EXECUTIVE SUMMARY OF Ph.D. THESIS ENTITLED

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

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'COMMERCE AND BUSINESS MANAGEMENT'

BY

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TABLE OF CONTENTS OF THE EXECUTIVE SUMMARY

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

TABLE OF CONTENTS OF THE Ph.D. THESIS AT A GLANCE

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

LIST OF TABLES OF THE EXECUTIVE SUMMARY

LIST OF FIGURES OF THE EXECUTIVE SUMMARY

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

1.0 INTRODUCTION

Due to the expansion of the information and communication technology (ICT) industry, which includes information technology (IT) and telecommunications, India is currently seen as a viable business destination. India's IT sector contributed 8% of its GDP and 50% of foreign direct investment, and with 1.20 billion subscribers (Statista), it ranks second in the global telecoms market. India had over 840 million internet users in 2021, the majority of which used mobile phones to access the internet due to strong mobile phone penetration and inexpensive data costs. Our daily routines, whether they be personal or related to our jobs, have changed as a result of mobile devices. The hand-held gadget has influenced how we interact and conduct business with both other customers and businesses.

Users are becoming acclimated to increased concerns regarding the ethical use of customers' personal data, privacy protection, and the aftereffects on the adoption of m-Commerce in case of a breach of trust and data due to the increasing shift towards m-Commerce. Therefore, it is important to understand how m-Commerce is accepted and used by Indian customers in the current environment, and this research study has made an effort to identify the elements influencing m-Commerce adoption.

2.0: A BRIEF ABOUT THE RESEARCH STUDY:

Due to the growing relevance of this medium of commerce, researcher has tried to conduct a research study to identify factors that leads to adoption of m-Commerce. Data was collected from four major cities in the State of Gujarat viz., Vadodara, Ahmedabad, Surat and Rajkot. The research study was conducted among selected m-Commerce users from four main districts of Gujarat, mainly, Vadodara, Ahmedabad, Surat and Rajkot to find out how selected variables facilitates or hinders the adoption of m-Commerce. The variables selected include perceived cost, personalisation, privacy, security, Trust, Risk, perceived behavioural control, social norms, perceived ease of use, perceived usefulness and attitude. The main focus is to know how these drivers contribute towards m-Commerce adoption. The findings of the research study would be useful to m-Commerce merchants in designing suitable marketing strategy. It would also be useful to smart phone manufactures to adopt customer friendly design and also to app developers to design user friendly interfaces.

3.0 : OBJECTIVES OF THE RESEARCH STUDY:

The research study has one primary objective and have a few other objectives:

- To analyze how different drivers like perceived cost, personalisation, privacy, trust, risk, perceived usefulness, perceived ease of use, social norms and perceived behavioural control affects consumers attitude towards m-Commerce.

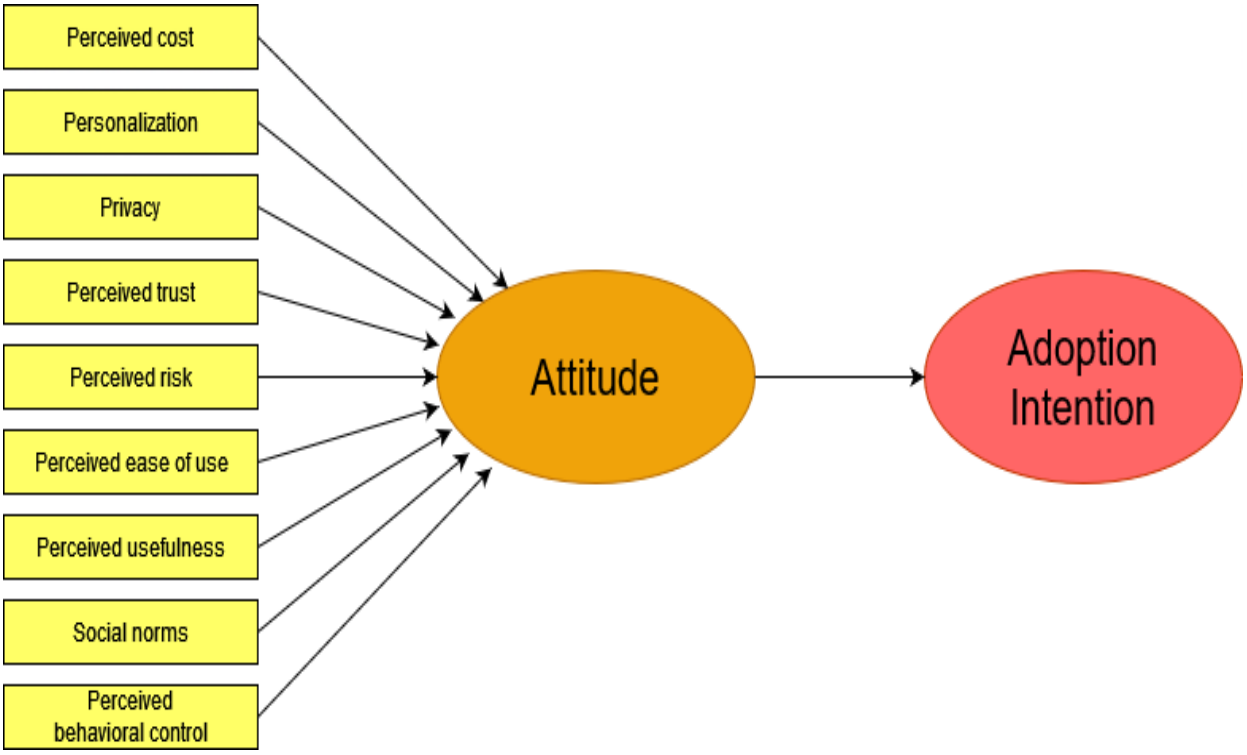
- To study how different drivers like perceived cost, personalisation, privacy, trust, risk, perceived usefulness, perceived ease of use, social norms and perceived behavioural control affects adoption intention of m-Commerce.
- To identify the strength of relationship between attitude and behavioural intention of the consumers towards adoption of m-Commerce
- To study the association between selected demographic background variables viz., age, gender, income, occupation, type of family, and marital status of selected m-Commerce consumers with the selected drives namely, perceived cost, personalisation, privacy, trust, risk, perceived usefulness, perceived ease of use, social norms, perceived behavioural control, attitude and adoption intention of m-Commerce.
- To identify the city-wise difference of opinion of selected m-Commerce users in terms of perceived cost, personalisation, privacy, trust, risk, perceived ease of use, perceived usefulness, social norms and perceived behavioural control, attitude and adoption intention from four Selected Cities of Gujarat State

4.0: CONCEPTUAL MODEL DEVELOPED AND USED IN THE RESEARCH STUDY:

The review of literature undertaken by the researcher for offering justification of the formulated hypotheses which has to be tested with the help of structured questionnaire is largely based on model of Fishbein &Ajzen (1980), Davis (1989), and (Khalifa and Shen, 2008). The primary premise of Ajzen and Fishbein's theory is that people actively choose whether or not to engage in a certain behaviour, and that they assess and evaluate many criteria before engaging in it (Bauer et.al.2005). Human behaviour is preceded by intentions, according to the Theory of Reasoned Action (TRA), which are developed based on an individual's attitude toward the behaviour and perceived subjective norms (Khalifa and Shen, 2008). Individuals' perceptions of the impact of significant persons such as family, classmates, bosses, and the media are captured by subjective norms. Ajzen expanded TRA into Theory of Planned Behaviour (TPB) by incorporating a new concept called "perceived behavioural control" as a predictor of both intention and behaviour. TPB provides for the prediction of behaviour that people do not have complete control over. Perceived behavioural control reflects both internal (self-efficacy) and external (environmental) limits on behaviour. The TPB has been widely utilised in the context of information technology adoption; here, it is being used in the context of m-Commerce adoption.

To meet the research aims, the research team took a quick look at the relevant literature and constructed a theoretical model which included selected drivers such as perceived cost, perceived usefulness, personalisation, perceived ease of use, privacy, social norms, trust, risk, and perceived behavioural control to investigate the impact of consumers' attitudes and intentions toward m-Commerce adoption. The study was conducted among selected m-Commerce users from four Gujarat cities.

Figure Number ES-1.0: Conceptual Model Developed and Used to Know the Drivers of m-Commerce Adoption Among Selected Users.



Source: Compiled by the Researcher

5.0: RESEARCH METHODOLOGY OF THE RESEARCH STUDY:

Various procedural and methodological aspects of the study have been attempted to be summarised in brief, namely the fundamental terms of the research study, the rationale of the research study, scope and coverage of study; research design of study; study objectives; study questions; study hypotheses; secondary data sources; sampling decisions and the conceptual model development. It also includes the gathering and analysis of primary data, as well as the results and implications of the research as well as a list of recommendations and suggestions, including the study's shortcomings as well as directions for future researchers to conduct investigations in the not-too-distant future.

The study's main goal was to examine and evaluate the impact of various drivers on consumers' attitudes toward m-Commerce, including perceived cost, personalization, privacy, trust, risk, perceived usefulness, perceived ease of use, social norms, and perceived behavioural control. The study also looked at the strength of the relationship between attitude and adoption intention. The study also looked at the relationship between age, gender, income, occupation, family type, and marital status of m-Commerce customers and the selected drives, such as perceived cost, personalization, privacy, trust, risk, perceived usefulness, perceived ease of use, social norms, perceived behavioural control, attitude, and adoption intention of m-Commerce. The researcher also attempted to identify city-specific differences in opinion among selected m-Commerce users in terms of perceived cost, personalisation, privacy, trust, risk, perceived ease of use, perceived usefulness, social norms, perceived behavioural control, attitude, and adoption intention from four Gujarat cities.

To perform a research study based on secondary and primary data, the researcher used an exploratory and descriptive research design. Primary data was acquired from 1480 m-Commerce users who were conveniently recruited among the population of four Gujarat cities: Ahmedabad (500), Surat (425), Vadodara (290), and Rajkot (265) using a non-probability sampling design.

SPSS 25 was used to do the data analysis. The Chi-square test was used to determine the relationship between age, gender, income, family type, and marital status and mobile commerce users' responses on perceived cost, personalisation, privacy, perceived trust, perceived risk, perceived ease of use, perceived usefulness, social norms, and perceived behavioural control, attitude, and adoption intention, in order to gain a better understanding of the demographic profile of m-Commerce users.

The Kruskal-Wallis test was used to determine the differences in response of mobile commerce users across four cities in Gujarat in terms of perceived cost, personalisation, privacy, perceived trust, perceived risk, perceived ease of use, perceived usefulness, social norms and perceived behavioural control, attitude, and adoption intention of m-Commerce.

The researcher also used AMOS 23 and Structural Equation Modeling (SEM) to investigate the relationship between variables such as perceived cost, personalisation, privacy, perceived trust, perceived risk, perceived ease of use, perceived usefulness, social norms, and perceived behavioural control, as well as the relationship between attitude and adoption intention.

The following table gives brief summary of various facets of research methodology followed in the conduct of this research study

Table Number ES-1.0: A Brief Factual Profile of the Research Study:

Number of Books Referred	23
Number of Journals Referred	208
Number of Research Papers Reviewed	430
Number of Research Reports/Thesis/ dissertation Referred	15
Whitepapers Referred	05
Number of Conference Proceedings Referred	27
Article accessed from Websites	86
Name of Search Engine Referred	ProQuest, JSTOR, Google Scholar, Springer Link, J-Gate
Name of statistical Tools Applied	Frequency Distribution, Percentages, Means, Proportions, Correlation, Chi-square Test, T-Test, Kruskal -Wallis Test, Post Hoc Test, Factor Analysis and Structural Equation Modelling using AMOS
Sources of Secondary Data Used	Reference Books, Journals, Newspaper Articles, Ph.D. Thesis, Master Dissertation, Working paper, Conference Proceedings, Websites
Group of Hypothesis Tested:	05
Research Design Used	Exploratory and Descriptive Research Design
Research Instrument Used	Structured Non-Disguised Questionnaire

Sampling Decisions	
Representative Sample	Mobile commerce Users
Sampling Design	Non-Probability Sampling Design
Sampling Method	Convenience and Quota Sampling Method
Sampling Frame	Cross-Sectional m-Commerce users as per the data published by Internet and Mobile Association of India (IAMAI) and Telecom Regulatory Authority of India (TRAI)
Sample Size	1480 m-Commerce users of Gujarat state (500 from Ahmedabad, 425 from Surat, 290 from Vadodara and 265 from Rajkot city)
Sampling Media	Structured non-disguised questionnaire filled upby conducting personal interviews with the m-Commerce users
Details of Model	Technological Acceptance Model, Theory of Planned Behaviour
Number of Tables in the Ph.D. Thesis	66
Number of Graphs in the Ph.D. Thesis	33
Number of Figures in the Ph.D. Thesis	18

Source: Field work

6.0: DRAFTING OF RESEARCH INSTRUMENT OF THE RESEARCH STUDY:

Using the gaps in the literature review in the chosen field of study as a guide, a structured questionnaire was developed with the study's primary purpose and research objectives in mind. Structured questions were used to gauge the perceptions of M-Commerce users on a Likert scale of factors affecting perceived costs, personalization, privacy, perceived trust, perceived risk, perceived ease of use, perceived utility, social norms, perceived behavioural control, attitude, and adoption intention. The questionnaire was designed to be neutral. Age, gender, marital status, family type, education, occupation and annual income were some of the demographic factors used in this research study to choose m-Commerce customers.

A pilot study was used to pre-test the structured questionnaire. The structured non-disguised questionnaire's reliability has been shown in Table Number 4.2. The selected m-Commerce users were given a pre-test, and their feedback was used to enhance and finish the design of the structured non-disguised questionnaire. The structured Questionnaire was created with the primary goal of this study in mind, as well as other research goals that were identified after finding gaps in the body of knowledge through a concise evaluation of the literature. The structured non-disguised Questionnaires contained neutrally worded questions, and m-Commerce users were asked to score their perceptions of factors influencing mobile commerce uptake. Before designing the structured non-disguised questionnaire with relation to selected items that were used to gather responses from mobile commerce users, the researcher conducted a thorough assessment of relevant literature in the subject domain. The structured non-disguised questionnaire was used to assess the factors that influence people's decision to use mobile commerce. It was necessary to conduct pilot research in Vadodara before preparing the final version of the questionnaire.

The questionnaire is divided into two sections. The first section includes questions about the demographic profile of respondents. The second section includes questions about m-Commerce motivations, attitudes regarding m-Commerce applications, and intent to embrace m-Commerce applications. To determine their level of agreement/disagreement, a 5-point Likert scale was employed. An attempt was made to assess the normalcy of the data acquired from 1480 m-Commerce users in the cities of Vadodara, Surat, Rajkot, and Ahmedabad, respectively.

An attempt was made to assess the normalcy of data obtained from the cities of Vadodara, Surat, Rajkot, and Ahmedabad in Gujarat State, respectively. The normality of the data was evaluated using the Kolmogorov-Smirnov test because the sample size was greater than 100 (1480 replies were collected).

The degree of cohesion among the scale items (Malhotra, 2007; Nunnally, 1981) and validity (Malhotra, 2007; Parasuraman, Berry, & Zeithaml., 1991) of the structured questionnaire are reflected in the reliability of a scale as evaluated by coefficient alpha. In this study, reliability tests were conducted and a composite score was calculated to determine the strength of the variables under investigation, which included Perceived Cost, Personalisation, Privacy, Perceived Trust, Perceived Risk, Perceived Ease of Use, Perceived Usefulness, Social Norms, Perceived Behavioural Control, Attitude, and Adoption Intention. All dimensions of the structured questionnaire related to assessing the variables under investigation were examined, with Cronbach's alpha ranging from 0.614 to 0.976, indicating internal scale reliability and reflecting the degree of cohesion among the selected items/statements (Malhotra, 2007 and Nunnally, 1981).

7.0: DATA ANALYSIS & INTERPRETATIONS OF THE RESEARCH STUDY:

The researcher provides the profile of users who have used or are using different m-Commerce application for making online purchases. The demographic details based on age, educational qualification, marital status, family type and monthly income of m-Commerce users and living in Vadodara, Ahmedabad, Surat and Rajkot city, selected four cities of Gujarat State are given in Table number 1.1.

Table Number: ES-1.1: Demographic Details of Selected m-Commerce Users

(Number and Percentage)

Background of selected m-Commerce users		**Vadodara**	**Ahmedabad**	**Surat**	**Rajkot**	**Gujarat State**
Age Groups (In years)	16 to 30	126(43.4)	148(29.6)	140(32.9)	126(47.5)	540(36.5)
	31 to 50	164(56.6)	206(41.2)	229(53.9)	139(52.5)	738(49.9)
	Above 50	0(0.0)	146(29.2)	56(13.2)	0(0.0)	202(13.6)
Gender	Male	136(46.9)	242(48.4)	212(49.9)	125(47.2)	715(48.3)
	Female	154(53.1)	258(51.6)	213(50.1)	140(52.8)	765(51.7)
Marital Status	Married	228(78.6)	416(83.2)	341(80.2)	207(78.1)	1192(80.5)
	Unmarried	62(21.4)	84(16.8)	84(19.8)	58(21.9)	288(19.5)
Family Type	Joint	139(47.9)	242(48.4)	202(47.5)	117(44.2)	700(47.3)
	Nuclear	151(52.1)	258(51.6)	223(52.5)	148(55.8)	780(52.7)
Occupation	Student	99(34.1)	123(24.6)	117(27.5)	102(38.5)	441(29.8)
	Service	120(41.4)	214(42.8)	180(42.4)	98(37.0)	612(41.4)
	Self-Employed	66(22.8)	140(28.0)	115(27.1)	61(23.0)	382(25.8)
	Non-working	5(1.7)	23(4.6)	13(3.1)	4(1.5)	45(3.0)
Annual Income	Less than 6 Lakhs	87(30.0)	141(28.2)	134(31.5)	72(27.2)	434(29.3)
	6 to 9 Lakhs	117(40.3)	161(32.2)	135(31.8)	113(42.6)	526(35.5)
	9 to 12 Lakhs	49(16.9)	107(21.4)	94(22.1)	47(17.7)	297(20.1)
	More than12 Lakhs	37(12.8)	91(18.2)	62(14.6)	33(12.5)	223(15.1)
Total		**290(100.0)**	**500(100.0)**	**425(100.0)**	**265(100.0)**	**1480(100.0)**

Users aged 31 to 50 accounted for 49.4 percent of all responses, followed by users aged 16 to 30 who accounted for 36.5 percent of all responses. There was not much difference in the male and female m-Commerce users in the Gujarat State. The m-Commerce applications were used mainly by married users compared to their counterpart as the difference these two groups was around 61 percent in the Gujarat State. It is conferred that Gujarat State has more or less same number of people living in joint and nuclear family. Regarding the occupation, majority of the responses were collected from the people from service sector (41.4 percent) followed by students (29.8 percent), self-employed (25.8 percent) and 3 percent from unemployed people. Based on the responses collected it is inferred that majority of the m-Commerce users were having annual income below nine lakhs.

Android is viewed as the most user-friendly with more than ninety percent of m-Commerce have opted for it. Regarding the frequency of shopping, 30 percent of the people used mobile phones for shopping once in a month, 23.1 percent once in a fortnight and 7.6 percent once in a week. Nearly 40 percent users were not sure about the number of times they used mobile for shopping as they take impulse buying decision. Nearly 50 percent users preferred to shop when they are at home, other favourite location was their workplace. Nearly 60 percent have given the opinion that their favourite time for shopping is late evening. Regarding the average time for shopping, responses were collected in four categories, with slight preference to 30 to 60 minutes as nearly forty percent preferred to spend that time duration while shopping through m-Commerce application.

The responses that were collected in different categories showed newspaper and SMS are the main source of information followed by television as well as friends, family, relatives and colleagues. E-mail and hoardings are the least preferred source of information about shopping through mobile phones. The main reason for downloading m-Commerce applications was the facility of easy refund, convenience in purchasing products, availability of attractive offers and discounts and the user-friendliness of the applications respectively.

The response regarding the selected respondent's response regarding number of applications used by m-Commerce users showed that nearly fifty percent have downloaded and used five to six m-Commerce applications and forty percent users have used three to four applications. The response regarding the purchase of twenty-five different product and services by using mobile phones revealed that majority of users used m-Commerce application for paying phone bills, buying electronic items, as well as ordering food items and booking for taxi and travel services. While, the users preferred buying educational equipment, flowers and gifts and health and fitness equipment, the least with the use of m-Commerce application.

Almost all the m-Commerce users of Gujarat State were highly aware about the IRCTC, followed by OYO, Uber, Swiggy and Paytm applications. The most downloaded m-Commerce applications include Amazon, followed by MakeMyTrip, Bookmyshow, Paytm and Goibibo respectively. While the most used applications were Zomato as 50 percent uses it, followed by Amazon and Flipkart, Goibibo, MakeMyTrip , and OLA, which shows the popularity of food ordering mobile apps among users. The least preferred m-Commerce applications among the users includes, Dacathon, Jabong and Goffer.

Majority of the users from all the four districts were opined that smart phone is not expensive. 86 percent from Vadodara, 93 percent from Surat, Ahmedabad and Rajkot agreed to this statement. Almost all the (95 percent) users felt that transaction fees are not high in India. Despite of all the positive opinion mentioned above, majority of the users (92 percent) revealed their concern regarding the fraudulent charges they may had to pay if they continue with m-Commerce. Even though users opined that internet and m-Commerce transactions are not costly and they do have the resources to adopt, 94 percent users felt that m-Commerce is a burden for them. More than 90 percent users from all the selected cities had also shared the same opinion, may be due to the psychological pressure and due to fear of privacy and security issues they may be feeling the psychological burden of adopting them.

More than eighty percent m-Commerce users of Gujarat were willing to accept promotional message, special price and coupons of their favourite products. 60 percent from Ahmedabad and more than 90 percent users from Vadodara, Surat and Rajkot have also showed willingness to accept promotional messages. 90 percent of the users of Gujarat state felt that they should had the choice to register for mobile advertisement only for selected categories of products of their choice.

85 percent of the m-Commerce users felt that it is important to receive information on products of customer's choice., 66 percent from Ahmedabad, 92 percent from Rajkot, and more than 95 percent users from Surat and Vadodara also felt the need for receiving promotional messages and other relevant information from products of their choice.

More than 90 percent of the M-Commerce users of Gujarat state revealed that m-Commerce companies should collect and update customers information and understand their changing needs to provide personalised offers. More than 70 percent users from Vadodara, Ahmedabad, Surat and Rajkot have expressed their readiness to share information about their favourite products with m-Commerce vendors. Nearly 70 percent users from all the four cities opined that disclosing location information has invaded their privacy. Nearly 75 percent of m-Commerce users demanded that client's information should be kept as confidential by m-Commerce vendors.

Regarding the confidence level of shoppers while making online purchases, the overall response from the Gujarat state revealed that 75 percent users felt confident while involving in m-Commerce transaction. More than 75 percent of users from Gujarat revealed that m-Commerce vendors are highly committed to fulfil their promises. More than 90 percent of the users from all the four cities believed that m-Commerce vendors were efficient in serving the users and they had performed activities as per customer's expectations.

More than 95 percent of the users of all the selected cities in the state of Gujarat have revealed that technological advancement in Internet security makes m-Commerce transaction trust worthy and they felt confident in giving debit and credit card information while engaging in online transactions. More than 96 percent users have opined that they had control over the kind of information to share or not to share with third parties.

95 percent of users opinion from all the four selected cities of Gujarat state have revealed about their views that other people can easily tamper with information regarding their m-Commerce transaction and had felt that m-Commerce transactions had potential risk. 97 percent of users opined that the information shared by mobile retailers are not trustworthy and feeding payment details in smartphone has potential risk. 76 percent users from Gujarat state had revealed that m-Commerce companies provide inadequate information on their website and have less operational reliability. The users of Gujarat state were worried about the risk of an unauthorized third party overseeing the payment process and the fear rate is more about users from Vadodara city (90 percent) than the users of other three cities which has reported around 70 to 75 percent and 57 percent users have opined those regulations to be followed while involving with m-Commerce have helped to minimize the privacy risk.

Three-fourth of the users from Gujarat state felt that it was easy to use smartphone for m-Commerce transaction and more than 85 percent users felt that m-Commerce provides convenience in getting information about promotional offers and coupons. Almost all the users (95 percent) have agreed that it is easy to search and compare products and services on smartphone.

Three-fourth of the users (75 percent) of Gujarat state were of the opinion that m-Commerce had helped them to accomplish the task faster. m-Commerce reflected their personality and has helped three-fourth of the users to learn about new products and services and to ahead of the competition.

74 percent users of Gujarat state have said that important people in their life wanted them to use M-Commerce services and majority of their friends/ colleagues used M-Commerce services. Around 73 percent users from all the four selected cities as well as Gujarat state had revealed that they trusted their intuition more than the advice from others while adopting new technology but had taken the opinion of those who had tried new products or brands before purchasing products and services.

75percent of the users had reported that friends, relatives and mass media had influenced their decision to use m-Commerce. Nearly 70 percent of the users reported that they could use m-Commerce without the help of others and had necessary means and resources to use m-Commerce services, were always waiting to receive m-Commerce services and will recommend m-Commerce services to others and of the opinion that the m-Commerce transaction was entirely within their control.

More than 65 percent users from all the four cities reported having access to the software, hardware, and network services needed to use mobile commerce services and have also revealed high intention to adopt it. percent of the respondent reported that using m-Commerce was a good idea as they had benefited from m-Commerce services.

Majority (70 percent) of users of Gujarat state had positive perception about using m-Commerce services. Majority of users had felt that it was essential to use m-Commerce and half of the users of Gujarat state had opined that they felt satisfied while making m-Commerce transaction.

Nearly 60 percent users of Gujarat state had positive views towards offering mobile coupons for discounts. 50 percent users of Gujarat preferred online scanning before product purchase and had enjoyed buying products and services via m-Commerce.

Majority of users (83 percent) had felt that the cost of performing transactions via mobile were more the other channels. 86 percent users of Gujarat state reported that they prefer to adopt products which are personalised for their use. 84 percent of the users were ready to adopt m-Commerce had their privacy being taken care of. 87 percent had wanted to adopt m-Commerce as they trusted it. Majority (80 percent) of the users reported that recent laws introduced to reduce customer risk has prompted them to adopt m-Commerce. 84.7 percent respondents had reported that user friendliness of the m-Commerce applications had made its adoption easy. 85 percent had reported that hassle free shopping through smartphone influences m-Commerce adoption.

In the overall analysis, 82 percent of the users had mentioned that positive attitude of Society has helped in m-Commerce adoption. 86 percent of people had agreed that they would continue to make use of m-Commerce transactions in the near future. 84 percent of the users had agreed that they had intended to make more m-Commerce transactions in future than they did now. 85 percent users showed their willingness to strongly recommend m-Commerce services to others.

8.0: KEY FINDINGS AND IMPLICATIONS OF THE RESEARCH STUDY:

To evaluate the numerous hypotheses that were established based on the study of primary data acquired from m-Commerce users in Gujarat state, the researcher used Chi-Square, correlation, Kruskal Wallis, and Factor Analysis.

The perceived cost, personalisation, privacy, perceived trust, perceived risk, perceived ease of use, perceived utility, social norms, and perceived behavioural control of m-Commerce all showed a low degree of positive correlation. The correlation between the variables was found to be significant at the 0.01 level, indicating that there is a less than 1% chance that the perceived cost, perceived risk, perceived ease of use, perceived usefulness, and social norms will not have the same relationship with m-Commerce users' attitudes in the future. At the 0.05 level of significance, personalisation, privacy, and perceived trust were found to be associated, implying that there is a less than 5% possibility of the above three variables and m-Commerce consumers' attitudes not being related in the future. However, at the 0.05 level, the association between perceived behavioural control and m-Commerce consumers' attitudes was not shown to be significant. As a result, the hypothesis "The selected drivers of m-Commerce viz., perceived cost, personalisation, privacy, perceived trust, perceived risk, perceived usefulness, perceived ease of use, social norms, and perceived behavioural control has significant impact on consumers' attitude towards m-Commerce applications" is accepted for perceived cost, personalisation, privacy, perceived trust, perceived risk, perceived usefulness, perceived ease of use, social norms, but rejected for perceived behavioural control at 0.01 and 0.05 level of significance.

Low degree of positive correlation was found between all the drivers of m-Commerce with the adoption intention. The relation was found to be significant at 0.01 level for perceived cost, Perceived risk, perceived usefulness, perceived ease of use, social norms and attitude and at 0.05 level of significance for Perceived trust. For the rest of drivers namely, personalisation, privacy, and perceived behavioural control, the relationship was there with the adoption intention but was not significant at 0.01 or 0.05 level of significance. Hence the hypothesis, “The selected drivers of m-Commerce viz., perceived cost, personalisation, privacy, Perceived trust, Perceived risk, perceived usefulness, perceived ease of use, social norms and perceived behavioural control has significant impact on adoption of m-Commerce applications” is accepted for perceived cost, Perceived risk, perceived usefulness, perceived ease of use, social norms, Perceived trust and attitude; but rejected for personalisation, privacy, and perceived behavioural control at 0.01 and 0.05 level of significance.

Chi square test was used to find the association and test the hypotheses “There is no significant association 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 Perceived Cost, personalisation, privacy, Perceived trust, Perceived risk, perceived ease of use, perceived usefulness, social norms, perceived behavioural control, attitude and adoption intention for the use of m-Commerce applications.”

Significant association was found between selected demographic variables of age, gender, marital status, type of family, occupation and annual income with selected statements on different drivers of m-Commerce viz., Perceived Cost, personalisation, privacy, Perceived trust, Perceived risk, perceived ease of use, perceived usefulness, social norms, perceived behavioural control, attitude and adoption intention. Users of different age groups have expressed different opinions regarding the criteria that, m-Commerce transactions helped them save money, no additional expenditure was incurred to switch from wired internet payment to m-payment option, Wireless Network connection was not expensive, had enough resources to use m-commerce, and were not afraid of fraudulent charges. Married and unmarried users had differing opinions on the added cost of switching from wired internet payment to m-payment, as well as their capacity to manage resources in order to use m-commerce. Users have differing opinions on the costs associated with purchasing a smartphone, regardless of whether they belong to a joint or nuclear household. Users from various occupational backgrounds disagreed on whether m-Commerce transactions helped them save money, if they had to spend more money to move from wired internet payment to m-payment, and whether they were able to manage resources to use m-commerce. Users from different income level have different views with regards to the fear of involving fraudulent charges in m-Commerce and the statement that m-Commerce are not burden for them.

With regard to personalisation of m-Commerce transactions, users from different occupational background have different opinion with regard to the choice to register for selected mobile advertisements. Irrespective of age, marital status and occupation, users differed in their views regarding their willingness to share preferred product information with m-commerce vendors.

People of different age groups had differing views on the assertions that m-commerce infringed their privacy, location information invaded users' privacy, and Personal information should be kept confidential by m-Commerce vendors. Married and unmarried users as well as users belonging to different occupation and income level differed in their opinion that personal information should be kept confidential by m-Commerce vendors. Users from different occupational background have also revealed that location information has invaded their privacy.

Regarding the trust involved, users of different age group differed in their views regarding their confidence level during online purchases and their opinion that m-Commerce vendors are committed. Both men and women have expressed opposing views on the efficiency with which m-commerce vendors serve clients, as well as the assertion that online retailers that display assurance seals are more trustworthy. Users showed varying levels of confidence during online purchases and their belief that m-commerce merchants are devoted, regardless of their marital status or employment background.

In terms of risk perception, consumers from various occupational backgrounds had mixed feelings about the notion that rules helped to reduce privacy risk in m-Commerce. Users, regardless of their income level, differed in their opinions about whether m-Commerce provides appropriate information on the website and has enough operational reliability, as well as whether there is a risk of an unauthorised third party overseeing the payment process.

Users of various age groups differed in their perceptions of the perceived ease of use of m-Commerce transactions, with some believing that using a cell phone was comfortable with online transactions, convenient for getting information on promotional offers, and easy to become skilled at using a cell phone for m-Commerce transactions. Users from various occupational backgrounds had differing opinions on the ease with which they could obtain information on promotional offers and the statement that becoming skilled at utilizing a cell phone for m-Commerce transactions was easy.

Users of various age groups differed in their opinion with the statements that m-Commerce transactions have aided them in completing tasks faster, making their lives better, reflecting their personality, allowing them to learn about new products and services, and providing them with better information about products and services that they intend to purchase. Users have differing opinions on the notion that it is easy to search and compare products/services via m-Commerce, regardless of gender or family type (joint or nuclear). Users, both married and single, have differing perspectives on m-Commerce, claiming that it has aided them in completing activities faster, improved their lives, and allowed them to learn more about new products and services before others. People with various employment backgrounds have differing perspectives on the notion that searching and comparing products/services helps them do jobs faster and improves their lives.

Users of various age groups have differing opinions on the statement that people who are important in their lives think they should use m-Commerce services, that the majority of their friends/colleagues use m-Commerce services, and that they trust their intuition more than advice from others when using new technology. When it comes to employing new technology, males and females have differing perspectives on the statement that they trust their intuition more than advice from others. Users have expressed varying opinions about the statement that the majority of their friends/colleagues use m-Commerce services, regardless of their occupational background.

Users of various age groups have differing perspectives on statements such as being able to use m-Commerce services without others' help, having knowledge and ability to use m-Commerce services, waiting to receive m-Commerce services, recommending m-Commerce services to others, m-commerce transactions being entirely within my control, and having access to the software, hardware, and network. Both married and unmarried users have access to the software, hardware, and network services needed to use MC services, and their desire to buy via mobile phone is significant. Users were able to utilize m-Commerce services without the assistance of others, m-Commerce transactions were completely under my control, they had access to the software, hardware, and network services required to use MC services, and their intention to purchase through mobile phone was quite high. M-Commerce transactions are completely within my supervision, regardless of their annual income.

Users of various age groups differed with regard to their satisfaction level while engaging with m-commerce transactions, conducted online product scanning prior to making a purchase, and enjoyed buying products and services via m-commerce. Users from various occupational backgrounds have differing opinions on the level of satisfaction they experienced during m-Commerce transactions.

They also have differing opinions on the statement that they did online product scanning prior to making a purchase and that they enjoyed buying products and services via m-Commerce. Users from various income backgrounds expressed varying opinions on the statement that they are in favour of receiving discounts through mobile coupons.

Users of all ages have expressed varying degrees of agreement with the statements that the cost of m-Commerce transactions are not more than the other channels, and that they would adopt M-commerce If privacy is protected and will strongly encourage others to utilize m-Commerce services. In terms of whether or not they would use mobile commerce, men and women have divergent perspectives. When it comes to their plans for future m-commerce transactions, people from both nuclear and joint families have differing opinions. Users from different occupational background have different views regarding their opinion that they would adopt m-commerce, if privacy is taken care of, want to adopt m-commerce as they trust it, recent laws reduce the risk can affect m-Commerce adoption, hassle free shopping through smartphone influences m-Commerce adoption and will strongly recommend others to use m-Commerce services. Users from various income backgrounds have differing opinions on the statement that they wish to adopt M-commerce because they trust it, that recent regulations that lower risk can aid in improved m-Commerce adoption, and that hassle-free purchasing through smartphone promotes m-Commerce adoption.

There was difference in the perception of people living in different cities in terms of attitude, adoption intention of the m-Commerce application and the selected m-Commerce drives except ‘Perceived risk’. The difference was examined to be significant at 0.01 level of significance for perceived cost, personalisation, privacy, ease of use, perceived usefulness, social norms, perceived behavioural control, attitude and the adoption intention. The difference was found significant at 0.05 level for the m-Commerce driver ‘Perceived trust’. Hence, the m-Commerce users residing in selected four cities differ significantly with regard to their perception regarding selected attributes, except for the ‘Perceived risk’.

The review of literature undertaken by the researcher for offering justification of the formulated hypotheses which has to be tested with the help of structured questionnaire is largely based on model of Ajzen and Fishbein (1980), Davis (1989), and (Khalifa and Shen, 2008). The primary premise of Ajzen and Fishbein's theory is that people actively choose whether or not to engage in a certain behaviour, and that they assess and evaluate many criteria before engaging in it (Bauer et.al.2005). Human behaviour is preceded by intentions, according to the Theory of Reasoned Action (TRA), which are developed based on an individual's attitude toward the behaviour and perceived subjective norms (Khalifa and Shen, 2008). Individuals' perceptions of the impact of significant persons such as family, classmates, bosses, and the media are captured by subjective norms. Ajzen expanded TRA into Theory of Planned Behaviour (TPB) by incorporating a new concept called "perceived behavioural control" as a predictor of both intention and behaviour.

TPB provides for the prediction of behaviour that people do not have complete control over. Perceived behavioural control reflects both internal (self-efficacy) and external (environmental) limits on behaviour. The TPB has been widely utilised in the context of information technology adoption; here, it is being used in the context of m-Commerce adoption.

To meet the research aims, the research team took a quick look at the relevant literature and constructed a theoretical model. The model included selected drivers such as perceived cost, perceived usefulness, personalisation, perceived ease of use, privacy, social norms, trust, risk, and perceived behavioural control to investigate the impact of consumers' attitudes and intentions toward m-Commerce adoption. The study was conducted among selected m-Commerce users from four Gujarat cities.

In order to test the conceptual model of the research study, the researcher has developed Structural Equation Model to study the relationship among different constructs using AMOS.

The research study has developed Structural Equation Model [SEM] by using 11 constructs viz., perceived cost, personalisation, privacy, perceived trust, perceived risk, perceived ease of use, perceived usefulness, social norms, perceived behavioural control, attitude and adoption intention. Where attitude was dependent on the drives of m-Commerce application (perceived cost, personalisation, privacy, perceived trust, perceived risk, perceived ease of use, perceived usefulness, social norms, perceived behavioural control and adoption intention was dependent on the attitude of m-commerce users.

SEM was created using the Analysis of Moment Structures [AMOS] software, and the research study involved a two-stage analysis: first, the measurement model was analysed, and then the hypothesis was tested by fitting it into the structural model. The Cronbach alpha coefficient was used to determine the model's reliability, as well as the validity of the hypothesized study model. Confirmatory Factor Analysis was used in this study to look at the constructs' construct, convergent, and discriminant validity (CFA).

The CR values of all the constructs were found to be more than 0.70, which confirms reliability of the construct (Hair, Black, Babin, & Anderson,2010). it was examined that CR value of the construct were greater than the AVE values, hence Convergent validity was established for the model under study (Hair et al., 2010). AVE value of all the 11 constructs were more than 0.50, hence the convergent validity is established (Hair et al., 2010; Sarstedt, et al., 2014). Construct validity was checked as a pre requirement for application of the SEM. It was found that ASV value of the construct is less than AVE values. Hence, construct validity is said to be established (Badgaiyan, Verma and Dixit,2016).

Discriminant validity was proved by comparing the AVE and MSV values, as the value of AVE is less than the value of Maximum Shared Variance (MSV) discriminant validity is proved (Hair et al.,2010). Discriminant validity was also confirmed through Fornell & Larcker criterion as it can be examined from Table number 1.2 that all the correlation value were lesser than the square root of AVE and hence the discriminant validity is established (Fornell & Larcker, 1981).

Table Number ES-:1.2:

Findings of AVE Values and Fornell–Larcker Test of Discriminant Validity

Selected Constructs	PC	PERS	PRY	TR	RISK	EOU	SN	PU	BC	ATT	AI
Perceived Control (PC)	**0.736**										
Personalisation (PERS)	0.009	**0.844**									
Privacy (PRY)	0.149	0.161	**0.736**								
Perceived Trust (TR)	0.053	0.003	0.004	**0.904**							
Perceived Risk (RISK)	0.059	0.019	0.051	0.032	**0.743**						
Perceived Ease of Use (EOU)	0.028	0.063	0.094	0.489	0.017	**0.810**					
Social Norms (SN)	0.008	0.069	0.055	0.080	0.021	0.036	**0.733**				
Perceived Usefulness (PU)	0.033	0.026	0.017	0.084	0.683	0.019	0.023	**0.824**			
Perceived Behavioural Control (BC)	0.061	0.055	0.048	0.007	0.037	0.059	0.527	0.048	**0.829**		
Attitude (ATT)	0.131	0.068	0.085	0.050	0.110	0.179	0.035	0.072	0.043	**0.857**	
Adoption Intention (AI)	0.148	0.044	0.069	0.044	0.109	0.157	0.005	0.064	0.033	0.800	**0.801**

Note: Diagonals represent the square root of the AVE, while the off-diagonals represent the correlations.

The goodness of fit of the overall confirmatory analysis was also examined through CMIN, GFI, NFI, IFI and RMSEA. Table number 1.3 provide details of the value and the threshold of the values to pass the goodness of fit index (Bollen, 1989; Greenspoon & Saklofske, 1998; Forza & Filippini, 1998; Hair et al., 2006, 2010; Awang 2012). From the Goodness of fit table No.1.3, it has examined that the value meets the threshold limit and thus the model of the study as concluded to have good goodness of fit and it can be concluded that the data fits into the model.

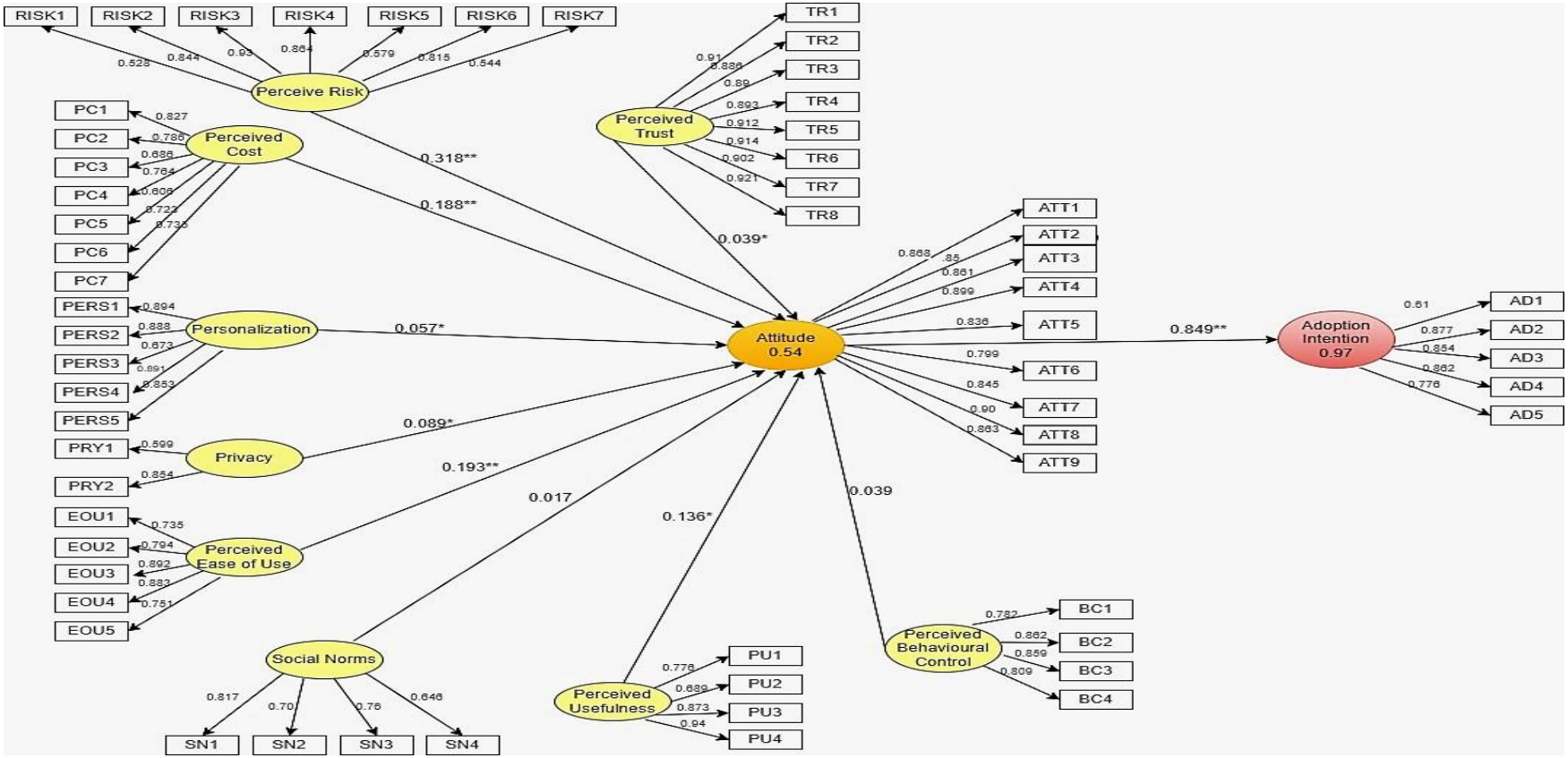
Table Number ES-1.3: Goodness of Fit Index

Name of Index	Level of Acceptance	Index Value	Comments
CMIN (Chi-square or Minimum Discrepancy Chi-square)	(χ2/df) <5.0 (Hair et al., 2006; Awang 2012)	4.45	Threshold level is achieved
GFI (Goodness of Fit Index)	GFI>=0.9 (Awang,2012, Hair et.al 2010) 0.8<GFI<0.9 (Greenspoon & Saklofske, 1998; Forza & Filippini, 1998)	0.858	Threshold level is achieved
NFI (Normed-Fit Index)	NFI>=0.9 (Awang,2012)	0.902	Threshold level is achieved
CFI (Comparative Fit Index)	CFI>=0.9 (Hu and Buntler, 1999; Awang,2012; Hair et al, 2010)	0.922	Threshold level is achieved
IFI (Incremental Fit Index)	IFI>0.9; Can exceed 1 (Bollen,1989)	0.922	Threshold level is achieved
RMSEA (Root Mean Square Error of Approximation)	RMSEA<0.08 (Byrne, 1998; Awang, 2012)	0.048	Threshold level is achieved

From the results of Structural Equation Modelling from Figure 1.1, it can be inferred that the Beta (β) value of all the 10 paths of the model were positive and majority of the path value were significant at 0.01 (4 path) and 0.05 (4 path) level except the path value of social norms and perceived behavioural control on the attitude which were found insignificant at 0.05 level of significance. Perceived risk had the highest influence (β=.318) on attitude compare to the other drivers of m-Commerce application. The next major effect was of perceived ease of use (β=.193) followed by perceived cost (0.188), perceived usefulness (β=.136), privacy (β=.089), perceived trust (β=0.039), personalisation (β= 0.057), perceived behavioural control (β=0.039) and social norms(β=.017). Attitude which was build based on the m-Commerce drivers had a positive and the significant effect (β=.849) on the adoption intention for the m-Commerce applications.

Figure Number ES- 1.1:

Results of Structural Equation Modelling



Note: *Standardised Coefficient significant at 0.01 level

****Standardised Coefficient significant at 0.05 level**

Table Number 1.4 provide summary of the hypotheses tested and its findings and implications:

Table Number ES-:1.4

Table Providing Details of Hypotheses, Findings and Implications of the Research Study

List of Hypotheses	**Summarized Findings of the Research Study**	**Implications of the Research Study**
The selected drivers of m-Commerce viz., perceived cost, personalisation, privacy, Perceived trust (Perceived risk perceived usefulness, perceived ease of use social norms and perceived behavioural control has significant impact on consumers' attitude towards m-Commerce applications. The selected drivers of m-Commerce viz., perceived cost, personalisation, privacy, Perceived trust Perceived risk perceived usefulness, perceived ease of use social norms and perceived behavioural control has significant impact on adoption intention of users of m-Commerce applications.	As the data collected through questionnaire is not normal, **Kendall's Tau** was carried out to know the relationship among the selected variables viz., perceived cost, personalisation, privacy, perceived trust, perceived risk, perceived ease of use, perceived usefulness, social norms and perceived behavioural control on attitude and found the correlation between these variable significant except in case of perceived behavioural control where it was found insignificant. The research study has also tried to find the relation between the drives of m-Commerce as well as attitude with the adoption intention of m-Commerce application and the results of the test demonstrate significant relation between the variables except personalisation, privacy, and perceived behavioural control. Attitude and adoption intention for m-Commerce adoption were significantly influenced by perceived cost, perceived usefulness, perceived ease-of-use and social norms	As the cost of m-Commerce applications was proven to be important in generating positive attitudes, m-Commerce service providers should consider cost aspects in m-Commerce transactions. Transparency can help m-commerce businesses increase their application's perceived trust. To avoid data breaches and build trust, businesses and developers should guarantee the customers they will not share their data with other persons or businesses. In order to reduce the hazards associated with m-Commerce transactions such as identity theft, phishing scams, adware and malware, credit card fraud, and fraudulent online transactions, data encryption should be used. In order to cater the requirement of consumers, service providers should collect information about users' preference so that offers can be customized. At the same time, m-commerce companies have to make sure that users' privacy is protected. As users have a habit of taking review from friends, relatives, and online merchant sites, before finalizing their product or services choices, reference groups can be used to attract more customers towards company's products and services.

List of Hypotheses	Summarized Findings of the Research Study	Implications of the Research Study
There is no significant association 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, perceived trust, perceived risk, perceived ease of use, perceived usefulness, social norms, perceived behavioural control, attitude and adoption intention of m-Commerce applications.	To find the significant association between selected drivers with selected demographic variables adopted in the study, the researcher has conducted **chi-square test.** Age was found to be significantly associated with **cost** as different age group have different opinion regarding, m-Commerce helped to save money, did not have to incur additional expenditure to shift from wired to wireless, wireless network connection is not expensive, have necessary means and resources and are not afraid of fraudulent charges. Married and unmarried people differ in their views that no additional charges incurred from switching from wired to wireless payments system as well as the opinion that they can manage resources to use m-Commerce. Users from joint and nuclear family differs with regard to the view that smart phone is not expensive. Users from different occupational background differ in their opinion that m-Commerce applications help in saving their money, do not incur additional charges to shift from wired to wireless network. Users from different income level differs in their views regarding the fear of fraudulent charges and revealed that m-commerce are not burden for them. Regarding the **personalisation,** users of different age group have different opinion regarding the willingness to share information about preferred products with m-Commerce vendors. Married users differ in their views from unmarried user regarding receiving promotional messages and coupons of their preferred choice, and their willingness to share the information regarding the same. People from different occupational background want to have the choice to register for mobile advertisement and have shown willingness to share preferred product information with m-Commerce vendors. Users from different age group and occupational background differ in their view regarding location-based information invades their **privacy**.	As the users believed that network connection fees are not expensive and they have enough money and other resources to engage in m-Commerce, it provides great opportunities for m-Commerce service providers to exploit this medium to the maximum potential. In order to build trust, m-Commerce businesses should ensure that the system is transparent by publishing all fees associated with m-Commerce transactions. Users showed willingness to communicate their product preferences and expected features with m-Commerce companies which help the companies to provide personalised offers to them. When sending messages to selected client groups, m-Commerce providers should consider the age and product preferences based on their search history rather than bombarding with unwanted messages. Permission-based marketing can take m-Commerce to the next level by allowing marketers to target specific client groups. m-Commerce vendors should collect information about consumers' product choice and attributes by creating trust in m-Commerce service providers and dealing with security challenges involved in m-Commerce. The m-Commerce service providers should consider age factor in mind while developing products to consumers as people may get more conscious about safety and security aspects of m-Commerce that affect their level of confidence and commitment. Because different age groups have varying perspectives on how comfortable using a mobile phone for online transactions is, app or website designers should consider this while building user-friendly interactive interfaces and adapting services for these groups. Occupational background and marital status also should be considered while designing and delivering m-Commerce services. Even though users have not expressed much concern regarding the risk involved with m-Commerce transaction, then also the application developers should continue to ensure the safety and security involved with online transaction.

	User of different age group, occupational background, marital status and income differed their view that personal information should be kept as confidential by m-Commerce Companies. User from different age group, marital status and occupational background showed different **trus**t level as they differ in their view regarding their confidence level to during m-commerce and the commitment level of m-Commerce vendors. Male and female differ in their views regarding the efficiency of m-Commerce vendors in serving the customers as well as their views about online stores that display assurance seals are trust worthier. Users have different occupational background have different opinion regarding whether regulations helped to minimise the **risk** level of m-commerce transactions. Users from different income level have different views regarding the adequacy of information provided by m-Commerce website and its operational reliability as well as the level of risk involved when third party overseeing the payment process. Users of various age groups differed in their perceptions of the **perceived ease of use** of m-Commerce transactions, with some believing that using a cell phone was comfortable with online transactions. Users of different age and occupational background differed in their view regarding the convenience involved in getting information on promotional offers and it is easy to become skilled at using a cell phone for m-Commerce transactions. Regarding **perceived usefulness**, users of different gender, type of family and occupation have different views on the easiness to search and compare products and services via mobile. Users of different age group, marital status and occupation differed in their views regarding the m-Commerce transactions have aided them in completing tasks faster and made their lives better.	As more women are working full-time, have more purchasing power, and make most of the family decisions regarding consumer products and services, marketers should consider this gender segment when formulating strategies. Users from various professions have varying opinions regarding the cost involved as well as the convenience of using mobile phones to acquire information about promotional offers; this should be addressed when creating promotional offers and marketing strategies. Given that the ease of getting promotional offers and the comfort of m-Commerce have drawn people to this medium, so it is important to build user-friendly interfaces for quick comparison and selection of products and services. The m-Commerce users should have quick and easy access to their preferred retail stores and it should provide a better user experience with optimised applications and websites with streamlined shopping experience which help them to navigate easily with few clicks and find and compare the products/services of their choice. In a country like India, social norms play a significant role in influencing online purchasing decision of people as m-Commerce users normally wait to get the feedback of early adopters before indulging in buying new products and services to mitigate the risk aspect involved with online transactions. As Friends, colleagues and relatives as well as web-based social communities play a vital role in the online buying especially through mobile, this reference groups and medium should be explored further to generate more sales. Even though users consult friends, relatives and colleagues while buying new products and services they prefer to take final decision based on their own trust and intuition than listening to others advice, so building a favourable image in the mind of consumers is quite essential for m-Commerce companies to survive in the competitive market place.

	Users of different age group and marital status differs with the view that they know more about new product and services than others and users of different age group differed with regard to the view that m-Commerce reflect users' personality and m-Commerce users are better informed than others. With regard to **Social Norms**, users of various age groups differed with regard to the statement that people who are important in their lives think they should use m-Commerce services, majority of their friends/colleagues use m-Commerce services, and that they trust their intuition more than advice from others when using new technology. Males and females have differing perspectives on the statement that they trust their intuition more than advice from others. Users of different occupational background have expressed varying opinions about the statement that the majority of their friends/colleagues use m-Commerce services. Regarding **perceived behavioural control**, users of various age groups have differing perspectives regarding, their knowledge and ability to use m-Commerce services, waiting to receive m-Commerce services and recommending m-Commerce services to others. User of different age and occupational background differed with regard to their ability to perform m-Commerce without others help, transactions are within their control, have access to software and hardware services and intention to buy via mobile is quite high. Marital users differ from their counterpart regarding their opinion about accessibility of hardware, software and network services as well as their level of intention to purchase via mobile. Users from different income level revealed that transactions are completely within their control.	As different age groups have different expectation, content developers as well as m-Commerce service providers should develop suitable content catering to the requirement of different age groups. When users perceived that they have control over their behaviour which helps them to reduce the risk and uncertainty involved with adopting m-Commerce services. So, it is very important to convince them that m-Commerce transactions are entirely within their control and ensure safety and security measures involved with it. There is difference in the views of users from different occupational background regarding the perceived behavioural control involved in m-Commerce transaction, m-Commerce companies should address this issue to make sure that all are able to use m-Commerce services without any difficulty and should create confidence in them that m-Commerce transactions are within their control and no third party is exerting undue influence and control over m-Commerce services. Different age groups have shown difference regarding their attitude towards m-commerce transaction and opined that they do online scanning before making purchased decision and really enjoyed buying products as well as really satisfied with m-commerce services. The association of attitude with occupation revealed significant result with criteria regarding their satisfaction level during m-Commerce transaction, enjoyment they experienced during purchase through mobile and the positive views they hold regarding m-Commerce transaction. People from different occupational background differs in their views regarding the enjoyment they experienced and their positive views as well as satisfaction involved with m-Commerce transaction. So, m-Commerce merchants should consider the age and occupation of target consumers and design the product and services accordingly. Users of different age group have different opinion regarding cost and privacy involved with m-Commerce, this aspect requires special attention. Marital status also affected users' views regarding their willingness to strongly recommend the m-Commerce applications to others.

	Regarding **attitude**, users of various age groups and occupational background differed in their opinion with regard to their level of satisfaction while engaging with m-commerce transactions, conducted online product scanning prior to making a purchase, and enjoyed buying products and services via m-commerce. Users from various income backgrounds expressed varying opinions on the statement that they are in favour of receiving discounts through mobile coupons. Regarding **adoption intention,** users of all ages have expressed varying degrees of agreement with the statements that the cost of m-Commerce transactions are not more than the other channels, and that they would adopt M-commerce If privacy is protected and will strongly encourage others to utilize m-Commerce services. In terms of whether or not they would use mobile commerce, men and women have divergent perspectives. When it comes to their plans for future m-commerce transactions, people from both nuclear and joint families have differing opinions. Users from different occupational background have different views regarding their opinion that they would adopt m-commerce, if privacy is taken care of, want to adopt m-commerce as they trust it, recent laws reduce the risk can affect m-Commerce adoption, hassle free shopping through smartphone influences m-Commerce adoption and will strongly recommend others to use m-Commerce services. Users from various income backgrounds have differing opinions on the statement that they wish to adopt M-commerce because they trust it, that recent regulations that lower risk can aid in improved m-Commerce adoption, and that hassle-free purchasing through smartphone promotes m-Commerce adoption.	In a democratic country like India, reference play an important role. If some people are skeptical about strongly recommending the m-Commerce transaction to other, it is going to affect the growth of m-commerce business as word of mouth is an important way of stimulating people in buying goods and services. So, this issue requires immediate attention of m-Commerce service providers. m-Commerce service providers should focus on cost, privacy and perceived trust issues involved with m-Commerce transaction by providing variety products at competitive price and by ensuring that transactions are performed smoothly and securely and also ensuring that the personal and financial information will remain secure and will never be disclosed with third party. The results also revealed that user friendliness of m-Commerce App or Website interface, hassle free shopping through smart phone, recent laws to reduce risk and positive attitude of society towards m-Commerce influence the adoption intention.

List of Hypotheses	Summarized Findings of the Research Study	Implications of the Research Study
There is no difference in the opinion of selected m-Commerce users for the m-Commerce drives namely, perceived cost, personalisation, privacy, Perceived trust, Perceived risk, perceived ease of use, perceived usefulness, social norms, and perceived behavioural control; the attitude and the adoption intention for m-Commerce based on the city in which they live"	Non-parametric test Kruskal-Wallis was carried out to test the hypothesis. There was difference in the perception of people living in different city in terms of attitude, adoption intention of the m-Commerce application and the selected m-Commerce drives except 'Perceived risk'. Post Hoc Test was carried out to identify the cities amongst which there was a difference in the perception for m-Commerce drivers towards attitude and adoption intention for the m-Commerce applications. The city-wise difference in the perception of m-Commerce users is given as follows: **Perceived Cost:** Vadodara city has the highest mean rank whereas Ahmedabad city has the lowest. Perception of users was not found statistically significant between Surat and Rajkot cities, whereas it was found significant among other cities. **Personalisation:** Vadodara city has the highest mean rank whereas Surat city has the lowest. The group that has significant difference in the opinion regarding personalisation is the m-Commerce users of Vadodara city, as the difference was significant among the group and Vadodara city. There is no significant different found in the perception of users regarding personalisation of services in Ahmedabad, Surat and Rajkot cities. **Privacy:** The users of Vadodara city were highly concerned about privacy compared to Ahmedabad, Surat and Rajkot cities where the difference was not statistically significant. **Perceived Trust:** There was no significant difference found between m-Commerce users of different cities at 0.05 percent level of significance. The major difference was identified between the Vadodara and Ahmedabad city which were significant at 0.10 level of significance. **Perceived Ease of Use:** There was considerable difference in the views of m-Commerce users in all the four cities regarding perceived ease of use of m-commerce applications as all the results were found to be statistically significant. Vadodara city uses have high regard for perceived ease of use involved with m-Commerce transactions whereas it was lowest in Rajkot city.	**Perceived Cost:** m-Commerce users main concern was not the cost of smartphone or network connection expenditure but they were worried about the fraudulent charges that they may have to pay if they are continuing with m-Commerce transaction. m-Commerce companies should create trust among the users and has also to make the system more transparent by giving all the details regarding the transaction to users. **Personalisation:** As the users showed willingness to received information about latest product and services and promotional offers as well as are ready to share information about their preferred choices, companies, based on this information, can easily send personalised offers to consumers which may result in increased sales. The results of post hoc test showed that except users of Vadodara city, users of other cities were not able to enjoy the advantage of personalisation involved with m-Commerce, so m-Commerce service providers as well as app developers should concentrate on this aspect to improve the adoption rate. **Privacy:** The study revealed that privacy has become a sensitive issue among users, m-Commerce should adopt prompt measures to protect consumer privacy. Even though companies are increasingly adopting measures like Data masking, password encryption, OTP based login systems, and checking and authentication of users and other measures to ensure that data would be accessed only by authorized parties, privacy issues need to be tackled by introducing stringent laws against invaders of privacy. **Perceived Trust:** Users showed high confidence level to engage m-Commerce transactions and opined that m-Commerce vendors are highly committed in serving the customers and also showed confidence in giving card details while engaging in online transaction but would like to have opt in and opt out option regarding sharing personal information with third parties. As users showed trust m-Commerce vendors, m-Commerce companies as well as marketers should be able to maintain customer trust for repeat purchase and customer retention.

	Perceived Usefulness: Regarding the perceived usefulness, Vadodara city has shown high concern for perceived usefulness involved with m-Commerce application whereas the lowest was reported from Ahmedabad city. There was no significant different in the perception of users between Surat and Rajkot as the results was not statistically significant in these cities. **Social Norms:** The influence of social norms was found to be high in Vadodara whereas it was lowest in Ahmedabad city. There was no difference found in the opinion of users between Surat and Rajkot as the results were not statistically significant between these cities whereas there was considerable difference in the opinion of users in other cities. **Perceived Behavioural Control:** The users of Rajkot city have high influence of perceived behavioural control regarding m-commerce applications followed by Vadodara, Ahmedabad and Surat cities respectively. There was significant difference in the views of users of Surat and Rajkot cities which were found to be statistically significant where as it was not found significant in other selected cities of Gujarat state. **Attitude:** The Vadodara users have showed high positive attitude towards adopting m-Commerce applications and it was lowest in Rajkot city. There was no significant difference found in the attitude of users between Ahmedabad and Surat as the results were not statistically significant between these cities. Significant different in the attitude of m-commerce users were found among other cities as the results were statistically significant.	**Perceived Ease of Use:** Majority of the users revealed that indulging in m-Commerce activities are quite easy and comfortable and the applications helped them in getting information about promotional offers and coupons. As users were comfortable in using mobile for purchasing goods and services, it provided lot of opportunities for companies to explore this medium to the maximum extent. **Perceived Usefulness:** If a person believes that using a particular system will definitely improve his/her performance, then he/she will adopt it. It is the duty of the m-Commerce vendors to focus on the usefulness involved with m-Commerce while developing marketing strategy. **Social Norms:** The influence of social norms was found to be high in the cultural city of Vadodara, but are not playing a significant role in Ahmedabad where people, even if they consult with each other regarding buying new products and services, final decision is taken based on a person's intuition than that of society. M-Commerce merchants should consider this difference while designing marketing strategy and developing offers to these customer groups. Reference group can exert a great influence in Vadodara, so they can be targeted with attractive offers to promote sale of product and services. **Perceived Behavioural Control:** perceived behavioural control plays a very significant role in the decision-making process of people in Rajkot city as users in the city felt that transactions are within their control and have high confidence in their ability to take own decision while engaging in m-commerce. As perceived behavioural control is not strong in Surat city, m-commerce companies can target their reference group who will play a major role in their purchase decision and can design marketing programmes accordingly. **Attitude:** As users of Vadodara showed high positive attitude compared to other cities, Vadodara has high potential regarding the growth of m-Commerce compared to other selected cities of Gujarat. As Rajkot users have low positive attitude compared to other three selected cities, m-Commerce service providers should try to find the reason for this and try to incorporate more lucrative offers as well as have to have to build trust, thereby helping them to overcome insecurity regarding m-Commerce transactions. As

	Adoption Intention: The adoption intention of m-Commerce was high among Vadodara users, followed by Surat, Ahmedabad and Rajkot cities. There was significant difference in the perception of users was found between Vadodara city with Ahmedabad and Rajkot cities as the results were statistically significant whereas the difference between the other cities were not found statistically significant.	Rajkot users have high level of control over their transaction it is very important to convince them about the benefits involved with m-Commerce. **Adoption Intention:** The response of the users from Vadodara city showed that they have high intention to adopt m-Commerce transaction which has to be explored properly by m-Commerce merchants by designing personalised offers at reasonable price. Compared to other three cities, adoption rate is low in Rajkot, the m-Commerce merchants should find reasons for low adoption in Rajkot city and also try to attract users further by giving attractive promotional schemes and customized offers and should also ensure that hazzle free shopping via mobile phones as well protecting their privacy to reduce risk and uncertainty involved with m-Commerce transaction, all these measures can definitely improve the adoption intention of users in Rajkot city.
The selected drivers of m-Commerce viz., perceived cost, personalisation, privacy, perceived trust, perceived risk, perceived usefulness, perceived ease of use, social norms and perceived behavioural control has significant impact on consumers' attitude towards m-Commerce applications	From SEM, it can be inferred that perceived risk is the most important factor that affect the attitude positively. perceived ease of use as well as perceived usefulness have significant impact on consumers' attitude towards m-Commerce adoption and found that both have significant impact on adoption intention. Perceived ease of use plays more important role in adoption intention decision than perceived usefulness. Perceived cost also affect attitude and also Adoption Intention significantly. Trust affects attitude but the influence was not strong when compared to risk and privacy aspect is concerned. Privacy played a significant role in developing attitude towards m-Commerce adoption. Personalisation influence in developing attitude towards m-Commerce, but not very strongly. Social norms as well as Perceived Behavioural Control did not play any significant role in developing consumers' attitude towards mobile commerce adoption	As it is an important driver in Adoption Intention, m-Commerce service providers should come up with some solution to avoid the risk involved with m-Commerce transaction, through proper security software, use encryption technology for your credit card, avoid using public network while doing transactions online, download applications from reliable store like Google Play Store, Windows App Store, iPhone App Store, create multi-factor authentication to avoid multiple login from different accounts etc. can reduce the level of risk involved with m-Commerce transactions. If a company wants to live sustainably in the market place it is very important to use trust seals and signal like Transport Layer Security (TLS) certificates or Secure Sockets Layer (SSL), a networking protocol that ensures browser authentication and encrypts and secure the communication with the client and makes it more authenticated.
The attitude has a significant and positive impact on m-Commerce users' adoption intention of m-Commerce applications.	The results of SEM revealed that there is significant impact of attitude on adoption intention. In this study, from the coefficient of determination, it can be found that 97 percent of the variance in adoption intention can be explained by attitude.	As the finding of SEM has revealed the significant predictors involved with m-Commerce adoption, m-Commerce service providers as well as merchants should take proper steps to overcome those hurdles involved and ensure better adoption of m-Commerce services.

9.0 : MANAGERIAL IMPLICATIONS

The findings of this study would benefit the m-commerce companies in developing a stable, strong and a loyal customer based. People who are new to the system of m-commerce should be oriented regarding the benefits of m-commerce through ethical marketing practices. Since m-commerce plays a role in the consumers life and lifestyle, it becomes imperative for the m-commerce companies to know their attitude and engage the consumers during the development of new applications which will cater to the specific needs of the consumers thereby firmly retaining the consumers and create long term profits. The output of the study gives throws some light into the essential requirements of consumers which app designers as well as mobile merchants should cater and thus make m-adoption process quite faster (Natarajan et al. 2017).

Instead of focusing primarily on technology-related difficulties, m-Commerce enterprises should consider factors from the standpoint of their users. High-tech will not provide the company a competitive advantage. Companies and management must carefully evaluate variables such as subjective norm, cost, risk, and enjoyment that relate more to individuals' responsibilities from both social and consumer viewpoints in order to attract more users.

The main managerial implications of the study are given below:

- The results of the research study would be useful in designing and redesigning of marketing strategies which appeal to new consumers as well as retain the existing consumer base.
- It would help m-commerce companies to focus on pain points and touch points by identifying the areas of priority, allocation and reallocation of limited resources so as to increase the penetration and adoption rate of m-commerce.
- The key characteristics identified in this study would help m-commerce companies to develop and design features appropriate for the m-commerce system and make it more acceptable among the consumers.
- This study would be beneficial to m-commerce app designers, service companies and mobile marketers in designing appropriate strategies and system as well as in developing business models which helps in better adoption of m-commerce.
- The findings of the study would help a number of stakeholders viz., app designers, m-commerce merchants as well as service providers to develop suitable strategies as per the requirements of the target group of consumers.

10.0: OVERALL RECOMMENDATIONS OF THE RESEARCH STUDY:

'One size fit for all' strategy will not be feasible with the evolution in Information and Communication Technological sector (Verdegem and De Marez,2011; Ashraf et al,2021). Companies are forces to go for targeting marketing practices through personalised offers to existing and prospective users due to intense competition, reduction in customer loyalty and failure of marketing strategies for the masses. Personalisation helps to reduce search time and the costs involved in searching among advertising clutters (Krishnamurthy 2001). Moreover, it has been observed that around 80 percent of the customers leave the websites in the first 30-60 seconds of browsing due to confusion related to products and services. This has a negative impact on companies since they spent huge amount on marketing and diverting the traffic to company's websites and apps. So, personalisation of offers has become very important in attracting consumers which was confirmed by this study as it has been revealed that personalisation has a positive impact on developing attitude towards m-Commerce.

The choices of consumers differ with stages of adoption and m-commerce retailers need to look into the changes in taste and preference of consumers to design appropriate marketing communication accordingly. Some consumers consider mobile devices as a channel to search m-commerce retailers rather than concentrating on single application. Hence shopping and non-shopping app developed by m-commerce retailers would help them collect and analyses data related to consumers browsing behaviour as well as purchasing pattern (Kim et al., 2017). Utilization of these data would help the retailers in creating personalised offers to the users of m-commerce services leading to customer happiness (Tyrvainen and Karjaluoto, 2019).

Personalisation of services enriches customer experience since companies are able to differentiate new and loyal consumers and thereby design strategies accordingly. Real time analytics help companies in understanding their consumer preferences and render attractive offers which helps them during m-Commerce transaction to tracking shipment, provide timely delivery and quality service to the consumers which in turn helps the companies get better return on investment. It also helps companies to personalise offers for new and existing users by providing them with vast browsing experience without direct interference, which leads to improve customer loyalty and build brand equity.

Some literature reviews showed price to be an important factor that affect the attitude and purchase intention (Heim and Sinha,2001) while some other researchers disagreed with this view because they opined that the price differences being negligible and price comparison being a time-consuming process, people are not price sensitive during online purchase. Gehrt and Rajan (2012) opined that, creation of consumer segments in India should be on the basis of on product quality, reputation and recreation as well as value singularity rather than on price sensitivity. The study conducted by Natarajan et al. (2017) opined that since innovators generally are less price sensitive to m-shopping applications, mobile companies can use them as a primary target when offering new products and services via mobile shopping channel.

Indian consumers in general being sensitive towards pricing, at times compromise on adopting latest technology. With increase in purchasing power consumers need to be justified for the price paid by them for the products and services. Many Indian brands attract consumers through low pricing since pricing is a powerful tool in India. This view was confirmed by a study titled "Global drivers of consumer choice" conducted by BCG centre for consumer insights around eighteen global markets that found that Indian consumers are highly price sensitive than others (Bharadwaj et al.,2020). If the cost involved with the purchase is high then consumers are likely refrain from buying online. It becomes imperative on the m-companies to attract price conscious consumers through attractive offers (Kukar-Kinney and Close (2010).

The current study has also shown that price of smartphone as well as the cost involved with m-Commerce transactions affects the users attitude towards adopting m-Commerce applications. The cost and the pricing associated with m-transactions has a major impact on the attitude towards m-commerce adoption. Therefore, service providers need to focus on transaction costs involved by integrating differential pricing category to include the price sensitive consumers. As pricing and cost has been found to have a significant impact on adoption intention, mobile service companies need to ensure that usage charges are nominal and should also bring transparency in the system otherwise it may have a negative effect on the adoption decision (Zhou,2011).

The research study has found Privacy as another important factor that affect the user's attitude towards adopting m-Commerce. Unsolicited messages being sent to consumers mobile devices would create privacy issues as consumers consider their mobile as very personal and confidential device (Carroll et al. 2007) which can be overcome by permission-based marketing. Prior permission before sending personalised offers and messages help to develop a positive image about the company in the mind of customers which in turn will help to build trust in service providers leading to adoption of m-commerce services.

It was found that, compared to the developed countries where consumers have high awareness level with respect to data breach and hacking, those in the developing countries are more to risk related issues since they do not have adequate knowledge regarding the problems associated with virtual transactions and will not be able to deal with the security risks involved due to the lack of technological infrastructure and support mechanism (Sarkar et al., 2020). But in this study, Perceived risk was found to be the most important driver of m-Commerce adoption. As users are very much worried about the risk involved with m-Commerce transaction, enough attention should be given to improve the safety and security measures to improve the adoption rate. Since perceived risk as a construct impacts attitude to a significant level, m-commerce service providers need to pay due attention to the risks involved with virtual settings and should also set up physical display and distribution system to those consumers who are wary of virtual transactions.

The non-intrusive nature of m-Commerce services attracts users to this medium, but are wary of the risks associated with online payments which can be overcome by enhanced payment security measures which would improve usability by consuming minimum time (Marriott & Williams, 018).

Trust has a significant but lowest impact on influencing the attitude of users in adopting m-Commerce. The significance of Trust in m-commerce adoption was in confirmation with previous research conducted by Chong et al. (2012) and Zhang et al. (2012). Trust plays a major role especially with adoption of m-commerce services having high financial value transactions.

Trust is a predominant factor in m-Commerce services, especially with regard to payment as older generations are more concerned with security issues. Therefore, transparency is vital in m-payments for long term association with users. m-commerce service providers need to ensure data integrity by introducing data encryption to keep consumers data secure since m-commerce involves sharing of sensitive personal and financial details by the users.

Payment through mobile requires trust generation among consumers as they need to disclose their credit/debit card details or use UPI ID (where bank account is acting as a wallet with just a two-factor authentication code) which makes them vulnerable to safety and security issues. Therefore m-commerce users need to be educated with respect to phishing apps, use of strong passwords for UPI applications, confidentiality to be maintained regarding MPIN, locking their SIM to prevent possible hacking and enabling encryption with remote wiping facilities so as to remove security issues and build trust in consumers.

Trust has a significant but lowest impact on influencing the attitude of users in adopting m-Commerce which can be built through transparent, reliable, error free and responsive customer services with 24/7 support system. Incorporating a sense of human touch through clear instructions, user-friendly interfaces, customized offers of products and services based on consumers search history and above all the assurance that confidentiality would be maintained with respect to their personal and financial data in transactions would go a long way in building trust in consumers (Dash & Saji, 2008).

Loyalty of consumers towards m-commerce depends on trust building by the vendors even if products and services offered are satisfactory, consumers will not go for it unless they trust the vendors. Hence integrity, competence, benevolence and predictability need to be established by m-commerce merchants so as to build trust in consumers. (Lin and Wang, 2006). Due to the sensitivity of personal and financial data involved with m-Commerce, proper encryption and multi-factor authentication via face or finger print recognition, SMS or PIN can also generate trust in m-Commerce users.

To increase the adoption rate among users, m-commerce merchants need to come out with promotional offers at regular intervals so that consumers purchase goods at regular intervals. Once consumer trust the m-commerce service providers in terms of quality of products and services they would often engage in m-commerce transactions. (Lin and Wang, 2006). The research study has revealed that perceived usefulness has a significant impact on mobile commerce service adoption which is in consistent with the findings of Shankar and Datta(2018).

m-commerce companies need to improvise the perceived usefulness involved with m-Commerce transactions so that consumers do not shift their loyalty towards competitors offer which can be prevented through improvement in content, system and service quality, quality of website or app content, better product or services offers and should also focus on keeping competitive pricing for their products and services (Lin & Wang, 2006).

Mobile based transactions are being adopted by consumers day by day due to its convenience and ubiquity, service providers should keep on enhancing the system features with better security cover and make it user friendly with any service costs which is possible with decreasing transaction costs and this would help in faster and wider adoption by consumers.

The study on impact of perceived ease of use of m-commerce users on attitude revealed that most consumers engage in m-commerce transactions as it is convenient. With the increasing convenience and popularity of smartphones which consumers use for gathering information and shopping, in-store experiences of consumers have seen a sea-change and they are on the constant lookout of new mobile solutions that can help them compare products in-store to make an appropriate purchase decision (Tyrvainen and Karjaluoto, 2019). The variety of products and the convenience associated with shopping using mobile devices has seen consumers indulge themselves in shopping via smart phone (Chiang and Dholakia,2003).

Online shopping makes it convenient for the consumers and specially women consumers (Raman,2014) because they do not get entangled in the web of pressure exerted by salesman who generally manipulate and control the shopping environment. Online products on websites or mobile apps when arranged into convenient categories and sub-categories attracts the consumers to shop and make them feel that they have a variety to choose from and they enjoy the shopping process (Chang, 2011). Concessions in pricing, shopping convenience, variety in selections and recreational benefits are the major factors that lure people towards online shopping through mobile apps (Forsythe et al., 2006).

The researchers have opined that PEOU played a significant role in pre implementation stage but the effect reduces over a period of time (Taylor and Todd,1995; Koufaris,2002; Wu and Wang, 2005; Wei et al., 2009; Chong et al, 2012), the reason was the familiarity of the consumers with the use of mobile services technologies (Liebana-Cabanillas et al., 2017). As per the findings of the study, social norms did not affect the attitude of consumers towards adopting m-commerce services which was in contrast with the findings of some previous research. Earlier study by Chauhan et al. (2018) opined that in B2C transactions, users are highly influenced by family, friends and relatives while taking decision to adopt m-commerce, similar view was given by Shankar and Datta who recommended the use of opinion leader as well as social networking for the faster diffusion of m-commerce apps (Shankar and Dutta,2018).

Though social norms found no significant impact on users' attitude in adoption of m-commerce services, this construct can be explored to develop appropriate campaigns on social networking sites to connect in a better way with target groups using personalised communication with users through appropriate educational and promotional campaigns. Customer testimonials and reviews can also be included which helps in developing promoting positive word of mouth about company's products and services.

Even though it has been found in this study that Social Norms played no significant role in developing attitude, previous studies to know the impact of social norms on behavioural intention and perceived usefulness (Kalinic and Marinkovia, 2016) was found significant. Thus, social norms can be considered while developing consumer loyalty programmes as these groups have the potential to act as opinion leaders about companies' products and services to their friends, relatives and others. As per the findings of the study, Perceived Behavioral Control also played no significant role in developing attitude towards adopting m-Commerce applications.

As positive attitude played a significant role in adoption decision, m-Commerce merchant should try to create a positive attitude in the mind of consumers by identifying and meeting the needs of consumers. Adequate attention should be given to understand the needs of m-commerce users to improve the rate of adoption of m-commerce along with upgradation in technology by focusing on important drivers like perceived risk, perceived ease of use, perceived cost, perceived usefulness and privacy respectively.

Perceived risk was found to be the most important driver that affect the attitude of users towards adopting this technology. in this study. As users are very much worried about the risk involved with m-Commerce transaction, enough attention should be given to improve the safety and security measures to improve the adoption rate.

The second most important factor that affect the attitude and thereby adoption decision was Perceived Ease of Use as people are interested in those m-Commerce apps and websites which are user friendly. The m-Commerce apps developers and website designers should focus on this aspect and design an interface which is easy to use across all segments of the society. Regional language should also be given due importance to enhance the adoption intention.

Perceived Cost was found to the third influencing factor that affect the attitude and of consumers thereby influence the consumers decision making process involved in adopting m-Commerce. In a price sensitive market like India, even though smartphone price is low and data charges of the country are one of the lowest in the world, Perceived cost of m-Commerce adoption as well as the price involved with the purchase of the device still played a major role. M-commerce merchants should consider this view and design vast variety of products and services at competitive price to overcome the pricing issues involved with m-Commerce transactions.

SEM analysis results revealed that perceived usefulness has a significant impact on attitude and the impact of perceived usefulness on behavioural intention was found in the previous studies of Wu and Wang (2005), Wei et al. (2009); Kim et al. (2010) and Liebana- Cabanillas et al. (2014). commerce. Since the content, accuracy and the format of m-commerce apps play very important role in developing attitude, m-commerce merchants as well as marketers should be very clear about what they want to offer to the consumers as the study has proved that perceived usefulness play a significant role in developing attitude towards m-commerce adoption. Therefore, the quality of service needs to be reviewed and improved at different stages of adoption time to time identifying the different needs of consumers at different stages and design and re-design user friendly interfaces for easy access. Location based information can also be used to improve the "usefulness" aspect involved with m-Commerce.

11.0 : OVERALL SUGGESTIONS OF THE RESEARCH STUDY:

The research findings throw light on formulating appropriate strategies related to better adoption of m-commerce as well as building long term relationship with users, and the suggestions would be useful to all m-Commerce service providers, telecommunication companies, mobile retailers, mobile marketing agencies as well as for wireless device manufactures.

The main suggestions for improving the m-Commerce adoption are listed below:

- Normally, online users have a habit of keeping their name and birth dates as security password which can easily be accessed by cyber criminals. M-commerce companies should educate the users about the need to use strong password and change it periodically so that users' account can be protected from hackers thereby ensuring safe transactions through mobile. m-Commerce merchants should also ensure that payment process through credit/debit card is secure so that cyber criminals do not have a chance to steal consumers' data.
- m-Commerce merchants should adopt 3D or 3 Domain system which is a combination of user/acquirer and inter-operability domain which is an advanced authentication layer that can prevent unauthorised use of cards which helps card issuers and online merchants to identify and differentiate between good and bad transaction thereby minimizing the fraud related with online payment system.
- Card Verification Value (CVV), commonly used by companies to validate the card-not-present transactions (CNP), especially in m-Commerce transaction can also help to reduce the insecurity associated with adopting the system
- Strong customer authentication (SCA) ensures that online payments are done through multi-factor authentication (by any two of the following viz., password/PIN; phone/hardware token; finger print/face recognition) which is mandatory in European Union can also be strictly implemented in India to reduce misuse of consumers card details.

- Vendors of m-commerce who store and transmit card data of consumers need to strictly comply with the regulations and standards set by Payment Card Industry and Data Security Standard (PCI DSS) to protect credit card details and thereby avoid fraud(www.rapyd.net)
- m-commerce firms need to maintain transparency related to privacy and security issues and display their digital certificate on their website issued by authentic certification agencies to ensure secure internet connection.
- Companies of m-commerce should strive to develop a brand image in the minds of consumers through system quality and information quality which will reduce the risks involved with the m-commerce channel and convince consumers regarding the benefits of m-commerce adoption.
- m-Commerce service providers should adopt fraud management system by asking for additional buyer verification process.
- m-commerce merchants should comply with privacy and data security standards prescribed by the regulatory authority and ensure that m-commerce transactions are safe. Verifying the IP address of the consumer with the billing system ensures that the consumer is the original card holder.
- Security and privacy of transactions can also be ensured through SSL (Secure Socket Layers) and TLS (Transport Layer Securities) protocols that encrypts the data during online transit and ensures that encrypted data is accessible only by the intended recipient.
- To overcome the problems faced by the consumers due to small visual display and key board interfaces, the unique feature of 'always on' feature of mobile phones for shopping should be promoted to escalate the usefulness associated with the commerce apps which eventually will develop a favourable experience to the user. (Tyrvainen and Karjaluoto,2019)
- The readiness of the consumers to engage and actively participate in m-commerce activities can be improved by understanding their lifestyle and personal value system which will help the m-commerce companies customize the offers and go into building a long-lasting relationship with consumers.
- Purchases through online mode is surrounded by insecurity to a certain extent and therefore to remove the anxiety and insecurity from the minds of consumers, m-commerce companies should be transparent with related to payment details, delivery of products, tracking orders, exchange or return of goods.
- Safety and security aspects of m-commerce transactions in general dissuade consumers from adoption of m-Commerce services which can be resolved by development of various business models, incorporating proper design system and right marketing strategies to reassure and convince the consumers of the feasibility and the potential of m-commerce adoption.

- One of the main reasons for attracting and retaining consumers of m-commerce is website design (Ranganathan and Ganapthy,2002) which can be included in the future study to know the adoption intention of users towards m-commerce, as McKnight and Chervany (2001) have pointed out that well designed mobile apps or website with ease of navigation and adequate links to other websites can be quite useful to consumers for information leading to purchase decision (Nilashi et al. (2015).
- m-Commerce companies should provide transactional assurance as well as ensure confidentiality of consumers' personal and financial data so as to avoid risk and insecurity associated with m-Commerce transactions.
- m-Commerce companies should ensure that portals and platforms used to reach out to consumers should be user friendly and also take into consideration education, language, culture and lifestyle adaptation for better acceptability of the products and services offered through their portals and platforms.
- Adequate attention to safety features and improvised services from over time coupled with platform designs catering to consumers expectations helps in escalation of consumer engagement and retention.
- Consumer trust can be restored through trusted third-party certification in addition to adopting proper data protection policies and reliable security systems, as well as bringing transparency to the m-commerce platform.
- m-commerce service quality can be improved through personalisation of services as per the users' choice, better interactivity, search and comparison of features among different m-commerce apps and websites.
- The design of user interface should be as per the technological infrastructure available to users in that area which helps in better customer engagement
- m-commerce companies should be able to identify the functional features based on the browsing pattern of consumers and try to improve consumer touch points as well as product and service portfolios which makes shopping experience memorable leading to customer trust. (Sarkar,Chauhan & Khare (2020).
- Companies should develop strategies that help in improving mobile service interactivity and also create and educate customers that m-Commerce services are a part of modern consumers' personality to convince them regarding the benefits of this medium in improving their task performance.
- Because different elements have varying effects on different cultures, businesses should tailor their strategy to the demographics of their target markets. For example, perceived usefulness should be prioritised in fully developed western societies in order to increase adoption rates, whereas perceived simplicity of use is critical in emerging countries.

- Some argue that data mining and future data use are novel aspects of online shopping, and that in a competitive market, e-commerce platforms will respect consumers' preferences for limited data mining and use as long as those preferences are clearly communicated to e-commerce platforms via a well-written privacy policy (Wang et al,2021).

12.0 : LIMITATIONS OF THE RESEARCH STUDY:

- This study was conducted only among m-commerce users. Future studies can include both users as well as non-users to know the reason for adoption/ non adoption.
- The samples for the research study were collected from those who have used m-commerce services living in selected four cities of Gujarat, namely, Ahmedabad, Surat, Vadodara and Rajkot. The selected samples may not be a representation of the population from the rural areas and therefore the results cannot be generalized. The study can also be extended to non-users to know their intention to adopt m-commerce.
- Some respondents began using m-commerce during the global pandemic situation which was a necessity and they are at the infancy stage of adoption. Moreover, they may have limited themselves to bare minimum applications and their intention to continue may vary with situation returning to normalcy. Hence, they need to be monitored at regular time interval by conducting longitudinal study.
- This study was conducted from users' perspective but future studies can focus on m-commerce merchants, mobile apps and content providers, technology enablers and network service providers as these factors also play a major role in adoption decision of m-commerce.
- This study focused on the factors that prompted consumers to adopt m-commerce (as there is a direction link between intention and behaviour), but did not incorporate the continuing the usage intention with m-commerce services which future researchers can focus on.

13.0 : DIRECTIONS FOR FUTURE RESEARCH:

- Researchers, in future, can focus on the impact of demographic variable like age, income, education and occupation to understand the moderating effect of these variables on adoption intention.
- Researchers can also study the mediating role of perceived usefulness and perceived ease of use in adoption decision. Studies can also be extended to different cultural context.
- This research study was a consumer-focused study but studies focusing on stakeholders can also be performed so as to have a perspective from the consumers side and also from the side of stakeholders.
- Future research can study the effect of personality traits on user behaviour. The mediating role of perceived enjoyment in adoption decision can also be performed to get better insights (Zhou, 2011).

- As previous studies proved that customers show different preferences at different stages in the adoption process, it would become more interesting to include the journey map of consumers right from product search, initial adoption till retention to understand the changes in their behaviour over a period of time. Such kind of studies can be conducted in the future to throw more light on the changing attitude and preference of people.
- Researchers can also examine how different m-commerce retail channels adopt strategies to attract and retain consumers overcoming the shortcomings of small screen size of mobile phones.
- A study can also be undertaken to know the fate of e-commerce websites after the introduction of mobile apps, though Huang et al (2016) conducted a study regarding the same and opined that some reduction in the sale has taken place with websites, but overall purchase via online has increased. Similar study can also be conducted in Indian context to get inputs regarding Indian consumers preference towards mobile apps over e-commerce website.
- Previous literature regarding integration of brick and mortar with online stores proved that both are complementary to each other (Pauwels and Neslin, 2015), which can be investigated in Indian context. Similarly, the comparison between apps and website will help companies to develop their strategies accordingly.
- Some researchers have opined that since cultural and social factors also play a very significant role in creating trust among users towards decision making process of m-commerce adoption (Blaise et al. 2018; Al-Khalaf and Choe,2020) it can be investigated in the Indian context as well.
- Future research studies can draw a comparison between retail and shopping apps with gaming and entertainment apps since the gaming industry in India has reported 40 percent growth in 2020 and the revenue from mobile gaming app is expected to touch at $1.5 billion by 2025 (Choudhury D.,2020)
- Future research studies can focus on the perception of users towards ‘fairness in dealing’ related to m-Commerce transactions as it might have an impact on trust as well as their re-purchase intention (Lii and Sy, 2009)
- The research can be performed in different cultural and institutional context, in-depth study can also be undertaken to get an insight regarding mobile app diffusion. The study was conducted in the four major cities of Gujarat state which can be extended to other districts as well as to rural areas.
- Researcher has carried out cross sectional study but longitudinal study can give more insights about the adoption intention. As the business models and technological upgradation is on the go, the feasibility of such kind of studies have to analysed (Chauhan et al., 2018).

- The study primarily focused on selected characteristics like perceived cost, personalisation, privacy, risk, trust, perceived ease of use, perceived usefulness, social norms, perceived behavioural control with attitude and then the effect of attitude on adoption intention. Future researchers can focus on other characteristics like perceived enjoyment, self-efficacy etc. which may help in better adaptability especially among youth.
- The effect of moderating variable like age, gender, education income and occupation would also help m-commerce merchants in better segmentation and customized targeting of m-commerce users.
- The Decomposed Theory of Planned Behaviour (Taylor and Todd,1995) established that along with perceived ease of use and perceived usefulness, compatibility is also an important driver that affect m-commerce adoption. The construct, perceived compatibility was not covered in this study and future research studies can pay importance to that aspect.
- Future studies can take one construct at a time and conduct an in-depth study, for example, pre use and post use trust.
- The changes in the relevance of adoption factors, specifications of devices as well as changes in the attitude of users at successive intervals can be traced through longitudinal studies.
- The influence of network in m-Commerce adoption can also be studied as it was found to be an important factor in m-Commerce adoption (Chong, A. Y. L.2013).

14.0 : CONCLUSIONS OF THE RESEARCH STUDY:

The research model was based on TAM and TPB with additional variables. Coefficient of determination (R2) for the attitude was 0.54 and for the Adoption Intention was 0.97. The above value helps to interpret that 54 percent of variance in the attitude can be predicted through the drivers of m-Commerce namely, perceived cost, personalisation, perceived risk, privacy, perceived trust, perceived usefulness, perceived ease of use, social norms and perceived behavioural control can be explained by attitude; and 97 percent of the variance in the adoption intention of m-Commerce application can be predicted with the help of attitude and the drivers of m-Commerce. Thus, this study has tried to throw light on important drivers that affect the attitude and also proved the highly significant role of attitude in adoption decisions.

From this research study, it can be concluded that Perceived risk has highest influence on attitude as compared to other drivers of m-Commerce applications. The next major effect was of perceived ease of use followed by perceived cost, perceived usefulness, privacy, perceived trust, personalisation, perceived behavioural control and social norms respectively. Attitude which was built based on selected m-Commerce drivers had a positive and significant effect on adoption intention for the m-Commerce applications. The main selected drivers were also affected by demographic profile of users. There was difference in the city-wise response of m-Commerce users from selected cities of Gujarat, viz., Vadodara, Ahmedabad, Surat and Rajkot.

Risk, being the major determinant, should be given utmost focus. According to a survey by Netherlands-based VPN service Surfshark, digital data breaches have become a severe concern in India, with the country ranking third after the United States and Iran in terms of data breaches(economictimes,2022). India has lost around INR 165 million in the first half of 2021 due to data loss by malware attack which is a serious concern. It's worth noting that the vast majority of the data stolen belonged to major corporations such as Facebook, Air India, Dominos India and Mobikwik (Devina Sen Fupta, 2021). The rate of data breaches and losses has increased dramatically as AI-enabled gadgets become more commercially available.

In order to make m-commerce transactions an enjoyable experience, m-commerce companies collect users' personal data thereby invading their privacy. Search engines can (and do) gather information such as search history, cookies, IP addresses, and click-through data. When all of this data is combined, it can be used to create a consumer persona based on the person's browsing, shopping, and social media interests. Customer personas are commonly used to personalise messages. Profiling, on the other hand, becomes a severe privacy issue when data-matching algorithms link a person's profile to personally identifiable information, which could lead to data breaches.

With everyday technological breakthroughs, it is becoming increasingly impossible for the legal system to keep track of all data breaches, let alone prosecute the perpetrators. In this situation, the best course of action for businesses, government agencies, and even people are to implement security measures to prevent these attacks. Companies have already begun implementing password encryption, OTP-based login systems, and comprehensive background checks to prevent credential theft.

The Reserve Bank of India (RBI), on March 2021 has come up with new guidelines to deal with the privacy and security issues associated with debit and credit cards used during online transactions which primarily intends to put an end to the practice of storing the consumers card details by online merchants. The Reserve Bank has insisted on adoption of tokenisation of card data rather than storing the card details by online merchants and financial institutions where only a token number should be stored and the card details will be available only with the banks and credit/debit card companies. As RBI has made it mandatory that by June 2022, all online merchants should shift to token numbers and this move will help m-commerce consumers to reduce the anxiety related to the misuse of debit or credit card information(www.hindu.com).

Moreover, Reserve Bank of India has come up with fresh directives known as Credit Card and Debit Card – Issuance and Conduct) Directions, 2022 to be effective from July 1,2022 and as per the guidelines written consent of the applicant shall be required before issuing the credit card and no bank can force customers to accept credit and debit card. Further banks have been asked to set up proper grievance redressal mechanism and solve the customer grievances within a month. If banks fail to address the grievances card users can directly approach Ombudsman in the RBI office (Darbhamulla, 2022). This move helps to build customer confidence in using credit and debit cards for online purchase which may further boost m-Commerce.

Customers are increasingly focused on convenience, which strengthens the advantages of online retailers. However, if ecommerce companies do not provide a customer-centric experience or do not get real about serving customers' real-time needs quickly, it may just become another bubble. E-commerce companies can benefit from a combination of real-time analytics and engagement tools that can help them break down silos and integrate their processes and systems in real time.

Real time actions by retailers are imperative in converting prospects into consumers as merchants should engage the consumer with the first few minutes of visiting the company's websites or mobile apps. m-commerce merchants on their part need to know the exact requirements of the consumers via analytics without delay for quick decisions to be taken and there by provide real time offers which would help in consumer acquisition and retention. Real time action can also help in reducing the number and frequency of abandoned shopping cart (Mckinsey, 2020). Based on the search history of consumers and preferences, m-commerce companies can suggest similar products which would help them in providing a greater buying experience resulting in consumer retention and consumer referrals. With the help of analytics, once companies know the consumers preference, they should design Interactive website and Apps with buyer responsive sales and marketing strategy which would also help to improve conversion rate of prospects into real time consumers.

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