with Virtual try on, we are able to see ourselves in different attires (Tandon, 2023). Bauer et al. (2006) suggested that though in e-retail, order is placed online, but the fulfilment has to take place offline. Doolin (2004) considers e-tailing as sale of goods and services to customers through internet. Dawn and Kar (2011) describes e-tailing as form of retailing where both the sellers and buyers meet through electronic medium and they need not to be at same physical place, while completing their transactions. Online shopping is a subset of e-commerce. The next section focuses on the evolution and development of online shopping in India.

1.2 Evolution and Development of Online Shopping

Online shopping in India unfolds through several distinctive phases, each characterized by notable shifts in consumer patterns, technological progress, and market dynamics:

Emergence of Online Travel Bookings (Early 2000s): The emergence of online travel bookings not only simplified the travel planning process, but also laid the foundation for a broader e-commerce eco-system in India. It demonstrated the potential for online transactions and contributed to changing consumer's attitudes toward online purchases. This period paved the way for the growth of other e-commerce sectors, including online shopping, in the country. The concept of online shopping began with the emergence of online travel bookings. Websites like MakeMyTrip and Yatra.com gained popularity, allowing users to book flights and hotels online.

Entry of Online Marketplaces (Mid-2000s): The entry of online marketplaces in India during the mid-2000s marked a significant development in the country's e-commerce landscape. This phase was instrumental in expanding the concept of online shopping, and it widened e-commerce in India. Around the mid-2000s, online marketplaces like eBay and Amazon India (formerly Junglee) entered the Indian market. These platforms initially

focused on selling books, electronics, and lifestyle products. The marketplaces served as a bridge for Indian consumers to experience online shopping. This also played a pivotal role in familiarizing Indian consumers with the concept of online shopping and paved the way for the rapid expansion of the e-commerce industry. Over the years, it catalyzed significant changes in consumer behavior, seller dynamics, and the overall e-commerce ecosystem in India.

Early Adoption of Online Fashion (Late 2000s): The late 2000s witnessed the early adoption of online fashion in India, marking a significant phase in the evolution of the e-commerce industry in the country. During this period, several key developments and trends contributed to the growth of online fashion. Online fashion retailers like Myntra and Flipkart's fashion section gained prominence. The availability of a wide range of clothing, often at discounted prices, attracted a significant customer base. The early adoption of online fashion in the late 2000s laid the foundation for the growth of the Indian online fashion industry. Over the years, it has continued to evolve, with more players entering the market and innovations in technology, logistics, and customer engagement, making it one of the most dynamic and competitive segments of the Indian e-commerce landscape.

Shift Towards Mobile Shopping (Early 2010s): The shift towards mobile shopping in the early 2010s marked a transformative phase in the evolution of e-commerce, not just in India but globally. The proliferation of smartphones and mobile internet access led to a significant shift towards mobile shopping. The popularity of mobile apps accelerated the pace of online shopping. Mobile shopping revolutionized the way people in India shopped, making it more convenient and accessible than ever before. This trend not only changed the consumer behavior, but also drove e-commerce companies to adapt to the mobile-first approach, leading to a surge in mobile app development and mobile-focused strategies within the industry. Mobile shopping continues to be a dominant force in the e-commerce landscape in India and across the globe.

Growth of E-commerce Giants (2010s): The growth of e-commerce giants in the 2010s was a pivotal development in the Indian e-commerce landscape. Companies like Amazon and Flipkart played a central role in shaping the industry and contributed to its rapid expansion during this decade. Amazon and Flipkart became major players primarily by investing heavily in logistics, warehousing, and technology to enhance their reach and customer

experiences. The growth of e-commerce giants also had a significant impact on the retail industry, job creation, and the overall economic growth. In present times e-commerce is playing an integral role in India's retail sector.

Discount and Festival Sales (2010s): Discount and festival sales events in the 2010s further drove the growth of e-commerce in India. These sales events, often characterized by significant discounts, exclusive deals, and promotional offers, became a staple in the Indian online shopping calendar. E-commerce companies introduced large-scale sales events like "The Great Indian Festival" and "Big Billion Days," offering significant discounts and exclusive deals during festivals. These sales events played a crucial role in popularizing online shopping. The growth of discount and festival sales in the 2010s was instrumental in popularizing online shopping in India. It not only contributed to changing consumer behavior but also highlighted the potential of e-commerce in the country, leading to continuous innovation and expansion in the online retail sector. These sales events remain an integral part of the Indian shopping calendar, with similar sales events emerging in various sectors, including electronics, fashion, and groceries.

Diversification of Product Categories (2010s): The diversification of product categories in the 2010s was a key element in the evolution of e-commerce in India. E-commerce platforms expanded their offerings beyond their initial focus, which was typically electronics and fashion, to include a wide range of product categories. E-commerce platforms diversified their product offerings to include not just electronics and fashion, but also groceries, home appliances, and more. This further expanded the customer base. The diversification of product categories in the 2010s reflected the evolving preferences and demands of consumers. E-commerce platforms recognized the need to provide a wide variety of products to remain competitive and meet the diverse needs of their customer base. This expansion has continued into subsequent years, with platforms continually adding new categories and offerings.

Rise of Payment Gateways (2010s): The rise of payment gateways in the 2010s played a crucial role in shaping the e-commerce landscape in India. Digital payment gateways like Pay tm, Phone Pe, and Google Pay became popular, making online payments more accessible and secure. The rise of payment gateways in the 2010s paved the way for a cashless and digital economy in India. It transformed the way consumers and businesses

conducted financial transactions, making online shopping and e-commerce more accessible and efficient. This trend continued in the 2020s, with India becoming one of the fastest-growing digital payment markets in the world.

Expansion into Tier II and Tier III Cities (2010s): The expansion of e-commerce into Tier II and Tier III cities in India during the 2010s was a significant development in the evolution of the e-commerce industry. Tier II and Tier III cities, smaller towns and urban areas, became the focus of e-commerce companies due to several factors. E-commerce companies expanded their delivery networks to reach smaller towns and cities, tapping into previously untapped markets. The expansion into Tier II and Tier III cities was a strategic move by e-commerce companies to tap into a previously underserved and rapidly growing market. This expansion led to an increase in e-commerce adoption among consumers in smaller towns and rural areas, further bolstering the e-commerce industry in India. It also contributed to the creation of a more inclusive digital economy, connecting people from diverse geographical backgrounds to the benefits of online shopping.

COVID-19 Acceleration (2020s): The COVID-19 pandemic accelerated the growth of e-commerce in India, just as it did in many parts of the world. The pandemic and the subsequent lockdowns and social distancing measures led to significant changes in consumer behavior and further boosted the e-commerce industry. The COVID-19 pandemic accelerated the adoption of online shopping as people sought contact less purchasing options. Online grocery shopping, in particular, witnessed significant growth. The COVID-19 pandemic not only accelerated the growth of e-commerce in India but also fundamentally altered consumer habits. As more people experienced the convenience and safety of online shopping, many continued to shop online even as restrictions eased. The e-commerce industry adapted to these changing dynamics and continued to expand, making online shopping a more integral part of the retail landscape in India.

Regulatory Changes (2020s): In September 2021, several regulatory changes were either proposed or enacted in the Indian e-commerce industry during the 2020s. These regulations were introduced to address various concerns and issues related to e-commerce, including competition, data privacy, and consumer protection. The Indian government introduced new e-commerce rules and regulations aimed at ensuring fair competition and protecting consumers' interests. These regulations have had an impact on the e-commerce landscape.

It's important to stay updated with the latest regulatory changes, as the Indian government has been actively addressing various aspects of the e-commerce industry to balance consumer protection, competition, and the growth of the digital economy. The regulatory landscape for e-commerce in India is evolving, and businesses operating in this sector should remain compliant with the latest rules and guidelines.

Growth of Hyper local Delivery (2020s): The growth of hyper local delivery in the 2020s has been a significant trend in the Indian e-commerce industry. Hyper local delivery refers to the delivery of products and services from local stores and merchants to customers within a limited geographic area, often within the same city or locality. Hyper local delivery services and quick grocery delivery became popular as consumers increasingly turned to online platforms for essential goods. The growth of hyper local delivery has transformed how consumers access essential products and services, making it a convenient and efficient way to meet daily needs. This trend has led to a more dynamic and competitive e-commerce landscape in India, with various players trying to offer the best hyper local delivery experience to customers.

Sustainable and Ethical Shopping (2020s): Sustainable and ethical shopping has gained significant momentum in India during the 2020s. This trend reflects a growing awareness among consumers regarding the environmental and ethical impacts of their consumption choices. There is a growing trend of consumers seeking sustainable and ethical products, which has led to the emergence of online marketplaces and brands focusing on eco-friendly and socially responsible products. Sustainable and ethical shopping has become more than just a trend; it is a fundamental shift in consumer behavior that reflects a growing commitment to responsible and environmentally conscious consumption. This trend has led to the emergence of a wide range of eco-friendly and ethically conscious brands and products in the Indian market. It also presents opportunities for businesses to align their practices with these values and cater to the growing demand for sustainable and ethical products.

1.3 Current Scenario of Online Shopping in India

The evolution of online shopping in India continues, with ongoing advancements in technology, changes in consumer preferences, and the e-commerce industry's adaptation to

emerging trends and challenges. As more Indians gain internet access and become familiar with online shopping, the industry is expected to keep growing and diversifying. With the ongoing evolution of technology, changing consumer preferences, and a highly competitive market, the online shopping experience in India is expected to become increasingly seamless, personalized, and convenient for consumers of all backgrounds and preferences. After China and the US, and India had gained a large online shopper base of 125 million people in the last three years and by 2030, this is expected to be crossing 200 million (IBEF, 2020).

1.4 Theoretical Background

One of the most basic and widely used theories for finding determinants of behavioral intentions is Theory of Reasonable Action developed by Fishbein and Azjen (1975). Two main determinants of a person's behavior are: attitude and the subjective norm. This was followed by the theory of planned behaviour (TPB) by Azjen (1991), which is primarily an extension of the previous theory. Two factors discussed above were reconsidered along with the third new factor which is perceived control behaviour. Another major development came in 1995 by Taylor and Todd, named as Decomposed theory of planned behaviour. According to this theory attitude, subjective norm and perceived behaviour control are the crucial factors that affect behavioural intention and the actual behavior of the consumer.

Technology Acceptance Model (TAM) as the name suggests was modified version of Theory of Reasonable Action (TRA) to find out the users acceptance of information systems/technology. The major goal of this model as developed by Davis (1989) was to find out crucial factors that explain computer usage among user populations. Basic model was developed taking two constructs, viz. Perceived usefulness and Perceived Ease of use. Other than these two factors if any other variable was found to be significant affecting user behavior it was labelled as an external variable. TAM was modified by Venkatesh and David (1995), where attitude was eliminated, as it was no more considered relevant. In the year 2000 Venkatesh and Davis came up with the proposal of TAM 2. In the final version of TAM 3 experience was taken as a moderator and computer anxiety was taken as additional construct.

Wangpipatwong et al. (2008) examined the fundamental factors that affected citizen's continued intention while using e government websites. TAM has been used as a base

model and self-efficacy has been empirically tested as an additional factor influencing continued intention of the consumer. Web-based survey was employed to collect data from 614 citizens. Regression results revealed perceived usefulness and perceived ease of use enhanced citizen's continued intention to use e government websites. The findings also highlighted the indirect effect of perceived ease of use through perceived usefulness which enhanced citizen's continuance intention.

Lim et al. (2015) uncovered the relationship between subjective norm, perceived usefulness and online shopping behavior while taking the purchase intention as a mediator. Gathering data from 662 respondents and using AMOS 16.0, the researchers' highlighted that perceived usefulness significantly influenced online shopping behavior. The purpose of research by Tandon et al. (2015) was to understand and analyse the role of perceived usability and perceived usefulness influencing customer satisfaction towards online shopping in India. The scale had been extended to include satisfaction with the 'Cash-on-delivery' mode of payment, persisting in Asian countries. The findings revealed that website functionality has a significant and positive impact on perceived usability. Additionally, perceived usefulness and perceived usability have a positive impact on customer satisfaction. Results helped in validation of the new scale, viz. Cash-on-delivery.

Singh and Srivastava (2018) proposed a model with the help of existing and new variables for understanding online shopping behavior. Data collected from 344 online shoppers through self-structured questionnaire was analysed with the help of SEM-AMOS. Perceived usefulness and Perceived risk emerged as significant predictors of purchase intention of online Indian consumers. Achchuthan and Velnampy (2016) investigated the antecedents of green purchase intention among young consumers in Sri Lanka. The results support that perceived consumer effectiveness had a positive influence on green purchase intention.

With the passage of time, research shifted to use of new technologies in e-commerce Kasilingam (2020) tried to find out, whether consumers use chat bots while doing shopping through smart phones. Taking Technology Acceptance Model (TAM) and Diffusion of Innovation (DOI) as base theories, and applying Partial Least Square Structural Equation modeling (PLS-SEM) on data collected from 350 respondents, the results supported that

perceived usefulness, perceived ease of use, perceived enjoyment, price consciousness, perceived risk and personal innovativeness affected the attitude towards chatbots in a significant way.

Ashfaq et al. (2020) integrated Expectation Confirmation theory (ECM), Information system success (ISS) model, TAM, and the need for interaction with a service employee (NFI-SE) and proposed a model to investigate the drivers of use of chatbots towards user satisfaction and continued intention. Empirical evidence reflected that information quality and service quality were the significant drivers of customer satisfaction, while perceived enjoyment, perceived usefulness and perceived ease of use substantially improved continued intention of the consumers. Online shopping has gained momentum in the digital world, and triggered researchers across the globe to analyse the impact of diverse drivers of online shopping on consumers' Behavioral Intention (BI). People from developing economies, like India are fascinated by the new trend, and marketers of online shopping want to target this wider population to enlarge their imprint. A rise in e-commerce has induced retailers to adopt different retail strategies to survive.

Table 1.1: Related Theories of online shopping

Supportive literature	Key constructs	Theory
Fishbein and Ajzen (1975)	Affect, anxiety	Theory of reasoned action
Bandura (1986)	Behavioral intention, attitude, and subjective norm	Social Cognitive Theory
Ajzen (1991)	Behavioral intention, attitude, subjective norm, and perceived behavioral control	Theory of Planned Behavior
Davis (1989)	Perceived usefulness and perceived ease-of-use	Technology acceptance model
Thompson et al. (1991)	Job-fit, complexity, long-term consequences, affect towards use, social factors and facilitating conditions	The model of PC utilization
Davis et al. (1992)	Extrinsic motivation and intrinsic motivation	The motivation model
Venkatesh and Davis (2000)	Social influence and cognitive instrumental process	Extended TAM2 model
Venkatesh et al. (2003)	Performance expectancy, effort expectancy, social influence and facilitating conditions	Unified theory of acceptance and use of technology
Venkatesh et al. (2012)	Performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value and habit	Unified theory of acceptance and use of technology 2
Spence (1973)	Trust, purchase Intentions	Signalling Theory
Blumler and Katz (1974)	Intentional use of media consumption; social and psychological needs	Uses and Gratification Theory
Westaby (2005)	Consumer's attitude, behaviour and continued intentions	Behavioural Reasoning Theory
Oliver (1977;1980)	Perceived performance. disconfirmation of beliefs. Satisfaction	Expectation confirmation theory
Deci and Ryan (1985)	Autonomy, Competence, and Relatedness	Self-Determination Theory

Earlier research reflected diversity and difference among the researchers, as to which constructs should be considered while analysing technology acceptance by the users in different fields. Initially the researchers' used Unified theory of acceptance and use of technology (UTAUT) model proposed by Venkatesh et al. (2003) with performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), and user behavior (UB) as major constructs. In the augmented model, UTAUT2, Venkatesh et al. (2012) added hedonic motivation (HM), price value (PV), and habit (H). This model has been used as a base model in the current study, with some additional constructs, viz., Technology interface (TI) drivers (Chatbots and Virtual try-on) and Digital payment mode (DPM) drivers.

Table 1.2: Variables and their sources

Variable	Definition	Source
Performance Expectancy	Performance expectancy (PE) is the degree to which an individual believes that using the system will help him or her to attain gains in job performance.	Venkatesh et al., 2003
Effort Expectancy	Effort expectancy (EE) is the degree of ease associated with the use of the system.	Venkatesh et al., 2003
Social Influence	Social influence (SI) is the degree to which an individual perceives that important others believe he or she should use the new system.	Venkatesh et al., 2003
Facilitating Conditions	Facilitating conditions (FC) is the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system.	Venkatesh et al., 2003
Hedonic Motivation	Hedonic motivation (HM) is the fun or pleasure derived from using a technology.	Venkatesh et al. 2012
Habit	Habit (HAB) is the extent to which people tend to perform behaviour automatically because of learning.	Venkatesh et al. 2012
Price Value	Price value (PV) is the consumers' cognitive trade-off between the perceived benefits of the applications and the monetary cost for using them.	Venkatesh et al. (2012)

Although there is a wide literature on online shopping, yet limited literature is available examining online shopping in the context of Demonetisation. Has Demonetisation in India been responsible for swift shift towards online shopping is an important question demanding immediate attention. Mehta et al. (2016), asserted that despite the emergence of digital currency, cash still predominates in many economies, including India. Rani (2016) criticized Demonetisation considering it as an adverse situation; however, she mentioned that it helped consumers shift towards a cashless economy, e.g., Pay tm, internet banking, etc. Kalyani (2016) also corroborated the transition to digital mode after Demonetisation in India. Government of India encouraged using digital options for payments (Economic survey, 2017). As endorsed by Salim, et al. (2010), technical efficiency of the country is highly influenced by the government initiatives. Thus Demonetisation, in India has assisted digitization, however, the real challenge still according to Antoniou and Ansoff (2007) is technology adoption among all age groups. Youth is leveraged for the promotion of digital

literacy (Mahajan and Singla 2017). Demonetisation by the Indian government in 2016 and further reforms in internet banking services are positive steps to advance online consumerism. This was further supported by Banerjee and Sayyed (2017), who also advocated that the Indian economy was moving strongly towards being a cashless economy. However, there is still insufficient research covering this important dimension.

The World Bank statistics for India highlight that 22.2% GDP emerges from the shadow economy as against 12.7% by China and 11% by Japan (Shetty and Rajakumar, 2016). Hence, in India the demonetisation move was undertaken by the government, to wage a war against corruption. There is research paper focusing on the level of success of this move, however, what is surprising is that it has initiated various researchers to examine whether this move has facilitated a shift to digital payments, and across the globe digital payments are taken to advance online shopping.

Against this backdrop, the current study adds value by adding DPM drivers as a new construct in UTAUT2. This becomes important in view of researchers like (Muthumani et al. 2017) indicating how user-supportive payment mechanisms like cash on deliveries return and exchange facilities encourage consumers to shop online. Tandon et al. (2019) introduced pay in Delivery (POD), however in the current study; we are including DPM drivers because of its increased relevance today. Affectionate reaction of the people towards any new technology is also the significant area of study. For understanding the pragmatics drivers of Online Shopping with BI, a lot of researchers have been fascinated and are keenly working to get a deeper knowledge of this emerging area. Thus, the current study pioneers consolidating the drivers of online shopping through the lens of extended UTUAT2. Although widely appearing in practices, these issues to the best of my knowledge have not received enough attention in academia.

1.5 Rationale of the Study

Catching up e-commerce pace may be difficult, but additional literature and new models may assist in better understanding, the factors that influence behavioral intentions of online shoppers. Though UTAUT2 through its wide applicability in diverse fields, has helped us to explore the factors that influence Behavioral Intention, but to date, we have not been able to trace research validating critical drivers influencing consumers' decisions while interacting with new technology (Chu et al. 2022). Chatbots and virtual try-on technology are distinct domains of business research signifying the era of digital transformation.

The field of chatbots is novel and complex, so most of the research has employed mature theories like UTAUT2 (Balan 2023). As highlighted by Antoniou and Ansoff (2004), technology adoption by all age groups is a big challenge in developing countries. Regarding new technology, the most pertinent point to ponder is the affective reaction of the consumers towards technology. Previously, anxiety was considered a latent variable having a direct impact on the antecedents of BI (Celik, 2016). Widespread use of digital technologies, especially mobile devices, Digital payment mode (DPM) drivers (Gupta *et al.* 2022) and (Technology interface) TI drivers have become essential to achieve business success (Gupta *et al.* 2023). See To et al. (2014) emphasized that prepaid e-cash, debit cards, and credit cards expedited online transactions. The Indian government has also initiated various steps for easy access and use of financial services. Limited research on linking DPM drivers with BI in online shopping induced us to examine this more deeply.

1.6 Key objectives of the Study

The major objectives of the present study are:

O1: To analyse the major drivers of online shopping.

O2: To analyse the preferred mode of payment for buying online after demonetisation.

O3: To design a model relating drivers of online shopping and digital payment mode drivers with Behaviour Intention.

1.7 Organization of the Thesis

The thesis consists of five chapters namely: 1) Introduction; 2) Review of Literature and Hypotheses Development; 3) Research Design and Methods; 4) Results and Discussion; and 5) Conclusion, Implications and Limitations of the Study.

Chapter I: Introduction This chapter embodies a concise introduction to the background of this research work and thereby highlights the research problem. The chapter throws light on recent trends of online shopping in India. It also presents the need for the study and focuses on the objectives of the study.

Chapter 2: Review of Literature This chapter reviews pertinent literature from various sources in order to comprehend various concepts of online shopping, research findings related to demonetisation in India, online shopping and consumer behavior, drivers of online shopping, dimensions of digital payment mode and the determinants of behavioral intention. The review of literature assists to provide a direction to the research on the basis of the theoretical framework of various studies covered for comparison and deeper learning.

Chapter 3: Research Design and Methods The next chapter present chapter discusses the research design and methods applied for achieving the objectives. In this chapter, objectives of the research have been chalked out clearly along with formulation of hypothesis. It mainly focuses on the research design, sampling design, sources of data collection, details of questionnaire, reliability and validity test and also defines the research methods used to prove the hypotheses of the study. The conceptual model of the research has also been a part of this chapter.

Chapter 4: Results and Discussion The present chapter emphasizes on the findings from data analysis. The chapter also covers interpretation of responses to questions collected through questionnaire directed to various online customers. The chapter starts with the demographic analysis of the respondents and characteristics of respondents followed. PLS-SEM has been employed to find drivers of online shopping and their impact on behavioral intention of the consumers.

Chapter 5: Conclusion The last chapter covers discussion and discusses the implications of the findings to the practitioners, academicians and policy makers. Each research objective is revisited and discussed. The limitations of the study and directions for future research form an integral part of this chapter.

1.8 Concluding Remarks

The current chapter focuses on the overview, covering development and evolution of online shopping in India. The chapter also emphasizes the importance of developing a model that not only serves as a valuable guide for managing retail online shopping but also provides assistance to young entrepreneurs who aspire to enter into e commerce sector. The next chapter is dedicated to a comprehensive review of literature along with the development of hypotheses.

CHAPTER 2

REVIEW OF LITERATURE AND HYPOTHESES DEVELOPMENT

The review of the available literature is one of the most important elements of any research project. Review of literature is the most significant aspect of the research in the sense it helps in finding research gaps and finding statement of the problem. The previous findings help in identifying the scope for further research. Thus, it becomes a strong foundation for an investigation related to the chosen topic and facilitates theory building.

This chapter reviews the extant literature leading to the development of the research hypotheses and the research model. The present chapter particularly reviews the available literature on drivers of online shopping. Section 2.2 focuses on analysing consumer behaviour towards online shopping in the context of demonetisation in India. In view of Demonetisation in India literature supports major impact on online shopping through digital payments. This, this study includes Digital Payment mode (DPM) is added as a new driver of online shopping. Section 2.3 covers the major drivers of online shopping. These cover: UTUAT2 Drivers of online shopping; Technology Interface (TI) drivers of online shopping and Digital Payment mode (DPM) drivers of online shopping.

2.1: Online shopping: Global and Indian Scenario

The past two decades have changed the way of online shopping has been done. Spread of Internet, fast emerging Technology interface; online payment mechanism and modes, along with economic changes like liberalised and globalised scenario along with demonetisation, all have left their imprint on online shopping. These may also be considered when we are examining the online shopping journey of India. Online shopping is gaining momentum across the globe now, inducing researchers to analyse various aspects related to online shopping. Universally the use of the Internet has significantly enhanced over the past few decades, calling for a better understanding of online shopping adoption across countries. Developing economies like India are now more eager to adopt online shopping, as analysed through various models of technology adoption (Tandon et al. 2018). Following China and US, India has a large online shopper base of 140 million in 2020 (IBEF, 2020). By 2030 online shopping market is expected to reach US\$ 350 billion. Consumers prefer to shop

online, as it conserves time, is convenient; assists in diminishing travel time and above all facilitates price comparisons. Conversely as concluded by Daroch, Nagrath, and Gupta (2021) the factors that restrain online shopping include: fear of bank transactions; convenience of traditional shopping compared to online shopping; insecurity; insufficient product information and lack of trust.

The conclusion of study by Ramayah *et al.* (2020) shows a significant correlation between functional and emotional values and their ability to forecast online purchase intention. On the other hand, intentions to make online purchases are not predicted by social, epistemic, or conditional values. The findings of study by Ngah *et al.* (2023) showed that online retailers' intention to switch third-party logistics providers (3PLs) was negatively correlated with satisfaction, and that handling conflicts had a favourable impact on satisfaction. Additionally, customer relationship management (CRM) strengthens the inverse relationship between satisfaction and switching intention, while satisfaction and CRM sequentially mediated conflict handling and switching intention. Norzieiriani *et al.* (2010) offer a broad overview of the research on how lifestyle choices affect consumers' intentions to make additional online purchases.

Researchers have been impelled to cover how online shopping has been influenced by technology adoption (Venkatesh *et al.* 2012), POD mode of payment (Tandon and Kiran 2019), trust and repurchase intention (Tandon *et al.* 2021; Uzir *et al.* 2021). There were diverse results due to slow internet adoption and penetration, preference for physical shopping and cultural differences being still prevalent in developing economies. Several theoretical models have been used intensely by several researchers to understand the user acceptance behavior of online shoppers.

2.2 Consumer behaviour towards online shopping in context of Demonetisation

Rao *et al.* (2016) provided insight into sectors anticipated to undergo significant impact, specifically agriculture, automobiles, and construction. In a separate study, Rajakumar and Shetty (2016) delved into the potential immediate and prolonged economic consequences of Demonetisation. Forecasts suggested a decline in interest rates due to a surplus of liquidity in the banking system, resulting from the public depositing high denomination notes while withdrawing limited amounts. The act of Demonetisation has unmistakably

established a backdrop for an impending economic crisis, one that is likely to affect the economy unless there is a surge in public spending.

Kaur (2016) analysed short term impact of demonetisation on Indian economy. Impact on black money and corruption, funding elections, gold silver and jewellery, fall in real estate prices, digital payments, fake currency seizing, decrease in the interest rates, lower inflation are the factors were stressed upon by Kaur (2016). This move can lead to improvement in the tax compliance, lower corruption rate and complete elimination of fake currency. Lahiri (2016) opined that it is likely that the current cash shortage may have given stimulus to the banking habits of the people of India. This needed further analysis, and thus there was need to examine how it influenced online shopping.

Tripathi (2016) discussed the challenges being faced by the rural people, which primarily included: weekly withdrawal limit of Rs. 25000/- per week and cash crunch in the banks. Furthermore, there was the problem of ignorance about frequent changes in RBI guidelines. became a big challenge for the people who had the marriage function before 31st December 2016. Further, demonetisation was a challenge for the customers of regional rural banks in the sense that that they were out of cash, Demonetisation is good, provided the financial system is well equipped and prepared for the change. Especially, chest management should be ready to crack the liquidity trap.

Banerjee and Sayyed (2017) tried to understand behavior of online shoppers in terms of mode of payment post-demonetisation. Outcomes suggest that demonetisation enabled a switch by e-commerce players to restricted cash on delivery mode of payment. Further it gave opportunity to the online retailers to re-calibrate their business models to boost cash less instruments. As an immediate effect of Demonetisation preference of people shifted from cash driven transactions to cashless ones (Kalyani 2016, Kaur 2017, Potnuru, 2017).

2.3 Drivers of online shopping

2.3.1 Drivers of UTAUT

Sun et al. (2011) tried to understand Chinese consumers continuance intention towards online social networks by proposing integrative model combining flow theory, social capital theory and UTAUT. The proposed model was empirically tested with the help of

320 Chinese online social network users. The results highlighted that perceived enjoyment, perceived usefulness, effort expectancy, social influence, usage satisfaction, tie strength, shared norms and trust positively influence continuance intention.

Dharamwiryia and Smith (2012) tried to identify the factors that influence the repurchase intention of online consumers of Indonesia. The proposed model was empirically tested and results confirmed positive influence of performance expectancy and facilitating conditions on the repurchase intention of online shoppers.

Yoo and Han (2013) applied UTAUT to capture the effect of various factors affecting employees' intention to use e learning at workplace. Data was collected from 261 employees and results depicted that attitude towards technology significantly influences employees' intention to use e learning at the workplace.

Gupta and Dogra (2017) stated that the use of mapping apps is still in its nascent stage. Data collected from 284 Indian tourists was analysed using PLS-SEM. UTAUT2 was taken as base model and the results indicated that the most significant antecedents of behavioral intentions are habit, facilitating conditions and hedonic motivation. However, it was noted that price value, social influence and facilitating conditions did not exhibit significant influence on traveler's intentions while using mapping apps.

Tandon and Kiran (2018) tried to identify factors affecting behavioral intention of online shoppers by taking UTAUT2 as the base model. Data was collected from 500 participants which was analysed through structural equation modeling. The study validates cash on delivery improves online shopping intention, security and privacy along with ease of ordering have been introduced as new constructs in the study. Results reveal that performance expectancy, effort expectancy, social influence, hedonic motivation, price value, security and privacy and ease of ordering show positive results however price value and facilitating conditions do not exhibit significant results.

Chang et al. (2019) aimed to uncover the factors that influence the behavioural intention and use behavior of the consumers while making online booking for the hotels. While taking UTAUT2 as a base model data was administered from 488 respondents through field survey. Age, gender and experience were taken as moderators. Factors assimilated from

UTAUT2 like performance expectancy, social influence, facilitating conditions, hedonic motivation, price value and habit positively influences behavioral intention.

Saumell et al. (2019) used the extended and expanded version of UTAUT2 to find out factors affecting use of mobile applications for hotel reservations. Perceived credibility was the added construct along with the original constructs of UTAUT2. Data was collected from 1200 Spanish consumers and analysed through structural equation modelling. Though all the factors were found relevant but habit, facilitating conditions and intention was found to be significantly related to use.

TABLE 2.1. Past Literature on UTAUT AND UTAUT2

Citation	Sector/Field	Dependent variable	Theoretical foundation	Drivers of UTAUT	Other variables
Guo and Barnes (2011, 2012)	Virtual world	Behavioral intention, Actual behavior	Motivation theory, transaction Cost theory, and UTAUT	Performance expectancy, Effort expectancy, and social influences	Advancement and customization
Hong et al. (2011)	Agile IS	Continued intention	Attitude, Status quo, Omission bias, IS continuance model	Social influences, and Facilitating conditions	Habit, and Perceived usefulness
Lian and Yen (2014)	Online shopping	User acceptance	Innovation resistance theory and UTAUT	Performance expectancy and Social Influence	value, Risk and Tradition
Miltgen, Popovic, and Oliveira (2013)	Biometrics	User acceptance	Technology acceptance model, diffusion of innovations and UTAUT	Social influences and Facilitating conditions	Innovativeness, compatibility trust, Privacy concern, and Perceived risk
Sun, Liu, Peng, Dong, and Barnes (2014)	Social networking	Continuance intention	Flow theory, Social capital theory, and UTAUT	Social influence and Effort expectancy	Perceived enjoyment, Perceived usefulness, Strength, Shared norms, and Trust
Wangpipatwong et al. (2008)	E-government websites	Citizen continuance intention	TAM	Perceived usefulness and Perceived ease of use	Computer self-efficacy
Yoo et al. (2012)	E-learning	Intention to use to e learning	Motivation theory and UTAUT	Effort expectancy, Attitudes, and Anxiety	Performance expectancy, social influence, and Facilitating conditions
Zhou et al. (2010)	Mobile banking	User adoption	UTAUT and Task Technology fit	performance expectancy, social influence, and	Task technology fit,

					facilitating conditions	
Li et al. (2018)	Charitable crowd-funding projects		UTAUT		performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), sense of trust	Experience expectation on donors' intention to donate
Uğur and Turan (2018)	Academic e-learning technologies	Behavioral Intention	UTAUT		Performance Expectancy. Effort Expectancy	System interactivity
Saumell et. al. (2019)	Adoption of mobile applications for restaurant searches and reservation	Users' experience	UTAUT-2.		performance expectancy, effort expectancy, facilitating conditions, hedonic motivation, habit and social influence	Price-saving orientation and perceived credibility
Jadil et. al. (2021)	m-banking	usage intention and use behavior	UTAUT		Performance expectancy. effort expectancy and facilitating conditions	Culture
Saprikiset et. al. (2022)	m-banking apps	Behavioral Intention	(UTAUT) with ICT facilitators and ICT inhibitors		social influence, reward and anxiety	Reward, security Risk, anxiety
Chang et al. (2019)	online hotel bookings	Use behavior & behavioral intention	UTAUT2		Performance expectancy, social influence, facilitating condition, hedonic motivation, price value, and habit	Facilitating condition & Hedonic motivation.

2.3.2 Digital Payment Mode as new driver of Online Shopping

Digital payment mode is a way of payment where both the seller and buyer use online mode and no physical cash is involved. The greatest advantage of digital payment mode is that it is easy to use and works on instant basis (Franciska and Sahayaselvi, 2017). In case of cash

payments, a study by Boston Consulting Group and Google in July noted that wallet users have already surpassed the number of mobile banking users and are three times the number of credit card users. These include: Banking Cards; UPI; Mobile Wallets; Banks Pre-paid Cards; Point of Sale and Internet Banking.

Digital payment mode embraces many terms, like electronic payments, e-banking, m-banking, e-cash, online banking and the list is non-exhaustive. Researchers have come up with many definitions of electronic payments considering all the relevant features. According to Abrazhevich (2004) electronic payment refers to the system where both the seller and the buyer with the help of utilisation of available infrastructures engage in any sort of financial commitment. In another view point put forth by Briggs and Brooks (2011) it is an association between banks and people to make financial transaction successful. Further, when for any type of exchange of money if internet as a medium is used, it could be termed as online payment (Ogedebe and Jacob, 2012).

Table 2.2: Type of Digital Payment System

S. No.	Type of Digital Payment System	Description
1.	Unstructured Supplementary Service Data (USSD)*99#	The Service works across all GSM Service providers and handsets
2.	Immediate Payment System (IMPS)	It is available on basic Mobile Phones, Smart Phones via the internet and at ATMs
3.	National Electronic Fund Transfer	Individuals/Organizations can Transfer Funds electronically to any account
4.	Real-Time Gross Settlement (RTGS)	Primarily meant for Large Value Transactions
5.	Prepaid Payment Instrument (PPI)	Used by Individuals/Organizations for payment of Goods/Services
6.	Unified Payment Interface (UPI)	Interconnect Banks to help Fund Transfer
7.	Mobile Banking	Access to Bank Account via App
8.	Mobile Wallets	Digital payment System via Smartphone apps.
9.	Aadhar Enabled Payment System	Complete Payment System Using Biometric Authentication
10.	Bharat interface for money	Unified Payment Interface based system using Mobile Number
11.	Credit Card/Debit Card	Card Enabled Fund Transfer

Gupta et al. (2022) has extended UTAUT2 to find out whether DPM influences decision of the consumer while making online purchase along with the initial drivers of online shopping. Data was collected from 364 people through self-structured questionnaire. Results have validated digital payment mode as a new driver of online shopping.

See to et al. (2014) emphasized the use of prepaid and debit cards long time ago. Then there was research by Kabir et al. (2015) covering review of literature from 2010-2015 on the adoption of e payments and the results highlighted that both the developing and developed nations are embracing the E payments because of efficiency and convenience in the financial transactions. Vally and Divya (2018) found out through a survey conducted on 183 consumers adopting various digital payment methods that there has been exponential growth in digital payments because of Digital India initiative followed by in 2016. Results

were analysed using chi square test and suggested that digital payments help in uplifting the economy as they bring transparency into the system. Future payment system would be indeed cashless transactions (Franciska and. Sahayaselvi,2017).

Khan et al. (2017) tried to find out the present status of online payments at a global level by conducting a survey based on secondary data available on online payments in the past. Security issues and challenges have been highlighted. Further research highlighted that people have more preference for mobile payments in comparison to debit cards and credit cards. Leong et al. (2021) by taking UTAUT2 as the base model tried to identify the factors that influence E wallet adoption among Malaysian consumers. Data was gathered was 309 people and was analysed using PLS SEM. The results indicate that the factors viz. Performance expectancy, price value, facilitating conditions and social influence substantially and positively influence intentions of consumers while using E wallets.

2.3.3 Technology Interface Drivers

Recently, various researchers have introduced and validated interactive tools like chatbots (CBs) and virtual try-on technology (VTO) [(Zhang et al. 2019), (Tandon et al. 2023)] while using UTAUT2. Given the increasing impact of technology, retailers could harness these interactive tools to gain a competitive advantage in this digitized era. Suri *et al.* (2016) found no significant relationship between student discipline and attitudes towards e-learning, sentiment towards computers, and fear of computers and technology. The study's findings also demonstrate that students across all academic disciplines support the availability of online access to lectures and e-learning resources. Zhang et al. (2019) tries to understand the role of virtual try on technology as a new technology which helps the online retailers in fostering the sales. With the integration of hedonic, utilitarian and risk perspectives the consumer's attitude towards VTO has been analysed. Results demonstrate that perceived usefulness, perceived enjoyment and perceived helpfulness affect the intention of the consumer while purchasing a garment online. Shawar and Atwell (2007) by illustrating different kinds of chatbots tried to find out different fields where they could find their application. Chat bots could be useful in different areas like education, business and e commerce in accordance with the functions they possess.

Smink et al. (2019) compared the advantages and disadvantages of online product presentation with the help of augmented reality (AR) in comparison to non-AR product

presentation and the results confirmed that AR enriches perceived informativeness and enjoyment of the consumer while doing online shopping. Tandon (2023) tried to understand the relative significance of interactive technological forces such as chatbots, virtual try on technology e-word of mouth experience on behavioral intention of consumers while doing online shopping. Both online and offline modes were considered as data was collected from 362 respondents. Results highlight e word of mouth (e-WOM) as the strongest driver affecting the attitude of the consumer followed by the chatbots and virtual try on.

2.4 Behavioral Intention and Sustained Intention

The association between behavioral intention and the factors influencing online shopping is rooted in the Theory of Planned Behavior (TPB). According to TPB, behavior is directly influenced by behavioral intention, and this intention is shaped by one's attitude. Attitude, in turn, represents the individual's feelings of favorability or unfavorability towards engaging in a specific behavior. Many studies on online shopping have considered behavioral intention as a dependent variable, exploring its relationship with various factors.

2.5 Hypotheses Development

Consumer behavior for online shopping has been captured through many models of technology adoption (Tandon et al. 2018). Due to its wide credence, this research also counts on UTAUT2 (Kwateng et al. 2018; Venkatesh et al. 2012) recommended that UTAUT2 should be applied in different settings. Earlier researchers have extended the model by adding different variables like DPM, E(WOM), attitude, and so on. Though Exploratory analysis was conducted on DPM drivers for further analysis. There was no need to conduct EFA on the drivers of UTAUT2 (Venkatesh et al. 2003; Venkatesh et al. 2012). TI drivers have already been validated as new drivers of online shopping (Zhang et al. 2019, Tandon 2023). After finding out the factors of DPM drivers, partial least squares structured equation modelling (PLS-SEM) was applied to develop the model and investigate the inter-relationships among the latent variables. The proposed study tested five hypotheses in line with the objectives of examining the possible associations between the latent and the outcome variables. Though there has been much research on the UTAUT2 drivers, there is a dearth of analysis of critical factors that have affected the e-commerce

sector in this digital area, and this study, by using DPM and TI drivers, will add more insight.

2.5.1. Drivers of UTAUT2

Technology integration has always lured researchers across the globe to devise new models to explain e-commerce. Ugur and Turan, (2018) investigated the determinants of academic e-learning technologies through the UTAUT model. These results supported that PE, EE, and system interactivity influenced BI in e-learning, too. (Jadil et al. 2021) used the UTAUT base model with meta-analysis examining 127 mobile banking studies. The results indicated that culture as a moderator influenced FC and usage intention and PE was the strongest predictor of usage intention.

Performance expectancy (PE) relates to using the system to accomplish advantages in job performance (Venkatesh et al. 2003). Perceived usefulness in TAM (Davis et al. 1989) refers to the conduciveness of users to purchase. PE has been cited and empirically examined by (Tandon et al. 2016) and is an important predictor of online shopping. BI is significantly and positively influenced by PE in online hotel bookings (Chang et al. 2019). Additionally, PE significantly influenced the use of technology in various fields, as highlighted by (Saumell et al. 2019). UTAUT was tested for Chinese consumers by Li et al. (2018), and the results confirmed that a donor's intention to donate to various projects is significantly affected by PE. Contrary to this, Sareen and Jain (2014) found no significant relationship between PE and BI.

Effort expectancy (EE) is the degree of ease associated with the use of the system. EE has appeared as the strongest factor influencing online shopping (Yaprakli et al. 2013). On the contrary, many other studies, Lian and Yen (2014), Baptista and Oliveira (2015) and Zhang et al. (2019) did not have supportive evidence of the impact of EE on BI. Social influence (SI) is the degree to which an individual perceives that others believe in the use of the new system (Venkatesh et al. 2003). Earlier literature (Yaprakli et al. 2013) highlights a direct effect of SI on BI. In UTAUT, the facilitating conditions (FC) refer to knowledge regarding shopping online. In contrast, Baptista and Oliveira (2015) reported its adverse impact on the use of technology. Hedonic motivation (HM) is associated with pleasure and excitement related to the use of technology (Venkatesh et al. 2012). According to Menon and Kahn (2002), online consumers respond quickly to promotional incentives. Price value (PV)

refers to stipulating value for money, and product availability at rational prices (Venkatesh et al. 2012). Behavioral intention is significantly and positively influenced by PV in online hotel bookings (Smink et al. 2019). When UTAUT2 was tested for Spanish consumers, Tandon, (2021) found that price-saving orientation is significantly related to the use of mobile applications for restaurant searches and reservations. BI is affirmatively influenced by habit in online hotel bookings (Chang et al. 2019). Habit is an important predictor of Behavioral Intention. Saumell et al. (2019), concluded that habit is significantly associated with the use of mobile applications for restaurant searches and reservations.

The associated hypotheses are as follows:

***H1:** UTAUT2 drivers (performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), hedonic motivation (HM), price value (PV), and habit (H)) are positively related to the Behavioral Intention of online shoppers.*

***H1a:** Performance expectancy (PE) is positively related to the Behavioral Intention of online shoppers.*

***H1b:** Effort expectancy (EE) is positively related to the Behavioral Intention of online shoppers.*

***H1c:** Social influence (SI) is positively related to the Behavioral Intention of online shoppers.*

***H1d:** Facilitating conditions (FC) are positively related to the Behavioral Intention of online shoppers.*

***H1e:** Hedonic motivation (HM) is positively related to the Behavioral Intention of online shoppers.*

***H1f:** Price value (PV) is positively related to the Behavioral Intention of online shoppers.*

***H1g:** Habit (H) is positively related to the Behavioral Intention of online shoppers.*

Next, we moved to Technology Interface drivers, presented in Section 2.5.2.

2.5.2. Technology Interface Drivers

TI results in efficient and effective online interactions between technology systems and customers. This study proposes that it is essential to understand how TI influences the BI of online consumers and further affects SI. TI covers two dimensions, chatbots and virtual try-on technology. Smink et al. (2019) examined the effect of virtual try-on (VTO) technology on brand responses and personal data disclosure. Kasilingam (2020) tried to understand the various constructs of the TAM model on attitudes toward chatbots and the intentions of mobile shoppers. Lian and Yen (2014) examined the effect of various predictors along with chatbots on the satisfaction level of users. The results reveal that in the future, chatbots will play a vital role in satisfying digital users. Results indicate that VTO does not show a significant effect on trust. Thus, there are mixed results; while studies do indicate the importance of chatbots, there is still a need to investigate this profoundly. This gains importance in view of people becoming more tech-savvy.

Chatbots

We have many assistants today like Siri and Alexa. Chatbots are frequently used today, in education and investment, for opening an investment app, or for IELTS booking. They are available 24/7. It has been empirically validated by (Danckwerts et al. 2019) that the intention to purchase can be stimulated through collaborative and interactive systems and devices. Chung et al. (2010) suggested that assistance through chatbots enriches customer satisfaction. Still, more research is needed to recognize how chatbots impact online shopping and whether chatbot conversation accelerates BI (Sampson and Chase, 2020)

Virtual Try-On Technology

Lured by Lenskart's advertisement for virtually trying on different glasses and ordering online, the customers want more such things to happen. E-retailers introduced virtual try-on technology to help online shoppers try out different combinations of dresses, cosmetics, glasses, etc. (Lin and Wang, 2016, Zhang et al. 2019). Such technology is infectious for online clothing retailing. Beck and Crie (2018), regards VTO technology to be positively associated with a customer's buying behavior and also confirmed its positive impact on perceived usefulness.

The existing literature examines the impact of UTAUT2 drivers on BI for online shoppers, but the impact of DP and TI drivers on BI has been under-researched. The increased pace of Internet penetration facilitated the adoption of digital payments in online shopping. With new technologies like CBs and VTO, there is a need to examine how TI is influencing BI.

Thus, the present study sought to understand the integrated impact of UTAUT2, DP, and TI drivers on BI. It also tried to investigate whether BI positively influences SI.

H2: Technology Interface drivers are positively related to Behavioral Intention.

H2a: Chatbots are positively related to Behavioral Intention.

H2b: Virtual try-on (VTO) is positively related to Behavioral Intention.

2.5.3. Digital Payment Drivers

Digital technologies are shaping the manner in which retailers and customers are going to transact in the future (Yen et al. 2017). Tandon et al. (2018) validated the role of the cash-on-delivery (COD) mode of payment as a construct and a new dimension to UTAUT2. The role of willingness to change in mediating the relationship between organism-representing variables and m-payment app adoption was examined by Chakraborty et al. (2023). The results of the multi-group analysis demonstrated that, social influence had a negative and non-significant impact on the adoption of mobile payments in the single group, it had a positive and significant impact on the married group. However, as technology improved, COD as a mode of payment was being replaced by other digital payment modes. DPM expedites the use of e-payment for online transactions. Moving further, DPM has been validated as a new construct of online shopping influencing BI (Gupta et al. 2022). This highlights the passion for using new payment modes. The related hypothesis is as follows:

H3: Digital Payment mode drivers are positively related to Behavioral Intention.

2.5.4. Sustained Intention

Venkatesh *et al.* (2003), the Unified Theory of Acceptance and Use of Technology (UTAUT) draws from various theoretical frameworks, including the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivational Model, the Theory of Planned Behavior (TPB), a combination of TBP/TAM, Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT). Notably, Performance Expectancy (PE) aligns with perceived usefulness in TAM, Effort Expectancy (EE) corresponds to perceived ease of use in TAM, Social Influence (SI) is akin to subjective norms in TAM 2, and Facilitating Conditions (FC) encompasses perceived behavioral control of TAM-TPB.

Researchers have extended the application of UTAUT to new contexts and diverse cultural settings such as China, Iran, and India. The earlier UTAUT model did not explicitly address the use of technology for hedonic motives (HM). Recognizing this gap, Venkatesh *et al.* (2012) introduced HM, Perceived Value (PV), and habit (HAB) into UTAUT2. These additions significantly contributed to improving the explained variance in Behavioral Intention (BI) by 56–74% and technology use by 40–52%.

According to Ajzen (1991), stronger intentions often lead to the performance of a task. A positive consumer attitude toward a product is linked to repurchase and, consequently, Sustained Intention (Pavlou and Fygenson, 2006; Tsai and Huang, 2007; Wang and Head, 2007).

H4: UTAUT2 drivers, Technology Interface drivers, and Digital Payment drivers are positively related to Behavioral Intention, which positively and significantly influences Sustained Intention.

H5: Behavioral Intention is positively related to Sustained Intention.

2.6 Chapter Summary

The studies in this chapter have investigated the drivers of online shopping, facets of digital payment drivers and studies related to behavioral intention with regard to technology interface drivers. But a comprehensive model covering all the aspects related to online shopping is missing not only Indian context but also in western context. Previous reported research on online retailers in India is dolefully scarce, as such very limited literature is available which may shed light on this phenomenon. Thus, the assimilation of extended UTAUT2, digital payment drivers as well as technology interface drivers has been integrated with the intention to derive a model applicable to developing economies. Through the present study online retailers would be able to detect the vital drivers for online shopping and online retailers can focus on those to augment their sales and customers can derive higher satisfaction.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

As e-commerce is developing at a faster pace, there is a need for further development of the existing set of literature. The current research pioneers consolidating the drivers of online shopping through the lens of extending UTAUT2 drivers with TI drivers and DPM drivers to examine their influence on BI. Consequently, it was thought to examine whether BI results in SI, as this would help in increasing consumers' links and adding a sustainability perspective to e-business. Though discussed in academic forums, they lack focus, and academic research on them is still in its infancy. Consumer behavior for online shopping has been captured through many models of technology adoption (Tandon et al. 2018). Despite the fact that there has been much research on the UTAUT2 drivers, there is still less research focusing on critical factors that have affected the e-commerce sector in this digital area. The current research by adding DPM and TI drivers, will add more insight, and this gains more importance in view of people becoming more tech-savvy. The existing literature examines the impact of UTAUT2 drivers on BI for online shoppers, but the impact of DPM and TI drivers on BI has been under-researched. The increased pace of Internet penetration facilitated the adoption of digital payments in online shopping. With new technologies like CBs and VTO, there is a need to examine how TI is influencing BI. Thus, the present study has been undertaken sought to understand the integrated impact of UTAUT2, DPM, and TI drivers on BI. It also tried to investigate whether BI positively influences SI.

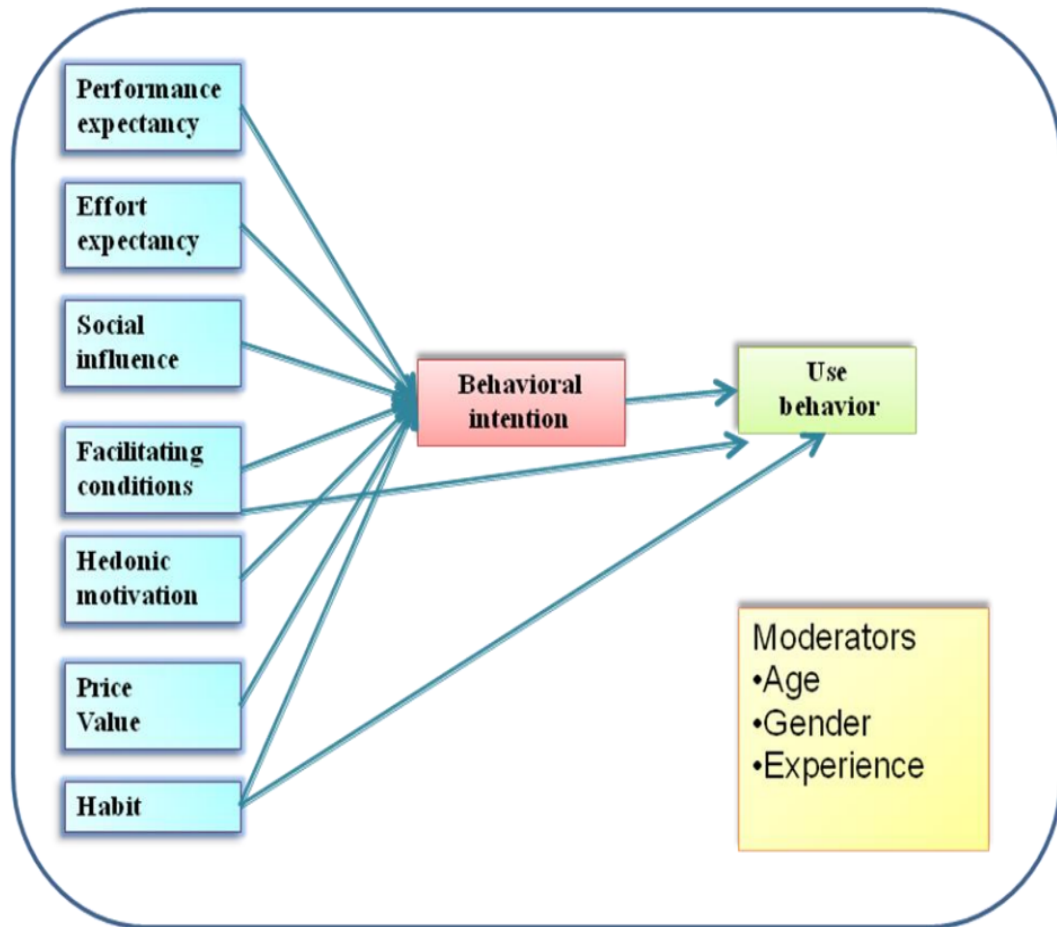
In view of this backdrop, the current chapter provides a base of the research design and methods used to achieve the results. Section 3.1 underlines the research design. The details of survey instrument have been provided in 3.1.1 and sample details in 3.1.2. Section 3.2 projects sources of data. Data collection procedure and pilot study is presented in section 3.3, Tools and Techniques used in section 3.4. This is followed by conceptual model in section 3.5; research framework in section 3.6 and chapter summary in section 3.7.

3.1 Research Design

Research design, sampling design, sources of data collection, and research methods used for data analysis are essential to realise and achieve the objectives. The present section covers these. The section also describes the details of questionnaire.

3.1.1 Survey Instrument

The study is based on primary data. This empirical study was conducted in India and used a questionnaire to collect the required data. A structured questionnaire was designed to test the proposed relationships. All the questions were closed-ended. The current study is based on collecting data through a Five-point Likert scale. Moreover, the adoption of same scale values for measuring the constructs allows for easier interpretation of the study findings (Wong & Merrilees, 2007). The use of five-point scales boosts the response rate and minimizes the respondents' frustration level (Leong et al. 2020). This exercise helped to ensure the content and face validity of the questionnaire (Jain, 2020; Kumar et al. 2021; Lim et al. 2021). The final questionnaire is presented in the Appendix 1. Base model developed by Venkatesh et al., (2012) has been given in the figure 3.1



Source: Tandon et al., (2018)

The questionnaire consists of 70 items. Many scale items for various constructs have been adapted from previous literature, but these constructs have been deepened in the light of changing circumstances. All the newly added items have been marked in italics. UTAUT2 model has also been extended with the help of new constructs to fulfil the demands of evolving digital environment in a developing nation like India.

In the beginning we have drivers of UTAUT2 model. Initial model proposed by Venkatesh et al. (2003), the UTAUT model cogitated performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), and user behavior (UB). In augmented model, UTAUT-2, Venkatesh et al. 2012, added hedonic motivation (HM), price value (PV) and habit (H). The questionnaire depicting drivers of UTAUT2 has been given in the Table 3.1. Performance Expectancy consists of 12 scale items. In this, 3 new items have been added with the help of existing literature and 9 have been adapted from standard model developed by Venkatesh et al. (2003) and further refined Venkatesh et al.

(2012). Newly added scale items are: (i) I can go in for online shopping 24*7.(ii) I can go in for online shopping from anywhere using mobile apps. (iii) Online shopping provides options to choose from multiple brands.

Effort expectancy has a total 7 scale items, which have been adapted from Tandon et al. (2017). Facilitating conditions has 4 scale items adapted from the base model. Habit also has 4 scale items. In case of social influence out of 4 scale items, item stating “Feedback/ reviews of verified customers help me in locating the right product” has been introduced for the first time. Hedonic motivation has 4 scale items. Further price value has 6 scale items, out of which 3 scale items are original in nature. (i) Free membership offered is often attractive and provide me value for money.(ii) EMI options provide me value of money.(iii) Refund policy provides me value for money. Behavioral intention has 4 scale items, which have been adapted from Tandon et al. (2015). Sustained Intention has three items, and it has been introduced as a new construct in research. Many earlier researchers’ have used Behavioral intention as the dependent variable, but we wanted to study whether, behavioral intention results in sustained intention, hence it was added. Sustained Intention has been introduced for the first time in research as a construct because in a developing country like India we are able to reach at results only if behavioral intention results in sustained intention.

Table 3.1. UTUAT-2 Scale with literature support

Serial No.	Scale Items	Source
PERFORMANCE EXPECTANCY		
1.	I find online shopping useful in my daily life.	(Venkatesh et al. 2012)
2.	Online shopping is more productive.	(Venkatesh et al. 2012)
3.	Online shopping provides wide assortment of products useful in my daily life.	(Venkatesh et al. 2003, 2012; Tandon et al. 2017)
4.	Online shopping helps me to find product information within the shortest time frame.	(Venkatesh et al. 2003, 2012; Tandon et al. 2017)
5.	While shopping on internet I can find some products that are not easily available in physical stores.	(Venkatesh et al. 2003, 2012; Tandon et al. 2017)
6.	Online shopping helps me in comparative analysis of the similar products.	(Venkatesh et al. 2003, 2012; Tandon et al. 2017)
7.	Online shopping enables me to accomplish shopping more quickly than traditional stores.	(Kang et al. 2011)
8.	Shopping online takes less time from search of products to transaction.	(Kang et al. 2011)
9.	I can go in for online shopping 24*7.	
10.	I can go in for online shopping from anywhere using mobile apps.	
11.	Online shopping provides options to choose from multiple brands.	
12.	Online shopping enables me to accomplish shopping in an effective manner.	(Venkatesh et al. 2012)
EFFORT EXPECTANCY		
1.	Learning how to use online shopping is easy for me.	(Venkatesh et al. 2012)
2.	My interaction with online shopping is clear and understandable.	(Venkatesh et al. 2012)
3.	I find online shopping easy to use.	(Venkatesh et al. 2003, 2012)
4.	It is easy for me to become skillful at using online shopping.	(Venkatesh et al. 2003, 2012)
5.	The language used by online retailers is easy to understand.	(Venkatesh et al. 2003, 2012; Tandon et al. 2017)
6.	Online shopping websites are easy to use	(Tandon et al. 2017)
7.	Information provided by online retailers help me to purchase product.	(Tandon et al. 2017)

Serial No.	Scale Items	Source
FACILITATING CONDITIONS		
1.	I have the resources necessary to use online shopping.	(Venkatesh et al. 2003, 2012)
2.	I have the knowledge necessary to use online shopping.	(Venkatesh et al. 2003, 2012)
3.	Online shopping is compatible with other technologies I use.	(Venkatesh et al. 2003, 2012)
4.	I can get help from others when I have difficulties using online shopping.	(Venkatesh et al. 2012)
HABIT		
1.	The use of online shopping has become a habit for me.	(Venkatesh et al. 2012)
2.	I am addicted to online shopping.	(Venkatesh et al. 2012)
3.	I must use online shopping.	(Venkatesh et al. 2012)
4.	After using online shopping for the first time, it has become natural to me.	(Venkatesh et al. 2012)

Serial No.	Scale Items	Source
SOCIAL INFLUENCE		
1	People who are important to me think that I should go in for online shopping.	(Venkatesh et al. 2012)
2.	People who influence my behaviour think that I should go in for online shopping.	(Venkatesh et al. 2012)
3.	People whose opinions that I value prefer that I should go in for online shopping.	(Venkatesh et al. 2012)
4.	Feedback/Reviews of verified customers help me in locating the right product.	
HEDONIC MOTIVATION		
1.	Shopping online is an exciting experience for me.	(Venkatesh et al. 2003, 2012; Tandon et al. 2017)
2.	Shopping online is fun for me.	(Venkatesh et al. 2003, 2012; Tandon et al. 2017)
3.	Shopping online is enjoyable.	(Venkatesh et al. 2003, 2012; Tandon et al. 2017)
4.	Shopping online is very entertaining.	(Tandon et al. 2017)

Serial No.	Scale Items	Source
PRICE VALUE		
1.	At the current price, online shopping provides a good value for money.	(Venkatesh et al. 2012; Tandon et al. 2017)
2.	Online products are reasonably priced.	(Venkatesh et al. 2012; Tandon et al. 2017)
3.	Online discounts and online promotions offered are often attractive which provide me value for money.	(Venkatesh et al. 2012; Tandon et al. 2017)
4.	Free membership offered is often attractive and provide me value for money.	
5.	EMI options provide me value for money.	
6.	Refund policy provides me value for money.	
BEHAVIORAL INTENTION		
1.	I am satisfied with the product range offered by online retailers.	(Tandon et al. 2015)
2.	I am satisfied with the quality of products offered online.	(Tandon et al. 2015)
3.	I am satisfied with the quality of products offered online.	(Tandon et al. 2015)
4.	Online shopping is a satisfying experience as it offers customized products at my convenience.	(Tandon et al. 2015)
SUSTAINED INTENTION		
1.	I intend to continue using online shopping in the future.	(Venkatesh et al. 2003, 2012)
2.	I will always try to use online shopping in the future.	(Venkatesh et al. 2003, 2012)
3.	I plan to continue using online shopping frequently.	(Venkatesh et al.2012)

Digital payment mode as indicated through table 3.2 is a newly developed construct, and the scale items have been extracted with the help of literature available on Demonetisation in Indian context. The research construct has been validated by (Gupta et al., 2022).It consists of 14 scale items in total.

Table 3.2 Digital Payment Mode Scale with literature support

DIGITAL PAYMENT MODE	
1.	I prefer to buy through digital mode of payment. (Tandon et al. 2017)
2.	Digital is a reliable mode of payment while shopping online. (Tandon et al. 2017)
3.	I plan to pay through digital mode of payment. (Tandon et al. 2017)
4.	Digital mode of payment gives me confidence for future purchase of products. (Tandon et al. 2017)
5.	I feel safe while using digital mode of payment in online shopping.
6.	Digital mode protects my privacy.
7.	To increase trust in digital payments cyber security systems must be strengthened.
8.	I trust that the website will not give my personal details to other websites without my permission. (Wolfenbarger and Gilly 2003)
9.	The terms used for digital mode of payment are understandable.
10.	More the surety about the product more the use of credit cards.
11.	Reducing the cost of electronic transfer would act as catalyst for digital payment.
12.	It becomes easier to make payment using Debit/Credit cards as details are already saved on the website.
13.	Authentication through OTP ensures safety while making payment through digital mode of payment.
14.	Recent Government of India directives to the banks regarding refund in case of mis-utilisation of funds motivate me to make payment through digital mode of payment.

In the last we have Technology Interface Drivers. Chatbots has 4 scale items, out of which 3 have been adapted from Taylor and Todd 1995 and one scale item “Chatbots help me to vent out negative feelings “has been freshly introduced. Further price value has 6 scale items, out of which 3 scale items are original in nature. (i) Free membership offered is often attractive and provide me value for money. (ii) EMI options provide me value of money.(iii) Refund policy provides me value for money. If we talk about Virtual Try-On, the first two scale items viz., (i)VTO engages us with pass time motive. (ii) VTO helps in mood management have been developed with the help of existing literature and other two scale

items have been adapted from Tandon et al. (2023). All the scale items of technology interface drivers are depicted in table 3.3.

Table 3.3: Technology Interface Scale with literature support

CHATBOTS		
1.	Chatbots help to vent out negative feelings	
2.	I like using chatbots for shopping.	Taylor and Todd 1995
3.	Using chatbots for shopping is a good idea.	Taylor and Todd 1995
4.	Using chatbots for shopping is a pleasant experience	Taylor and Todd 1995
VIRTUAL TRY ON		
1.	VTO engages us with passing time motive	
2.	VTO helps in mood management	
3.	VTO is important for me as it helps me to choose better products for myself	Tandon, U. 2023
4.	VTO provides sufficient and accurate information about the product	Tandon, U. 2023

3.2 Sources of data

There are two sources of data collection: Primary and Secondary. Primary data is very much fresh in nature and collected for the first time. Main source of data collection has been a questionnaire. First part of the questionnaire consisted of demographic profile of the respondents and second section comprised of scale items related to drivers of online shopping. Data for this research has been collected in two phases. During the second phase, in-person visits were undertaken to collect the required data. Additional Data Source In addition to the questionnaire survey, the study also drew upon a secondary data source, which plays a significant role in the current research. Secondary data forms a substantial component of this study. Previous studies on technological adoption models, reports on online shopping (IBEF 2020) and published research work (Economic survey 2017) has been considered in the study.

3.3 Data collection procedure and pilot study

Data were collected between the period of July 2018 to April 2020. Data were collected from 600 respondents through a survey using snowball sampling, with the link shared through email. The initial response rate was low and after a month, a second e-mail was sent to invite those who had not responded to complete the questionnaire. Another reminder to implore responses followed this. Respondents were also contacted through social media (Face book and LinkedIn). First, a pilot study was done by sending it to 50 online shoppers for checking the face validity of the questionnaire. Data were also collected from 50 academicians to check the content validity. Based on the review, some of the items were deleted and some were reframed. Further those items were retained with reliability greater than 0.7. Initially, questionnaire was sent to 800 people and they were asked to circulate further to online shoppers in their peer group. The population of this research comprised North Indian Internet-savvy online consumers. In Northern India, three states were covered, i.e., Punjab, Haryana, and Himachal.

The survey instrument was modified, and final data were collected from 600 respondents. Respondents were asked to rank the importance of each item of the construct on a 5-point Likert scale.

3.4 Tools and Techniques Used

There are two major approaches to research in any field- qualitative research and quantitative research. The two approaches have different data collection and analysis methods. Both approaches have their own merits and demerits. Researchers have to adopt an approach based on the study's objectives. Qualitative research is a type of research that produces results not arrived at by statistical techniques. To collect data, qualitative research has a wide variety of research methods such as participants' observation, case studies, focus groups and in-depth interviews. This research approach can help achieve a comprehensive understanding of different perspectives. However, the analysis of qualitative data is time-consuming and labour-intensive.

The major disadvantage of this research approach is that the results are easily affected by the researchers own biases. Quantitative research is conducted by collecting quantifiable data and analyzing them using statistical techniques. Quantitative data are collected using structured methods such as polls and surveys. These methods require researchers to use

closed-ended questions, making data analysis quite straightforward. The results achieved are unbiased and generalizable to the entire population.

3.4.1 Discriminant Validity: According to discriminant validity, theoretical constructs are distinct and their measurements don't have a strong correlation with one another (Campbell and Fiske, 1959). Fornell-Larker Criteria was used to demonstrate how the constructs are different from one another.

3.4.2 Factor Analysis: Factor analysis as a statistical tool compresses large number of variables into smaller number by removing all of their commonalities. It is also known as data reduction technique (Tucker and MacCallum, 1997). As digital payment driver is a newly introduced construct factor analysis was conducted on 14 scale items developed with the help of relevant literature. And two factors emerged viz ease of payment and perceived risk. Ease of payment has been adapted from perceived ease of use.

Numerous researchers have identified Perceived Ease of Use (PEOU) as a direct precursor to the intention to adopt mobile payment services (Venkatesh et al. 2003). Many of these studies refer to the definition provided by Davis (1989) for PEOU, which is described as "the degree to which individuals believe that utilizing a specific technology would be free of effort, encompassing both physical and mental exertion." According to Ajzen (1991), intentions serve as indicators of the level of effort individuals are willing to invest and the extent of effort they plan to exert in performing a particular behavior. Consequently, the adoption or use of digital payment systems hinges primarily on the intention to embrace or utilize these systems.

Actions are often guided by perception. "Perceived risk refers to an individual's anticipated uncertainty level linked to the outcomes of using a specific technology." This perception of risk is described by Peter and Ryan (1976) as "the anticipation of potential losses associated with a purchase, acting as a deterrent to purchasing behavior." In the words of Featherman and Pavlou (2003), "perceived risk is characterized as the potential for loss in the pursuit of the desired outcome of using an e-service." Grasping the concept of perceived risk enables online retailers to gain insights into the perspective of consumers regarding online shopping.

Research, such as that conducted by Tandon et al. (2019), underscores a robust positive correlation between perceived risk and customers' intention to make online purchases. In essence, understanding perceived risk becomes crucial for online retailers seeking to navigate the landscape of consumer behavior in the realm of online shopping.

This study is based on structural equation modeling (SEM). SEM approach is widely used for data analysis as it helps analyse relationships between multiple independent and dependent variables. There are two variants of SEM- variance-based structural equation modeling (VB-SEM) and covariance-based structural equation modeling (CB-SEM). VB-SEM is preferred over CB-SEM, for testing models with multiple latent variables (Henseler et al. 2015). Moreover, VB-SEM has fewer restrictive assumptions (Talwar et al. 2020) and higher statistical power (Hair et al. 2019) than CB-SEM. Among the VB-SEM techniques, partial least squares structural equation modeling (PLS-SEM) is being widely used by marketing researchers to test the proposed hypotheses. Variance-based PLS-SEM can easily handle both reflective and formative constructs (Hair et al. 2019; Matthews et al. 2018). Though PLS-SEM works well with small sample sizes, existing studies have demonstrated that this technique can also be used with large sample sizes (Hair et al. 2019; Lou and Yuan, 2019; Matthews et al. 2018). Thus, the use of PLS-SEM was considered appropriate for the current study.

After critically reviewing UTAUT2 model, the current research proposed a revised theoretical model that was tested using a combination of exploratory factor analysis and structural equation modeling (PLS-SEM), resulting in the current model. UTAUT2 drivers along with DPM drivers and TI drivers were considered. PLS-SEM was used due to high levels of statistical power (Klarner et al. 2013). PLS-SEM is a non-parametric procedure, and a bootstrapping procedure was used to test the significance of the loadings. The high-quality business research on chatbots is still in its early stage of development. PLS-SEM is a widely used SEM method that will be further employed in studies involving chatbots. Therefore, taking support from the previous literature, PLS-SEM has been applied to validate the impact of chatbots and virtual try-on technology on Behavioral Intention in online shopping. Since this study used the survey participants' responses, it was vital that the common method bias problem is not reflected in the results Before starting the analysis process, the data were checked for CMB, multicollinearity and normality. CMB may occur when the participant responds to questions related to both the independent and dependent

variables. The presence of CMB can adversely impact the research findings. Attempts were made to minimize the likelihood of CMB. Moreover, Harman’s single-factor test was conducted to check for CMB.

3.5 Proposed Model

In the proposed model, the drivers considered include (i) drivers of UTAUT2 (FC: facilitating conditions; H: habits; HM: hedonic motivation; EE: effort expectancy; PE: performance expectancy; PV: price value; SI: social influence), (ii) TI drivers (chatbots and virtual try-on technology), and (iii) DPM drivers (perceived risk and ease of payment). The dependent variables are (i) BI and (ii) SI.

The Conceptual model is depicted in Figure 3.2

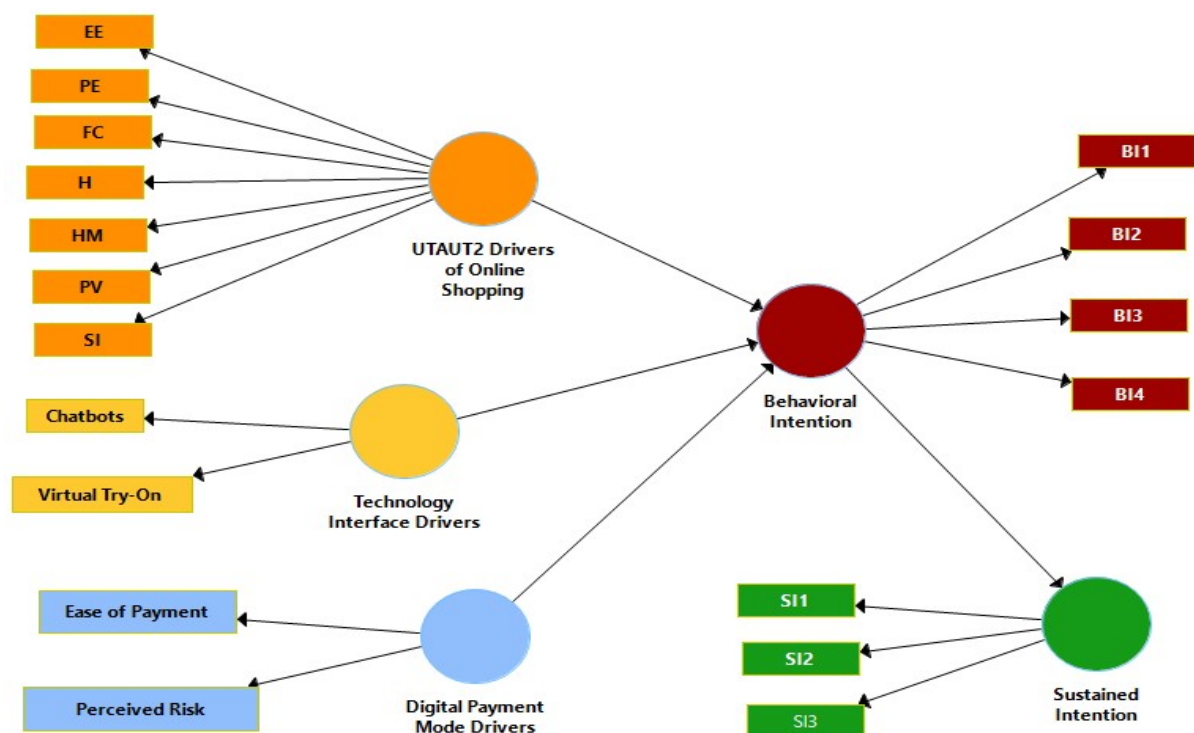


Figure 3.2: Conceptual Model

Figure 3.2 depicts the proposed model to examine the relationship of UTAUT2 drivers, Technology Interface drivers, and Digital Payment mode drivers with Behavioral Intention and Sustained Intention.

3.6 Research framework

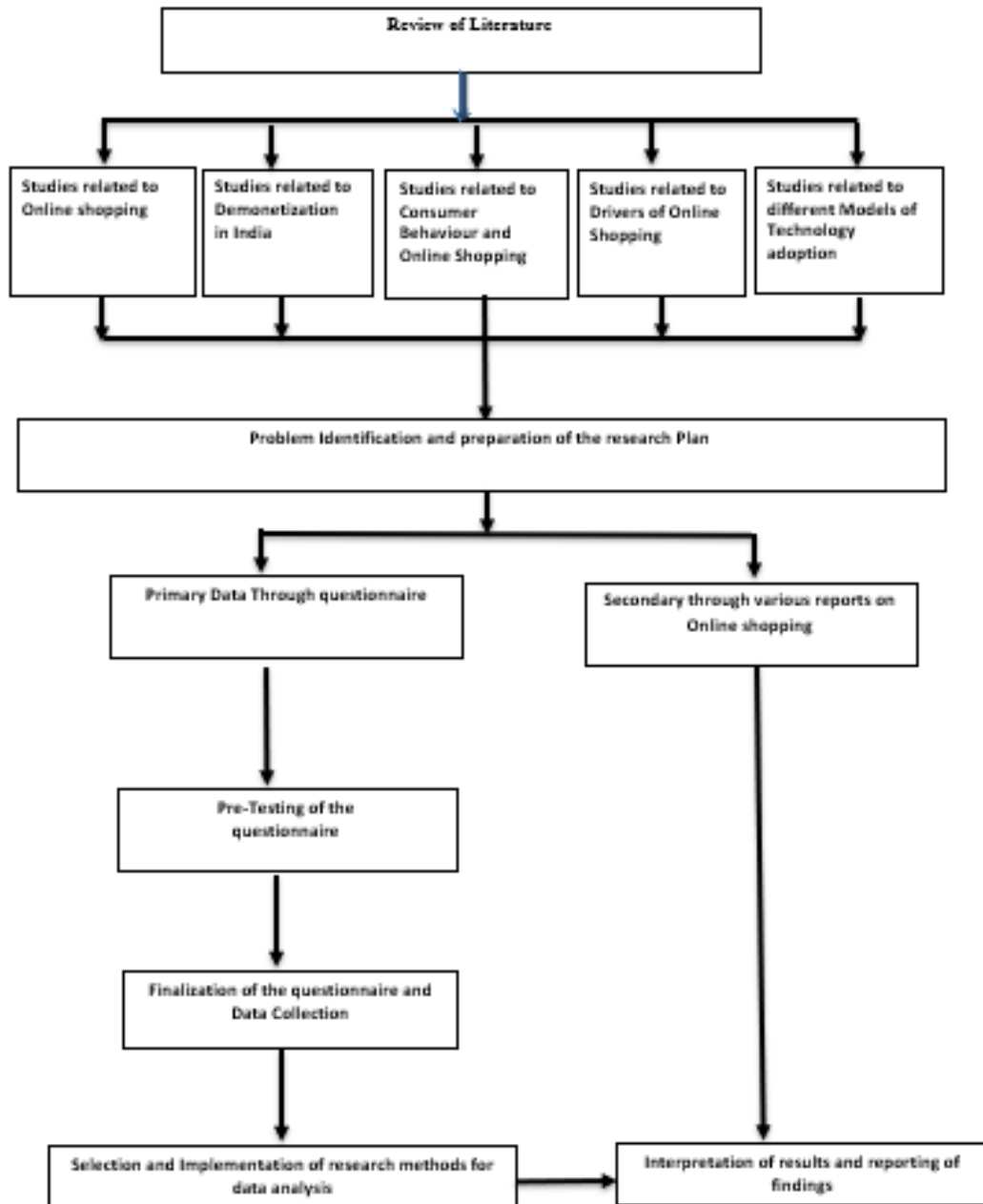


Figure 3.2: Research Framework

3.7 Chapter Summary

The third chapter discusses in detail the methodology used for conducting this research. Further, the process of data collection and analysis is explained. This chapter comprises of phases of research and explains the entire process followed to achieve the objectives of the research. The chapter portrays various tools and techniques that have been applied to test the hypotheses.

CHAPTER 4

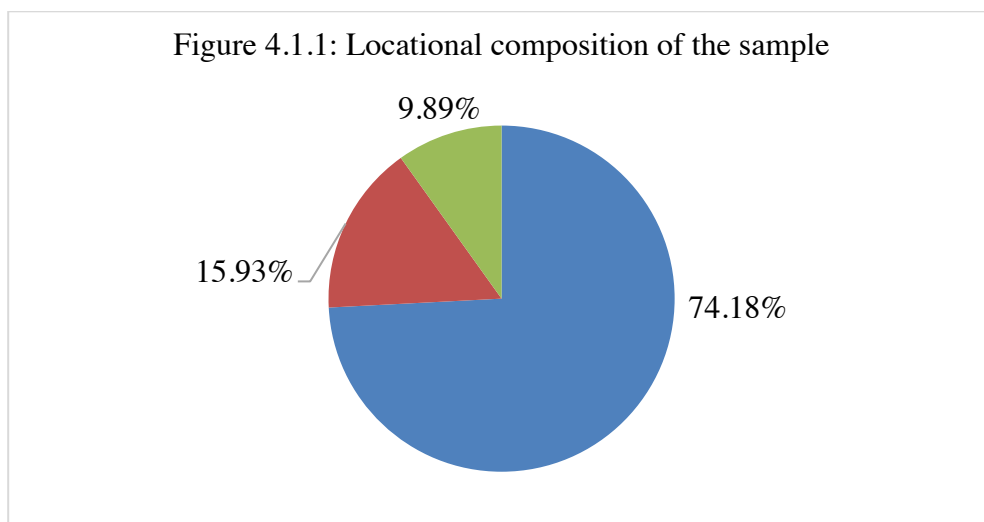
RESULTS AND DISCUSSION

This chapter presents the results and details of how objectives have been achieved. Section 4.1 presents the Demographic profile of the respondents. Section 4.2 Characteristics of sample respondents. The next section 4.3, projects the analysis of UTAUT2 drivers, digital payment mode drivers, technology interface drivers of online shopping and their impact on behavioral intention using Structural Equation Modeling (SEM).

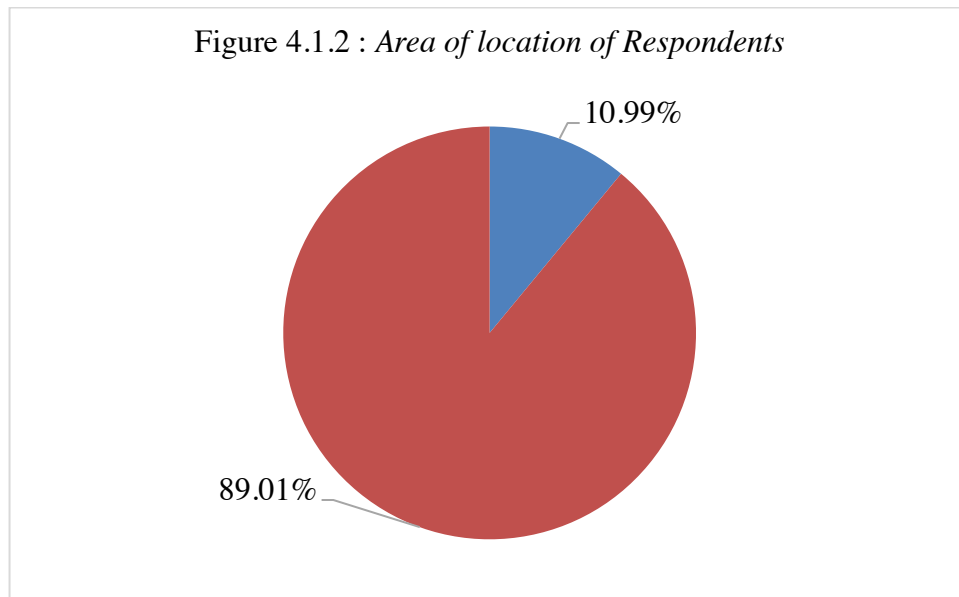
4.1 Demographic profile of the respondents

The following section covers the demographic characteristics undertaken in the present study and are explained separately.

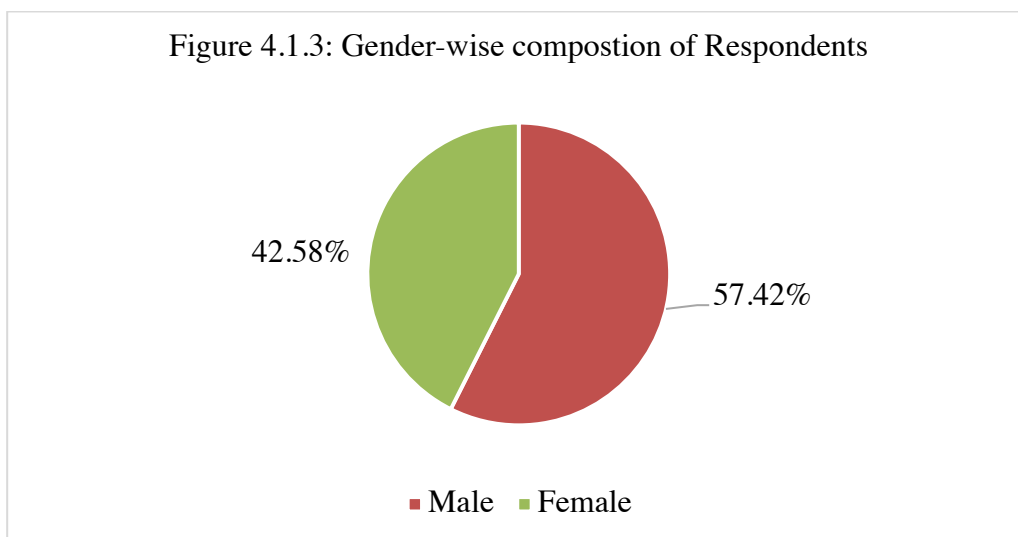
4.1.1 Location of respondents- As depicted in Figure 4.1.1, the composition of the sample was bent in favor of respondents of Punjab, constituting 74.18 % of the total sample size. Further, Haryana respondents accounted for 15.93 % of the sample



4.1.2 Area of location of Respondents- As indicated through Figure 4.1.2, the highest response rate was observed among urban population, accounting for 89.01% of the total responses. Rural population constituted only 10.99% of the total responses received.

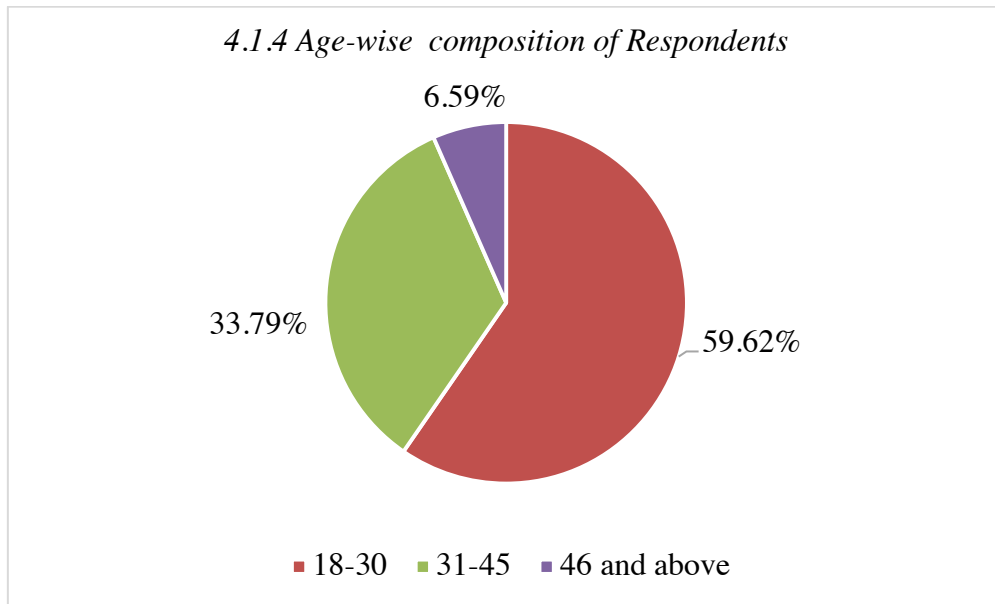


4.1.3 Gender-wise composition of Respondents - The sample was dominated by males. Gender-wise analysis as shown in Figure 4.1.3 indicates that 57.42 percent respondents were males and remaining 42.58 percent were females.

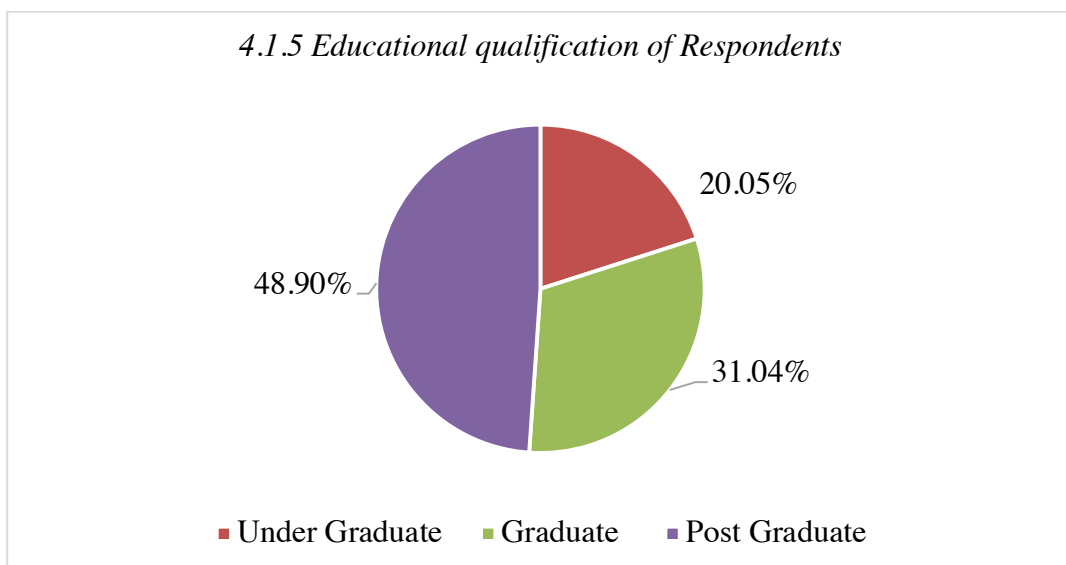


4.1.4 Age-wise composition of Respondents: Three age groups were considered for the study. As depicted through Figure 4.1.4, respondents falling in the age group of 18-30 years are 59.62 percent. This is followed by 33.79 percent of respondents in the age group of 31-

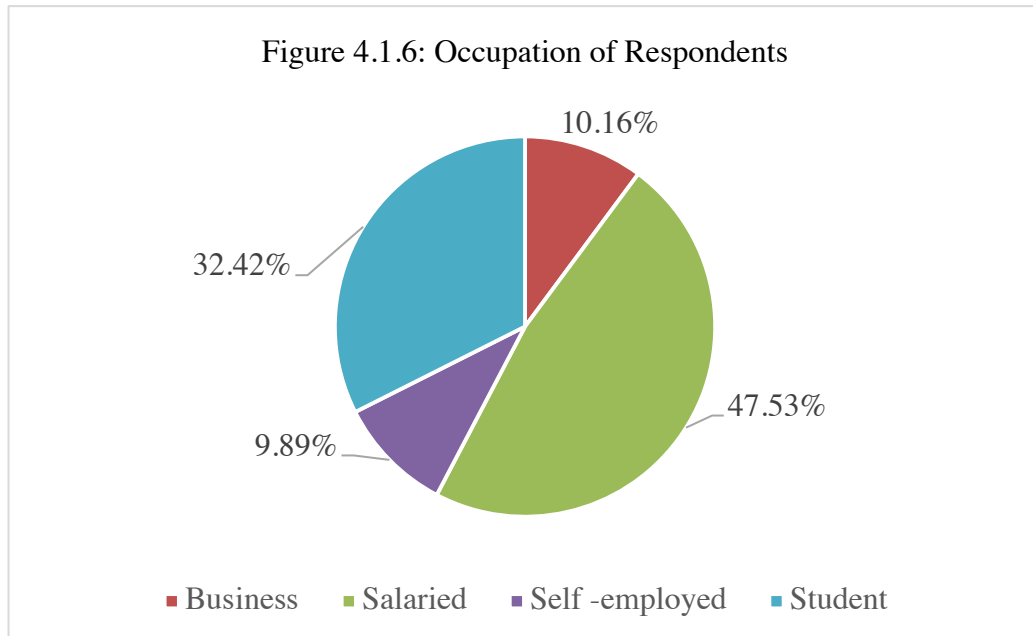
45. 6.59 percent respondents are over 45 years. The response rate from the last category i.e. over 45, is lower than the other two other categories.



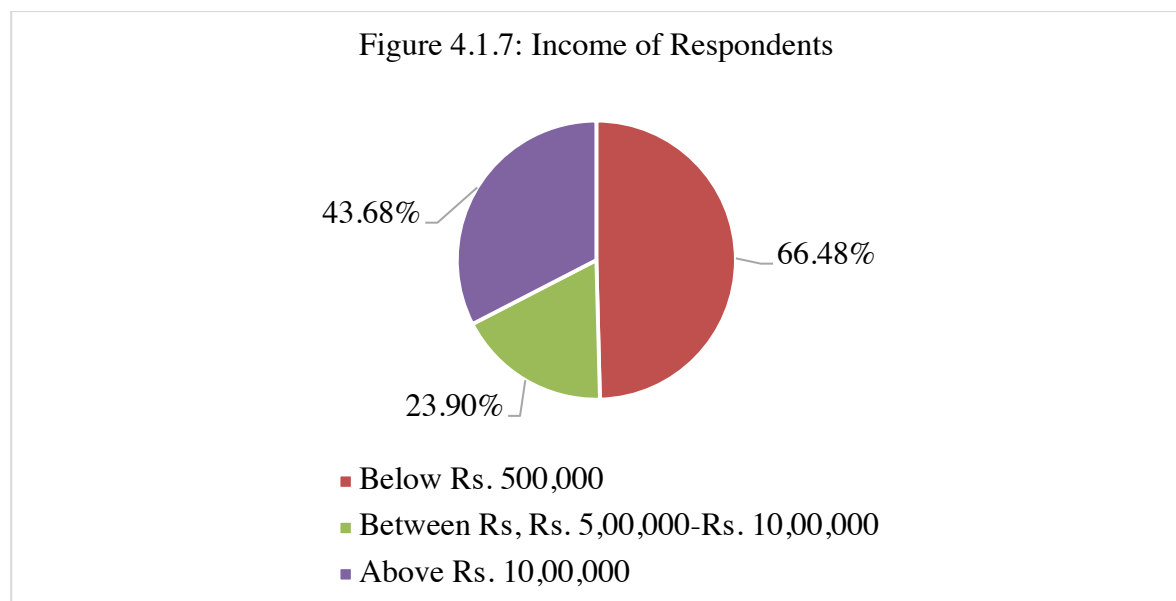
4.1.5 Educational qualification of Respondents: Three levels of education chosen for the survey were: Undergraduate, Graduate and Postgraduate. Figure 4.1.5 indicates that majority of respondents are postgraduates. This group comprises 48.90 percent of the sample followed by undergraduates with 31.04 percent of the sample followed by 20.05 percent as graduates.



4.1.6 *Occupation of Respondents:* Among the three categories, service class dominated the sample (47.53 percent) followed by students (32.42). Only a small fraction of sample i.e., 9.89 percent was self-employed



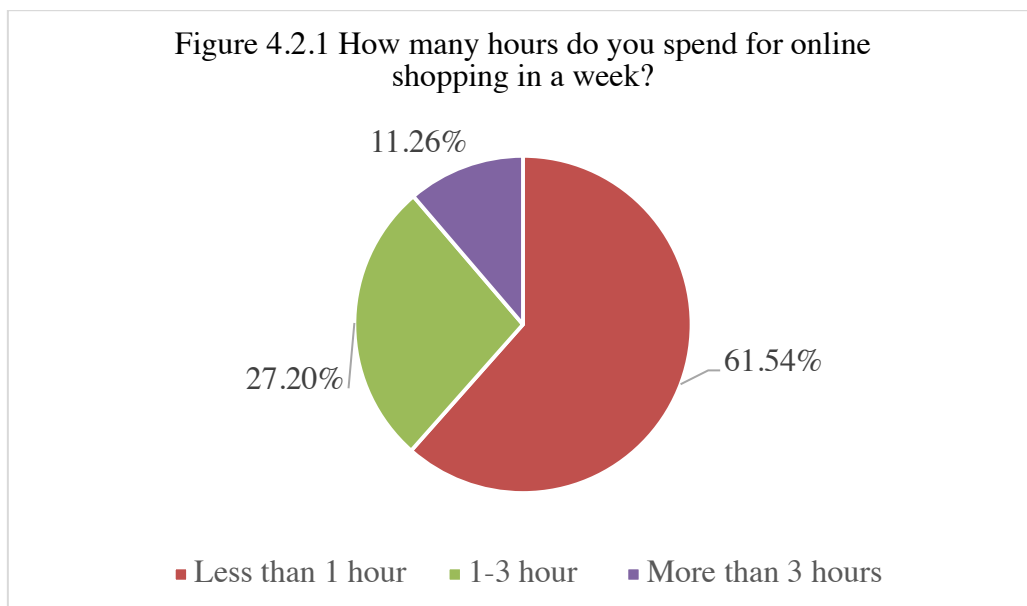
4.1.7 *Income of Respondents-* The survey encompassed four income tiers. Within the respondent pool, 66.48% reported below Rs.5000, 00, while 43.68% has income above Rs. 10,000,00 as depicted by the figure 4.1.7.



4.2 Characteristics of sample respondents:

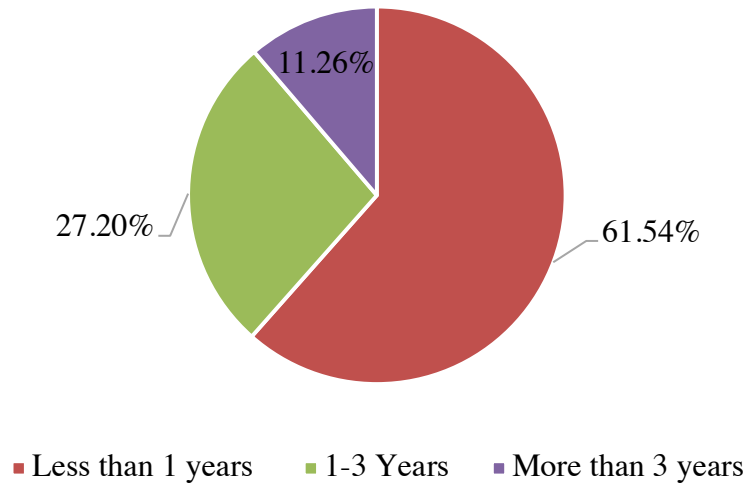
This section depicts the characteristics of respondents. These characteristics are described below separately.

4.2.1 Hours spent on internet: Figure 4.2.1 depict the number of hours spent on internet by respondents. Majority of the respondents (61.54%) devote less than 1 hour per week. This is followed by 27.2 percent respondents who spend 1-3 hours on internet.



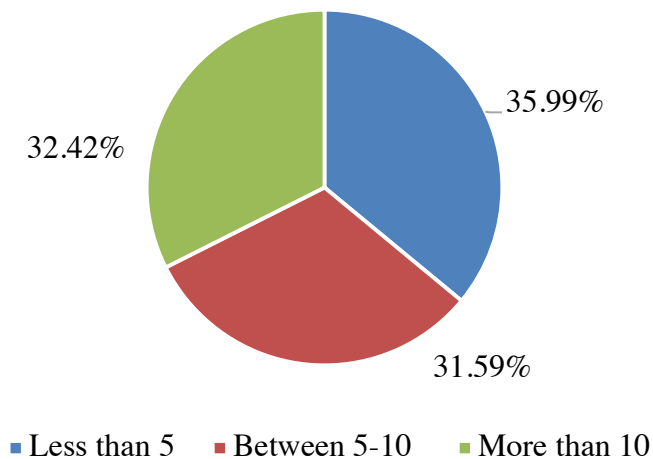
4.2.2 Years of online shopping: A significant number of respondents, 61.54 percent of the sample respondents have been shopping online from one year whereas (27.2) had adopted online shopping from 1-3 years. Only 11.26 percent of sample respondents had been shopping online from more than 3 years. This shows that people are slowly adopting online shopping as part of their routine.

Figure 4.2.2: For how long you have been shopping on internet?

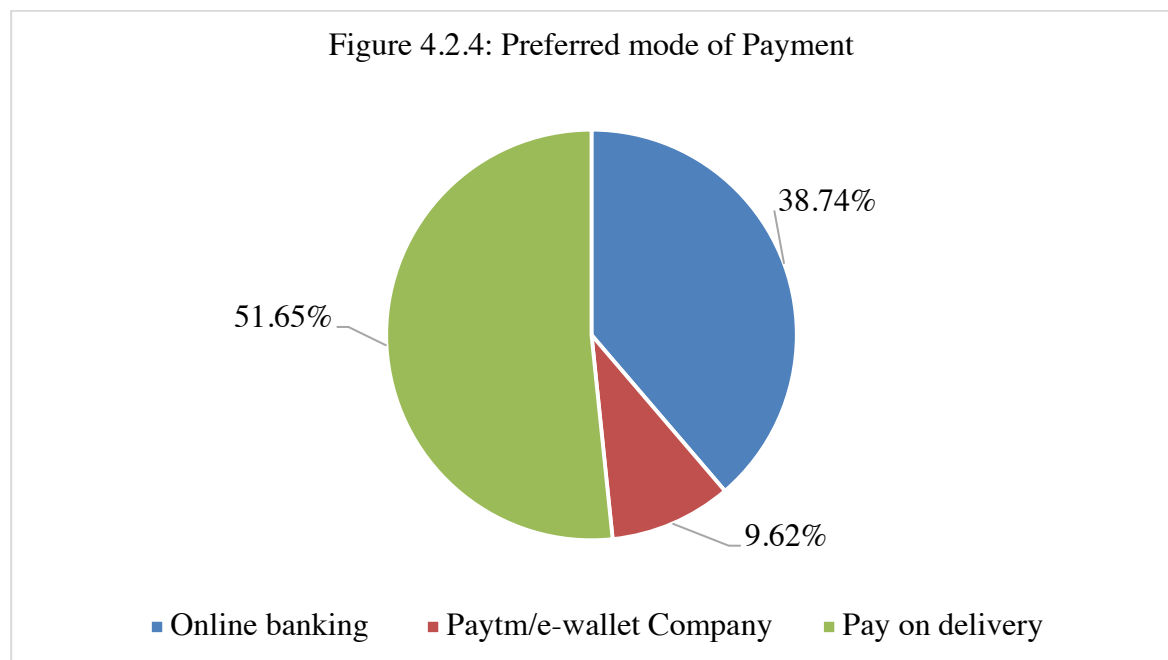


4.2.3: *Products purchased online from past six months*: Figure 4.2.3 summarizes the products purchased by the respondents. It can be inferred that 35.99 percent of respondents had purchased less than 5 products online. This was followed by 32.42 percent. These respondents had bought more than ten products online.

Figure 4.2.3 Products purchased by the respondents in last one year



4.2.4: Preferred mode of payment: Figure 4.2.4 indicates the preferred mode of payment. The results highlight that Pay on delivery is the dominant mode of payment as 51.65% aspire to pay through Pay on delivery. Pay on delivery includes both the cash on delivery and digital payment options. Other payment options like online banking (38.74%) and Paytm/e Wallet Company (9.62%) was the least preferred mode of payment. As cash on delivery was already empirically tested mode of payment, this research tried to validate digital payment mode as a new driver of online shopping.



4.3 Analysis of UTAUT2 drivers, digital payment mode drivers, technology interface drivers of online shopping and their impact on behavioral intention and sustained Intention

This section reports results of data analysed using PLS-SEM. SEM has become one of the preferred data analysis techniques among researchers. This technique helps to test complex models. The technique is very helpful when a research model has multiple independent (exogenous) and dependent (endogenous) constructs. SEM consists of several linear equations that simultaneously determine relationships among several constructs.

SEM involves two steps.

First, the measurement model is assessed to check the reliability and validity of the constructs. The objective of confirmatory factor analysis (CFA) is measurement model confirmation in PLS-SEM (Hair et al. 2020). Items/ indicators are dropped based on the outer loading values. After dropping the items/indicators, the reliability and validity of the constructs are checked. Second, the structural model is assessed to determine the influence of one construct on another. This step involves path analysis. It allows researchers to test the hypothesized relationships among constructs. The sign and magnitude of the path coefficient dictate the relationship between the two constructs. Conclusions are drawn based on the path coefficients and statistical significance of relationships.

This part of the study is a confirmatory and exploratory study as it is testing an established theory as well as building new theory by deepening the originally existing constructs and extending the model by introducing fresh constructs.

4.3.1 Exploratory factor Analysis

EFA applied for digital payment mode (DPM) drivers is presented in Table 4.3.2. In the case of DPM drivers, two factors with eigenvalues greater than 1 were extracted. The two factors extracted are (i) ease of payment and (ii) perceived risk. In the case of the first factor (ease of payment), eight statements having loading values greater than 0.50 were retained. In the case of this factor, the statement “Digital mode protects my privacy” had the highest loading value (0.857). This was followed by statements such as “I feel safe while using digital payment mode in online shopping” and “Digital payment mode gives me confidence for future purchase of products”. This factor has a high eigenvalue of 8.533 and the variance explained by this factor is 39.219%. For perceived risk, the statement “to increase trust in digital payments cyber security systems must be strengthened” had the highest loading (0.840), followed by “Authentication through OTP ensures safety while making payment through digital payment mode” (0.795). This factor has an eigenvalue of 1.046 and this factor explained 29.202% of the variance (KMO 3926.028; df:91 $p \leq 0.01$). These two sub-constructs were used for further analysis as DPM drivers.

Table 4.3.1: Factor analysis of the digital payment mode drivers

Digital Payment Drivers	Ease of Payment	Perceived Risk
MP6: Digital mode protects my privacy.	0.857	
MP5: I feel safe while using digital payment mode in online shopping.	0.833	
MP4: Digital payment mode gives me confidence for future purchases of products.	0.805	
MP2: Digital is a reliable payment mode while shopping online.	0.745	
MP3: I plan to make payment through digital payment mode.	0.741	
MP1: I prefer to buy through digital payment mode.	0.709	
MP9: The terms used for digital payment mode are understandable.	0.634	
MP8: I trust that the website will not share my personal details with others without my consent.	0.632	
Eigenvalue	8.533	
% of Variation	39.219	
MP7: To increase trust in digital payments cyber security systems must be strengthened.		0.840
MP13: Authentication through OTP ensures safety while making payment through digital payment mode		0.795
MP11: Reducing the cost of electronic transfer would act as a catalyst for digital payment.		0.762
MP14: Recent Government of India directives to the banks regarding refunds in case of mis-utilization of funds motivate me to make payments through digital payment mode.		0.627
MP12: It becomes easier to make payments using debit/credit cards as details are already saved on the website.		0.603
MP10: The more the surety about the product, the more the use of credit cards.		0.553
Eigenvalue		1.046
% of Variation		29.202
KMO and Bartlett's Test		
Kaiser–Meyer–Olkin Measure of Sampling Adequacy	0.946	
Bartlett's Test of Sphericity	Approx. Chi-Square	3926.028
Df	91	
p-value	0.000 ***	

[*** $p \leq 0.001$] Source: Authors' calculations with SPSS.

4.3.2 Confirmatory factor analysis

Exploratory Factor Analysis (EFA) consolidates inter-correlated variables into more overarching, underlying variables. Confirmatory Factor Analysis (CFA) is a statistical method employed to validate the factor structure of a set of variables. Structural Equation

Modeling (SEM) serves to elucidate the relationship between two types of variables: latent and observed/measured variables. Observed or measured variables are those directly gauged by the researcher, while latent variables, though not directly measured, are of interest to the researcher. Therefore, to observe latent variables, a conceptual model must be formulated to express them in terms of observed variables.

In the assessment of behavioral intention, the selection of drivers for online shopping and technology interface drivers was guided by prior research. The measurement model focuses exclusively on validating the proposed model. This model was outlined and tested using sample data, with all observed variables incorporated into the analysis.

4.3.3 Validation of Measurement Model

The measurement model is used to validate the research model. Before estimating the model, it becomes important to establish the validity and reliability of measurement tools used. By doing so, researchers ensure that the measures accurately captured, the constructs represented by them. To assess the measurement model evaluation, it is imperative to establish validity and reliability checks of the instrument. Content validity; Composite reliability; Convergent validity and Discriminant validity checks were carried out: The content and face validity has already been considered in section 3.3 of Research Methodology chapter.

Reliability is the main concern for questionnaire-based studies. Reliability can be described as the extent to which a measurement scale yields consistent results. To assess the reliability of measurement scales, Cronbach's alpha and composite reliability (CR) were computed for each construct. Validity can be described as the extent to which a measurement scale yields accurate results. Convergent validity was checked based on the average variance extracted (AVE) values. Discriminant validity was assessed based on the Heterotrait-Monotrait (HTMT) criterion and the Fornell-Larcker criterion. The use of the HTMT criterion to assess discriminant validity is becoming increasingly common in marketing studies. This approach is being widely used in studies adopting the PLS-SEM technique. The HTMT criterion is based on the correlation between the constructs.

Measurement model - Reliability and Validity

Table 4.3.2 portrays Cronbach's Alpha, Composite Reliability (CR), Average Variance Extracted (AVE), and Rho_A. The internal consistency of the survey instrument is in an acceptable range, as Cronbach's alpha is ≥ 0.70 (Cronbach, 1951). All constructs lie in the range of 0.735–0.875. Recommended AVE values should be ≥ 0.5 , and composite reliability (CR) ≥ 0.7 . AVE values of all constructs were ≥ 0.50 . Convergent validity was confirmed as the AVE value for each construct was above 0.5 (Hair et al. 2020). The high CR and Rho_A values reflected good overall reliability (Hamid *et al.* 2017).

Table. 4.3.2: Construct reliability.

	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
Behavioral Intention	0.875	0.877	0.915	0.728
DPM Drivers	0.749	0.751	0.889	0.800
Sustained Intention	0.781	0.814	0.872	0.696
TI Drivers	0.735	0.736	0.883	0.791
UTAUT2 Drivers of Online Shopping	0.858	0.877	0.891	0.539

Table 4.3.3 displays results regarding discriminant validity. As seen, the diagonal values depicting the sq. root of AVE on constructs are greater than the inter-construct correlation. Hence, the data are free from the problem of discriminant validity. In the Fornell-Larcker criterion, the square root of the AVE value for a construct is compared with its correlation coefficients with other constructs in the model. In a given model, the square root of a construct's AVE value should be greater than its correlation coefficients with other constructs in the model (Fornell & Larcker, 1981).

Table 4.3.3. Fornell–Larcker criteria.

	Behavioral Intention	Digital Payment Mode Drivers	Sustained Intention	Technology Interface Drivers	UTAUT2 Model Drivers of Online Shopping
Behavioral Intention	0.853				
DPM Drivers	0.681	0.894			
Sustained Intention	0.828	0.635	0.834		
TI Drivers	0.699	0.558	0.697	0.889	
UTAUT2 Drivers of Online Shopping	0.720	0.645	0.714	0.732	0.734

Discriminant validity was established for the present study as both criteria were met. Table 4.3.4 indicates that the HTMT ratio as suggested by Henseler et al., (2015), should be less than 0.85. Thus, this criterion is satisfied.

Table. 4.3.4: HTMT ratio.

	Behavioral Intention	Digital Payment Mode Drivers	Sustained Intention	Technology Interface Drivers	UTAUT2 Model Drivers of Online shopping
Behavioral Intention	0.839				
DPM Drivers	0.833	0.821			
Sustained Intention	0.870	0.752	0.812		
TI Drivers	0.887	0.787	0.845	0.818	
UTAUT2 Drivers of Online Shopping					

In the measurement model, the last aspect to check was outer and inner VIF values. As shown in Table 4.3.5, all VIF values are less than 3; thus, the data are free from multicollinearity. Hence, it was time to proceed with the structural model (Marquardt, 1970; Kennedy, 1992; Hair et al. 1995).

Table. 4.3.5: VIF values.

Outer VIF					
Constructs	VIF	Constructs	VIF	Constructs	VIF
EE	2.199	Chatbots	1.511	BI1	2.361
FC	1.863	Virtual Try-On	1.511	BI2	2.513
H	1.726	Ease of Payment	1.560	BI3	2.366
HM	1.938	Perceived Risk	1.560	BI4	2.026
PE	1.693			SI1	1.948
PV	1.972			SI2	1.867
SI	1.767			SI3	1.395
Inner VIF					
	Behavioral Intention	Digital Payment Mode Drivers	Sustained Intention	Technology Interface Drivers	UTAUT2 Drivers
Behavioral Intention		1.759	1.000		
Digital Payment Mode Drivers					
Sustained Intention		2.216			
Technology Interface Drivers		2.611			
UTAUT2 Drivers					

Table 4.3.6. Outer loadings.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))	p Values
EE ← UTAUT2 Model Drivers of Online Shopping	0.759	0.758	0.027	28.101	0.000 ***
FC ← UTAUT2 Model Drivers of Online Shopping	0.704	0.704	0.026	27.085	0.000 ***
H ← UTAUT2 Model Drivers of Online Shopping	0.660	0.660	0.030	22.369	0.000 ***
HM ← UTAUT2 Model Drivers of Online Shopping	0.805	0.805	0.015	54.210	0.000 ***
PE ← UTAUT2 Model Drivers of Online Shopping	0.726	0.726	0.022	32.503	0.000 ***
PV ← UTAUT2 Model Drivers of Online Shopping	0.806	0.806	0.020	40.046	0.000 ***
SI ← UTAUT2 Model Drivers of Online Shopping	0.664	0.664	0.031	21.082	0.000 ***
Chatbots ← Technology Interface Drivers	0.887	0.887	0.011	80.480	0.000 ***

Virtual Try-On ← Technology Interface Drivers	0.891	0.891	0.012	72.070	0.000 ***
Ease of Payment ← Digital Payment Mode Drivers	0.900	0.900	0.011	84.499	0.000 ***
Perceived Risk ← Digital Payment Mode Drivers	0.888	0.888	0.012	75.330	0.000 ***
BI1 ← Behavioral Intention	0.861	0.861	0.012	70.440	0.000 ***
BI2 ← Behavioral Intention	0.870	0.870	0.012	74.666	0.000 ***
BI3 ← Behavioral Intention	0.861	0.861	0.014	60.239	0.000 ***
BI4 ← Behavioral Intention	0.820	0.820	0.017	49.366	0.000 ***
SI1 ← Sustained Intention	0.890	0.890	0.009	100.946	0.000 ***
SI2 ← Sustained Intention	0.871	0.871	0.012	75.513	0.000 ***
SI3 ← Sustained Intention	0.733	0.732	0.029	25.091	0.000 ***

[*** $p \leq 0.001$.

4.3.4 Structural Model

The structural model estimation process follows the confirmation of the measurement model. Structural Equation Modeling (SEM) serves as a multivariate analytical tool employed to delineate relationships and assess the proposed conceptual or theoretical model. When utilizing SEM, researchers can opt for either Covariance-based SEM (CB-SEM) or Partial Least Squares SEM (PLS-SEM). In the current study, PLS-SEM is employed due to its flexibility and applicability under fewer conditions.

PLS-SEM is recognized for its robust statistical capabilities, particularly in handling intricate interactions. Unlike CB-SEM, which heavily relies on accurately approximating the observed covariance matrix, PLS-SEM uses fit to account for the explained variance in the endogenous constructs (Hair et al. 2019). This choice aligns with the specific requirements and complexities of the study, allowing for a comprehensive exploration of the relationships within the proposed model.

The first and second objectives of the study are as under:

O1: To analyse the major drivers of online shopping.

O2: To analyse the preferred mode of payment for buying online after demonetisation.

The hypotheses formulated, as reviewed in the literature, were subjected to testing and the results are illustrated in this section:

H1: UTAUT2 drivers performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), hedonic motivation (HM), price value (PV), and habit (H) are positively related to the Behavioral Intention of online shoppers.

H1a: Performance expectancy (PE) is positively related to the Behavioral Intention of online shoppers.

H1b: Effort expectancy (EE) is positively related to the Behavioral Intention of online shoppers.

H1c: Social influence (SI) is positively related to the Behavioral Intention of online shoppers.

H1d: Facilitating conditions (FC) are positively related to the Behavioral Intention of online shoppers.

H1e: Hedonic motivation (HM) is positively related to the Behavioral Intention of online shoppers.

H1f: Price value (PV) is positively related to the Behavioral Intention of online shoppers.

H1g: Habit (H) is positively related to the Behavioral Intention of online shoppers.

H2: Technology Interface drivers are positively related to Behavioral Intention.

H2a: Chatbots are positively related to Behavioral Intention.

H2b: Virtual try-on (VTO) is positively related to Behavioral Intention.

H3: Digital Payment Mode drivers are positively related to Behavioral Intention

Table 4.3.7: Path coefficients.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	p Values	F-Square
H1: UTAUT2 Model Drivers of Online Shopping → Behavioral Intention	0.465	0.467	0.043	10.735	0.000 ***	0.272 (L)
H2: Technology Interface Drivers → Behavioral Intention	0.211	0.210	0.036	5.823	0.000 ***	0.066 (S)
H3: Digital Payment Mode Drivers → Behavioral Intention	0.263	0.262	0.038	6.979	0.000 ***	0.151 (M)
H5: Behavioral Intention → Sustained Intention	0.868	0.869	0.011	76.101	0.000 ***	3.062 (L)
Indirect Effect						
H1*H5: UTAUT2 Drivers → Behavioral Intention → Sustained Intention	0.404	0.406	0.038	10.502	0.000 ***	
H2*H5: Technology Interface Drivers → Behavioral Intention → Sustained Intention	0.183	0.183	0.032	5.769	0.000 ***	
H3*H5: Digital Payment Mode Drivers → Behavioral Intention → Sustained Intention	0.229	0.228	0.033	6.942	0.000 ***	
	R Square		R Square Adjusted			
Behavioral Intention	0.695		0.693			
Sustained Intention	0.754		0.753			

[*** $p \leq 0.001$]

Table 4.3.7 underscores the significance of path coefficients and t-statistics within the inner model. Focusing on Behavioral Intention as the endogenous variable, the findings affirm that all UTAUT2 predictors are positively and significantly linked to BI. Notably, all sub constructs—EE (0.759), PE (0.726), FC (0.704), habit (0.660), HM (0.805), PV (0.806), and SI (0.664)—demonstrate significance, emphasizing their importance as UTAUT2 drivers. Among these, PE, HM, EE, and PV exhibit higher loadings. The UTAUT2 model drivers emerge as potent influencers of online shopping, with a path coefficient of 0.465 (T: 10.735 and $p \leq 0.01$). Consequently, H1, positing that UTAUT2 drivers (PE, EE, SI, FC, HM, PV, and H) positively relate to the Behavioral Intention of online shoppers, is substantiated.

Turning to Technology Interface (TI) drivers, they exhibit a path coefficient of 0.211 (T: 5.823 and $p \leq 0.01$), affirming H2 that Technology Interface drivers (chatbots and virtual try-on technology) are positively associated with Behavioral Intention. In the case of Digital Payment Mode (DPM) drivers, the association is β : 0.263 (T: 6.979 and $p \leq 0.01$). Consequently, H3, suggesting that Digital Payment Mode drivers are positively linked to Behavioral Intention, is empirically supported. The third objective of the study is:

O3: To design a model relating drivers of online shopping and Digital Payment Mode drivers with Behavioral Intention.

The hypotheses formulated, as reviewed in the literature, were subjected to testing and the results are illustrated in this section:

***H4:** UTAUT2 drivers, Technology Interface drivers, and Digital Payment Mode drivers are positively related to Behavioral Intention and Sustained Intention.*

***H5:** Behavioral Intention is positively related to Sustained Intention.*

Behavioral Intention is positively influencing Sustained Intention, with β :0.868 (T: 76.101 and $p \leq 0.01$). Thus, H5, that Behavioral Intention is positively related to Sustained Intention, has been empirically supported. Further, the indirect effect of H1*H5 is significant: UTAUT2 Drivers \rightarrow Behavioral Intention \rightarrow Sustained Intention (β : 0.404; T: 10.502 and $p \leq 0.01$). Similarly, the indirect effect of H2*H5 is significant: Technology Interface Drivers \rightarrow Behavioral Intention \rightarrow Sustained Intention (β : 0.183; T: 5.769 and $p \leq 0.01$). The results of H3*H5 are also significant: Digital Payment Mode Drivers \rightarrow Behavioral Intention \rightarrow Sustained Intention (β : 0.229; T: 6.942 and $p \leq 0.001$). As shown in the model (Figure 4.3.1 and Table 4.3.7), the R^2 value was 0.695 (Adj. R^2 0.693) for Behavioral Intention. For the association between Behavioral Intention and Sustained Intention, the R^2 value was 0.754 (Adj. R^2 0.753). Overall, the model was acceptable, and it satisfactorily fulfilled all of the parameters. The model explained 75.3% of the variation. The value of SRMR is 0.074, which is less than 0.08 as recommended. The NFI value is 0.756. Thus, the results lend support to H4: UTAUT2 drivers, Technology Interface drivers, and Digital Payment Mode drivers are positively related to Behavioral Intention, which positively and significantly influences Sustained Intention. Further, Figure 4.3.2 exhibits the bootstrapping results of the hypothesized model.

Table 4.3.8: Path coefficients and outcomes.

Hypotheses	β-Values/R^2	p-values	Status
H1: UTAUT2 Model Drivers of Online Shopping → Behavioral Intention	β -value 0.465	0.000 ***	Supported
H2: Technology Interface Drivers → Behavioral Intention	β -value 0.211	0.000 ***	Supported
H3: Digital Payment Mode Drivers → Behavioral Intention	β -value 0.263	0.000 ***	Supported
H5: Behavioral Intention → Sustained Intention	β -value 0.868	0.000 ***	Supported
H4: UTAUT2 Drivers, Technology Interface Drivers, and Digital Payment Mode Drivers are positively related to Behavioral Intention, which positively and significantly influences Sustained Intention	R^2 : 0.754		Supported
H1*H5: UTAUT2 Drivers → Behavioral Intention → Sustained Intention	β -value 0.404	0.000 ***	Supported
H2*H5: Technology Interface Drivers → Behavioral Intention → Sustained Intention	β -value 0.183	0.000 **	Supported
H3*H5: Digital Payment Mode Drivers → Behavioral Intention → Sustained Intention	β -value 0.229	0.000 ***	Supported

Note: Complied by the authors; $p \leq 0.001$ ***

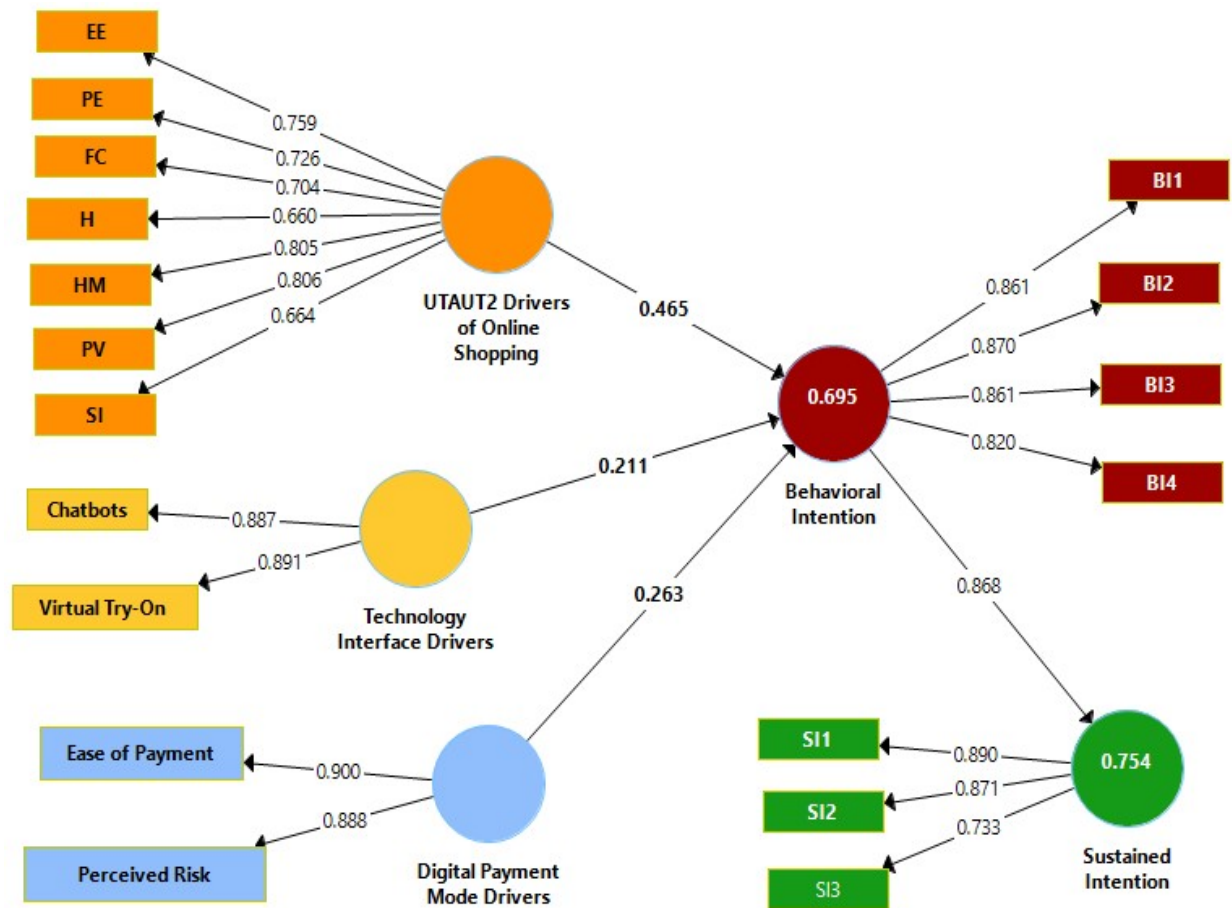


Figure 4.3.1: PLS-SEM model depicting the relationship of UTAUT2, DPM, and TI drivers with Behavioral Intention and Sustained Intention.

The study by Cohen (1987) was used to measure effect size F^2 . It highlights that if F^2 for particular predictor variables in terms of exogenous variable is ≥ 0.02 , the effect size is small; a value ≥ 0.15 is indicative of a medium effect size; and ≥ 0.35 reflects a large effect size. In Table , the effect size of UTAUT2 model drivers of Online Shopping \rightarrow Behavioral Intention is large, and that of Behavioral Intention \rightarrow Sustained Intention is also large. That of Digital Payment Mode Drivers \rightarrow Behavioral Intention is medium, and only for Technology Interface Drivers \rightarrow Behavioral Intention, the effect size is small. The results reflect that in the case of chatbots and virtual try-on adoption, we may be in the infancy stage and need to work on improving this.

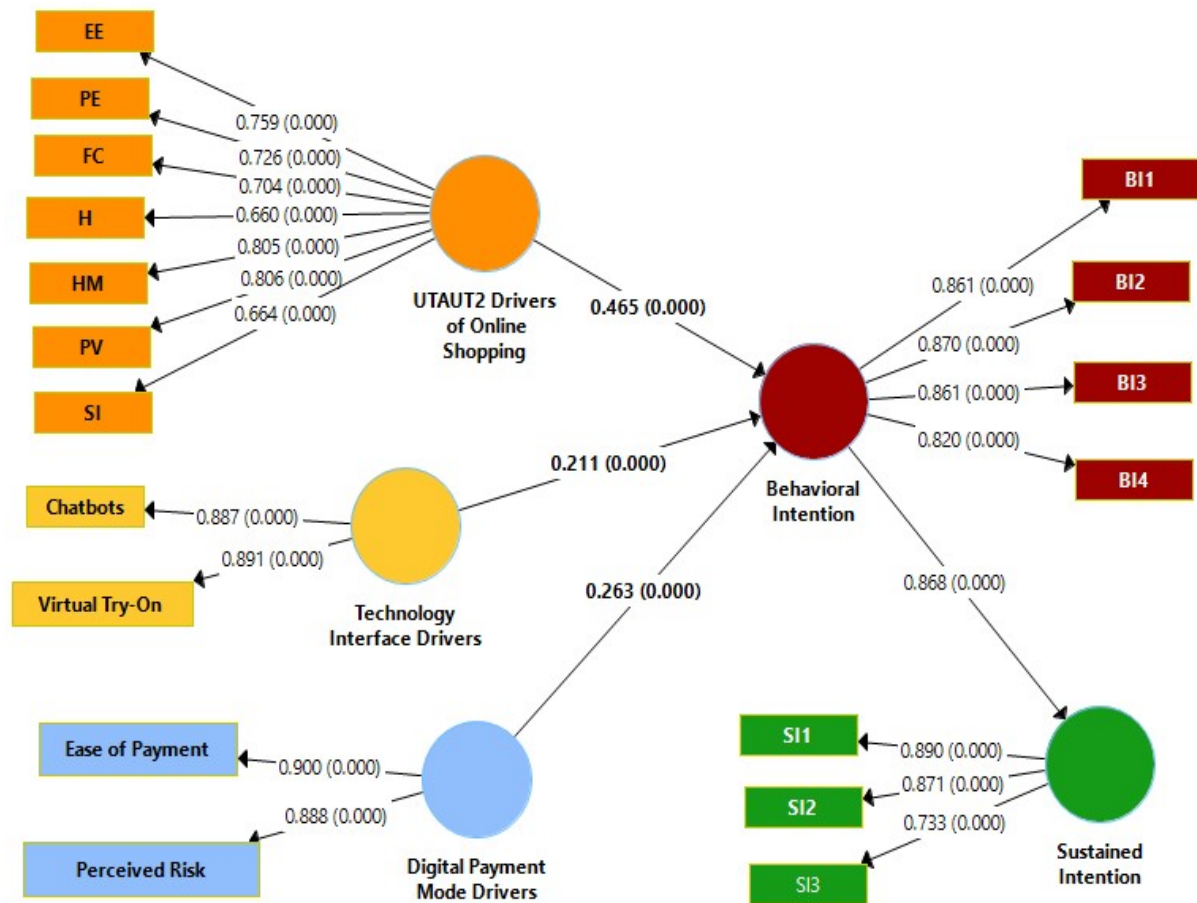


Figure 4.3.2 Bootstrapping model depicting the relationship of UTAUT2, DPM, and TI drivers with Behavioral Intention and Sustained Intention.

4.4 Discussion

Using Smart PLS to analyse the relationships, the main goal of the current study was to examine the effects of different online shopping factors on behavioral intention as well as the relationship between behavioral intention and sustained intention. The results of this study support those of Sivathanu (2018) and demonstrate that behavioral intention is positively and significantly impacted by performance expectation, facilitating conditions, hedonic motivation, and habit.

Online shopping is primarily driven by performance expectations, which are positively correlated with consumer intention according to prior research (Dharmawirya and Smith, 2012; Celik, 2016; Li et al., 2018; Tandon and Kiran, 2018). The present study confirms

the earlier literature (Menon and Kahn, 2002; Gupta and Dogra,2017; Tandon and Kiran, 2018) and the identification of Hedonic Motivation as a positive influence on online shopping. Our research supports earlier research by Sun et al., (2011) and exhibits Effort Expectancy as an important driver of online shopping.Price Value is showing significant positive influence on behavioral intention but is inconsistent with previous research studies Gupta and Dogra (2017)and Tandon and Kiran (2018).

Although Social Influence is found to positively affect Behavioural Intention, the findings are incongruent with those of previous studies conducted by Yaprakli et al. (2013), Venkatesh et al. (2012), Gupta and Dogra (2017) and Foon and Fah (2011). This disparity emphasises the complex nature of these relationships by pointing to differences in the impact of social factors on the intention to shop online.

As shown by Sareen and Jain (2014) and Yaprakali et al. (2013), the body of research continuously confirms that favourable conditions are a critical factor in the adoption of new technology. The results of this investigation support the body of established literature, demonstrating that UTAUT2 drivers do, in fact, promote behavioral intention. While there isn't much research on technology interface drivers, studies by researchers like Zhang et al. (2019), Cai et al. (2021), Chu et al. (2022), and Tandon (2023) have shown that chatbots and virtual try-on technology are emerging drivers of online shopping. These findings are consistent with the findings of the current study. The current study's findings lend additional support to the idea that chatbots and virtual try-on technology are new trends in online shopping.

The coefficient for Technology Interface drivers is comparatively lower, which indicates that these technologies are not yet at the best stage for widespread consumer adoption in the Indian context. This is a noteworthy finding. This finding suggests that Indian consumers still have space for these technologies to develop and be accepted.

Recent research has brought to light conceptual and methodological challenges associated with the approach proposed by Baron and Kenny (1986), as highlighted by Hayes (2018). Therefore, this study adopts the framework put forth by Zhao et al. (2010), which synthesizes insights from earlier mediation analysis research. The findings of the current study indicate the presence of complementary mediation, where both the indirect effect and the direct effect are positive and significant. Complementary mediation, as elucidated by Baron and Kenny (1986), refers to a scenario in which both the direct and indirect effects coexist, aligning in the same direction. In the specific context of this study, where Behavioral Intention partially mediates the relationship between UTAUT2 drivers, Digital Payment Mode drivers, and Technology Interface drivers with Sustained Intention, it is apt to characterize this phenomenon as partial mediation. Furthermore, complementary mediation represents a subtype of partial mediation, acknowledging the nuanced nature of the interplay between these variables.

CHAPTER 5

CONCLUSION, LIMITATIONS, AND IMPLICATIONS

In view of increasing demand for online shopping, understanding of consumers' needs, perceptions and the factors that influence consumers to shop online is a major challenge and is luring more and more research in this emerging area. The growing complexity of the nature of online demand in view of Emerging changes, technology interface and demonetisation in India was the main motive for undertaking the current research. This chapter presents the major findings of the study in Section 5.1, followed by Revising the objectives in section 5.2. Implications of the study are presented in section 5.3. The next section 5.4 outlines the limitations of the study and Future scope. Finally, the chapter ends with overall conclusions of the study.

5.1 Major Findings of the Study

In this section major findings of the study are highlighted:

- The proposed model investigated how different online shopping drivers affected the intention of consumers in Punjab, Haryana, and Himachal Pradesh, three northern Indian states. Drivers of UTAUT2, digital payment methods, and technology interfaces were found to be effective in influencing online shoppers' behavioral intentions and guiding them towards sustained intention.
- Antecedents of UTAUT2 were taken from the model (Venkatesh et al.2012). Though they have been empirically validated and tested in different settings and cultures, the idea was to substantially deepen various constructs of UTAUT2 to meet the requirements of this constantly evolving and technology led online shopping sector.
- As these factors have already been experientially validated by previous researchers, confirmatory factor analysis was performed on all the critical drivers as mentioned in UTAUT2. New scale items have been introduced in various drivers in the light of dynamic environment of which the online shoppers are a part of.
- The very first factor of UTAUT2 has come out to be successful driver of online shopping. Effort expectancy till date holds its position as a relevant driver of Online

shopping. Facilitating conditions has a direct and significant effect on the behavioral intention of online shoppers.

- The study has been extended by involving two new drivers in the comprehensive model undertaken in this study. These include digital payment mode drivers and the technology interface drivers. Though UTAUT2 model is not new, but a holistic model has been developed in this study to highlight the relevance of UTAUT2 drivers even when people are becoming more tech savvy and the impact of technology is overwhelmingly increasing. Digital payment mode drivers and Technology drivers along with UTAUT2 drivers has worked well and all the three drivers posit significant and positive result on the behavioral intention of online consumers.
- Further, the study identified Digital Payment mode drivers as a new antecedent of online shopping. The construct consisted of 14 scale items, which have been developed for the first-time taking help from the studies relating to demonetisation in India. As this construct has been freshly introduced in literature, it was necessary to conduct exploratory factor analysis on the same. EFA resulted in the emergence of two new factors such as: i) Ease of payment and ii) Perceived risk. Thus, the major contribution of this research is finding another critical factor of online shopping in the form of digital payment and validating it as a part of research process (Gupta et al. 2022).
- In the last technology interface emerged as a successful driver in this holistic model. There are limited studies on these constructs, such as chatbots and virtual try-on and they have long way to go in future. Scale items for both these constructs have been deepened taking-into-account the relevance of recent studies. Both chatbots and virtual try-on have emerged important sub-constructs of technology interface drivers influencing online shopping.
- Finally, in the context of developing country like India, it would be unfair to conclude the research on behavioral intention of the consumers. If we say on the basis of results of behavioral intention, we are able to reach at a conclusion, it would quite skeptical. Attempt was made to find out whether Behavioral intention further results into sustained intention. Results exhibit while analyzing the impact of various drivers of online shopping on behavioral intention leads to sustained intention. In a nutshell, major finding of the study finds its essence in the sense that drivers of UTAUT2, digital payment mode drivers and technology interface drivers

are having a positive and significant impact on behavioral intention of online consumers and will continue for a longer period of time.

5.2 Revising the objectives It is critical to understand whether the study is able to fulfil the objectives for which it was conducted.

The first and second objectives of the study are as under:

O1: To analyse the major drivers of online shopping.

The hypotheses formulated, as reviewed in the literature, were subjected to testing and the results are illustrated in this section:

H1: UTAUT2 drivers performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), hedonic motivation (HM), price value (PV), and habit (H) are positively related to the Behavioral Intention of online shoppers.

H1a: Performance expectancy (PE) is positively related to the Behavioral Intention of online shoppers.

H1b: Effort expectancy (EE) is positively related to the Behavioral Intention of online shoppers.

H1c: Social influence (SI) is positively related to the Behavioral Intention of online shoppers.

H1d: Facilitating conditions (FC) are positively related to the Behavioral Intention of online shoppers.

H1e: Hedonic motivation (HM) is positively related to the Behavioral Intention of online shoppers.

H1f: Price value (PV) is positively related to the Behavioral Intention of online shoppers.

H1g: Habit (H) is positively related to the Behavioral Intention of online shoppers.

To test the first objective extensive literature was done. While examining various studies regarding online shopping it was found that consumer orientation has changed towards online buying. UTAUT2 model was employed in various studies concerning technology

adoption and consumer behavior. All the drivers of UTAUT2 were analysed for confirmatory factor analysis and further PLS-SEM was employed for further analysis. Initial model proposed by Venkatesh et al. (2003), the UTAUT model cogitated performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), and user behavior (UB). In augmented model, UTAUT-2, Venkatesh et al. 2012, added hedonic motivation (HM), price value (PV) and habit (H). Though most of the scale items for various constructs have been adapted from previous literature, but many constructs have been deepened in the light of changing circumstances. Performance Expectancy consisted of 12 scale items. Out of these 3 new items have been added with the help of existing set of literature and 9 items have been adapted from standard model developed by Venkatesh et al., (2003) and further refined by Venkatesh et al. (2012). Newly added scale items are: (i) I can go in for online shopping 24*7. (ii) I can go in for online shopping from anywhere using mobile apps. (iii) Online shopping provides options to choose from multiple brands. Effort expectancy has total 7 scale items which have been adapted from Tandon et al. (2017). Similarly, facilitating conditions has 4 scale items adapted from the base model. Habit also has 4 scale items. In case of social influence out of 4 scale items, item stating “Feedback/ reviews of verified customers help me in locating the right product” has been introduced for the first time in the literature. Hedonic motivation also consisted of 4 scale items. Further price value has total of 6 scale items out of which 3 scale items are original in nature. (i) Free membership offered is often attractive and provide me value for money. (ii) EMI options provide me value of money. (iii) Refund policy provides me value for money. Behavioral intention consisted of 4 scale items adapted from Tandon et al. (2015). The results of the hypotheses tested for this part of research are shown through Table 5.1 it can be concluded that all the drivers of UTAUT2 are critical drivers of online shopping. In line with the UTAUT2 theory, the findings suggest that drivers of UTAUT2 have a positive impact on behavioral intention of online shoppers.

H2: Technology Interface drivers are positively related to Behavioral Intention.

H2a: Chatbots are positively related to Behavioral Intention.

H2b: Virtual try-on (VTO) is positively related to Behavioral Intention.

As understood from previous discussion, UTAUT2 drivers emerged as significant drivers of online shopping, but there is a need to understand and test what other factors have

become critical with the passage of time, where technology is overpowering every aspect of life. Technology Interface Driver are divided into two sub constructs, viz. chatbots and virtual try-on. Chatbots consisted of 4 scale items, out of which 3 have been adapted from Taylor and Todd 1995 and one scale item ‘Chatbots help me to vent out negative feelings’ has been introduced in this research. In Virtual Try On, the first two scale items viz., (i) VTO engages us with pass time motive. (ii) VTO helps in mood management. have been developed with the help of existing set of literature and other two scale items have been adapted from Tandon et al. (2023). CFA and PLS-SEM was employed to further analyse the results. Results lend support that Technology Interface Driver has a positive impact on Behavioral intention of online consumers.

O2: To analyse the preferred mode of payment for buying online after demonetisation.

H3: Digital Payment Mode drivers are positively related to Behavioral Intention

O3: To design a model relating drivers of online shopping and Digital Payment Mode drivers with Behavioral Intention.

Further, to determine the preferred mode of payment after demonetisation, substantial amount of research was undertaken on the studies regarding changes witnessed in online shopping in India in view of demonetisation. Majorly, the studies pointed towards the transition of Indian economy from cash driven economy to the cashless economy. This study thus tested and validated digital payment mode as a new driver of online shopping. The scale items have been extracted from literature available on demonetisation in the Indian context. It consists of 14 scale items. As here comes the concept of theory testing in relevance, exploratory factor analysis came in to effect and two sub-factors emerged such as perceived risk and ease of use. The research construct has been validated by the researcher (Gupta et al. 2022).

The hypotheses formulated, as reviewed in the literature, were subjected to testing and the results are illustrated in this section:

H4: *UTAUT2 drivers, Technology Interface drivers, and Digital Payment Mode drivers are positively related to Behavioral Intention and Sustained Intention.*

In this study an attempt has been made to develop a holistic model, comprising of UTAUT2 drivers, digital payment mode drivers and technology interface drivers influencing behavioral intention of the online consumers. To develop a model and evaluate the hypotheses corresponding to the aforementioned objective, Structural Equation Modeling (SEM) through Smart PLS were employed. The outcomes of the hypotheses tested for this specific segment of the study are summarized in Table 5.1. The proposed model provides an appropriate direction to online retailers in North India to have a holistic approach to online shopping.

H5: *Behavioral Intention is positively related to Sustained Intention.*

The study also is an initial study to relate behavioral intention with sustained intention in online shopping in India. The results support that Behavioral intention results in sustained intention.

Table 5.1. Status of Hypotheses

Hypotheses	β-Values/R²	p-values	Status
H1: UTAUT2 Model Drivers of Online Shopping → Behavioral Intention	β -value 0.465	0.000 ***	Supported
H2: Technology Interface Drivers → Behavioral Intention	β -value 0.211	0.000 ***	Supported
H3: Digital Payment Mode Drivers → Behavioral Intention	β -value 0.263	0.000 ***	Supported
H5: Behavioral Intention → Sustained Intention	β -value 0.868	0.000 ***	Supported
H4: UTAUT2 Drivers, Technology Interface Drivers, and Digital Payment Mode Drivers are positively related to Behavioral Intention, which positively and significantly influences Sustained Intention	R ² : 0.754		Supported
H1*H5: UTAUT2 Drivers → Behavioral Intention → Sustained Intention	β -value 0.404	0.000 ***	Supported
H2*H5: Technology Interface Drivers → Behavioral Intention → Sustained Intention	β -value 0.183	0.000 **	Supported
H3*H5: Digital Payment Mode Drivers → Behavioral Intention → Sustained Intention	β -value 0.229	0.000 ***	Supported

Note: Complied by the authors; $p \leq 0.001$ ***

5.3 Implications of the Study

The implications cover both Theoretical Implications and Managerial Implications.

5.3.1 Theoretical Implications

The theoretical implications of research demonstrating positive relationships between UTAUT2 drivers-Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), Hedonic Motivation (HM), Price Value (PV), and Habit (H)) and Behavioral Intention of online shoppers are profound and contribute to the advancement of various theoretical frameworks:

UTAUT2 Validity and Robustness:

The findings affirm the validity and robustness of the UTAUT2 model in the context of online shopping. The positive relationships underscore that the UTAUT2 framework effectively captures the essential factors influencing users' behavioral intentions in the online shopping domain.

Integrated understanding of Technology Acceptance:

The research contributes to a more integrated understanding of technology acceptance by demonstrating the simultaneous impact of multiple UTAUT2 drivers. This holistic perspective enriches theoretical frameworks related to technology adoption and usage.

Social Context and Collective Decision-Making:

Social Influence (SI) being positively related to Behavioral Intention reinforces the importance of social context in technology adoption. The theoretical implication is an acknowledgment of the collective decision-making process, emphasizing the role of social networks and group dynamics.

Incorporation of Emotional and Enjoyment Factors:

The positive relationship between Hedonic Motivation (HM) and Behavioral Intention extends theoretical understanding by incorporating emotional and enjoyment factors into the technology acceptance model. This highlights the significance of considering users' hedonic experiences in theoretical frameworks.

Contextual Relevance of Facilitating Conditions:

The positive relationship between Facilitating Conditions (FC) and Behavioral Intention emphasizes the contextual relevance of environmental and technological support. Theoretical frameworks can benefit from recognizing the dynamic interplay between user perceptions and external conditions.

Value Perception and Economic Considerations:

The positive association of Price Value (PV) with Behavioral Intention introduces economic considerations into technology acceptance models. The theoretical implication is an acknowledgment of users' perceptions of value and their impact on behavioral intentions in the context of online shopping.

Temporal Aspects and Habit Formation:

The positive relationship between Habit (H) and Behavioral Intention contributes to the understanding of temporal aspects in technology adoption. Theoretical frameworks can benefit from incorporating the notion of habit formation and its role in sustaining user intentions over time.

Enhanced understanding of drivers of online shopping

This research enhances the knowledge of online shopping literature, especially the role of TI drivers and DPM drivers. The study enriches the limited research by investigating the role and importance of online customer experience through CBs. The results are consistent with Hoyer et al. (2020), supporting the use of new technology to influence the Behavioral Intention of online shoppers. The results are significant for CBs and VTOs, highlighting their importance in online shopping. The current research has helped in analyzing VTO and offers a holistic perspective of how this technology leads to customer satisfaction.

Model development and Validation

In summary, the theoretical implications of this research contribute to the refinement and extension of existing theoretical frameworks, offering a more nuanced understanding of the factors influencing behavioral intentions in online shopping contexts.

5.3.2 Practical Implications for Industry practitioners and policy makers

The present study is very important for both online shoppers and retailers. Mobile payments are significant for the evolution of financial system in the country (Kumar and Chawla, 2023). No doubt, digital monetary services improve access to debit and credit cards, in addition to an improved inclination for other digital payments, but how digital payment drivers influence online shopping behavior is still an under-researched area. Therefore, there is scope for theory and practice. The role of TI drivers of online shopping adds a new dimension to the existing literature. Further, the paper has brought about the importance of TI drivers in enhancing sustained intention. The findings confirm the importance of chatbot conversation (Liebrecht et al. (2020). Chatbots assist in the online purchase process as they improve experience (Hoyer et al. 2020). The key aim of the current research was to understand the impact of different drivers of online shopping on Behavioral Intention and further on Sustained Intention. Theoretical frameworks that incorporate Digital Payment Mode, Technology Interface, and UTAUT2 drivers provide valuable insights for industry practitioners and policymakers. Understanding the combined impact of these factors can lead to development of strategies to promote the adoption and acceptance of digital payment modes.

The growth of e-commerce has brought many changes to the purchasing power of shoppers, as well as their payment modes. It is necessary to concentrate on promising technological changes in terms of the mode of payment. This research provides evidence of a strong impact of DPM drivers on online shoppers' BI. Thus, Indian managers need to adopt DPM as a major support service to make online shopping a worthwhile experience. The study suggests that managers need to adopt chatbots and virtual try-on technology to enhance the shopping experience. Online retailers should design and manage chatbots by monitoring user involvement and giving due attention to time, tone of communication, and, of course, the quality of the information that is provided. Thus, this study is of practical use for online consumers as well as sellers to use the latest technology in payment modes and also to enhance the technology interface to add more flavor to online shopping. DPM and TI drivers help in enlarging the impact on BI. The results also reflect that BI needs to be translated into SI for the retention of online shoppers.

By addressing these research implications, scholars can contribute to the knowledge base on improving satisfaction of online consumers and support evidence-based decision making for formulating strategies for online retail sector of India.

5.4 Limitations and Future Research Orientations

- Though research is exhaustive in nature, but it suffers from few limitations which provide the scope for future research. Firstly, as only respondents from Northern India were included. The results may be more applicable in countries that have similar demographics and cultures. Different organizational cultures, regional influences, or industry-specific factors may lead to variations in the relationships between drivers of online shopping and behavioral intention.
- Hence, it is advisable to approach the generalization of the study's findings to diverse settings with caution. Despite meticulous efforts to establish a robust and unbiased research methodology, the current study is not immune to limitations. Some of the factors and item indicators examined, while empirically tested, are relatively recent and novel. Subsequent research endeavors could adopt a comparative analysis approach to discern variations in consumer responses across distinct countries.
- This study has not incorporated control variables, presenting an opportunity for exploration in future research. Despite its limitations, this study offers a significant contribution to the field of online shopping literature. The research introduces a straightforward model that elucidates the impact of UTAUT2, Technology Interface (TI) drivers (specifically chatbots and virtual try-on technology), and Digital Payment Mode (DPM) drivers on the Behavioral Intention of online shoppers. Moving forward, there is potential for extending and testing the model in diverse countries to enhance its applicability. This research paper underscores the significance of UTAUT2 drivers in online shopping through practical research, employing a tailored UTAUT2 model with the inclusion of two novel variables. The exploration of the importance of Technology Interface (TI) and Digital Payment (DP) drivers as new variables opens avenues for further investigation in future research.
- However, the results do reflect the need to improve performance in terms of TI drivers. This, according to (Baron and Kenny, 1986), is partial mediation. Thus, there is support that the hypothesized model is acceptable, but in the future, other variables may be included. Understanding the limitations associated with partial mediation is crucial for a nuanced interpretation of the study's contribution. One limitation of this partial mediation scenario is that the model might need to fully

capture the intricacies of the relationship between the studied variables. These unexplored factors could include service quality, gamification and E (word of mouth) not considered in the current study. Researchers may consider exploring additional variables or refining existing constructs to create a more comprehensive model. This could involve investigating aspects should have been covered in the current study.

Future direction could focus on comparative studies across different regions, which may reveal how cultural factors influence drivers of online shopping and their impact on behavioral intention of the consumers. Understanding cross cultural differences can be valuable for designing context specific policies. Longitudinal studies could also be taken to track the changes in critical drivers of online shopping. These will provide more insights into the dynamics of online retailing, taking the framework of current study as a base. Personal recommendation by the websites could be taken as an additional construct in the future studies concerning behavioral intention of the online shoppers (Chakraborty et al. 2022). Such research can help online retailers understanding the long-term impact of such changes and plan the strategies accordingly. Future studies could also focus on new variables such as gamification and service quality. These new opportunities and challenges could act as catalysts and set new paths for undertaking research in this ever-emerging area.

5.5 Conclusions

The findings demonstrate an encouraging relationship between the drivers of online shopping and Behavioral Intention. Thus, this study contributes to the UTAUT2 theory. Overall, the model is acceptable and satisfactorily fulfills all the parameters. The results indicate that the DPM and TI drivers, as new drivers of online shopping, have enhanced the influence of online shopping. The study has established a relationship between behavioral intention and sustained intention. Though, the study's focus on northern states in Punjab may limit the generalizability to a certain extent, but as north India represents many states with different cultures, the study has wide implications. This study offers deep insights for research on online shoppers in a digitally revolutionized world.

References

1. AB Hamid, M. R., Sami, W., & Sidek, M. M. (2017). Discriminant validity assessment: Use of Fornell & Larcker criterion versus HTMT criterion. *Journal of Physics: Conference Series*, 890(1), 012163.
2. Abrazhevich, D. (2004). *Electronic payment systems: a user-centered perspective and interaction design*. [Phd Thesis 1 (Research TU/e / Graduation TU/e), Industrial Engineering and Innovation Sciences]. Technische Universiteit Eindhoven. <https://doi.org/10.6100/IR575913>
3. Achchuthan, S. & Velnampy, T. (2016). A Quest for Green Consumerism in Sri Lankan Context: An Application of Comprehensive Model, *Asian Economic and Social Society*, 6, (3), 59-76.
4. Ahmad, N., & Abdulkarim, H. (2019). The impact of flow experience and personality type on the intention to use virtual world. *International Journal of Human-Computer Interaction*, 35(12), 1074-1085.
5. Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
6. Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Prentice-Hall, Englewood Cliffs, N.J.
7. Al-Adwan, A. S., & Yaseen, H. (2023). Solving the product uncertainty hurdle in social commerce: The mediating role of seller uncertainty. *International Journal of Information Management Data Insights*, 3(1), 100169.
8. Al-Hattami, H. M. (2021). Determinants of intention to continue usage of online shopping under a pandemic: COVID-19. *Cogent Business & Management*, 8(1), 1936368.
9. Antoniou, P. H. and Ansoff, H. I. (2007). Strategic Management of Technology. *Technology analysis and strategic management*, 16(2), 275-291. <https://doi.org/10.1080/09537320410001682928>.
10. Antoniou, P. H., & Ansoff, H. I. (2004). Strategic management of technology. *Technology Analysis & Strategic Management*, 16(2), 275–291.
11. Ashfaq, M., Yun, J., Yu, S. and Maria, S. (2020), “I, chatbot: modeling the determinants of users’ satisfaction and continuance intention of AI-Powered service agents”. *Telematics and Informatics*, 54, 101473.

12. Bălan, C. (2023). Chatbots and Voice Assistants: Digital Transformers of the Company–Customer Interface—A Systematic Review of the Business Research Literature. *Journal of Theoretical and Applied Electronic Commerce Research*, 18 (2), 995-1019.
13. Banerjee, P., & Sayyed, V. (2017). A study on impact of Demonetisation on e-commerce industry. *International Journal of Engineering, Applied Sciences and Technology*, 2, 66–72.
14. Baptista, G., & Oliveira, T. (2015). Understanding mobile banking: The unified theory of acceptance and use of technology combined with cultural moderators. *Computers in Human Behavior*, 50, 418-430.
15. Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173.
16. 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, 866-875.
17. Beck, M., & Crié, D. (2018). I virtually try it... I want it! Virtual Fitting Room: A tool to increase on-line and off-line exploratory behavior, patronage and purchase intentions. *Journal of Retailing and Consumer Services*, 40, 279-286.
18. Briggs, A., & Brooks, L. (2011). Electronic payment systems development in a developing country: The role of institutional arrangements. *The Electronic Journal of Information Systems in Developing Countries*, 49 (1), 1-16.
19. Brrar, S., Lee, E., & Yip, T. L. (2023). An Exploratory Study of the Critical Success Factors of the Global Shipping Industry in the Digital Era. *Journal of Theoretical and Applied Electronic Commerce Research*, 18(2), 795-813.
20. Cai, L., Yuen, K. F., Xie, D., Fang, M., & Wang, X. (2021). Consumer's usage of logistics technologies: integration of habit into the unified theory of acceptance and use of technology. *Technology in Society*, 67, 101789.
21. Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, 56 (2), 81–105.
22. Campbell, M. C. (1995). When attention-getting advertising tactics elicit consumer inferences of manipulative intent: The importance of balancing benefits and investments. *Journal of Consumer Psychology*, 4(3), 225–254. https://doi.org/10.1207/s15327663jcp0403_02

23. Celik, H. (2016). Customer online shopping anxiety within the Unified Theory of Acceptance and Use Technology (UTAUT) framework. *Asia Pacific journal of Marketing and logistics*, 28(2). <https://doi.org/10.1108/APJML-05-2015-0077>
24. Chakraborty, D., Banerjee, J., Mehta, P. & Singh, N. P. (2022). The Impact of Website Design on Online Customer Buying Satisfaction and Loyalty to E-Tailers: An Exploratory Study of E-Tailers in India, *Information Resources Management Journal*, 35 (1), 1-18.
25. Chakraborty, D., Mehta, P., Dash, G, Khan, N., Jain, R.K. & Biswas, D. (2023). What Drives Consumers to Adopt Mobile Payment Apps in the Post-COVID-19 Scenario: The Role of Openness to Change and User Involvement, *Journal of Global Information Management*, (JGIM), 31(1), 1-24. DOI: 10.4018/JGIM.332799
26. Chang, C. M., Liu, L. W., Huang, H. C., & Hsieh, H. H. (2019). Factors influencing online hotel booking: Extending UTAUT2 with age, gender, and experience as moderators. *Information*, 10(9), 281. <https://doi.org/10.3390/info10090281>
27. Childers, T. L., Carr, C. L., Peck, J., & Carson, S. (2001). Hedonic and utilitarian motivations for online retail shopping behavior. *Journal of Retailing*, 77(4), 511–535.
28. Chu, T. H., Chao, C. M., Liu, H. H., & Chen, D. F. (2022). Developing an Extended Theory of UTAUT 2 Model to Explore Factors Influencing Taiwanese Consumer Adoption of Intelligent Elevators. *Sage Open*, 12(4), 21582440221142209.
29. Chung, K. H., & Shin, J. I. (2010). The antecedents and consequents of relationship quality in internet shopping. *Asia Pacific Journal of Marketing and Logistics*, 22(4), 473-491.
30. Cohen, J. (2013). *Statistical Power Analysis for the Behavioral Sciences*. *Statistical Power Analysis for the Behavioral Sciences*, Routledge, 1-567. <https://doi.org/10.4324/9780203771587>
31. Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika* , 16, 297–334.
32. Danckwerts, S., Meißner, L., & Krampe, C. (2019). Examining user experience of conversational agents in hedonic digital services—antecedents and the role of psychological ownership. *SMR-Journal of Service Management Research*, 3(3), 111-125.
33. Dang, T. Q., Tan, G. W. H., Aw, E. C. X., Ooi, K. B., Metri, B., & Dwivedi, Y. K. (2023). How to generate loyalty in mobile payment services? An integrative dual

- SEM-ANN analysis. *International Journal of Bank Marketing*, 41(3), 1177-1206
DOI:[10.1108/IJBM-05-2022-0202](https://doi.org/10.1108/IJBM-05-2022-0202)
34. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 13(3):319--339
 35. Dawn,S. K.and Kar,U. (2011). E-tailing in India: its issues, opportunities and effective strategies for growth and development. *International Journal of Multidisciplinary Research*, 1(3), 101-105.
 36. Deodhar, R. P. (2016). Black money and demonetisation (SSRN No. 2869172). DOI:[10.2139/ssrn.2869172](https://doi.org/10.2139/ssrn.2869172)
 37. Dharmawirya, M., & Smith, B. A. (2012). Analysis of Consumer Repurchase Intention towards Online Shopping in Indonesia's Online Retail Business Market. *International Journal of e-Education, e-Business, e-Management and e-Learning*, 2(3), 202-205
 38. Doolin, B., Dillon, S., Thompson, F. and Corner, J.L. (2005): Perceived risk, the internet shopping experience and online purchasing behaviour: A New Zealand perspective". *Journal of Global Information Management*, 13, (2), 66-88. DOI:[10.4018/jgim.2005040104](https://doi.org/10.4018/jgim.2005040104)
 39. Economic Survey. (2017). Chapter 3. Demonetisation: To deify or demonize, 53–81. Retrieved from <http://indiabudget.nic.in/es2016-17/echap03.pdf>
 40. Featherman, M.S. and Pavlou, P.A. (2003). Predicting E-services adoption: A perceived risk facets perspective. *International Journal of Human Computer Studies*, 59(4), 451-474.
 41. Foon, Y. S., & Fah, B. C. Y. (2011). Internet banking adoption in Kuala Lumpur: an application of UTAUT model. *International Journal of Business and Management*, 6(4), 161.
 42. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
 43. Franciska, A. M., & Sahayaselvi, S. (2017). An overview on digital payments. *International Journal of Research*, 4(13), 2101-211.
 44. Goel, N. (2018). Importance of GST in Indian Economy. *International Journal of Research and Analytical Reviews*, 4(4), 2349–2369.

45. Gounaris, S., Dimitriadis, S., & Stathakopoulos, V. (2010). An examination of the effects of service quality and satisfaction on customers' behavioral intentions in e-shopping. *Journal of services marketing*, 24(2), 142-156.
46. Gunmala Suri, Navkiran, Gurman Kaur, Sneha Sharma (2016). Factors Influencing E-learning among University Students, *International Journal of Marketing and Business Communication*, 5 (1), 43-49.
47. Gupta, A., & Dogra, N. (2017). Tourist adoption of mapping apps: A UTAUT2 perspective of smart travelers. *Tourism and hospitality management*, 23(2), 145-161
48. Gupta, N., Handa. M. & Gupta B. (2008). Young Adults of India-Online Surfers or Online Shoppers. *Journal of Internet Commerce*, 7(4), 425-444.
49. Gupta, S., Kiran, R., & Sharma, R. K. (2022). Validating the role of digital payment mode as a new driver of online shopping: A modified UTAUT2 model. *Journal of Public Affairs*, 22(2), e2434.
50. Gupta, S.; Kiran, R., & Sharma, R.K. Embedding Technology Interface and Digital Payment Drivers in the Unified Theory of Acceptance and Use of Technology 2 Model: Transforming Behavioral Intention to Sustained Intention. *Sustainability* 2023, 15, 13018. <https://doi.org/10.3390/su151713018>
51. Ha, H. Y., Janda, S., & Muthaly, S. K. (2010). A new understanding of satisfaction model in e-re-purchase situation. *European journal of marketing*, 44(7/8), 997-1016.
52. Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European business review*, 31(1), 2-24
53. Hair, J.F., Jr.; Anderson, R.E.; Tatham, R.L., & Black, W.C. (1995). *Multivariate Data Analysis*, 3rd ed.; Macmillan: New York, NY, USA.
54. Hair, Joe F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLSSEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101–110. <https://doi.org/10.1016/j.jbusres.2019.11.069>
55. Hair, Joseph F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM? *European Business Review*, 31(1), 1–24. <https://doi.org/10.1108/EBR-11-2018-0203>
56. Hameed, F., Qayyum, A. & Khan, F.A. (2022). A new trend of learning and teaching: Behavioral intention towards mobile learning. *Journal Computer Education* . <https://doi.org/10.1007/s40692-022-00252-w>

57. Handa, M. Gupta, N. (2014). A Study of the Relationship between Shopping Orientation and Online Shopping Behavior among Indian Youth. *Journal of Internet Commerce*, 13, 22–44.
58. Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
59. Hoyer, W. D., Kroschke, M., Schmitt, B., Kraume, K., & Shankar, V. (2020). Transforming the customer experience through new technologies. *Journal of interactive marketing*, 51(1), 57-71.
60. Iglesias-Pradas, S., & Acquila-Natale, E. (2023). The Future of E-Commerce: Overview and Prospects of Multichannel and Omni channel Retail. *Journal of Theoretical and Applied Electronic Commerce Research*, 18(1), 656-667.
61. Islam, T., Abid, C. M. S., & Ahmer, Z. (2020). How perceptions about ease of use and risk explain intention to use mobile payment service in Pakistan? The mediating role of perceived trust. *Pakistan Journal of Commerce and Social Sciences (PJCSS)*, 14(1), 34-48.
62. Jadir, Y., Rana, N. P., & Dwivedi, Y. K. (2021). A meta-analysis of the UTAUT model in the mobile banking literature: The moderating role of sample size and culture. *Journal of Business Research*, 132, 354-372.
63. Jain, S. (2020). Assessing the moderating effect of subjective norm on luxury purchase intention: a study of Gen Y consumers in India. *International Journal of Retail and Distribution Management*, 48(5), 517–536. <https://doi.org/10.1108/IJRDM-02-2019-0042>
64. Jumaan, I. A., Hashim, N. H., & Al-Ghazali, B. M. (2020). The role of cognitive absorption in predicting mobile internet users' continuance intention: An extension of the expectation-confirmation model. *Technology in Society*, 63, 101355.
65. Kabir, M. A., Saidin, S. Z., & Ahmi, A. (2015, October). Adoption of e-payment systems: a review of literature. In *International Conference on E-Commerce*, 112-120.
66. Kalyani, P. (2016). An empirical study of the effects of Demonetisation in India in the year 2016 and analyzing shifting trends in marketing/purchasing to the alternative options. *Journal of Management Engineering and Information Technology (JMEIT)*, 3.20–34.

67. Kandpal, V. (2020). Role of regulators in intensifying financial access to the untouched segment of society in developing country. *Corporate Governance and Organizational Behavior Review*, 4(1), 8-14.
68. Kandpal, V., & Mehrotra, R. (2019). Financial inclusion: The role of Fintech and digital financial services in India. *Indian Journal of Economics & Business*, 19(1), 85-93.
69. Kang, M. S., Im, I., & Hong, S. (2011). The meaning and measurements of the UTAUT model: an invariance analysis. 32nd International Conference on Information System 2011, ICIS 2011, Shanghai, China, 2070–2086.
70. Kasilingam, D. L. (2020). Understanding the attitude and intention to use smartphone chatbots for shopping. *Technology in Society*, 62, 101280.
71. Kaur, S. (2016). Demonetisation and its impact in India. *International Journal of Research*, 3 (17), 1150–1154.
72. Kennedy, P. (2008). *A Guide to Econometrics*; Wiley-Blackwell: Oxford, UK.
73. Khatimah, H., Susanto, P., & Abdullah, N. L. (2019). Hedonic motivation and social influence on behavioral intention of E-money: The role of payment habit as a mediator. *International Journal of Entrepreneurship*, 23(1), 1–9.
74. Kim, J., & Forsythe, S. (2010). Factors affecting adoption of product virtualization technology for online consumer electronics shopping. *International Journal of Retail & Distribution Management*, 38(3), 190-204.
75. Klarner, P.; Sarstedt, M.; Hoeck, M.; Ringle, C.M. (2013). Disentangling the effects of team competences, team adaptability, and client communication on the performance of management consulting teams. *Long Range Plan*, 46, 258–286.
76. Kline, R. B. (2023). *Principles and practice of structural equation modeling*. Guilford publications Inc.
77. Kumar, S., & Chawla, S. (2023). Investigating Barriers Contributing to the Nonadoption of Mobile Payment from Non-users' Perspective: Insights Based on SEM-ANN Analysis. *Global Business Review*.
<https://doi.org/10.1177/09721509231177488>.
78. Kumar, S., Talwar, S., Murphy, M., Kaur, P., & Dhir, A. (2021). A behavioural reasoning perspective on the consumption of local food. A study on REKO, a social media-based local food distribution system. *Food Quality and Preference*, 93, 1–13.
<https://doi.org/10.1016/j.foodqual.2021.104264>

79. Lahiri, A. (2016). Demonetisation, the cash shortage and the black money (No. 16/184). National Institute of Public Finance and Policy New Delhi: NIPFP Working paper series.
80. Leong, L.-Y., Hew, T.-S., Ooi, K.-B., & Wei, J. (2020). Predicting mobile wallet resistance: A two-staged structural equation modeling-artificial neural network approach. *International Journal of Information Management*, 51, 1–24. <https://doi.org/10.1016/j.ijinfomgt.2019.102047>
81. Leong, M. Y., Kwan, J. H., & Ming, L. M. (2021). Technology readiness and UTAUT2 in e-wallet adoption in a developing country. *F1000Research*, 10.
82. Lescevic, M., Ginters, E., & Mazza, R. (2013). “Unified theory of acceptance and use of technology (UTAUT) for market analysis of FP7 CHOReOS products”. *Procedia - Procedia Computer Science*. Elsevier Masson SAS, 26, 51–68. <https://doi.org/10.1016/j.procs.2013.12.007>
83. Li, Y. Z., He, T. L., Song, Y. R., Yang, Z., & Zhou, R. T. (2018). Factors impacting donors’ intention to donate to charitable crowd-funding projects in China: a UTAUT-based model. *Information, Communication & Society*, 21(3), 404-415.
84. Lian, J. W., & Yen, D. C. (2014). Online shopping drivers and barriers for older adults: age and gender differences. *Computers in human behavior*, 37, 133-143.
85. Liebrecht, C., Tsaousi, C., & van Hooijdonk, C. (2021). Linguistic elements of conversational human voice in online brand communication: Manipulations and perceptions. *Journal of Business Research*, 132, 124-135.
86. 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. <https://doi.org/10.1080/0965254X.2021.1941204>
87. Lim, Y. J., Osman, A., Salahuddin, S. N., Romle, A. R., & Abdullah, S. (2016). Factors influencing online shopping behavior: the mediating role of purchase intention. *Procedia economics and finance*, 35, 401-410.
88. Lin, Y. L., & Wang, M. J. J. (2016). The development of a clothing fit evaluation system under virtual environment. *Multimedia Tools and Applications*, 75, 7575-7587.
89. Lou, C., & Yuan, S. (2019). Influencer marketing: How message value and credibility affect consumer trust of branded content on social media. *Journal of*

Interactive Advertising, 104 19(1), 58–73.

<https://doi.org/10.1080/15252019.2018.1533501>

90. Mahajan, P., & Singla, A. (2017). Effect of Demonetisation on financial inclusion in India. *International Journal of Science Technology and Management*, 6(1), 338-343.
91. Marquardt, D.W. (1970). Generalized inverses, ridge regression, biased linear estimation, and nonlinear estimation. *Technometrics*, 12, 591–612.
92. Masihuddin, M., Khan, B. U. I., Mattoo, M. M. U. I., & Olanrewaju, R. F. (2017). A survey on e-payment systems: elements, adoption, architecture, challenges and security concepts. *Indian Journal of Science and Technology*, 10(20), 1-19.
93. Mathwick, C., Malhotra, N., & Rigdon, E. (2001). Experiential value: Conceptualization, measurement and application in the catalog and internet shopping environment. *Journal of Retailing*, 77(1), 39–56.
94. Matthews, L., Hair, J., & Matthews, R. (2018). PLS-SEM: The Holy Grail for Advanced Analysis. *Marketing Management Journal*, 28(1), 1–13.
95. Mehta, S., Patel, K., & Mehta, K. (2016). Demonetisation: Shifting gears from physical cash to digital cash. *Voice of Research*, 5(3), 47–50.
96. Menon, S., & Kahn, B. (2002). Cross-category effects of induced arousal and pleasure on the internet shopping experience. *Journal of retailing*, 78(1), 31-40.
97. Merle, A., Senecal, S., & St-Onge, A. (2012). Whether and how virtual try-on influences consumer responses to an apparel web site. *International Journal of Electronic Commerce*, 16(3), 41-64.
98. Muthumani, A., Lavanya, V., & Mahalakshmi, R. (2017). Problems faced by customers on online shopping in Virudhunagar district. *International Journal of Science Technology and Management*, 6(2), 152-159.
99. Ngah, A.H., Thurasamy, R. and Han, H. (2023), If you don't care, I will switch: online retailers' behaviour on third-party logistics services. *International Journal of Physical Distribution & Logistics Management*, 53 (7/8), 813-837. <https://doi.org/10.1108/IJPDLM-04-2022-0124>
100. Norzieiriani Ahmad, Azizah Omar and , Ramayah, T. (2010). Consumer Lifestyles and Online Shopping Continuance Intention. *Business Strategy Series*, 11(4), 227-243.
101. Nunnally, J. C. (1978). *Psychometric Theory* (2nd ed.). New York: McGraw-Hill

102. Ogedebe, P. M., & Jacob, B. P. (2012). E-payment: Prospects and challenges in Nigerian public sector. *International Journal of Modern Engineering Research*, 2(5), 3104-3106.
103. Owusu Kwateng, K., Osei Atiemo, K. A., and Appiah, C. (2018). Acceptance and use of mobile banking: an application of utaut2. *Journal of Enterprise Information Management*, 32 (1), 118–151.
104. Palau-Saumell, R., Forgas-Coll, S., Sánchez-García, J., & Robres, E. (2019). User acceptance of mobile apps for restaurants: An expanded and extended UTAUT-2. *Sustainability*, 11(4), 1210.
105. Pavlou, P.A. and Fygenson, M. (2006) Understanding and Predicting Electronic Commerce Adoption: An Extension of the Theory of Planned Behavior. *MIS Quarterly*, 30, 115-143.
<https://doi.org/10.2307/25148720>
106. Petrer, J.P. and Ryan, M.J. (1976). An investigation of perceived risk at the brand level. *Journal of Marketing Research* 2(13), 184-188.
107. Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual review of psychology*, 63, 539-569.
108. 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. *Journal of Applied Psychology*, 88(5), 879–903.
<https://doi.org/10.1037/0021-9010.88.5.879>
109. Potnuru, B. (2017). Demonetisation to oust black money in India: A success or failure. *International Journal of Development Research*, 7(12), 18088-18091.
110. Rajakumar, J. D., & Shetty, S. L. (2016). Demonetisation: 1978, the Present and the Aftermath. *Economic and Political Weekly*, 51(48), 13-17.
111. Ramayah, T. Syed Abidur Rahman, & Ng Ching Ling (2020). How do Consumption Values Influence Online Purchase Intention among the School Leavers in Malaysia? *Revista Brasileira de Gestao de Negocios*, 20(4), 638-654.
112. Ramdurg, A. I., & Basavaraj, D. (2016). Demonetisation: Redefining Indian economy. *International Journal of Commerce and Management Research*, 2(12), 7–12.
113. Rani, G. (2016). Effects of Demonetisation on retail outlets. *International Journal of Applied Research*, 2(12), 400–401.

114. Rao, K., Mukherjee, S., Kumar, S., Sengupta D. P., Tandon S. and Nayudu H. (2016). Demonetisation: impact on the economy. NIPFP, 182, 1-17.
115. Ray, D., & Choudhury, S. R. (2015). Factors affecting consumer decision making for purchasing selected home appliance products based on market segmentation-a feedback study of people associated with management education. *Journal of Research in Business and Management*, 3(2), 6–11.
116. Sabai, K., & Hoong, I. T. (2018). Entrepreneurial Opportunity Recognition, Exploitation and New Venture Success: Moderating Role of Prior Market and Technology Knowledge. *International Journal of Entrepreneurship*, 22(4), 1–6.
117. Salim, R. A., Hoque, M. Z., & Suyanto, S. (2010). The role of governance, ICT and bad loans in Australian bank efficiency: An empirical study. *The Asia Pacific Journal of Economics and Business*, 14(1), 18-36.
118. Samal, K. C. (1992). Chasing black money in India. *Journal of Indian School of Political Economy*, 4(2), 319–329.
119. Sambhanthan, A., Potdar, V., & Chang, E. (2017). Business sustainability conceptualization. *Applied Computing and Information Technology*, 1-16.
120. Sampson, S. E., & Chase, R. B. (2020). Customer contact in a digital world. *Journal of service management*, 31(6), 1061-1069.
121. Sareen, M., & Jain, A. (2014). The Role of Social Influence and Consumers' Effort Expectancy on Online Shopping: An Empirical Study of India. *International Journal of Management Research and business strategy*, 3(1), 138-158.
122. Sarkar, S. (2012). The parallel economy in India: Causes, impacts and government initiatives. *Economic Journal of Development Issues*, (11), 124–134. <https://dx.doi.org/10.3126/ejdi.v11i0.6111>.
123. Schneider, F., Buehn, A., & Montenegro, C. E. (2010). Shadow economies all over the world: New estimates for 162 countries from 1999 to 2007. *World Bank policy research working paper*, (5356).
124. See-To, E. W., Papagiannidis, S., & Westland, J. C. (2014). The moderating role of income on consumers' preferences and usage for online and offline payment methods. *Electronic Commerce Research*, 14, 189-213.
125. Shang, D., & Wu, W. (2017). Understanding mobile shopping consumers' continuance intention. *Industrial Management & Data Systems*, 117(1), 213-227.
126. Shawar, B. A., & Atwell, E. (2007). Chatbots: are they really useful?. *Journal for Language Technology and Computational Linguistics*, 22(1), 29-49.

127. Singh, P., Anand, A., & Modi, A. (2012). E-tailing in India–Pushing the Retail Frontier. Technopak. E-tailing In India – pushing the retail frontier - RASCI. http://www.rasci.in/downloads/2012/e-tailing_%20India_%20Pushing_Retail_frontier.p.
128. Singh, S., & Srivastava, S. (2018). Moderating effect of product type on online shopping behaviour and purchase intention: An Indian perspective. *Cogent Arts & Humanities*, 5(1), 1495043.
129. Sivathanu, B. (2019). Adoption of digital payment systems in the era of Demonetisation in India: An empirical study. *Journal of Science and Technology Policy Management*, 10(1), 143-171.
130. Smink, A. R., Frowijn, S., van Reijmersdal, E. A., van Noort, G., & Neijens, P. C. (2019). Try online before you buy: How does shopping with augmented reality affect brand responses and personal data disclosure. *Electronic Commerce Research and Applications*, 35, 100854.
131. Sun, Y., Liu, L., Peng, X., Dong, Y., & Barnes, S. J. (2014). Understanding Chinese users' continuance intention toward online social networks: an integrative theoretical model. *Electronic Markets*, 24, 57-66.
132. Talwar, M., Talwar, S., Kaur, P., Islam, A. K. M. N., & Dhir, A. (2020). Positive and negative word of mouth (WOM) are not necessarily opposites: A reappraisal using the dual factor theory. *Journal of Retailing and Consumer Services*, 1–12. <https://doi.org/10.1016/j.jretconser.2020.102396>
133. Tandon, U. (2021). Predictors of online shopping in India: An empirical investigation. *J. Mark. Anal.*, 9, 65–79.
134. Tandon, U. (2023). Chatbots, virtual-try-on (VTO), e-WOM: modeling the determinants of attitude'and continued intention with PEEIM as moderator in online shopping. *Global Knowledge, Memory and Communication*.
135. Tandon, U., & Kiran, R. (2018). Study on drivers of online shopping and significance of cash-on-delivery mode of payment on behavioural intention. *International Journal of Electronic Business*, 14(3), 212–237.
136. Tandon, U., & Kiran, R. (2019). Factors impacting customer satisfaction: An empirical investigation into online shopping in India. *Journal of Information Technology Case and Application Research*, 21(1), 13–34.

137. Tandon, U., Kiran, R., & Sah, A. N. (2016). Customer satisfaction using website functionality, perceived usability and perceived usefulness towards online shopping in India. *Information Development*, 32(5), 1657–1673.
138. Tandon, U.; Kiran, R.; Sah, A.N. Customer satisfaction as mediator between website service quality and repurchase intention: An emerging economy case. *Service Science*, 9, 106–120. [
139. Tandon, U.; Kiran, R.; Sah, A.N. The influence of website functionality, drivers and perceived risk on customer satisfaction in online shopping: An emerging economy case. *Information System e-Business Management*, 16, 57–91.
140. Taylor, S.; Todd, P. (1995). Assessing IT usage: The role of prior experience. *MIS Quarterly*, 19, 561–570.
141. Thong, J. Y., Hong, S. J., & Tam, K. Y. (2006). The effects of post-adoption beliefs on the expectation-confirmation model for information technology continuance. *International Journal of Human-Computer Studies*, 64(9), 799–810.
142. Tripathi, A. K. (2016). Demonetisation-Challenges For Rural India. *International Journal of Higher Education Research & Development*, 1(6), 34–36.
143. Tsai, H. T., & Huang, H. C. (2007). Determinants of e-repurchase intentions: An integrative model of quadruple retention drivers. *Information & Management*, 44(3), 231-239.
144. Tucker, L. R., & MacCallum, R. C. (1997). Exploratory factor analysis. *Unpublished manuscript, Ohio State University, Columbus*, 1-459.
145. Ugur, N. G., & Turan, A. H. (2018). E-learning adoption of academicians: A proposal for an extended model. *Behaviour & Information Technology*, 37(4), 393–405.
146. Uzir, M.U.H., Jerin, I., Al Halbusi, H., Hamid, A.B.A. and Latiff, A.S.A., (2020). Does quality stimulate customer satisfaction where perceived value mediates and the usage of social media moderates?. *Heliyon*, 6(12), p.e05710.
147. Vally, K. S., & Divya, K. H. (2018). A study on digital payments in India with perspective of consumer's adoption. *International journal of pure and applied mathematics*, 119(15), 1259-1267.
148. Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: towards a unified view. *MIS Quarterly*, 27(3), 425–478.

149. Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36, 157–178.
150. Wang, F., & Head, M. (2007). How can the web help build customer relationships?: an empirical study on e-tailing. *Information & Management*, 44(2), 115-129.
151. Wangpipatwong, S., Chutimaskul, W., & Papasratorn, B. (2008). Understanding Citizen's Continuance Intention to Use e-Government Website: a Composite View of Technology Acceptance Model and Computer Self-Efficacy. *Electronic journal of e-government*, 6(1), 55-64.
152. Wirtz, J., Patterson, P. G., Kunz, W. H., Gruber, T., Lu, V. N., Paluch, S., & Martins, A. (2018). Brave new world: service robots in the frontline. *Journal of Service Management*, 29(5), 907-931.
153. Wong, H. Y., & Merrilees, B. (2007). Closing the marketing strategy to performance gap: The role of brand orientation. *Journal of Strategic Marketing*, 15(5), 387–402. <https://doi.org/10.1080/09652540701726942>
154. Yaprakli, S., Kalbakhani, E., & Rasouli, R. (2013). An application of UTAUT model for online shopping acceptance in Iran. *Reef Resources Assessment Management Tech. Paper*, 38(5), 237-244.
155. Yen, Y. Y., Narayanasamy, K., Lin, C. Y., Rasiah, D., & Ramasamy, S. (2017). Consumer's perception towards real-time virtual fitting system. In *Proceedings of the 6th International Conference on Computing and Informatics*, Universiti Utara Malaysia, Sintok, 311-316).
156. Yuan, S., Liu, Y., Yao, R., & Liu, J. (2016). An investigation of users' continuance intention towards mobile banking in China. *Information Development*, 32(1), 20-34.
157. Zabukovšek, Simona Sternad, Šišovska, Irena, Mravljak, Monika and Bobek, Samo (2015). "E-business in Micro Companies: Lessons learned / E-poslovanje v mikro podjetjih – nova spoznanja" *Naše gospodarstvo/Our economy*. 61 (2),15-23. <https://doi.org/10.1515/ngoe-2015-0006>
158. Zhang, T., Wang, W. Y. C., Cao, L., & Wang, Y. (2019). The role of virtual try-on technology in online purchase decisions from consumers' aspect. *Internet Research*, 29(3), 529-551.

159. Zhao, X., Lynch Jr, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of consumer research*, 37(2), 197-206.

Annexure 1

QUESTIONNAIRE

A. Personal Information:

1. Name:	2. Contact No.: (Optional)
3. Location : <input type="checkbox"/> Punjab <input type="checkbox"/> Haryana <input type="checkbox"/> Himachal	4. Area of Location : <input type="checkbox"/> Rural <input type="checkbox"/> Urban
5. Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female	6. Age: <input type="checkbox"/> 18-30 <input type="checkbox"/> 31 -45 <input type="checkbox"/> 46 and above
7. Educational qualification: <input type="checkbox"/> Under graduate <input type="checkbox"/> Graduate <input type="checkbox"/> Postgraduate	8. Occupation: <input type="checkbox"/> Business <input type="checkbox"/> Salaried <input type="checkbox"/> Self employed <input type="checkbox"/> Student
9. Annual Income in Rs: <input type="checkbox"/> Below Rs 5,00, 000 <input type="checkbox"/> Rs 5,00,000 - 10,00,000 <input type="checkbox"/> Above 10,00,000	10. For how long you have been shopping on internet? <input type="checkbox"/> Less than 1 Year <input type="checkbox"/> 1-3 years <input type="checkbox"/> More than 3 years
11. How many hours do you spend for online shopping in a week? <input type="checkbox"/> Less than 1 Hour <input type="checkbox"/> 1-3 hour <input type="checkbox"/> More than 3 hours	12. How many products have you actually purchased online in last 1 year? <input type="checkbox"/> Less than 5 <input type="checkbox"/> 5-10 <input type="checkbox"/> More than 10
13. Which mode of payment do you prefer: <input type="checkbox"/> online banking <input type="checkbox"/> paytm /e-wallet company <input type="checkbox"/> pay on delivery	

Please read each statement carefully and rate/ tick each statement according to the 1 to 5 scale (strongly disagree to strongly agree).

		Scale				
B.	Performance Expectancy					
1.	I find online shopping useful in my daily life.	1	2	3	4	5
2.	Online shopping is more productive.	1	2	3	4	5
3.	Online shopping provides wide assortment of products useful in my daily life.	1	2	3	4	5
4.	Online shopping helps me to find product information within the shortest time frame.	1	2	3	4	5
5.	While shopping on internet I can find some products that are not easily available in physical stores.	1	2	3	4	5
6.	Online shopping helps me in comparative analysis of the similar products.	1	2	3	4	5
7.	Online shopping enables me to accomplish shopping more quickly than traditional stores.	1	2	3	4	5
8.	Shopping online takes less time from search of products to transaction.	1	2	3	4	5
9.	I can go in for online shopping 24*7.	1	2	3	4	5
10.	I can go in for online shopping from anywhere using mobile apps.	1	2	3	4	5
11.	Online shopping provides options to choose from multiple brands.	1	2	3	4	5
12.	Online shopping enables me to accomplish shopping in an effective manner.	1	2	3	4	5
C.	Effort Expectancy					
1.	Learning how to use online shopping is easy for me.	1	2	3	4	5
2.	My interaction with online shopping is clear and understandable.	1	2	3	4	5
3.	I find online shopping easy to use.	1	2	3	4	5
4.	It is easy for me to become skilful at using online shopping.	1	2	3	4	5
5.	The language used by online retailers is easy to understand.	1	2	3	4	5
6.	Online shopping websites are easy to use	1	2	3	4	5
7.	Information provided by online retailers help me to purchase product.	1	2	3	4	5
D.	Facilitating Conditions					
1.	I have the resources necessary to use online shopping.	1	2	3	4	5
2.	I have the knowledge necessary to use online shopping.	1	2	3	4	5
3.	Online shopping is compatible with other technologies I use.	1	2	3	4	5

4.	I can get help from others when I have difficulties using online shopping.	1	2	3	4	5
E.	Habit					
1.	The use of online shopping has become a habit for me.	1	2	3	4	5
2.	I am addicted to online shopping.	1	2	3	4	5
3.	I must use online shopping.	1	2	3	4	5
4.	After using online shopping for the first time, it has become natural to me.	1	2	3	4	5
F.	Social Influence					
1.	People who are important to me think that I should go in for online shopping.	1	2	3	4	5
2.	People who influence my behaviour think that I should go in for online shopping.	1	2	3	4	5
3.	People whose opinions that I value prefer that I should go in for online shopping.	1	2	3	4	5
4.	Feedback/Reviews of verified customers help me in locating the right product.	1	2	3	4	5
G.	Hedonic Motivation					
1.	Shopping online is an exciting experience for me.	1	2	3	4	5
2.	Shopping online is fun for me.	1	2	3	4	5
3.	Shopping online is enjoyable.	1	2	3	4	5
4.	Shopping online is very entertaining.	1	2	3	4	5
H.	Price Value					
1.	At the current price, online shopping provides a good value for money.	1	2	3	4	5
2.	Online products are reasonably priced.	1	2	3	4	5
3.	Online discounts and online promotions offered are often attractive which provide me value for money.	1	2	3	4	5
4.	Free membership offered is often attractive and provide me value for money.	1	2	3	4	5
5.	EMI options provide me value for money.	1	2	3	4	5
6.	Refund policy provides me value for money.	1	2	3	4	5
i.	Digital payment mode					
1.	I prefer to buy through digital mode of payment.	1	2	3	4	5
2.	Digital is a reliable mode of payment while shopping online.	1	2	3	4	5
3.	I plan to pay through digital mode of payment.	1	2	3	4	5
4.	Digital mode of payment gives me confidence for future purchase of products.	1	2	3	4	5
5.	I feel safe while using digital mode of payment in online shopping.	1	2	3	4	5
6.	Digital mode protects my privacy.	1	2	3	4	5
7.	To increase trust in digital payments cyber security systems must be strengthened.	1	2	3	4	5

8.	I trust that the website will not give my personal details to other websites without my permission.	1	2	3	4	5
9.	The terms used for digital mode of payment are understandable.	1	2	3	4	5
10.	More the surety about the product more the use of credit cards.	1	2	3	4	5
11.	Reducing the cost of electronic transfer would act as catalyst for digital payment.	1	2	3	4	5
12.	It becomes easier to make payment using Debit/Credit cards as details are already saved on the website.	1	2	3	4	5
13.	Authentication through OTP ensures safety while making payment through digital mode of payment.	1	2	3	4	5
14.	Recent Government of India directives to the banks regarding refund in case of misutilisation of funds motivate me to make payment through digital mode of payment.	1	2	3	4	5
J.	Behavioral Intention					
1.	I am satisfied with the product range offered by online retailers.	1	2	3	4	5
2.	I am satisfied with the quality of products offered online.	1	2	3	4	5
3.	I am satisfied with the quality of products offered online.	1	2	3	4	5
4.	Online shopping is a satisfying experience as it offers customized products at my convenience.	1	2	3	4	5
K.	Sustained intention					
1.	I intend to continue using online shopping in the future.	1	2	3	4	5
2.	I will always try to use online shopping in the future.	1	2	3	4	5
3.	I plan to continue using online shopping frequently.	1	2	3	4	5
L.	Chatbots					
1.	Chatbots help to vent out negative feelings	1	2	3	4	5
2.	I like using chatbots for shopping.	1	2	3	4	5
3.	Using chatbots for shopping is a good idea.	1	2	3	4	5
4.	Using chatbots for shopping is a pleasant experience	1	2	3	4	5
M.	Virtual try-on					
1.	VTO engages us with passing time motive	1	2	3	4	5
2.	VTO helps in mood management	1	2	3	4	5
3.	VTO is important for me as it helps me to choose better products for myself	1	2	3	4	5
4.	VTO provides sufficient and accurate information about the product	1	2	3	4	5

Annexure 2

LIST OF PUBLICATIONS

S.NO	Title of Paper, Name of the journal, year, Vol ,pp.	Authors	Impact factor in SSCI List
1.	Embedding Technology Interface and Digital Payment Drivers in the Unified Theory of Acceptance and Use of Technology 2 Model: Transforming Behavioral Intention to Sustained Intention ,Sustainability,15,13018	Savita Gupta, Dr.Ravi Kiran and Dr. Rakesh Kumar Sharma	*SSCI Impact Factor: 3.889 (2021); 5-Year Impact Factor: 4.089 (2021) MDPI
2.	Validating the role of digital payment mode as a new driver of online shopping: A modified UTAUT2 model, Journal of Public Affairs, 22(2), e2434.	Savita Gupta, Dr.Ravi Kiran and Dr. Rakesh Kumar Sharma	Indexed in: Scopus ABDC Category B WOS impact factor 2.6