SYNOPSIS ON

THE CONSUMER STUDY OF DRIVERS FOR B2C M-COMMERCE ADOPTION IN SELECTED CITIES IN THE STATE OF GUJARAT

SUBMITTED

IN

PARTIAL OR COMPLETE FULFILLMENT OF THE REQUIREMENT

FOR

THE AWARD OF THE DEGREE

OF

DOCTOR OF PHILOSOPHY

IN

COMMERCE AND BUSINESS MANAGEMENT

BY

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DECEMBER-2021

"THE CONSUMER STUDY OF DRIVERS FOR B2C M-COMMERCE ADOPTION IN SELECTED CITIES IN THE STATE OF GUJARAT"

SYNOPSIS

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AN ABSTRACT

Having smartphones and tablets has become a habit in one's daily life. Mobiles have transformed our thinking and everyday habits, be they personal or related to our work. The way we communicate to consumers and companies have been shaped by the hand-held device. With innovation and advancement in technology, consumers have seamless access to retailers across the world. Smartphones have garnered around 54 per cent of the overall mobile phones market in India in 2020 and are expected to reach 96 per cent by 2040 (Statista, n.d.a). With 4G and upcoming 5G networks, the mobile apps-based e-commerce playing a major part in revenue generation, companies are concentrating on 'mobile first' strategy with the products and services first available through a mobile portal before it is available on other traditional channels. Mobile applications are now striving to streamline intuitive user interfaces, personalized profiles, fast payment methods, 24/7 access to lure and retain customers. With the increasing shift towards m-commerce, consumers are becoming accustomed to growing issues concerning the ethical use of customers' personal data, privacy protection, and the after-effects of m-commerce adoption in case of breach of trust and data. Therefore, understanding m-commerce acceptance and usage among Indian consumers are the need of the hour. This study was an earnest attempt towards knowing the factors that draw people towards adopting m-commerce. The researcher has studied the effect of perceived cost, perceived usefulness, Personalisation, perceived ease of use, privacy, social norms, trust, perceived behavioural control and risk on attitude and how the attitude affects consumers' m-commerce adoption intention. The research study was undertaken in selected cities of Gujarat state, namely, Ahmedabad, Surat, Vadodara and Rajkot.

The PhD Thesis to be submitted shall be organized into seven chapters. The researcher shall also provide a List of Tables, Figures, Graphs and Abbreviations with supported Annexure as the case may be. The first chapter entitled "Information and Communication Technology Sector: An Overview" has given a brief view of the ICT sector in terms of market size, growth potential, strategies adopted for growth of the ICT sector and application of ICT in different areas like Healthcare, Education, Agriculture, Manufacturing, Finance, Banking, Insurance and Retailing. The chapter has also discussed the e-commerce market, e-commerce models, usefulness and problems faced with e-commerce and the gradual shift from e-commerce to m-commerce. The second chapter titled "An overview of mobile commerce" had presented a brief picture of m-commerce, covered m-commerce application, value chain, benefits and barriers in adopting m-commerce. This chapter has also discussed mobile apps as well as the trends in the m-commerce sector in India.

The third unit titled “Review of Literature” has tried to give a concise literature review of the impact of selected drivers namely perceived cost, perceived usefulness, personalisation, perceived ease of use, privacy, perceived behavioural control,trust, social norms and risk on attitude and the effect of attitude on adoption intention and a model was developed to know the drivers of m-commerce adoption. The fourth chapter was regarding the “Research Methodology” and chapter five entitled ‘Data Analysis and Interpretation’ has provided the results of the research study. Chapter six titled ‘Findings and implications of the Research Study’ has presented the results of testing of hypotheses with the help of different statistical tools and techniques to bring out implications of the research study. Chapter number seven entitled “Conclusions, Recommendations and Suggestions” provides the recommendations, suggestions, limitations and future directions of the research study. The secondary sources of information are enlisted in the section of the ‘Selected References’ given at the end, and the ‘Appendix’ offers an annexure which gives a detailed information of calculations on data analysis and interpretation and other information related to the research study.

The research study has aimed to explore the drivers of consumers readiness for m-commerce adoption and also aims to closely examine the prospects of m-commerce and assess its future potential in the Indian context, a market with a strong telecommunication infrastructure and with policies that support technology, the results would be beneficial to m-commerce merchants to find the target group for marketing their products. It would also be beneficial to policy developers to focus on taking major policy decisions based on the findings revealed in this research study. In short, the research study has many managerial and business implications for m-commerce network developers as well as merchants for developing a strategy to improve the penetration of m-commerce.

"THE CONSUMER STUDY OF DRIVERS FOR B2C MOBILE COMMERCE ADOPTION IN SELECTED CITIES IN THE STATE OF GUJARAT"

1.0 : INTRODUCTION:

In the 21st century, all aspects related to our life and lifestyle involve Information and Communication Technology (ICT). The development of wireless communication technology, an important advancement in ICT had played an important role in the increase in the use of ICT all-around the world. The use of ICT has provided ease in communication as now; people can communicate with others 24x7 and at distance place at the given point of time. The ease in communication had led to the increase in the use of ICT by people all-around the world. Businesses units are also increasingly using ICT for the achievements of their different objectives. The technology is used not only to influence the internal environment but also the external environment of the organisations. Wireless communication through mobile phones has become an excellent marketing channel for the different type of business organizations, providing them with the facility where they can directly market their products to the targeted customer which help in increasing the sales and consumer base of the organization (Barutcu, 2007).

1.1 : MEANING AND DEFINITION OF M-COMMERCE:

1.1.1 Etymology:

The phrase "mobile commerce" was coined at the Global Mobile Commerce Forum, in 1997 by Kevin Duffey who defined m-commerce as "the delivery of electronic commerce capabilities directly into the consumer's hand, anywhere, via wireless technology". Business transactions that are carried out in any hand-held device, come under the definition of m-commerce.

1.1.2: Conceptual Definition:

The researcher has strived to list out the definitions of m-commerce as follows:

- According to Durlacher (2000), any direct or indirect transaction having some monetary value that is carried out via a network of wireless telecommunication is defined as m-commerce.
- M-Commerce is "a new type of e-commerce transaction conducted through mobile devices using wireless telecommunication networks and other wired e-commerce technologies" (Siau et al., 2001)
- M-commerce is "the application of wireless communications networks and devices to the execution of transactions with monetary value" (Clarke, 2001)
- Tiwari and Buse (2007) have defined it as "any transaction, involving the transfer of ownership or rights to the use of goods and services, which is initiated and/or completed by using mobile access to computer-mediated networks with the help of an electronic device."
- Wu and Wang (2005) defined m-commerce as "A transaction with or without monetary value implemented via a wireless communication network that includes mobile banking, retail shopping, investing and other web services".

- According to Turban and King (2003), the main attributes of m-Commerce are ubiquity (the location does not affect the ability to conduct transactions to a large extend); convenience (with the ability to procure services through mobile devices); localization (getting location-specific services using GPS technology); accessibility (the customer is not bound by time and location) and personalization (companies can use m-commerce to tailor information and services specific to every customer's needs).

1.2 HISTORY AND GROWTH OF M-COMMERCE:

The delivery of the first m-commerce services started in Finland (in Helsinki) in the year 1997 with mobile phone supported two vending machines of Coca-Cola, by enabling payments through SMS service. In the same year, SMS was also used by Merita Bank of Finland to start the first banking service that utilized mobile phones. Finland also witnessed the birth of content distribution and product sales through mobile phones in 1998 when Linja Radio launched ringtones that could be downloaded to mobile phones. The year 1999 marked the start of mobile payments in the Philippines, and the first mobile internet platform introduced by iMode in Japan was NTT DOCOMO. This was a game-changer as the company just retained 9% of the net amount in the payment, where the rest of the money went to the consumer. There was rapid growth and spread of m-commerce applications in the following years with airline tickets, train tickets, and even parking facilities being sold through mobile phones in countries like Australia, Norway, and Japan. The humble beginning was followed by swift advancement in mobile phone technology and advancement in m-commerce applications that are pervasive in the current market, with more than 5 billion mobile phone users worldwide.

M-commerce services remove the need for PCs or a wired connection interface as m-commerce users just required a mobile phone with an internet connection to use the m-commerce services. The plethora of services provided by companies turn mobile phones into a powerful business tool, making it possible to conduct transactions with a single touch from anywhere in the world with accessible wireless internet. Mobiles can now be used for buying tickets, reserving restaurants, procuring services, and even ordering food, to name a few examples. M-commerce involves different players in the value chain which include mobile network operators, service providers, content developers, application providers, infrastructure and mobile equipment vendors and customers. M-commerce applications include many applications viz., financial applications (Banking, brokerage and payments), location-specific advertisement, inventory management, entertainment and mobile office, to name a few (Varshney, U., & Vetter, R., 2002).

1.3: M-COMMERCE IN INDIA: MARKET SIZE

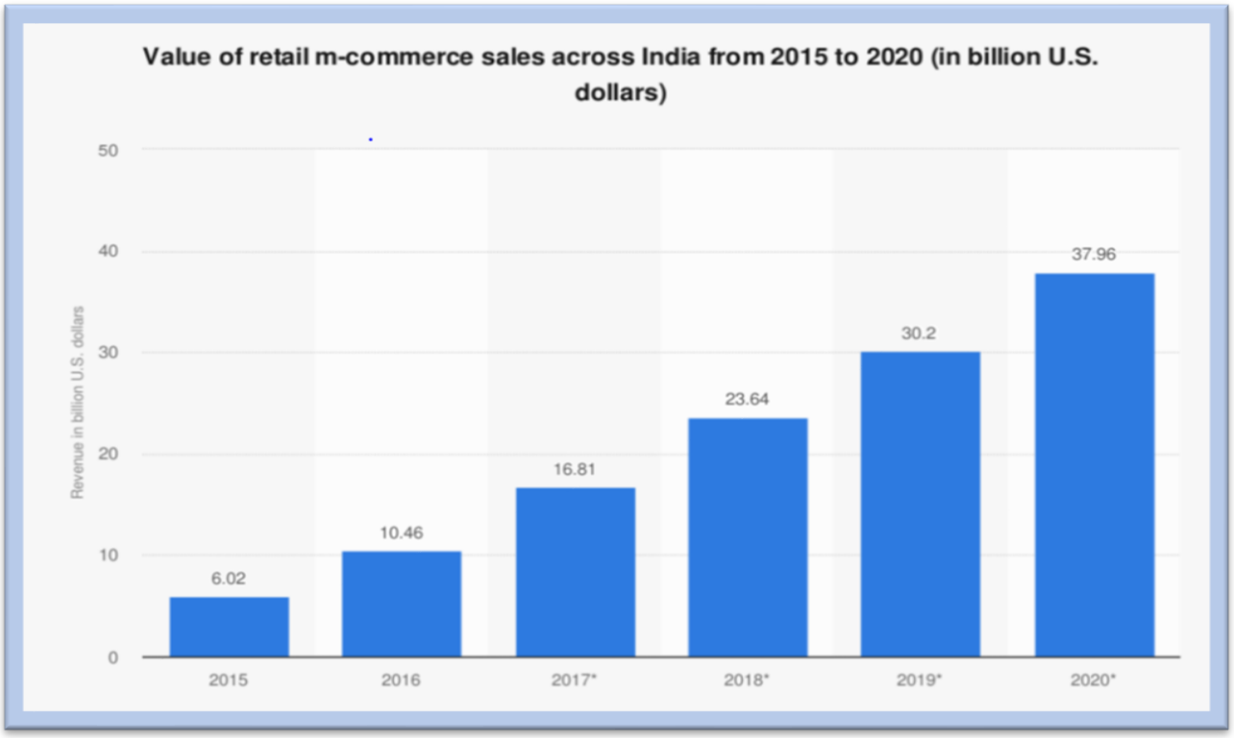
In India, in the financial year 2021, the digital payment has reached more than 53 billion Indian Rupees which was just 20.7 billion in the financial year 2018(Statista, b). mainly via mobile app BHIM (Bharat Interface for Money). In India, as of June 2021, the providers of Unified Payments Interfaces (UPI) documented digital payment transactions of 2.8 billion which is more than five trillion Indian rupees,

PhonePe has a 46 per cent share followed by Google Pay (35 per cent) and Paytm (12 per cent). Due to high smartphone penetration and cut-throat competition in the domestic market, mobile wallet transactions which was estimated at Rs. 36.5 trillion is projected to increase three times by 2024 (Statista, c). Due to the emergence of mobile-first economies, out of the global total retail e-commerce sale, 72.9 per cent was projected to be made through m-commerce in 2021 against 58.7 per cent in 2017(Statista, d). In 2020, B2C m-commerce in India was estimated at nearly 38 billion U.S. dollars from just 6 billion in 2015(Statista, e)

Graph Number: 01:

B2C m-commerce sales Value across India from 2015 to 2020

(Revenue in billion U.S. dollars)



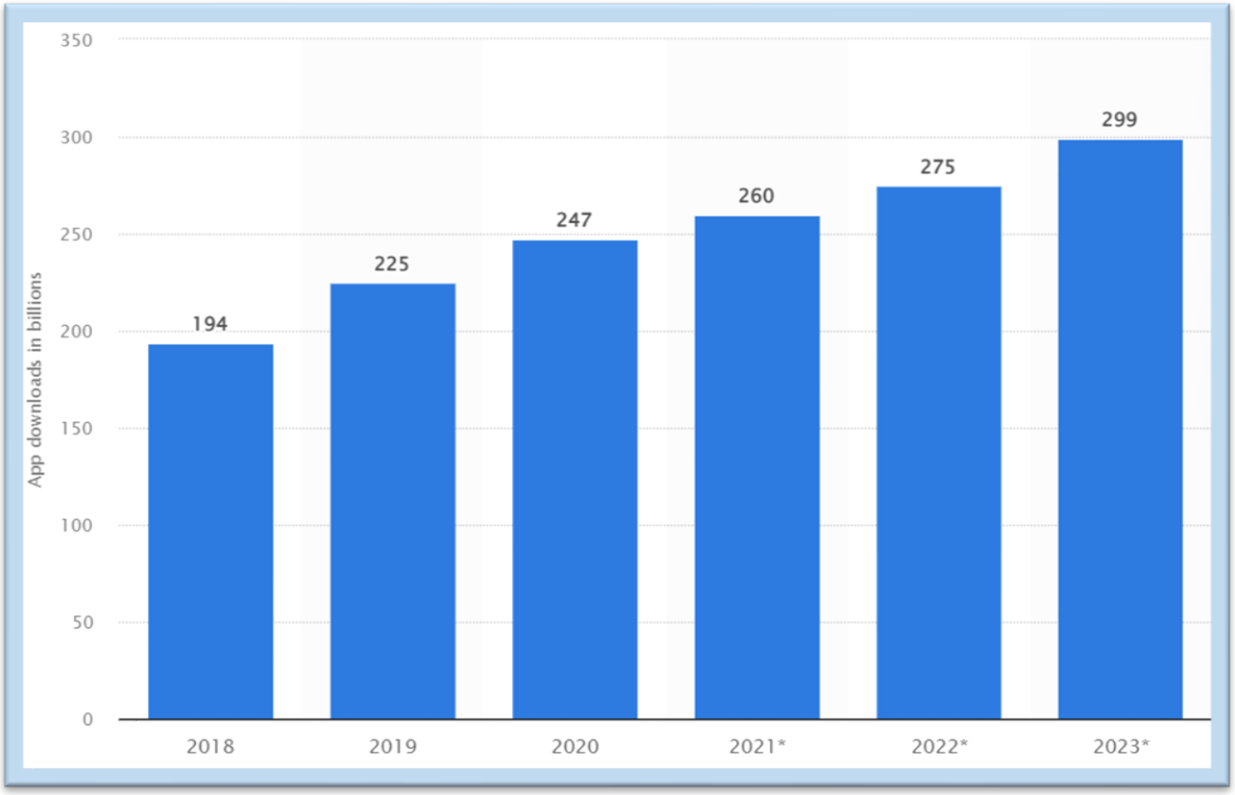
Source: Statista (2021, e)

According to AppAnnie, an app market analytics firm, mobile app usage among users of smartphones in India was 4.8 hours a day in the third quartile of 2021, thereby becoming "among the most mobile-first consumers in the world" (economic times,2021). Most business organizations have developed and deployed apps of their own, which they use to increase sales, inform customers about deals, and improve the customer-business relationship by providing quality service options. Apps are a step above mobile websites, with their sleek optimized designs, faster efficient content navigation, and features like quick single-click payment options, image search, voice recognition, barcode scanners, etc. The user-friendly and efficient nature of such apps increases customer satisfaction, leading to more impulse purchases.

Graph Number: 02:

Mobile Apps downloads worldwide from 2018 to 2023, by store

(In billion)



Source: Statista (2021, f)

As per the data revealed by Statista, 247 billion Internet users of the world download different mobile applications in the year 2020. The details of the applications downloaded included gaming apps which were downloaded by nearly half of the total Internet users, followed by social media apps which were 9.45 per cent of the total downloaded applications. The expected increase for the application download was expected to reach 299 billion by the year 2023 by Statista. Mobile applications are faster and more efficient than mobile web pages. Mobile applications are also safer, thus most of the financial transactions are carried out through apps rather than mobile internet.

Consumers prefer retailers that can provide a more personalized experience while making purchases. It also underlined a variety of preferences among consumers concerning retail technology, with retailers implementing robotics and automated shopping algorithms expected to perform better. Near Field Communication (NFC) technology that is used for payments is considered as one of the most reliable methods today, where one just needs to wave the mobile phone, that has been set up connectivity securely with the bank account or card, in front of the receiver to carry out the payment. With all this technology in place, these apps pose substantial security risks. Apps tend to collect a lot of information about the users: their location, transaction details, debit card information, time and pattern of usage, etc.

Many apps now ask permission for our contacts, location, and other system features, and the potential security breaches from mobile apps are a major concern today.

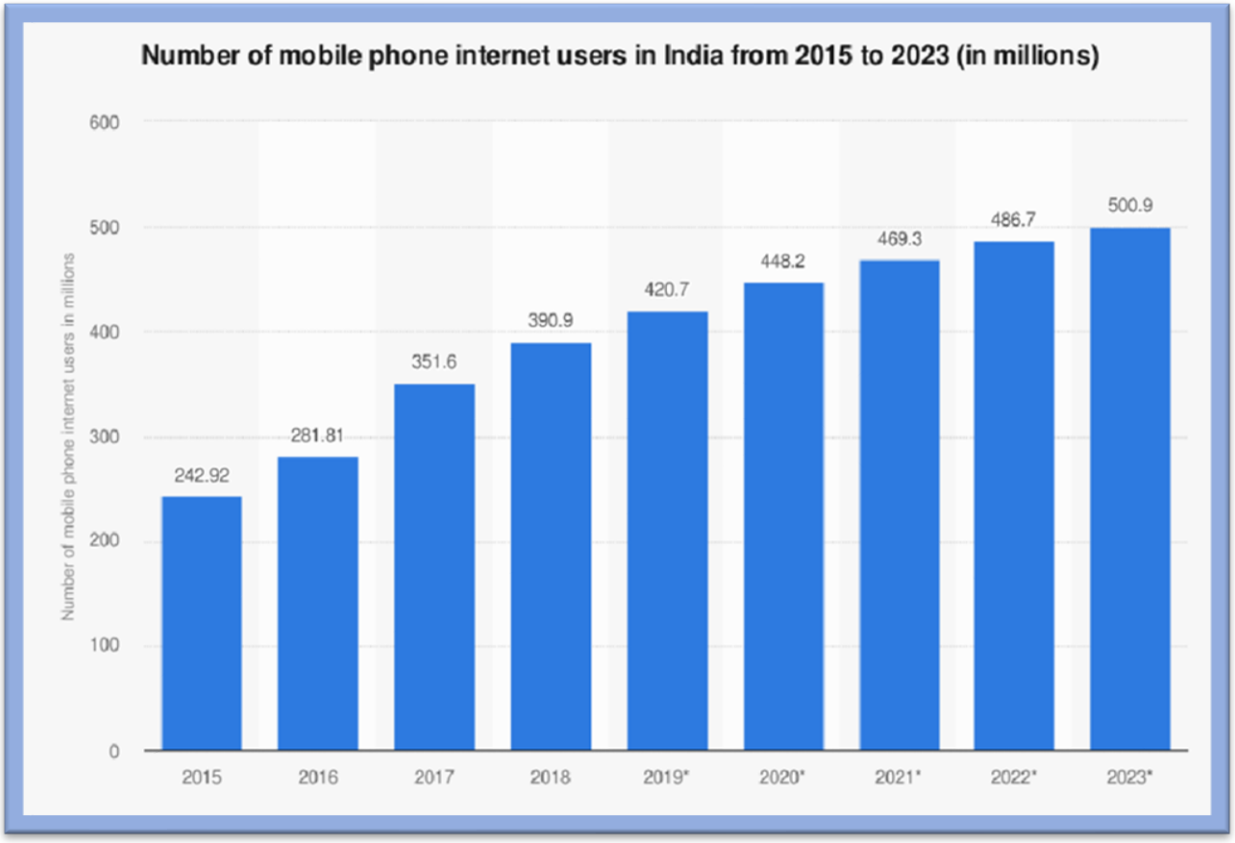
1.4: MOBILE INTERNET USERS IN INDIA:

Internet penetration in India which was just about four per cent in 2007 went up to 45 per cent in 2021(Statista, g), have a second position in the case of active internet users. As per the IAMAI-Kantar 'ICUBE 2020' report released on June 2021, out of the 1433 million population in India, 622 million are active internet users in 2020 (43 per cent) and is expected to reach 900 million (45 per cent) by 2025(The Economic Times,2021, b). Even though currently urban India is having two times more penetration than rural, by 2025 situation may be reversed as users of the rural area have been growing at a much faster rate than the urban area which may help to bridge the rural-urban divide. Indians using the internet through their mobiles 420.7 million in 2019. The projection states that it would reach 500.9 million in 2023, which constitutes more than 73% of the digital population and would reach 1.5 billion by 2040(Statista, h).

Graph Number: 03:

Users accessing the Internet via mobile in India from 2015 to 2023

(In million)



Source: Statista (2021, h)

According to Statista, the number of smartphone users in India has reached 439.42 million as of May 2021, thus occupying the second position after China. The entry of Reliance Jio, armed with cheap 4G and free voice calling has metamorphosed the telecom market. The company added 100 million customers within six months, in 2019, the company became the market leader as far as wireless telecom subscriber base is concerned. Competitive pricing led to other established telecom operators bringing down their pricing leading to an increase in affordability and accessibility of mobile internet (Statista, h).

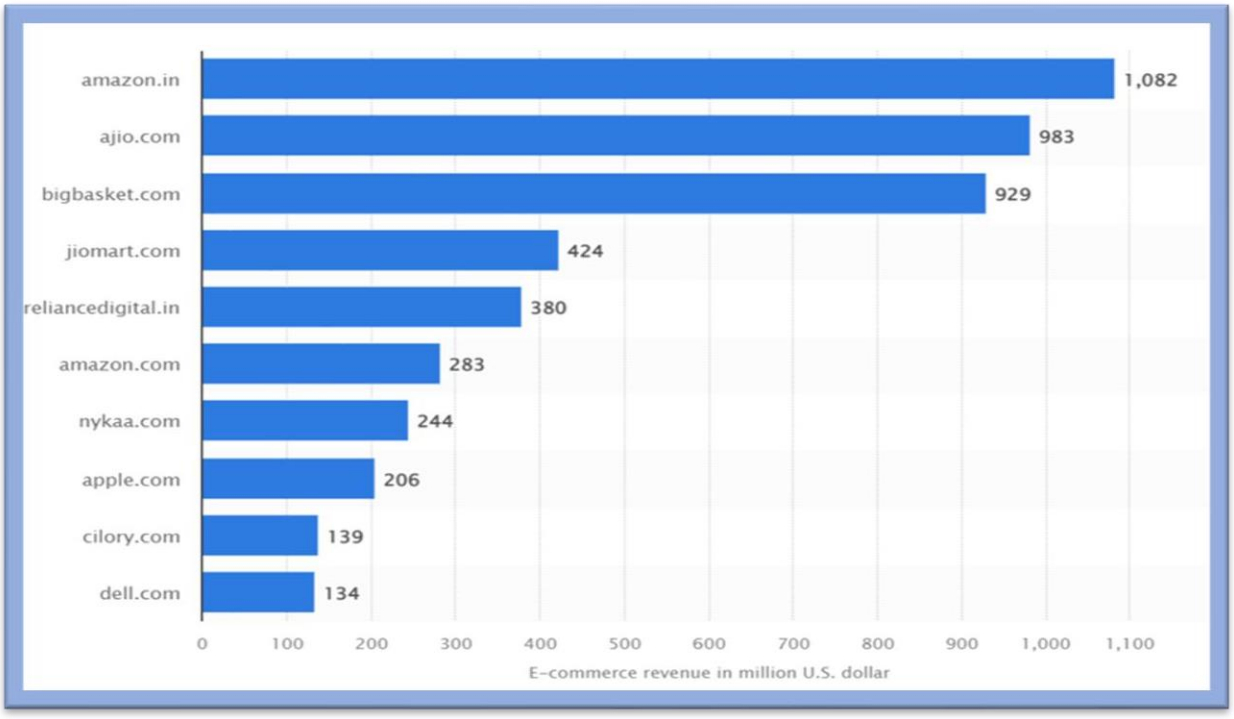
1.5 : MAJOR PLAYERS IN ONLINE RETAIL SECTOR:

A major shift to online purchase from in-store was found in the retail sector in 2020 due to the global pandemic where retail sites witnessed heavy traffic, Amazon with monthly traffic of 3,68 billion and eBay.com had 1.01 billion monthly visitors. Globally in 2020, the major online retail traffic was through mobile (67 per cent) and in some industries like fashion and travel, it was more than 75 per cent (statista.com). In the year 2020, in the Indian market, Amazon. in was the major player with net e-commerce sales of US$ 1,082 million followed by Ajio.com (US$ 983 million), Bigbasket.com (US$ 929 million) and Jiomart.com (US$ 424 million) (Statista, i).

Graph Number: 04:

Major players in online retail sites

(In million)



Source: Statista (2021, i)

2.0: A BRIEF LITERATURE REVIEW:

The review of literature, which helps in interpreting existing literature, helps to identify the contradiction of various thoughts and identifies the research gap, play a major role in any research study. It also helps us to know the current state of research and the relevancy of the research topic and also help the researcher to identify the areas which require further investigation and to adopt a suitable methodology to investigate the research problem under study. The researcher has analysed several research papers, scholarly articles, research reports, empirical surveys, seminar/conference/workshop proceedings etc. related to the selected area of the research study. After reviewing the research papers published in peer-reviewed journals and from other published articles, a concise review of the literature was prepared based on different drivers identified, viz., perceived cost, perceived usefulness, Personalisation, perceived ease of use, privacy, perceived Behavioural control, trust, social norms and Risk on attitude and the effect of attitude on consumers' m-commerce adoption intention and a conceptual model was developed to conduct the research study. The review mainly included the factors that prompt people to adopt m-commerce services in India, their usage frequency, benefits and difficulties experiences and their intention to continue with such services in the future. The researcher has summarized the current literature available from various researchers in the area of B2C m-commerce and has been presented in the Annexure

3.0 : RESEARCH METHODOLOGY:

The researcher has put efforts to outline in brief various methodological and procedural steps and conceptual aspects concerning the research methodology of the research study which has mainly included basic terms, rationale; scope and coverage; research design; objectives; hypotheses; the model used; sources of secondary data; sampling designs; data analysis and interpretation of the research study had been put forward in concise form as follows:

3.1 : BASIC TERMS OF THE RESEARCH STUDY:

The key terms of the research study have been briefly explained in this section:

3.1.1 : Perceived Cost:

Perceived cost in the framework of m-commerce denotes an individual's perception about using m-commerce services as expensive and it consists of initial fees, cost of the device, cost to download the application, subscription and communication fees and potential upgrade costs (Zhang et al., 2012).

3.1.2 : Personalisation:

Gartner (2017) defined Personalisation as "a process that creates a relevant, individualized interaction between two parties designed to enhance the experience of the recipient." It consists of customizing an experience or information, the company has received about the customers and prospects. It is the act of designing a product or service to meet an individual's requirement.

3.1.3 : Privacy:

Privacy denotes the consumers' perceptions regarding sharing of personal data in an unauthorized manner, unwanted interactions and constant chasing of shopping behaviour of e-tailors (Limbu et al., 2011). Information privacy is "the individuals' right or desire to have some influence over their personal information concerning its collection, use, and transfer by entities engaged in e-commerce" (Belanger and Crossler 2011). If consumers can manage the timing and control the physical, intellectual and behavioural sharing with others, then it can be claimed that privacy is maintained in m-commerce (Khalifa and Shen 2008).

3.1.4 : Trust:

Trust is the "confidence between the parties that the other party is reliable and that the parties will act with a level of integrity when dealing with each other" (Morgan and Hunt, 1994). Rousseau et. al. (1998) defined it as "a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviour of another". Trust in the m-commerce context is the consumers' readiness to engage with the service provider with the belief that the service provider would fulfil all the commitments towards consumers while performing m-commerce transactions (Marinkovic, Dordevic and Kalinic, 2020). Mayer, Davis & Schoorman (1995) defined trust as "the consumers' positive expectation and belief about service providers which consists of technical knowledge, integrity or their ability to fulfil promises and benevolence which include service providers concern about protecting consumers' interest". (Palvia, 2009).

3.1.5 : Perceived Risk:

Perceived risk, which is a key element in buyer-seller relationships is the individual believes that the desired outcome can be achieved by suffering a loss. (Featherman and Pavlou 2003). Perceived risk refers to the consumer's assumption about the severity of impact caused by negative events and consequences upon adopting novel technology (Bailey et al., 2020).

3.1.6 : Perceived Usefulness:

It is defined as "the extent to which individuals believe that using the new technology will enhance their task performance." Perceived usefulness is the customers' willingness to adopt new technology to improve their performance and efficiency in carrying out a particular task (Davis, 1989).

3.1.7 : Perceived Ease of Use:

Perceived ease of use (PEOU) is "the degree of belief that adopting a specific technology would free them of efforts" (Davis,1989). The ubiquitous nature of mobile phones makes carrying out transactions highly convenient as it eliminates the need to go to a physical store, and lets consumers' use services anytime and anywhere they want, only limited by cellular connectivity. (Li et al., 2012; Rodríguez-Torrico, San-Martín & San José-Cabezudo (2019)).

3.1.8 : Perceived Behavioral Control (PBC):

Perceived Behavioral Control is the "individual perceptions of how easy or difficult it is to perform a specific behaviour." According to Pederson (2005), PBC is "an image of a person's constraints both internal and external on behaviour which is further reflected in the individual's intention to use the services of m-commerce".

3.1.9 : Subjective norms/ Social Norms:

Subjective norm or social norm is the "perceived social pressure to engage or not to engage in a behaviour. A person's subjective norm is determined by his or her perception that salient social referents think he/she should or should not perform a particular behaviour" (Ajzen and Fishbein, 1980). The social influence on a person can be divided into influence from mass media, and influence from peers (Wu, Kang and Yang, 2015; Bhattacharjee, 2000). Studies discovered that the effect of mass-media influence was not significant (Wu et al. 2015), but peers played a major role in deciding users' attitudes and the intention to adopt m-commerce services (Kim, Yoon, & Han, 2016). Subjective norm is thus the opinion and perception a user has, that is influenced or derived from societal behaviour. (Ajzen and Fishbein, 1980). The decision of whether to execute an action or not, whether it is right or wrong, is decided by an individual's perception of what society believes in.

3.1.10 : Attitude:

Attitude is the opinion and perception a person has towards a particular activity, and that comes into tangible play when performing the said activity and can be either positive or negative. If a consumer thinks that a particular activity's outcome would be positive, then the consumer is said to have a positive attitude toward it (Antony Chew, 2006). The belief that attitudes towards m-commerce are strongly tied to the tendency of a consumer to adopt m-commerce formed the bases of TAM (Technology Acceptance Model) and TPB (Theory of Planned Behaviour). (Bailey et al., (2020); Sarkar, Chauhan & Khare (2020)

3.1.11 : Behavioural Intention:

Behavioural intention is defined as "the strength of one's intention to perform a specified behaviour.". Behavioural intention is the person's aim to portray a particular behaviour, which is affected by his attitude and social norms (Sadi and Noordin 2011).

3.2 : RATIONALE OF THE RESEARCH STUDY:

The anywhere-any time connectivity of smartphones, low cost of mobile internet, growing social media trends and changes in the work and lifestyle patterns have directed the growth of m-commerce. To keep up with the current trends business has to increase focus on providing a mobile-friendly shopping experience to consumers if they have to retain them for a longer time. This research study was undertaken to identify the major factors that drive people towards adopting m-commerce in selected cities of Gujarat state, namely Ahmedabad, Vadodara, Surat and Rajkot. As this medium of commerce is growing faster, it has become necessary to know the factors that help in identifying factors affecting m-commerce adoption as the primary adoption factors are still not clear (Pedersen et al., 2002). The

research study was focused on Business to Consumer (B2C) transactions conducted through mobile devices.

The study has made an earnest attempt to know the consumers' attitude towards this medium and their intention to adopt it as a medium of trade. An appropriate model relating to adoption intention was also used. Based on the literature review, certain drivers were selected, namely, perceived cost, Personalisation, privacy, security, Trust, perceived ease of use, perceived risk, perceived behavioural control, social norms and perceived usefulness was selected and the researcher tried to analyse the impact of these factors on their attitude and how attitude contribute towards m-commerce adoption. The role of the demographic variable on adoption intention was also covered.

3.3 : RESEARCH DESIGN OF THE RESEARCH STUDY:

The research design of the research study by bearing in mind its objectives, scope and coverage were exploratory and descriptive.

3.4 : SCOPE AND COVERAGE OF THE RESEARCH STUDY:

The scope of the study was to know the attitude of consumers towards m-commerce and their intention to adopt it as a medium of commerce. The study was confined to Surat, Baroda, Ahmedabad and Rajkot, the selected cities of Gujarat state. It also tried to find out the kind of products and services offered through mobile and the expected future services preferred by consumers through this medium. It provides an insight into the demographic profile of m-commerce users which will help the merchants to customize their offerings to those target segments.

3.5 : A BRIEF ABOUT THE RESEARCH STUDY:

The research study was undertaken based on primary data which was collected from 1480 m-commerce users across different sections of the society belonging to different age, gender, occupation, income and type of families. For conducting the study, representative samples were selected from four major cities of Gujarat state VIZ., Ahmedabad, Surat, Vadodara and Rajkot based on a non-probability sampling design. The researcher has collected Primary data using a pre-tested structured non-disguised questionnaire to provide the results of data analysis and interpretation after examining the effects of selected drivers of m-commerce adoption in selected cities of Gujarat state Viz., Vadodara, Surat, Rajkot and Ahmedabad respectively.

3.6 : OBJECTIVES OF THE RESEARCH STUDY:

The key objective of the research study was to examine the factors that affect the adoption of m-commerce services in selected cities of the Gujarat state VIZ., Ahmedabad, Surat, Vadodara and Rajkot. The other objectives of the research study were as follows:

- To analyse how different drivers like perceived cost, perceived usefulness, personalisation, privacy, trust, risk, perceived behavioural control social norms and perceived ease of use influence consumers' attitudes towards m-commerce
- To find out how attitude influences the consumers' intention to adopt m-commerce.

- To study the association between selected demographic background variables viz., Age, gender, income, type of family, marital status etc. of selected consumers on their intention to adopt m-commerce.
- To find the kind of products and services that are offered through mobile and explore the possible business areas where m-commerce is feasible.
- To get an understanding of the perception of mobile phone users towards this medium and their utility value in terms of the effects on purchase behaviour.
- To recommend applications and services that can make a major impact through M-Commerce.

3.7 : HYPOTHESES OF THE RESEARCH STUDY:

The researcher has attempted to formulate and test various statistical hypotheses based on research gaps that were identified with the help of an in-depth review of literature given as below:

3.7.1 : Hypotheses-1:

The cost and pricing of m-commerce services have a significant impact on user's attitude and their adoption intention for the use of m-commerce applications.

3.7.2 : Hypotheses-2:

Personalisation has a significant impact on m-commerce users' attitudes and adoption intention for the use of m-commerce applications.

3.7.3 : Hypotheses-3:

Privacy concern has a significant impact on m-commerce users' attitudes and adoption intention for the use of m-commerce applications.

3.7.4 : Hypotheses-4:

Perceived trust has a significant effect on m-commerce users' attitudes and adoption intention for the use of m-commerce applications.

3.7.5 : Hypotheses-5:

Perceived risk has a significant impact on m-commerce users' attitude and adoption intentions for the use of m-commerce applications.

3.7.6 : Hypotheses-6:

Perceived usefulness has a significant impact on m-commerce users' attitude and their adoption intention for the use of m-commerce applications.

3.7.7 : Hypotheses-7:

Perceived ease of use has a significant and positive impact on m-commerce users' attitude and adoption intention for the use of m-commerce applications.

3.7.8 : Hypotheses-8:

Perceived Behavioral Control has a significant and impact on m-commerce users' attitude and adoption intention for the use of m-commerce application.

3.7.9 : Hypotheses-9:

Subjective norm has a significant impact on m-commerce users' attitude and adoption intention for the use of m-commerce applications.

3.7.10 : Hypotheses-10:

The attitude has a significant and positive impact on m-commerce users' adoption intention.

3.7.11 : Hypotheses-11:

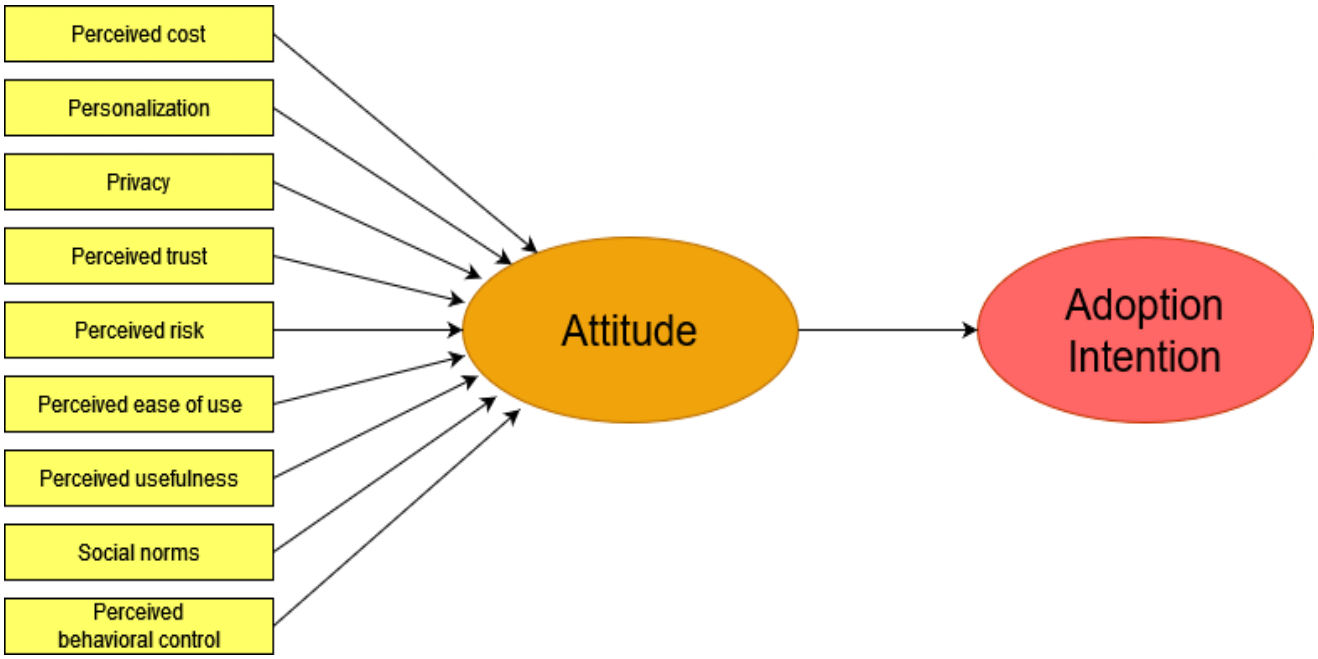
. There is no significant difference between selected demographic variables of m-commerce users viz., age, gender, marital status, type of family, occupation and annual income vis-a-vis their perception regarding cost, personalisation, privacy, trust, risk, perceived ease of use, perceived usefulness, social norms, perceived behavioural control, attitude and adoption intention for the use of m-commerce applications.

3.8 : CONCEPTUAL MODEL DEVELOPED AND USED IN THIS RESEARCH STUDY:

The review of the literature undertaken by the researcher for offering justification of the formulated hypotheses which has to be tested with the help of a structured questionnaire is largely based on the model of Ajzen and Fishbein (1980), Davis (1989), and (Khalifa and Shen, 2008). Ajzen and Fishbein's theory assumes that is that people knowingly take a proper decision either on executing or not executing a specific behaviour and they go through and analyses innumerable criteria related to the behaviour before actually performing it (Bauer et.al.2005). The Theory of Reasoned Action (TRA) specifies that the behaviour of people is preceded by intentions which in turn depends on an individual's attitude towards behaviour as well as on social norms (Khalifa and Shen, 2008). The theory of Planned Behaviour (TPB) was developed by Ajzen by stating that individuals do not have complete control over their behaviour, thereby adding "perceived Behavioural control" as a new construct to determine adoption intention and actual behaviour.

To achieve the research objectives, a concise view of the available literature was undertaken by the research and a theoretical model was developed as given in Figure Number 04. The model had incorporated selected drivers like perceived cost, perceived usefulness, Personalisation, perceived ease of use, privacy, social norms, trust, risk and perceived behavioural control to study the influence consumers' attitude and their intention towards m-commerce adoption which was conducted among selected m-commerce user from four selected cities of Gujarat state.

Figure Number One: Conceptual model developed for the Research Study



Source: Compiled by the researcher.

3.9 : SOURCES OF INFORMATION:

It mainly consisted of the following.

3.9.1 : Secondary Data:

The Secondary data was sourced from various books, journals, the internet and online articles which provide updates on the mobile industry which will give an overview of research and analysis done by previous researchers.

3.9.2 : Primary Data:

The primary data was collected with the help of a questionnaire from selected m-commerce users from four cities of Gujarat state, namely Vadodara, Surat, Ahmedabad and Rajkot by using convenience and quota sampling. The questionnaire was employed to measure the customer's attitude, their intention and the factors that drive them to engage in m-commerce. Some questions were related to the demographic profile of the consumers.

3.10 : DRAFTING OF THE STRUCTURED NON-DISGUISED QUESTIONNAIRE:

The structured Questionnaire was drafted considering the key objective of research this study and considering other research objectives that were determined after identifying gaps based on a concise review of literature as available in the body of knowledge. The structured non-disguised Questionnaires consisted of neutrally worded questions and the m-commerce users were asked to rate his/her perception of factors affecting the adoption of m-commerce.

The researcher has taken up a comprehensive review of relevant literature about the subject domain before drafting the structured non-disguised questionnaire concerning selected items that were used to collect responses from m-commerce users. The structured non-disguised questionnaire was put to use to measure the factors that drive people towards the adoption of m-commerce. The final draft of the questionnaire was prepared after a pilot study conducted at Vadodara to make necessary changes in the questionnaire.

The questionnaire consists of three parts. The first part comprises questions regarding the demographic profile of respondents. The second part consists of Questions related to the smartphone use, kind of Operating system used, how frequently used for m-commerce purposes, preferred place and time for shopping through mobile, average time spent for shopping, source of information, the reason for downloading apps, details about apps downloaded, kind of products bought using mobile phones, overall experience and satisfaction level derived from this medium of commerce. Scaling questions were used to know the drivers of m-commerce adoption. A 5-point Likert scale was used to know the agreement or disagreement level of m-commerce users.

Table Number: 01: List of Selected References of Selected Criteria Used in Drafting of Structured Questionnaire

List of Selected References of Different Criteria Used in Drafting Structured Questionnaire			
Name of Author and Research Article	**Conduct of the Time Period of Research Study**	**Number of Criteria used in the Questionnaire.**	**Total Number of Criteria Items**
Criteria No. 1 to 9 Perceived cost on m-commerce adoption			
Wei et al	2009	1,6	02
Kim et al	2010	2	01
Chong et al.	2012	3	01
Venkatesh, Thong and Xu	2010	8,9	02
Julius and Khasawneh	2003	4	01
Haque	2004	5	01
Vrechopoukis et al	2002	7	01
Criteria No. 10 to 14 Personalisation on m-commerce adoption			
Liang et al.	2004	11	01
Kim and Jun	2008	13	01
Solomon et al.	2006	12	01
Kumar and Benbasat	2006	14	01
Kim and Han	2014	10	
Criteria No. 15 to 17 Privacy on m-commerce adoption			
Kenneth Yang	2005	15	01
Chong	2013	16	01
Zhang, Chen, and Lee	2013	17	01
Criteria No. 18 to 26 Perceived Trust on m-commerce adoption			
Chong et al	2012	19,25	02
Gefen	2000	18	01
Chong et al	2012	26	01
Hsu et al	2014	24	01
Mcknight et al	2002	23	01
Jarvenpaa,	2000	21	01
Danny Kao	2009	22	01
Cao et al.	2018	20	01

Criteria No. 27 to 33 Perceived Risk on m-commerce adoption			
Wu and Wang	2005	28	01
Featherman and Pavlou	2003	31	01
Luarn and Lin	2005	32	01
Siau et al.	2004	29,33	02
Jarvenpaa et al.	2000	27	01
Aminul Islam et.al	2010	30	01
Criteria No. 34 to 38 Perceived Ease of Use on m-commerce adoption			
Wu and Wang	2005	35	01
Moore and Benbasat	1991	38	01
Bhattacherjee	2001	34	01
Taylor and Todd	1995	36	01
Venkatesh and Davis	2000	37	01
Criteria No. 39 to 45 Perceived Usefulness on m-commerce adoption			
Wu and Wang	2005	39, 41	02
Nysveen et al	2005	43	01
Chang and Chong	2013	40	01
Chong et.al.	2012	42	01
Wei. Et.al	2009	44, 45	02
Criteria No. 46 to 53 Social Norms on m-commerce adoption			
Fishbein et al	1975	50	01
Venkatesh et all	2000	47	01
Taylor and Todd	1995	46, 48	02
Venkatesh and Davis	2000	49	01
Roehrich	2004	51	01
Chong et.al.	2012	52,53	02
Criteria No. 54 to 61 Perceived Behavioural Control on m-commerce adoption			
Pedersen P.E.	2005	54,55,56,60	04
Lee et al	2006	57,58	02
Zhang et al.,	2012	59,61	02
Criteria No. 62 to 70 Attitude on m-commerce adoption			
Kenneth Yang	2005	63,65, 68	03
Oh et al	2003	62	01
Lee et al	2006	66,67	02
Hung et al	2003	69	01
Wei et al	2009	70	01
Pedersen	2005	64	01
Criteria No. 71 to 81 Adoption intention of m-commerce			
Venkatesh and Davis	2000	79	01
Lee et al	2006	81	01
Yang	2010	80	01
Chong et al.	2012	71,74	02
Wang & Li	2012	72	01
Zhang, Chen and Lee	2013	73	01
Wu and Wang	2005	75,77	02
Wei et al	2011	76	01
Lee et al	2006	78	01

3.11.1: Reliability of the Structured Non-Disguised Questionnaire:

To test the reliability of various constructs of the questionnaire, the Cronbach's Coefficient Alpha equivalent to the average of all the split-half correlation coefficients was used by the researcher. As given in Table Number 3.2, the Cronbach's Alpha score (Cronbach, 1951) showed that the value of the opinion of selected factors of use of m-commerce application which led to the adoption intention of m-commerce application was found ranging from 0.626 to 0.976 that showed internal reliability of the scale, and echoed the degree of cohesiveness between the selected items or statements (Nunnally, 1981).

Table Number: 02:

Reliability of opinion of selected m-commerce users on selected criteria for the study

Sr. No.	Selected Criteria	Cronbach's Alpha Co-efficient
01	Perceived Cost	0.766
02	Personalisation	0.614
03	Privacy	0.952
04	Perceived Trust	0.795
05	Perceived Risk	0.691
06	Perceived Ease of Use	0.626
07	Perceived Usefulness	0.758
08	Social Norms	0.823
09	Perceived Behavioural Control	0.976
10	Attitude	0.797
11	Adoption Intention	0.875
	Overall Reliability of all Criteria	**0.872**

3.11 : SAMPLING DECISIONS:

The major sampling decisions applied in this research study have been described as follows.

3.11.1 Representative Sample of the Research Study

The representative samples of this study are individuals who were engaged in m-commerce. The researcher has made a sincere attempt to have a fairly representative sample from among people belonging to different demographic backgrounds by using convenience and quota sampling methods. A male or female m-commerce user residing in this area at the time of collection of the primary data is considered as a representative sampling unit.

The primary data were collected from selected m-commerce users belonging to different segments viz., students; housewives, employees and businessmen from the selected four cities of the Gujarat State viz., Vadodara, Surat, Ahmedabad and Rajkot respectively

3.11.2 Sampling Design:

The researcher had used a non-probability sampling design for this research study. Convenient cum quota sampling method was followed to draw representative samples of this research study consisting of those m-commerce users belonging to the selected four cities of the Gujarat State viz., Vadodara, Ahmedabad, Surat and Rajkot respectively

3.11.3 Sampling Method:

The researcher has used quota-cum-convenience methods of sampling

3.11.4 Sampling Frame

As the sampling frame directly suiting the chief objective of the research study was not available and hence the researcher made interactions with the m-commerce users from different socio-economic backgrounds to understand the extent of penetration. The researcher tried to understand the factors that drive them to adopt this medium of commerce, The published reports of the different associations of the mobile industry were also reviewed for determination of the sample size of this research study. The researcher has attempted to have fairly representative samples from different demographic backgrounds by using convenience and quota sampling methods. M-commerce data published by the Internet Mobile Association of India (IAMAI) and Telecom Regulatory Authority of India (TRAI) was taken into consideration for drawing the representative sampling unit of m-commerce users from the selected four cities of the Gujarat State viz Vadodara, Surat Ahmedabad and Rajkot.

3.11.5 : Sample Size Determination:

For collecting primary data, a sample size of 1480 m-commerce users was drawn from four major cities of Gujarat state VIZ., Ahmedabad, Surat, Vadodara and Rajkot. The total number of m-commerce users drawn from Vadodara city was 290; 500 m-commerce users from Ahmedabad city; 425 from Surat city and 265 from Rajkot city.

[Please Refer Annexure-II for detailed information on Determination and Computation of Sample Size]

3.11.5 Sampling Media:

The primary data was collected by using a structured non-disguised questionnaire which was circulated among the selected m-commerce users residing in the selected four selected Cities of the Gujarat State viz., Vadodara, Surat, Ahmedabad and Rajkot.

4.0: DATA ANALYSIS AND INTERPRETATION OF THE RESEARCH STUDY:

The researcher had used suitable statistical tools to test the formulated hypotheses by application of suitable tests of significance and use of appropriate statistical software for data analysis and interpretation. The researcher had made use of viz., Frequency Analysis; Computation of Mean; Chi-Square Test, one way ANOVA, Tukey Post Hoc Test for Multiple Comparison, Kruskal-Wallis Test, and Structural Equation Modelling are also applied to test the significance of the formulated statistical hypotheses to offer findings and implications of this research study. Data analysis was used to offer the demographic profiles of the selected m-commerce users in the selected four cities of the Gujarat State viz., Vadodara, Surat Ahmedabad and Rajkot respectively.

The data analysis has offered results on selected criteria viz., frequency of use; awareness of different m-commerce applications, perception and experience of the selected features, attitude, Behavioural intention and adoption intention of m-commerce respectively.

5.0: FINDINGS AND IMPLICATIONS OF THE RESEARCH STUDY:

The researcher has attempted to offer findings of applications of various statistical tools and techniques that were put to use to infer findings and to bring out meaningful strategic business, economic and managerial applications of this research study. The use and application of correlation have revealed the relationship between the perceived cost, Personalisation, privacy, perceived ease of use, Trust, risk, perceived usefulness with the attitude and the relationship of social norms, perceived control and attitude with the adoption intention.

Chi-Square Test was used to assess the association between selected background variables of selected m-commerce users with their response regarding selected drivers of m-commerce Adoption.

The findings of the research study are also based on the application of the Kruskal-Wallis test that was used to identify the alterations in the city-wise responses of selected m-commerce users in the State of Gujarat. The factor analysis was applied to reduce the dimension of statements and Structural Equation Modelling (SEM) using AMOS was also performed to predict the relationships among the variables. Based on the findings of the research study, the researcher has also attempted to come up with some valid implications.

6.0: RECOMMENDATIONS AND SUGGESTIONS OF THE RESEARCH STUDY:

The researcher through this study has tried to identify and analyze the factors that are proficient to give sufficient justification to consumers' adoption decision towards m-commerce. The conceptual model framed and tested in this study would provide a better understanding of online consumers' buying behaviour. From the inputs received from this study, m-commerce service providers would be able to strategize and reengineer their business process to match with customers' requirements. M-commerce merchants can develop proper policies and procedures that would help consumers to use m-commerce services effectively and efficiently.

The researcher has made efforts to offer an overview of the entire PhD thesis in this section. The researcher has provided the recommendations, suggestions, and limitations of the research study along with the directions for future researches. Based on the data analysis, testing of hypotheses and development of the Structural Equation Modelling (SEM), the researcher recommends that though mobile was a powerful medium of commerce nowadays, its user interface and small screen size and operating system has to be optimized before the content is delivered. Small screen size creates a problem when customers are looking for exclusive visuals about the products they want to buy. Even though users opined that internet and m-commerce transactions are not costly and they do have the resources to adopt, but felt that m-commerce burden them psychologically, which may be due to privacy and security issues. The m-commerce service provider should focus on these aspects and try to create trust and confidence among the users.

Most of the companies are moving towards m-commerce due to the fast & wide coverage of the audience base. It helps to strengthen your brand, & to remain updated with competitors, which ultimately affects sales. Technological advancement and changes in buying habits of consumers lead to a mobile-centric approach while doing business. Merchants are also satisfied due to the Wider Audience base, Enhanced User Experience, Direct communication, easily adapt as per the customer's needs. It also helps in increasing customer interactions and also to improve the number of transactions. The rise in the use of mobile phones has also led to new trends in marketing like mobile content marketing. Reaching customers at right time through geo-tracking and programmatic advertising has become the latest trend. It also provides valuable knowledge about consumers purchase behaviour through mobile analytics.

The study revealed the majority of the people spent more than half an hour for mobile shopping and late evening shopping from home is preferred for m-commerce, the m-commerce merchants can think of providing some limited time offers to encash this opportunity. Even though no users have shown any dissatisfaction towards this medium, 32 per cent of users have remained neutral regarding their overall experience with m-commerce. In a highly competitive society like ours, 32 per cent is not a negligible number. M-commerce service providers should take immediate steps to improve user experience with m-commerce as a buying platform. Many factors had contributed to better consumer experiences like personalised offers, Easy comparison of product, variety of payment options, brand visibility, convenient checkouts, updates through push notification, better instore experiences with mobile optimisation, bar code or QR code scanner for better product information, Customer Support facility with the help of chatbot and messenger apps. Variety of Payment Methods like a credit card, PayPal, or cryptocurrency which they could easily be integrated into the mobile store.

7.0: LIMITATIONS OF THE RESEARCH STUDY:

- The research study was mainly carried out among the urban m-commerce users in the four selected cities viz., Vadodara, Surat, Rajkot, and Ahmedabad of the Gujarat State, so it would be unsuitable to generalize it as a representative for the entire population of the Gujarat State.
- Even though the researcher has made an earnest attempt to collect primary data through a predesigned questionnaire by reducing ambiguities, the responses collected might lead to distorted and unfitting data which affects analysis as well as findings of the research study.
- The measures of constructs were collected at the same point of time in this study. People's perceptions and their intention to use m-commerce may change over time due to their increasing awareness and experience as well as due to technological advancement and better safety measures taken by service providers. The number of users is also increasing rapidly, which makes it difficult to determine the optimum sample size for the research study. So, it is advisable to conduct a longitudinal study to know the changing perception of people towards m-commerce adoption.

- Apart from the geographical area, the findings of the research study are suffering from limitations of restricted sampling size. Moreover, the sampling design adopted in this study was the convenience sampling method which has the possibility of under- or over-representation of the population and may lead to biased results.
- The research study had limited time duration, and monetary resources, so the results would also get relatively influenced to some extent.
- The questionnaire contains one option as "Neutral" response categories from the surveying samples which may prevent disclosure of facts and figures.
- There are different methods to measure attitude and adoption intention for m-commerce users, and there are many models and assessment techniques developed for the same. In this regard, the views of experts may differ from one another.
- The research study would be based on consumers' perspectives. It can be extended to merchants' perspectives also.

8.0: DIRECTIONS FOR FUTURE RESEARCH:

This research was focusing on B2C m-commerce adoption, future research can have a two-way study and study can also be undertaken in B2B m-commerce adoption. This study was focusing on adoption intention, which can further be extended to know the continuance intention with m-commerce. The research study can be undertaken in a different context and can be with new constructs like perceived entertainment, which is not covered in this research study. As this is a one-time study, it fails to capture the changes in user reaction over time, longitudinal study can be undertaken to get better insights into the user reaction in a rapidly growing platform like m-commerce. Perceived compatibility is an important factor that has a major influence on adoption decisions, users may think of adopting m-commerce technology if it is reconcilable with their current behavioural patterns. This factor can be explored more by future researchers. The moderating role of Gender, Education and income can also be incorporated to know the influence of demographic variables on adoption intention in future research studies.

9.0: CHAPTERISATION SCHEME OF THE PHD THESIS:

9.1 Chapter Number I: ICT Sector in India: An Overview

The first chapter entitled "Information and Communication Technology Sector: An Overview", has started with a brief introduction of the Information and Communication Sector (ICT sector) in India which is categorised into Information Technology (IT) Sector and Telecommunication sector. In the segment discussing the IT sector, the researcher has given an overview of the IT sector, discussed the market size and revenue of the IT-BPM (Business Process Management) sector in India, also discussed Industry 4.0 which is about digital transformation through state-of-the-art next-generation technology like Blockchain, Artificial intelligence (AI), Machine Learning, Cloud computing and robotics and the Government initiative to promote IT-BPM sector in India. In the Telecommunication sector, the researcher has discussed the Telecom market in India, which consists of wireline, wireless and broadband subscribers.

The researcher has also discussed the Internet penetration in India and also discussed in detail mobile internet users in the country. Also discussed is the Government initiative to promote the Telecom market in India. A brief overview of The National Telecom Policy 2018 / National Digital Communications Policy 2018 was also mentioned in the chapter. The role of ICT in economic and social development is also discussed in detail. Challenges faced are also included in this chapter. Application of ICT in different functional areas like Governance, Healthcare, Education, Agriculture, Manufacturing, Retailing, Banking, Finance and Insurance and in protecting the environment are elaborated with examples. The researcher has also discussed the Evolution of e-commerce due to the internet revolution in India, the market size of e-commerce companies, major players, e-commerce models, government initiatives, advantages, disadvantages, trends in e-commerce and the gradual shift from e-commerce to m-commerce are discussed in detail.

9.2 Chapter Number 2: M-commerce

The second chapter titled "mobile commerce" has given an overview of m-commerce.

The chapter started with a brief introduction followed by concept and attributes, history and growth of m-commerce was also discussed. The researcher has tried to differentiate the term m-commerce from e-commerce. Components of m-commerce, as well as m-commerce service classification, are also discussed in the unit. Application of m-commerce in different functional areas like banking, ticketing, advertising, payment, health, auction, entertainment and retailing are also discussed. The researcher has briefly discussed the m-commerce value chain, members involved in the value chain and their respective roles are also elaborated here. The researcher has also mentioned the role of mobile apps in promoting m-commerce and also discussed the essential features of m-commerce apps. The benefits and barriers of m-commerce were also discussed. The researcher has concluded the chapter by including the latest trends in m-commerce that have bolstered its dominance in the Indian market.

9.3 Chapter Number 3: Review of Literature:

The third unit titled "Review of Literature" has tried to give a concise Literature Review of the impact of selected drivers namely perceived cost, perceived usefulness, personalisation, perceived ease of use, privacy, perceived behavioural control, trust, Risk and social norms on attitude and the effect of attitude on purchase intention and a model was developed to know the drivers of m-commerce adoption. The unit has started with the theoretical foundation behind the adoption behaviour of information system (IS) research. The researcher has discussed widely used models of ICT adoption viz, Technology Acceptance Model (TAM) (Davis, 1989), Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975), and Theory of Planned Behaviour (TPB) (Ajzen, 1985). Then the researcher has discussed prior research studies related to mobile services and the studies related to Technology Acceptance Model (TAM). The researcher has also reviewed the literature available in the area of m-commerce concerning selected drivers of m-commerce VIZ., perceived cost, perceived usefulness, personalisation, perceived ease of use, privacy, perceived behavioural control, trust, social norms, Risk, attitude and adoption intention.

An attempt has been made to conceptualize the model of the research study through browsing, classifying, compiling, and critically reviewing earlier Ph.D. Theses; Dissertations as well as research articles; research papers; empirical studies; research reports, and also results of empirical field surveys that were conducted by other researchers in India and Worldwide. The researcher has made use of Reference Books and publication of the proceedings of the seminars, conferences, and workshops relating to the chosen area of the research study. Thus, the researcher had put efforts to identify the gaps with the help of an in-depth review of the literature to identify and select the objectives of this research study.

9.4 : Chapter Number Four: Research Methodology:

Chapter number four of this research study titled "Research Methodology" has provided a detailed explanation of several procedures followed in the conduct of this research study. The researcher has employed efforts to outline in brief various methodological and procedural steps and conceptual aspects concerning the research methodology of this research study which has mainly included viz., the basic terms, rationale; scope and coverage; research design; objectives; hypotheses; model; sources of secondary data and sampling decisions. It has offered explanation methods of data collection and statistical tools and techniques applied for data analysis and interpretation.

9.5 : Chapter Number Five: Data Analysis & Interpretation of The Research Study:

Chapter number five entitled 'Data Analysis and Interpretation' has provided results of the research study based on analysis and interpretation of the collected primary data from the selected m-commerce users from the selected four cities of the Gujarat State. It has provided factual data and its analysis on selected areas viz., Profile of selected m-commerce users, a response regarding friendliest mobile operating system, frequency of shopping by using mobile, preferred place of shopping using mobile phones, average time spent for shopping, source of information for online shopping and the kind of products they bought through of smart phone which would be beneficial to service providers in identifying the target market. The researcher has also investigated the reason for downloading mobile shopping Apps as well as the overall awareness, download and usage of m-commerce apps. m-commerce users' observation regarding Perceived Cost, Personalisation, privacy, perceived trust, perceived risk, perceived usefulness and ease of use, social norms, perceived behavioural control, Attitude and Adoption Intention about m-commerce adoption. Selected respondents' overall experience, as well as overall satisfaction from m-commerce, were also discussed. The results of data analysis have been presented in percentages, averages and frequency distribution supported with its graphical presentation. The researcher had carried out data analysis by using statistical software SPSS-25 version.

9.: 6 Chapter Number Six: Findings & Implications of The Research Study:

Chapter number Six named 'Findings and Implications of the Research Study' has presented results of Testing of Hypotheses with the help of the use of different statistical tools and techniques to bring out business and managerial strategic implications of this research study.

The researcher had offered the findings and implications of the research study considering the inferences made based on the data analysis using Correlation; Chi-Square; T-Test; Kruskal-Wallis Test; Factor Analysis and Structural Equation Modelling (SEM) respectively.

9.7: Chapter Number Seven: Conclusions, Recommendations and Suggestions of the Research Study:

Chapter number seven offers an abridged form of the PhD Thesis. It has provided the recommendations, suggestions, limitations and future directions of the research study. It contains the researcher's annotations expressed in the form of conclusions, recommendations and suggestions. The researcher had also put forward her concluding remarks based on the results and findings from the primary data that were collected from a total number of 1480 m-commerce users conveniently drawn from the four selected cities of the Gujarat State viz., Ahmedabad, Surat, Vadodara, and Rajkot respectively.

An attempt has also been made to suggest some significant areas where improvement is expected from m-commerce system developers as well as from m-commerce merchants in terms of offering user-friendly value-added features as well as quality services to improve the adoption rate. Based on the researcher's learning, insight and empirical evidence systematically inferred through this research study has been offered as a set of recommendations supported with some valuable suggestions that have emerged during the conduct of this research study.

The diverse sources of secondary sources of data and information put to use in the conduct of this research study have been enlisted in the section of the 'Selected References' given at the end, and finally, the 'Appendix' offers supporting annexure.

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Annexure-1

Welcome to Questionnaire

WELCOME TO QUESTIONNAIRE

Sir/Madam,

I, Ms Yamini K K, a Research Scholar in the Department of Commerce and Business Management, Faculty of Commerce, The Maharaja Sayajirao University of Baroda, perusing my doctoral research study on **DRIVERS FOR M-COMMERCE ADOPTION**, and I am required to carry out a survey, for which I request you to spare your valuable time to fill up this questionnaire. I assure you that it is purely an academic exercise and the information provided by you would be kept strictly confidential. Thanking you, I remain.

(Ms Yamini K K)

Please put a Tick Mark (√) on the appropriate box as per your experience.

(Q.1) Your Age-Group (In Years): 16 to 30 □ 31 to 50 □ Above 50 Years □

(Q.2) Gender: Male □ Female □

(Q.3) Marital Status: Unmarried □ Married □ Single □

(Q.4) Type of Your Family: Joint□ Nuclear □

(Q.5) Occupation: Student □ Service□ Self-Employed □ Non-working□

(Q.6) Annual Income [In Rupees]: Less than 6 Lakhs □ 6 to 9 lakhs □ 9 to 12 lakhs □ More than 12 lakhs□

(Q.7) Which Operating System of Smartphone is more user friendly?

Android□ iOS□ Windows □ Others_____□

(Q.8) How frequently do you shop on smartphone?

Once in a Month□ Once in fortnight□ Once a week□ Many times a week□ Uncertain □

(Q.9) Your preferred place of shopping using Smartphone?

Work place □ Home□ Anywhere □

(Q.10) your preferred time of shopping using Smartphone?

Morning □ Afternoon □ Evening □ Late evening□

(Q.11) Average Time that you Spend Each Time while searching &shopping:

Less than 30 Minutes □ 30 to 60 Minutes□ More than 60 Minutes□

(Q.12) You get information for Shopping online from

Ad in Newspapers	Hoardings	Family Members	Friends	Colleagues	E-mail	SMS

(Q.13) Reason for downloading a mobile shopping app?

To Avail Discount		Easy Purchase		Easy Refund		User Friendly	

(Q.14) Number of m-commerce Applications, you have downloaded in your Smartphone:

2 to 4 □ 5 to 8 □ 9 to 12□

(Q.15) You have used Smartphone for Following: [please tick as many as you online shop]

Mobile, Computers	Cloths	Footwear	Fashion Accessories	Flowers & Gifts	Home Appliances	Furniture	Electronic items
Bags, luggage	Travel Tickets	Movie Tickets	Hotel Booking	Education	Trading	Fund Transfer	Groceries
Baby products	Gas Bill	Electricity bill	Phone Bill	Buy Books	Industrial goods	Health & Fitness	Games & Sports Products

(Q.16) Following are the list of m-commerce apps. Pls put a tick mark in the appropriate place. Awareness=A; Downloaded=D; Used=U.

App Name	A	D	U	App Name	A	D	U	App Name	A	D	U
Amazon India				Dominos				TataCliq			
Flipkart				Ajio				Wish.com			
Lenskart				Zomato				Koovs			
Paytm Mall				Groffers				Shopclues			
Snapdeal				Club Factory				Big basket			
eBay				Limeroad				Bookmyshow			
Decathlon.in				Jabong				Makemytrip			
Myntra				Voonik				Shein			
H&M				Craftsvilla				Trivago			
Aliexpress				Starbucks				OYO			
IRCTC				Uber				Nykaa			
Pepperfry				Shopify				OLX			
Firstcry				Swiggy				UberEats			
Groupon				Quikr				Banggood			
Justdial				Caratlane				Infibeam			
Yebhi				Croma store				Smartshopper			
Infibeam				Rediff.com				Indiamart.com			
Naapatol.com				Fabindia.com				ShopClues.com			
Shopping.IndiaTimes.com				Shopping.rediff.com				Jabong.com			
Travelguru.com				ClearTrip.com				Craftsvilla.com			

(Q.17) Please put a Tick (√) on ANY ONE of the following scales defined as:

1= Strongly Disagree, 2= Disagree, 3=No Opinion, 4=Agree and 5=Strongly Agree .

Sr. No.	Selected Criteria	1	2	3	4	5
1.	Smartphone is not expensive	1	2	3	4	5
2.	Transaction fee is not high for using M-Commerce	1	2	3	4	5
3.	M-Commerce transactions saves my money	1	2	3	4	5
4.	Internet services are not expensive	1	2	3	4	5
5.	I incur an additional expense to switch from wired Internet payment to omnipresent M- Payment Option	1	2	3	4	5
6.	Network connection fees for M-Commerce are Not Expensive	1	2	3	4	5
7.	I manage necessary means and resources to use M-Commerce	1	2	3	4	5
8.	I am afraid for unreasonable or fraudulent charges payable by me for M-Commerce	1	2	3	4	5
9.	M-Commerce are burdens for me	1	2	3	4	5
10.	I would like to receive messages on Sales, Special Price and Promotional coupons for the products of my interest	1	2	3	4	5
11.	I wish to have the choice to register for mobile advertisements only for selected categories of products	1	2	3	4	5
12.	It is important to receive information on products of my choice	1	2	3	4	5
13.	It is necessary for M-Marketers to keep an updated information about their customers for providing personalise offers	1	2	3	4	5
14.	I am willing to share information with M-Marketers for information related to my choice of products	1	2	3	4	5

Sr. No.	Selected Criteria	1	2	3	4	5
15.	Use of M-Commerce is an invasion of my privacy	1	2	3	4	5
16.	Location information invades my privacy	1	2	3	4	5
17.	My Personal information of needs to be kept confidential by M-Marketers	1	2	3	4	5
18.	I am confident while making online purchases	1	2	3	4	5
19.	M-Commerce vendors are committed, they fulfil their agreement	1	2	3	4	5
20.	M-Commerce vendors are efficient at providing serving their customers	1	2	3	4	5
21.	I believe that M-Commerce vendors perform activities in accordance with customers' expectations	1	2	3	4	5
22.	Advances in Internet security technology provide trustworthy M-Commerce transactions	1	2	3	4	5
23.	Online stores that display assurance seals are trust worthier	1	2	3	4	5
24.	I feel confident in giving online details of debit card and credit card	1	2	3	4	5
25.	Payments process in M-Commerce is smooth and secure	1	2	3	4	5
26.	I have a choice to opt-in or opt-out to share my personal information with third parties.	1	2	3	4	5
27.	Others can tamper with information of my M-Commerce transactions	1	2	3	4	5
28.	M-Commerce transactions have potential risk	1	2	3	4	5
29.	M-Tailors' information is not trustworthy	1	2	3	4	5
30.	Feeding payment details in smartphones have potential risk	1	2	3	4	5
31.	M-Commerce has inadequate information on the website and less operational reliability.	1	2	3	4	5
32.	There is a risk of an unauthorized third party overseeing the payment process	1	2	3	4	5
33.	Regulations on M-Commerce minimise the privacy risks	1	2	3	4	5

34.	It's easy to use smartphone for M-Commerce	1	2	3	4	5
35.	Interacting with M-Commerce is clear & easy to understand	1	2	3	4	5
36.	Using M-Commerce is comfortable with online transactions	1	2	3	4	5
37.	It is convenient to get information on offers and promotional coupons	1	2	3	4	5
38.	It would be easy to become skillful at using cell phone or PDA for M-Commerce transactions	1	2	3	4	5
39.	It is easy to search & compare products & services on smartphone.	1	2	3	4	5
40.	M-Commerce helps me in accomplishing tasks faster.	1	2	3	4	5
41.	M-Commerce makes life better	1	2	3	4	5
42.	Use of M-Commerce reflects my personality	1	2	3	4	5
43.	I know more about new products before other people do	1	2	3	4	5
44.	M-Commerce provides flexibility to conduct business transactions anytime from anywhere	1	2	3	4	5
45.	People using M-Commerce are better informed than those using the TV, newspaper and magazines about the product/service they intended to purchase	1	2	3	4	5
46.	People who are important to me think that I should use M-Commerce services	1	2	3	4	5
47.	Majority of my friends/ colleagues use M-Commerce services	1	2	3	4	5
48.	People who are important to me, think that using M-Commerce services is a good/ wise idea	1	2	3	4	5
49.	People who are important to me, think use of mobile payment services is beneficial	1	2	3	4	5

Sr. No.	**Selected Criteria**	1	2	3	4	5
50.	I trust my intuition more than advice from others while using new technology.	1	2	3	4	5
51.	I seek out the opinion of those who have tried new products or brands before I try them	1	2	3	4	5
52.	Friends and relatives have influence on my decision to use M-Commerce	1	2	3	4	5
53.	Mass media (e.g., TV, newspaper, articles, radio) recommendation to use M-Commerce has influenced me to use M-Commerce	1	2	3	4	5
54.	I am able to use m-commerce services without the help of others	1	2	3	4	5
55.	I have necessary means and resources to use m-commerce services	1	2	3	4	5
56.	I have knowledge and ability to use m-commerce services	1	2	3	4	5
57.	I am always waiting to receive m-commerce services	1	2	3	4	5
58.	I will recommend using m-commerce service to others	1	2	3	4	5
59.	Making M-commerce transactions is entirely within my control`	1	2	3	4	5
60.	I have access to the software, hardware and network services required to use m-commerce services.	1	2	3	4	5
61.	My general intention to purchase via mobile phone is very high	1	2	3	4	5
62.	Using M-Commerce services is a good /wise idea	1	2	3	4	5
63.	I am in favour of using M-Commerce	1	2	3	4	5
64.	M-Commerce services is beneficial for me	1	2	3	4	5
65.	I hold positive perception about using M-Commerce services	1	2	3	4	5
66.	I feel satisfied while making M-Commerce transactions	1	2	3	4	5
67.	It is essential to make use of M-Commerce	1	2	3	4	5
68.	I hold positive views towards offering mobile coupons for discounts	1	2	3	4	5
69.	I like to undertake online scanning of products prior making a purchase	1	2	3	4	5
70.	I enjoy buying products & services via M-Commerce	1	2	3	4	5

71.	Total costs to perform transactions via mobile phone are more than other channels	1	2	3	4	5
72.	I would prefer to use M-Commerce , which is personalised for me	1	2	3	4	5
73.	If Privacy is taken care of, I would like to adopt M-Commerce	1	2	3	4	5
74.	I want to adopt M-Commerce because I trust it	1	2	3	4	5
75.	Recent laws reduce the risk related to M-Commerce,which influence it's adoption	1	2	3	4	5
76.	M-Commerce's userfriendliness makes easy adoption of it	1	2	3	4	5
77.	Hassle free shopping through smartphone influences M-Commerce adoption	1	2	3	4	5
78.	Positive attitude of Society towards M-Commerce influences it's adoption	1	2	3	4	5
79.	I will continue to make use of M-Commerce transactions in the near future	1	2	3	4	5
80.	I intend to make more M-Commerce transactions in future than I do now	1	2	3	4	5
81.	I will strongly recommend others to use M-Commerce services	1	2	3	4	5

(Q.18) Your overall experience in meeting of expectations of M-Commerce:

Highly Dissatisfied □ Dissatisfied □ No Opinion □ Satisfied □ Highly Satisfied □

(Q.19) Your overall satisfaction as a M-Shopper:

Highly Dissatisfied □ Dissatisfied □ No Opinion □ Satisfied □ Highly Satisfied □

****

Annexure-II

Sample Size Determination:

The researcher has tried to determine the sample size which is desirable to be regarded as representative of population and details are given below:

Formula for determining Sample Size:

$n = \pi (1 - \pi) z^2 \div D^2$

Where

n = required sample size.

π = the estimated population proportion based on the Marketing White Book of April 2018 internet penetration estimated at 60 (0.60) percent in India.

z = suppose the level of confidence is 95 per cent than associated z value is 1.96

D = the level of precision and desired precision is such that the allowable interval is set as D = p (sample proportion) – π (population proportion) = + or – 0.05.

This formula used form Malhotra, Naresh K. and Dash, Satyabhushan (2011).

Calculation of Sample Size:

$$n = \frac{\pi (1 - \pi) z^2}{D^2}$$

$$n = \frac{0.60 (1 - 0.60) (1.96)^2}{(0.05)^2}$$

$$s = \frac{0.60 (0.40) (3.8416)}{0.0025}$$

$$s = \frac{0.921984}{0.0025} = 369$$ so sample size is **rounded off to 370**

Based on total 370 sample size we can also determine the total sample size, considering four selected cities as four strata, by multiplying 370 with seven strata (i.e., 370 x 4 = 1480) Total Sample size for four selected cities is given in the following table.

As the size of population is different in all selected four cities, the Stratified Random Sampling method (Proportional Allocation) is used and city wise allocation of sample is calculated as follows. Thus, the sample size was fixed as 1480 respondents.

Stratified Random Sampling (Proportional Allocation): $n_i = \frac{n N_i}{N}$

$$n_1 = \frac{n N_1}{N}, \quad n_2 = \frac{n N_2}{N}, \quad n_3 = \frac{n N_3}{N}, \quad n_4 = \frac{n N_4}{N}$$

Where:

n = Total sample size (1480).

n_1, n_2, n_3 and n_4 = required total sample size for each group.

N_1, N_2, N_3, and N_4 = Size of population for each group (7,214,225, 6,081,322, 4,165,626, & 3,804,558).

N = Sum total of population of all four group (**21265731**).

By applying formula sample size is calculated as follows: (Figures Rounded Off)

n_1 (Ahmedabad)= $\frac{1480 \times 7214225}{21265731}$ so n_1 is **502** Sample size for Ahmedabad. **(500)**

n_2 (Surat) = $\frac{1480 \times 6081322}{21265731}$ so n_2 is **423** Sample size for Surat. **(425)**

n_3 (Vadodara) = $\frac{1480 \times 4165626}{21265731}$ so n_3 is **289** Sample size for Vadodara. **(290)**

n_4 (Rajkot) = $\frac{1480 \times 3804558}{21265731}$ so n_4 is **264** Sample size for Rajkot. **(265)**

Table Number: 3. 1:

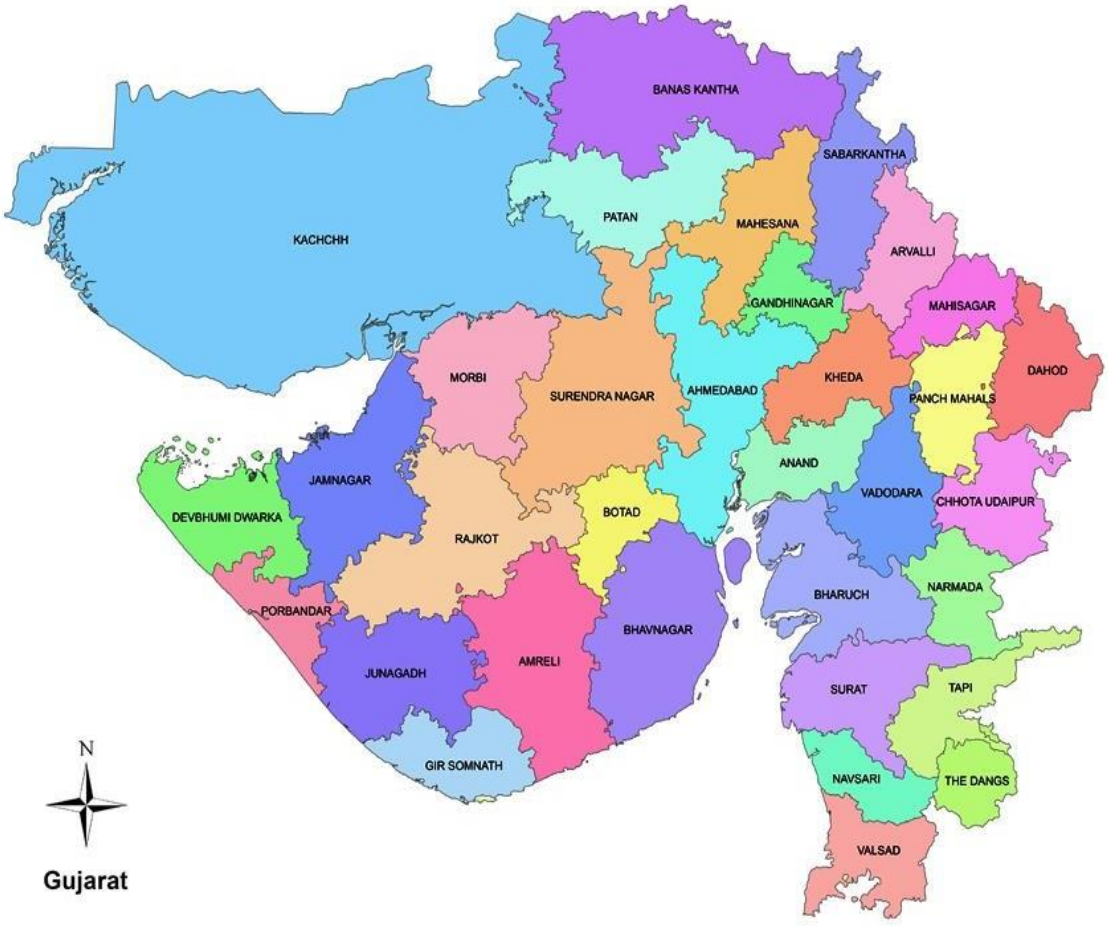
Taluka Wise Distribution of Sample Size for calculating total sample size of the proposed research study

Sr. No.	**Name of Taluka**	*** Total Population as per Census of India, 2011**	**** According to the Marketing White Book of April 2018 internet penetration estimated at 60 (0.60) percent in India. ****	**Calculated Sample Size (Figures Rounded Off)**
1	Ahmedabad	72,14,225	4328535	**500**
2	Surat	60,81,322	3648793	**425**
3	Vadodara	41,65,626	2499375	**290**
4	Rajkot	3,804,558	2282735	**265**
Total: -		21265731	12759438	**1480**

* Https://www.census2011.co.in/census/state/districtlist/gujarat.html, Retrieved on 05/09/2018.

Annexure-III

Map of Gujarat State



Annexure-IV
LITERATURE REVIEW ON M-COMMERCE ADOPTION

S. No	Author/s (year)	Title of the Research paper	Major observations/ Findings
1	Khalifa and Cheng (2002)	Adoption of M-commerce: Role of Exposure	The level of exposure to a certain technology will affect the certainty and clarity of his or her attitude which may affect his or her adoption intention positively or negatively. The study also proved that social norms highly influence their adoption decision.
2	Vrechopoulos, Constantiou, Mylonopoulos & Sideris (2002)	Critical Success Factors for Accelerating M-commerce Diffusion in Europe	User-friendly mobile shopping interfaces, better application and better-quality devices as well as reduced price, resolving bandwidth, security and coverage problem are the critical factors, if proper care is given to handle these issues that may help in enhancing the adoption rate
3	Anckar & D'incau (2002)	Value creation in m-commerce: findings from a consumer survey	The study revealed the unwillingness of users in receiving personalised shopping messages. Young as well as old generation are equally eager to use mobile entertainment services. The study also showed that people treat m-commerce as a supplement not substitute to e-commerce.
4	Tariq Bhatti (2003)	Exploring Factors Influencing the Adoption of M-commerce	This finding of the study using extended technology acceptance model by integrating innovation diffusion theory revealed that Perceived ease of use, subjective norms and Behavioural control affects adoption intention positively. Perceived ease directly influences the adoption decision whereas behavioral control and social norm indirectly affects via perceived ease of use
5	Bill Anckar, Christer Carlsson, Pirkko Walden (2003)	Factors Affecting Consumer Adoption Decisions and Intents in M-commerce: Empirical Insights	The poor networks and not so user-friendly interface of mobile devices constitute significant barriers for those who have used the services and the high initial and operating costs were found to be the key factors that have prevented others for the adoption of mobile services.
6	Constantinos Coursaris, Khaled Hassanein & Milena Head (2003)	m-Commerce in Canada: An Interaction Framework for Wireless Privacy	The findings revealed the need for taking more measures to improve privacy and security concerns in wireless environment and presented a new interaction framework for more privacy and security in wireless environment
7	Leger Pierre-Majorique, Luc Cassivi and S. F. Wamba (2004)	Determinants of the adoption of customer-oriented m-commerce initiatives	Revealed that e-commerce adoption prompts people to adopt m-commerce. The size of the firm has nothing to do with m-commerce adoption and Software companies are more motivated to adopt m-commerce. Firms focusing on B2C are showing more readiness to adopt m-commerce than B2B firms
8	K. Petrova (2004)	M-commerce Adoption: End-User/Customer Views	Proposed a research model by defining the relationships between users, technology, and the m-commerce value chain and proposed a relationship model for m-Commerce and the research study was able to validate its structure via supply and demand models and through existing references.
9	Margherita Pagani (2004)	Determinants of adoption of third generation mobile multimedia services	The researcher has studied about the third-generation mobile multimedia services by consumers in Italian market and found that price, perceived ease of use, speed of use and perceived usefulness Have significant impact on the adoption decision of multimedia mobile services.

10	Kenneth Yang (2005)	Exploring factors affecting the adoption of m-commerce in Singapore	The researcher has employed the Technology Acceptance Model (TAM) to examine factors affecting Singaporeans attitudes toward this emerging mobile technology and applications and found that Perceived usefulness has influenced their attitude and consumer's past adoption behavior, innovativeness and demographic variable age as well as gender affected their adoption behaviour.
11	Pedersen, P. E. (2005).	Adoption of Mobile Internet Services: An Exploratory Study of M-commerce Early Adopters	The researcher has extended Technology Acceptance Model (TAM) by incorporating perceived risk and cost into the TAM to find B2C m-commerce adoption decision and found that most important determinant for behavioural intention is compatibility and a positive influence of perceived risk on behavioural intention was also revealed. The study further discloses indirect influence of perceived ease of use and usefulness on actual usage via Behavioural intention.
12	Nysveen, H., Pedersen, P. E., & Thorbjornsen, H. (2005).	Intentions to use mobile services: Antecedents and cross-service comparisons	The researcher has incorporated motivational factors like usefulness, enjoyment, ease of use and expressiveness along with subjective norms, attitude and perceived behavioural control on adopting mobile chat services and Thujones found that all these factors significantly affect adoption decision of mobile services. The role of gender plays a major role as female users are attracted to mobile chat services due to social influence and perceived enjoyment involved in chat services whereas males are more attracted due to usefulness and expressiveness feature of mobile chat services.
13	Wu, J. H., & Wang, S. C. (2005).	What drives mobile commerce? An empirical evaluation of the revised technology acceptance model	Combined the TAM and Innovation diffusion theory to investigate what determines users' mobile commerce acceptance with regard to online banking, shopping, investing and online services. The findings indicated that all variables except perceived ease of use significantly affected users' behavioural intentions. Among them, compatibility had the most significant influence.
14	Patricia Harris (2005)	Adoption and usage of m-commerce: a cross-cultural comparison Of Hong Kong and the United Kingdom	The researcher has studied the role culture play in m-commerce decision by conducting a study in UK and Hong Kong and found that even in UK m-commerce users found the service as costly, then also they are ready to adopt different type of services offered by m-commerce. Even though, user of m-commerce in Hongkong has not found m-commerce as costly as UK users, but adoption rate in Hongkong is comparatively low as value added services are very costly in the country.
15	Anthony A. Chew (2006)	The Adoption of M-Commerce in the United States	The researcher has revealed that trust, privacy, perceived usefulness and ease of user, e-commerce adoption, subjective norms and innovativeness affects adoption decision.
16	Sendecka (2006)	Adoption of mobile services: Moderating effects of service's information intensity	The researcher has found that perceived behavioural control, perceived expressiveness and compatibility positively affected the mobile service adoption and also revealed that information intensity moderately affected the relationship between perceived expressiveness, enjoyment and perceived control with adoption intention.
17	Enrique Bigné, Carla Ruiz, and Silvia Sanz (2007).	Key Drivers of M-commerce Adoption. An Exploratory Study of Spanish Mobile Users.	The researcher has analysed the main predictors and found that age, experience, attitude and the frequency and length of mobile use significantly influence the adoption decision and all the factors except experience influence m-commerce continuance intention.

18	Niina Mallat (2007)	Exploring Consumer Adoption of Mobile Payments - A Qualitative Study	Factors inhibiting mobile payment adoption reflect the immature state of mobile payment market, and include premium pricing, Perceived incompatibility with large value purchases, complexity of payment procedures, a lack of widespread merchant acceptance and perceived risks. The study focused on major adoption factors in m-payment and found that pricing, immature market, lack of compatibility for heavy buying, complex payment procedure, perceived risk and lack of merchant acceptance have negatively affected the growth of m-payment services.
19	Paul A Pavlou, Ting Lie, Angelika Dimoka (2007)	An integrative model of m-commerce adoption	The researcher has tried to develop a model of adopting m-commerce by analyzing the Behavioural process involved during getting, giving information as well as purchasing with mobile and the model suggested main factors like mobile device display features, navigability, information protection, delay in downloading and Personalisation can improve the adoption rate.
20	Suleyman Barutcu (2007)	Attitudes towards mobile marketing tools: A study of Turkish consumers	The research revealed the negative attitude of users towards m-shopping which may be because of the unfamiliarity with the services during that time period. On the other hand, users have positively accepted mobile based advertising, discount coupons banking, entertainment as well as location-based services. The study also revealed that consumers are highly price sensitive.
21	Khalifa M. and Shen K.N. (2008)	Drivers for transactional b2c M-commerce adoption: Extended theory of planned behavior	The study was motivated by the contradiction between the high penetration rate of mobile devices and the low adoption rate of m-commerce. To understand the drivers for m-commerce adoption, this study extended the Theory of Planned Behaviour Model by incorporating the direct and indirect effects of perceived consequences. Cost, convenience, privacy, efficiency and security were identified important factor for the adoption of M-commerce
22	Suleyman Barutcu (2008)	Customers' Attitudes Towards M-commerce and Mobile Marketing in Consumer Markets	The mobile phone users have positive attitudes towards mobile advertising, entertaining and discount coupons, but have negative attitude toward mobile shopping due to security problem. They are highly price sensitive as the lower price is found to be the most important factor for adoption of m-commerce.
23	Dash, S., & Saji, K. B. (2008).	The role of consumer self-efficacy and website social-presence in customers' adoption of B2C online shopping: an empirical study in the Indian context.	The researcher has studied the role of self-efficacy and website social presence on B2C m-shopping adoption intention and found that self-efficacy and website social presence of consumers influence trust, perceived risk and usefulness which in turn will influence the adoption decision.
24	Mallat, N., & Tuunainen, V. K. (2008).	Exploring Merchant Adoption of Mobile Payment Systems: An Empirical Study	The researcher has identified the main drivers and barriers in m-payment adoption, drivers help to increase sales and reduce cost of payment processing and barriers include system complexity, unfavourable revenue sharing models, lack of critical mass as well as lack of standardization.
25	Suhong Li et.al. (2008)	The influence of Gender on new technology adoption and use-m-commerce	The researcher has studied about the role of gender in m-commerce adoption and found that both male and female have showed similar interest in case of entertainment services. Males prefer more communication, information and transaction services than females as they move faster through the adoption stage than female,
26	Hong, S. J., Thong, J. Y., Moon, J. Y., & Tam, K. Y. (2008).	Understanding the behavior of mobile data services consumers.	Based on the decomposed theory of planned behaviour, the researcher has found the factors that affect mobile data users to continue with the services and found that perceived mobility, attitude, social and media influence and perceived monetary value influence consumers' intention to continue with mobile data services.

27	Despo Ktoridou, Epaminondas Epaminonda, Hans Ruediger Kaufmann (2008)	Technological challenges and consumer perceptions of the use of mobile marketing: evidence from Cyprus	Consumers acquaintance with mobile marketing seems to be differentiated by age, gender and educational level and those who are unfamiliar with the new mobile marketing tool showed willingness to learn about it and participate in relevant communication programme, given that their privacy is respected.
28	Wong, Y. K., & Hsu, C. J. (2008).	A confidence-based framework for business to consumer (B2C) mobile commerce adoption	Recognized crucial elements of B2C m-commerce adoption and established a confidence-based framework by extending TAM with psychological factors like institution-based, history-based and personality-based confidence as well as behavioural factors consisting of perceived ease of use and perceived usefulness.
29	Ranjan B. Kini (2009)	Adoption and Evaluation of M-commerce in Chile	The respondents in this study, even though are familiar with the technology and applications but have not transformed into innovative users and based on the study, the researcher has concluded that what is important to the growth of m-commerce is not technology or product innovation, the major change is required in the mindset of people so that they will show readiness to adopt new technology.
30	Wei, Marthandan, Chong, Ooi, & Arumugam, (2009).	What drives Malaysian m-commerce adoption? An empirical analysis	As per the study, the main drivers that exert significant positive relation with adoption intention are social influence, perceived usefulness. Perceived cost and trust whereas perceived ease of use and trust were not significantly influence adoption decision.
31	Edwin Saidi (2009)	Mobile opportunities, mobile problems: Assessing m-commerce implementation issues in Malawi"	The main problem faced during initial stages of m-commerce were due to handset limitation, authentication issues, absence of telecommunication infrastructure as well as business related challenges like huge capital investment rate, low literacy, trust only on cash as medium of exchange, lack of legal framework to regulate m-payment system and lack of expertise to develop safety and security measures.
32	Md. Aminul Islam et al. (2010)	Adoption of M-Commerce Services: The Case of Bangladesh	The m-commerce adoption factors that exert significant positive influence are cost and pricing, security, privacy, rich and faster information and the factors that could not exert major influence are convenience, awareness and knowledge and perceived usefulness
33	Basheer & Ibrahim (2010).	Mobile marketing: Examining the impact of trust, privacy concern and consumers' attitudes on intention to purchase	The study focused on trust and privacy concern in mobile marketing context revealed significant positive relation between perceived usefulness and entertainment with intention to participate and purchase mobile marketing services whereas negative relation found between privacy, personal use and extensive advertising with participate and purchased decision involved with m-marketing.
34	Rajanish Das and Sujoy Pal (2010)	Exploring the factors affecting the adoption of mobile financial services (MFS) among the rural under-banked	The main inhibiting factor in the adoption of Mobile Financial Services (MFS) are lack of trust, high perceived financial cost, and lack of readiness to adopt new technology and financial cost involved. Even the perceived risk, privacy and security are not significantly affecting the purchase decision, may be due to lack of awareness about the risk of new technology adoption.
35	Tripathi S.N. and Mittal's (2010)	Investigating the Impact of Mobile Marketing in the Current Indian Scenario and Proposing Customerization as a Solution	The researchers found that rather than spending huge amount on mobile marketing and advertising, it is profitable to customize the marketing messages as per customers' requirements. The study recommends 'Customerization' and advertisers should ask consumers permission and convince them to opt in before sending the marketing messages and should try to avoid unwanted messages as it may create negative impact on consumers attitude towards company and its product

36	Paul Gerhardt Schierz (2010)	Understanding consumer acceptance of mobile payment services: An empirical analysis	The major factors that influence mobile payment services are mobility, compatibility and social norms whereas perceived risk was not found to be a strong influence in m-payment adoption
37	Kim, C., Mirusmonov, M., & Lee, I. (2010).	An empirical examination of factors influencing the intention to use mobile payment	The researcher has conducted a study among early and late adopters and revealed that perceived usefulness and ease of use as well as compatibility significantly affect adoption decision. The researcher has also revealed that perceived ease of use was preferred by early adopters whereas late adopters focus on perceived usefulness.
38	Uchenna et.al. (2011)	M-commerce Usage in Malaysia: Assessing Key Determinants	Perceived usefulness, perceived cost and subjective norms are important predictors for m-commerce usage among Malaysian consumers. May be due to the familiarity with the technology interface, perceived ease of use may not be the strongest predictor. Perceived trust has a low explained variance compared to other predictors in this study.
39	Sadi and Noordin (2011)	Factors influencing the adoption of M-commerce: An exploratory Analysis	The exploratory factor analysis revealed that Perceived Usefulness, Perceived ease of use, Perceived Trust, Perceived Cost, Subjective Norm, Perceived Behavioral Control, facilitating condition, Self-Efficacy, Attitude Towards Use are the important underlying factors influencing the adoption of M-commerce. Perceived usefulness found to be one of the critical factors, besides, the usefulness of m-commerce, the findings also revealed the importance of trust in m-commerce
40	Wei-Han G Tan, Boon-In Tan and Keng-Boon Ooi (2011)	Cash, Credit Card or Mobile Phone? Exploring the intention to adopt Mobile Credit Card: a conceptual model	The study adopted the TAM with the incorporation of two additional constructs, the personal innovativeness and social influences. The study reveals a clear link between Perceived usefulness and Perceived ease of use and the adoption of mobile credit card. The study also reveals that personal innovativeness and social influence are important factors affecting the customers' adoption
41	R. Safeena, Hundewale& A.Kamani (2011)	Customer's adoption of mobile-commerce a study on emerging economy	The study has considered five factors perceived usefulness, perceived ease of use, subjective norm, consumer awareness about mobile banking and perceived risks associated with mobile banking. The study concluded that all these five factors have a strong and positive effect on customers to accept mobile banking system
42	Ching Mun Cheah et.al. (2011)	Factors Affecting Malaysian Mobile Banking Adoption: An Empirical Analysis	Factors such as perceived usefulness (PU), perceived ease of use (PEOU), relative advantages (RA) and personal innovativeness (PI) were found positively related with the intention to adopt mobile banking services. However, social norms (SN) were the only factor found insignificant. Perceived risks (PR) were negatively associated with the mobile banking adoption.
43	Zhou, T. (2011)	An empirical examination of users' post-adoption behaviour of mobile services	The results using partial least squares indicated that expectation confirmation, perceived ease of use, perceived usefulness and usage cost significantly affect users' satisfaction and also in determining their postadoption behaviour. In addition, perceived usefulness has a direct effect on the continuance intention.
44	Lin, H. F. (2011).	An empirical investigation of mobile banking adoption: The effect of innovation attributes and knowledge-based trust	The researcher has examined the effect of innovation attributes viz., perceived relative advantage, compatibility and ease of use as well as knowledge-based attributes viz., perceived competence, benevolence and integrity. On attitude and behavioural intention among potential as well as repeat customers. The findings showed that ease of use, compatibility, relative advantage, integrity and competence significantly affects attitude and attitude affects behavioural intention to adopt/ continue with m-banking

45	Zhang, L., Zhu, J., & Liu, Q. (2012).	A meta-analysis of mobile commerce adoption and the moderating effect of culture.	By using extended TAM model conducted a meta-analysis of studies related the effect of culture on m-commerce adoption behaviour and the data was tested using structural equation modelling. The researcher has tried to find the moderating effect of culture by dividing it into western and eastern culture and findings showed that culture has moderating effect in the adoption decision of m-commerce.
46	Mohamed Khalifa, Sammi K. N Cheng and Kathy Ning Shen (2012)	Adoption of m-commerce: A Confidence Model	Investigated the moderating role of confidence in intention formation within the context of m-commerce adoption, they developed and empirically tested a model with trial, communication and observation and the result implies that interactive (i.e., trail and communication) and passive (i.e., observation) approaches are mutually significant in the adoption decision of m-commerce.
47	Zarmpou, T., Saprikis, V., Markos, A., & Vlachopoulou, M. (2012).	Modeling users' acceptance of mobile services	Conducted a study on mobile service acceptance based on the variables, namely, functionality, trust, innovativeness, relationship and mediating factors of PEOU and PU on behavioural intention of the consumers and the findings revealed perceived usefulness and innovation strongly affects adoption decision whereas trust and perceived ease of use has no direct effect on consumers adoption intention.
48	Chong, A. Y. L., Chan, F. T., & Ooi, K. B. (2012).	Predicting consumer decisions to adopt mobile commerce: Cross country empirical examination between China and Malaysia	The extended study using TAM and DOI with cost, trust, social influence, variety of service and triability showed that trust and social determinants are the most prominent determinants for Malaysian users, whereas social influence, trust and cost are more relevance in Chinese context.
49	Janine Joubert and Jean-Paul Van Belle (2013).	The Role of Trust and Risk in M-commerce Adoption within South Africa	The researcher was concentrating on early adopters and found that image and compatibility has more significant role to play in the adoption decision than perceived risk and trust. The researcher has revealed that system-based trust significantly affects adoption decision and the risk and personal disposition to trust helps to determine trust whereas perceived risk did not have any direct impact on adoption decision.
50	Ayman Bassam Nassuora (2013).	Understanding factors affecting the adoption of M-commerce by consumers	The study revealed that perceived ease of use and usefulness perceived cost, trust and privacy were found to the most important predictors for m-commerce usage, among this perceived trust was the most fundamental factor which may help consumers to overcome uncertainty and risk.
51	Chong, A. Y. L. (2013).	Understanding mobile commerce continuance intentions: an empirical analysis of Chinese consumers.	The researcher has studied about the continuance intention of m-commerce by extending Expectations-Confirmation Model (ECM), adding extra variables viz., trust, perceived cost, perceived ease of use and perceived enjoyment and the results revealed that perceived cost, usefulness, ease of use, trust, satisfaction and enjoyment significantly influence the continuance intention of m-commerce.
52	Chen, J. Q., Zhang, R., & Lee, J. (2013).	A cross-culture empirical study of M-commerce privacy concerns	The researcher has tried to analyse the privacy aspects in different cultural context and found that Koreans are more active m-commerce users than US consumers as the latter are more concerned about information privacy. Income has no significant role to play in the adoption decision of US consumers but it significantly affect the decisions of Korans regarding adoption of m-commerce.

53	Adebiyi Ayodele A., Alabi Esther, Ayo Charles K. and Adebiyi Marion O. (2013).	An Empirical Investigation of the Level of Adoption of Mobile Payment in Nigeria	The study tried to analyse the adoption level of m-payment in Kenya revealed the positive attitude of people towards cashless economy die to the inherent advantage of m-payments such as Ease of use, Convenience, ease of access and reduced transaction time but due to lack of trust in service providers and agents, security and privacy issues, cost of services and the complexities of user interfaces prevents successful implementation of m-payment services in the country.
54	Phonthanukitithaworn, C., Sellitto, C., & Fong, M. W. L. (2015).	User intentions to adopt mobile payment services: A study of early adopters in Thailand	Studied m-payment adoption in Thailand based on TAM and revealed that perceived trust, ease of use, compatibility, perceived usefulness, social norms and perceived cost are the core factors contributing largely towards its early adoption.
55	Lee, W. O., & Wong, L. S. (2016).	Determinants of mobile commerce customer loyalty in Malaysia	The findings of this study by using Structural Equation Modelling (SEM) method exposed that efficiency, commitment, fulfilment, privacy, system availability, trust, satisfaction affects loyalty decision. Among this it was found that efficiency affect significantly on satisfaction which leads to loyalty. Similarly, commitment strongly affects loyalty than trust and satisfaction.
56	Kalinic, Z., & Marinkovic, V. (2016).	Determinants of users' intention to adopt m-commerce: an empirical analysis	Based on TAM model conducted a study on M-commerce adoption intention which revealed perceived usefulness and ease of use significantly and directly affects adoption intention. The study also disclosed that customization and social influence strongly affects perceived usefulness and customization, mobility and perceived innovativeness significantly affect perceived ease of use.
57	Han, S. L., Thao Nguyen, T. P., & Anh Nguyen, V. (2016).	Antecedents of intention and usage toward customers' mobile commerce: Evidence in Vietnam.	The researcher has tried to analyse m-commerce adoption factors using extended Technology Acceptance Model (TAM), by incorporating personal innovativeness, quality dimension, cost and playfulness as antecedents and the results showed that irrespective of its advantage of perceived usefulness and ease of use, Vietnam consumers are reluctant to pay for m-commerce services
58	Liébana-Cabanillas, F., Marinković, V., & Kalinić, Z. (2017).	A SEM-neural network approach for predicting antecedents of m-commerce acceptance	Conducted on M-commerce adoption factors in the Republic of Serbia by using Structural equation modeling (SEM) and neural network approach by extending TAM by incorporating trust, customization, mobility and customer involvement and found that customer involvement and customization are the most important factor that decide the adoption decision of m-commerce.
59	Marinkovic, V., & Kalinic, Z. (2017).	Antecedents of customer satisfaction in mobile commerce: Exploring the moderating effect of customization.	Conducted a study to determine the satisfaction level of mobile commerce adoption by taking factors from several theories, perceived usefulness from TAM, perceived enjoyment from flow theory, social influence from UTAUT and added additional factors, namely trust and mobility, to determine significant predictors of customer satisfaction in m-commerce and the important drivers that was found in the study include perceived usefulness, mobility, Trust and perceived enjoyment
60	Natarajan, T., Balasubramanian, S. A., & Kasilingam, D. L. (2017).	Understanding the intention to use mobile shopping applications and its influence on price sensitivity	Studied the usage of mobile apps used for shopping by using extended technology acceptance model (TAM) and the theory of diffusion of innovations (DOI) by adding additional variables perceived enjoyment, perceived risk and personal innovativeness and used Experience, Gender and frequency of use as moderators. The study found that perceived risk and personal innovativeness played a major role in m-shopping adoption decision and also revealed the innovative people with high intention to use m-shopping are less sensitive to price.

61	Marriott, H. R., & Williams, M. D. (2018).	Exploring consumers perceived risk and trust for mobile shopping: A theoretical framework and empirical study	The study emphasizes the importance of removing psychological, financial and performance risks by enhancing trust towards m-payment channel as well as vendors. The result also revealed that age and gender affect m-shopping adoption decision which necessitates retailers to develop marketing strategies based on the target demographic to improve their intention to adopt m-shopping.
62	Shankar, A., & Datta, B. (2018).	Factors affecting mobile payment adoption intention: An Indian perspective	The results of m-payment adoption study by extending TAM showed the significant positive antecedents viz., self-efficacy, perceived usefulness and ease of use whereas subjective norms and personal innovativeness were not found to play a major role in m-payment adoption decision.
63	Blaise, R., Halloran, M., & Muchnick, M. (2018).	Mobile commerce competitive advantage: A quantitative study of variables that predict m-commerce purchase intentions.	Investigated the factors affecting purchase intention of consumers by including social influence, facilitating conditions, trust, perceived risk, users' perceptions of performance and effort expectancies in United states by using UTAUT model found that social influence, Performance and effort expectancies as well as the facilitating conditions of trust significantly affects the m-commerce purchase intention.
64	Chauhan, S., Mukhopadhyay, S., & Jaiswal, M. (2018).	The adoption of mobile app for B2C transaction in platform marketplace: An empirical examination of key drivers	Conducted research to know the factors affecting the adoption of mobile apps for B2C m-commerce transaction and found that subjective norm, observability, relative advantage, age and education level affect the adoption decision positively. Study also revealed that people prefer to adopt complex mobile apps with more functionality. Regarding the demographic variable, gender, it was found that female users are more inclined to adopt m-commerce than their counter parts.
65	Sun, J., & Chi, T. (2018).	Key factors influencing the adoption of apparel mobile commerce: an empirical study of Chinese consumers	Conducted a study to find the main factors influencing the Chinese consumers' intentions to use apparel m-commerce by using multiple regression analysis and the results showed that perceived usefulness and ease-of-use, subjective norm, compatibility and experience positively and significantly affect the adoption of apparel m-commerce.
66	Roy, S. K., Balaji, M. S., Quazi, A., & Quaddus, M. (2018).	Predictors of customer acceptance of and resistance to smart technologies in the retail sector	Studied consumers' acceptance of smart retail technology (SRT) in Australia by using extended TAM, by integrating added variables like technology readiness, superior functionality and store reputation and found that TAM variables along with extended variable helped in identifying the technology acceptance in retailing among consumers.
67	Sharma, S. K., Sharma, H., & Dwivedi, Y. K. (2019).	A hybrid SEM-neural network model for predicting determinants of mobile payment services.	Performed a study to find the user's willingness to adopt mobile payment services in Oman by modifying TAM by adding constructs such as mobility, customization, awareness of benefits, self-efficacy along with perceived trust and security. The research model was tested by SEM and validated and ranked the key constructs by using Neural network. All other constructs except perceived usefulness was found to play a significant role in adopting m-payment services by new customers as well as retaining the existing consumers.
68	Sujatha, R., & Sekkizhar, J. (2019).	Determinants of M-Commerce Adoption in India Using Technology Acceptance Model Infused with Innovation Diffusion Theory	The researchers, by using revised technology acceptance model and innovation diffusion theory, studied the m-commerce adoption factor in Indian context by including perceived cost, risk, compatibility, perceived ease of use and usefulness and found that except cost all the variables have a positive influence on behavioural intention towards m-commerce.

69	Sarkar, S., Chauhan, S., & Khare, A. (2020).	A meta-analysis of antecedents and consequences of trust in mobile commerce	The outcomes indicated that the antecedents of trust include perceived usefulness and ease of use, system quality, information quality and service quality, user interface, structural assurance, perceived risk, ubiquity, perceived security and disposition to trust, whereas the consequences include attitude, behavioral intention, user satisfaction and loyalty and all these have significant and positive relationship with trust in m-commerce. The study further revealed that all the relationships except perceived ease of use, disposition to trust, and attitude were found to be moderated by culture.
70	Cui, Y., Mou, J., Cohen, J., Liu, Y., & Kurcz, K. (2020).	Understanding consumer intentions toward cross-border m-commerce usage: A psychological distance and commitment-trust perspective	Studied factors influencing user adoption Cross-border m-commerce by combining psychological distance theory and commitment-trust theory and have identified seven key factors namely, mobile exclusive distance, social distance, communication, opportunistic behaviour, satisfaction, investment size and relationship benefit associated with users' trust and sense of commitment.
71	Pandey, S., & Chawla, D. (2020).	Exploring factors that drive adoption of various categories of m-commerce: An emerging market study.	Studied the influence of performance expectancy, personal Innovativeness, effort expectancy, facilitating conditions, social influence, perceived enjoyment and perceived risk on adoption of different M-commerce categories namely content delivery, location-based, transaction-based and entertainment factors in India. Data analysed through structured equation modelling (SEM) revealed that effort expectancy, perceived enjoyment, performance expectancy, facilitating conditions and perceived risk have varied impact on adoption, social influence have major positive impact whereas personal innovativeness have major indirect impact on adoption in all these four categories.
72	Chen, X., Su, L., & Carpenter, D. (2020).	Impacts of situational factors on consumers' adoption of mobile payment services: A decision-biases perspective.	Conducted a study on situational factors viz., purchase intention and time pressure on adoption of Mobile payment service and found that Mobile payment service adoption behaviour is a result of interactions between Mobile payment service characteristics and situational factors.
73	Bailey, A. A., Pentina, I., Mishra, A. S., & Ben Mimoun, M. S. (2020).	Exploring factors influencing US millennial consumers' use of tap-and-go payment technology	Studied factors affecting B2C m-payment adoption among US millennials by using extended technology acceptance model (TAM). The results revealed that perceived usefulness, risk perception and perceived ease of use influence consumers' attitude towards adopting m-payment. Attitude, system trust and socio-cultural influences influence their adoption intention.
74	Anwar, A., Thongpapanl, N., & Ashraf, A. R. (2021).	Strategic imperatives of mobile commerce in developing countries: the influence of consumer innovativeness, ubiquity, perceived value, risk, and cost on usage	The researcher used ubiquity, perceived cost and perceived risk (financial and performance risk) as antecedents of perceived value and also explored the moderating role of consumer innovativeness, the results revealed that ubiquity positively affects value, whereas risk and cost exert negative influence. Innovativeness moderates the relationships between identified antecedents and value and the value positively affects actual usage which is further strengthened by consumer innovativeness.
75	Manchanda, M., & Deb, M. (2021).	On m-commerce adoption and augmented reality: A study on apparel buying using m-commerce in Indian context.	Studied the effect of augmented reality (AR) and anthropomorphism on consumers' attitudes and intention to adopt m-commerce, the result showed that anthropomorphizing of AR-mediated m-commerce significantly and positively affects confidence of consumers and their perception towards innovativeness as well as influence subjective norms also which in-turn positively affect the attitude toward AR-mediated m-commerce which leads to m-commerce adoption.