Critical Factors in Consumers Perception towards Mobile Commerce in E-Governance Implementation: An Indian Perspective

Kanwalvir Singh, Himanshu Aggarwal

Abstract—Mobile commerce (M-commerce) tools and its services are growing at a much faster pace in this digitized world. The competitive race between the various mobile phone companies and the products that they make, offer much competitive price and services to the citizens in their day to day lives. But the common man and the Government in every country are all confused and helpless with this dynamic state of the mobile technology and its M-services. The need is so as to be par with or have equally capable standards viz. M-commerce technologies with such new innovative and technological wonderful services so as to offer efficient services to the common citizens. This paper provides an opportunity for the common citizens perceptions based on mobile commerce to be studied and also, finding the critical factors in consumer's perception towards mobile commerce in e-Governance implementation.

Index Terms—Mobile commerce, E-Governance, Citizen Perception, Adoption factors, Mobile services.

I. INTRODUCTION

The field of wireless networks combined with mobile technological advancements is making rapid strides and deep roads into the day to day lives of common citizens of the country. While electronic commerce (E-commerce) continues to impact the global business environment profoundly, technologies and applications are beginning to focus more on mobile computing and the wireless web (In simple terms, M-commerce = E-commerce + Wireless Web) [6]. The significant increase in the number of mobile users in the recent years has necessitated the need for secured wireless information services and reliable Mobile Commerce (M-commerce) applications. According to Valcourt E., Robert J. & Beaulieu F. (2005), the development of new mobile technologies increases day after day and creates important commerce opportunities. Various states in India have been taking several initiatives from time to time for providing good e-Governance in their respective states.

II. LITERATURE REVIEW

The purpose of this section is to review the earlier work done in studying the consumer's behavior and their existing theories so as to establish the basis for this study. According to Kotler, P. (2003), a consumer's behavior is influenced by cultural, social and personal factors. Saha et al. (2010) stressed that there is great influence of social factors on the consumer buying behavior. Consumer's buying behavior also depends on the personal factors like age, gender, education, lifestyle, personality and income. Carlos, B. (2010) also emphasized that behavioural intentions have been great influenced by the positive and direct influence of attitudes of the consumers. Rehman, M. et al. (2012) depicted that citizens' intention to conduct a transaction with the Government has been greatly influenced by the perceived ease of use, awareness, service quality and transaction security. They also further emphasized on that the understanding of adoption factors will drive policy makers to formulate and develop strategies to increase the intention of the citizens so that they can avail e-government services either to get information or to conduct transaction with the government web site. Therefore, the citizens' perception plays a significant role in the adoption of e-government services. Chang et al. (2006) explored an e-Government service in Taiwan in the online tax filing and payment system (OTFPS). The researcher used questionnaire method amongst the users of the service via e-mails. The study underlines that perceived usefulness, ease of use, perceived risk, trust, compatibility, external influence, interpersonal influence, self efficacy and facilitating conditions are the important influential factors supporting the adoption of OTFPS, an e-government service. Huh, Y.E. et al. (2008) conceptualized m-service benefits into two diverse groups namely the basic benefits and the innovative benefits. Basic benefits represent consumers' perception of positive experiences with their use of fundamental functions available with the mobility of mobile phones. On the other hand, the role of customer evaluations of electronic service and e-trust has been investigated in explaining customer loyalty to online retailers by Ribbink et al. (2004). Dimitrova and Chen (2006) identified the influential adoption factors as perceived usefulness, perceived uncertainty and civic-mindedness through an online questionnaire.

III. OBJECTIVES AND SCOPE OF STUDY

The purpose of this study is to analyze and measure the factors influencing the consumer's attitude towards M-commerce and mobile services. Secondly, to study and determine what citizens think about the various existing M-commerce practices already available in their day-to-day usage. The research outcome is the CSF's (critical success factors) influencing the citizens' intention to adopt M-commerce services.

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IV. RESEARCH METHODOLOGY

A. Sampling Scheme

This study is a quantitative research and is an empirical study involving the primary data collected from 400 common randomly selected citizens. A well-structured and comprehensive questionnaire has been developed in consultation to the researchers, practitioners, government officials, educationists and the consultants.

➤ For the State of Punjab

1. Universe of Study: Districts of the state of Punjab.
2. Sample Selection: The present work will study and analyze the citizen's perceptions in the State of Punjab. For this, two districts and two Tehsils/Sub-Tehsils have been selected from each region of Punjab: From Malwa region - Fatehgarh Sahib & Patiala, From Majha region - Amritsar & Gurdaspur, From Doaba region - Jalandhar & Nawanshahr.

➤ For the Respondents

1. Universe of Study: All Common citizens of selected Districts of State of Punjab.
2. Sample Selection: The primary data for analysis has been collected from the selected 400 common citizens at the selected Tehsils/Sub-Tehsils of the Punjab state using stratified random sampling.
3. Data collection Tools: The collected responses from this questionnaire have been developed on the basis of the review of literature. A pilot survey had also been conducted to ensure clarity, relevance, reliability and effectiveness of the questionnaire. The questionnaire has been then somewhat amended on the basis of the suggestions given by the respondents. The questionnaire has been divided into the various demographic profiles for the gender, region, educational qualification, annual income, age and profession & is mainly related to the questions on the respondent's profile.
4. Processing of Data: The responses to these factors have been gathered on the summating rating method of five point Likert scale, where 5=Strongly Agreed, 4=Agreed, 3=Undecided, 2=Disagreed and 1=Strongly Disagreed. The valid responses have been coded & tabulated and then statistically analyzed in SPSS 18.0 The data obtained has been processed and analyzed for citizen's data and its objective.

B. Tests for Analysis

Following methods (tests) have been applied for the analysis of the data:

❖ Mean and Rank methods have been used in order to find the influence of various factors.

❖ The statistical tests like T-test and ANOVA were applied for citizens (respondents) data to find the mean difference of various factors on the demographic profiles i.e. Gender, Region, Educational Qualification, Annual Income, Age and Profession.

V. ANALYSIS AND FINDINGS

The analysis of the various factors has been considered in view of the objectives listed above. For this, the descriptive as well as inferential statistics tests have been applied for analysis part: Firstly, Exploratory analysis and then, Inferential analysis tests (T-Test & ANOVA) have been applied.

A. Demographic Profile of Citizens

This section deals with the details of demographical profiles of respondents (citizens) and description of all factors related to the study the existing mobile commerce practices.

Table 1: Sample profile of the respondents (Citizens)

Categories	Count	Percentage (%)
Gender		
Male	376	94
Female	24	6
Region (background)		
Urban	113	28.3
Semi-urban	91	22.8
Rural	196	49.0
Educational Qualification		
Graduate	125	31.3
Matric/10+2	184	46
Illiterate	91	22.8
Annual income		
BPL (below poverty line)	2	0.5
Not income tax-payer (but not BPL)	297	74.3
Income tax-payer	101	25.3
Age (in years)		
Below 18	3	0.8
18-60	351	7.8
Above 60	46	11.5
Profession		
Unemployed / Non-working	7	1.8
Employed (govt. service/private)	66	16.5
Businessman	29	7.3
Student	6	1.5
Farmer	292	73

Note: No. of Respondents = 400

*In Table 1, Count represents the no. of respondents (citizens), Categories are under the demographic groups and % is the percentage response size.

Table 1 indicates the sample profile of the respondents (citizens). Out of the total no. of 400 citizen respondents (sample size), almost 94% of the respondents are found to be male and maximum number of respondents belong to the age group of 18 to 60 years. Near-about half (49%) of the total respondents are from rural region. About 46% of the respondents have their educational qualification as matric or 10+2. A majority of them are non income-tax payers (74.3%) whereas BPL respondents are found to be negligible (only 0.5%). The significant point to note in this sample survey is the majority of the respondents being farmers (73%) and second highest being the employed persons (16.5%), which were found to be negligible in comparison to the farmers.

B. Description of Factors (Dimensions)

The study is further sub-divided into various dimensions for analyzing the critical factors in consumer's perception towards mobile commerce in e-governance implementation. The description about the various Dimensions (Dimension 1 to Dimension 3) is as follows.

❖ *DIMENSION 1: Advantages/Benefit of using M-commerce*
Dimension 1 here depicts the Advantages/ Benefit of using M-commerce. Table 2 specifies the Mean scores and Rank of each item for various factors of Advantages/Benefit of using M-commerce/mobile services.

Table 2: Mean scores and Rank of each item of Advantages/Benefit of using M-commerce

Factors		Mean	Rank
Enhances transparency & quality of work	(F1)	4.21	R_5
Enhances speed & efficiency	(F2)	4.20	R_6
More flexibility (anywhere, anytime) - 24x7	(F3)	4.76	R_2
Offers variety of personalized information and services	(F4)	4.43	R_3
M-transaction payment services	(F5)	4.27	R_4
Affordable price	(F6)	4.86	R_1
Improved data security	(F7)	3.25	R_7

Based on the mean and rank score, the mean of factors F1, F2, F3, F4, F5 and F6 are found to have higher mean(mean score > 4), the maximum being that of factor F6(Mean=4.86). Only, factor F7 has mean score<4.0

Significant factors: Table 3 reveals that factor F1, F2, F3, F4, F5 and F6 are the significant factors for Advantages/Benefits of using M-commerce/mobile services. Most items (categories) agreed with the factors of advantages/benefits of using M-commerce/mobile services (as average >4.0). From Table 3, it is found that the females agree more than males for factors (F2, F3, F4, and F6) of Dimension 1. Respondents having age below 18 years have high mean scores on factors: M-commerce offers variety of personalized information and services (F4), M-transaction payment services (F5) and affordable price (F6) which might be due to their young age and curiosity about the know-how of latest mobile technologies. Mean scores of respondents in urban region also reflect that M-commerce is more flexible (F3) & has affordable price (F6) since they might be availing M-commerce services in their day to day lives. Respondents who are graduates bear less opinion on factors F1 and F2 as compared to other categories of qualification. Respondents who are not income tax payers bear more opinion as their mean score has been found to be higher than the other

categories. Employed respondents bear more opinion on all factors of M-commerce whereas student's opinion is relatively opposite to this (having less opinion). Urban & BPL respondents bear more opinion on F3 & F6 since they are having mobile and are conscious and aware about the M-commerce services. Students had high opinion on F4, F5 and F6 since they are availing M-services & have know-how about the M-payment and various other security features (like passwords, tickers, etc.) associated with these services. Males showed significant opinion on More flexibility (anywhere, anytime) - 24x7 (F3) and Affordable price (F6) whereas females showed significant opinion on Enhances speed & efficiency (F2), More flexibility - 24x7 (F3), Offers variety of personalized information and services (F4) and Affordable price (F6). This might be due to the reason that the males being mostly on the move and might be availing M-commerce services in e-Governance facilities. Females on the other hand, avail more of internet, chatting or social networking features of mobile services since them being more social and finding these services convenient and easy to use. Table 4 determines the difference in mean scores of the significant factors (F1, F2, F3, F4, F5 & F6) using t-test and ANOVA F-test. Table 4 depicts that Gender showed significant t value on Enhances transparency & quality of work (F1), Enhances speed & efficiency (F2) and Offers variety of personalized information and services (F4). F values indicate that all groups except income group, showed significant opinion on all factor of M-commerce. Graduate respondents bear less agreed opinion where as matric/10+2 & illiterate respondents have more agreed opinion on all factor of M-commerce. Age and Profession reflect significant opinion on all factors of advantages/benefits of using M-commerce. Respondents agreed for M-commerce being more flexible as they are fully aware about availing M-commerce services and also finding them affordable and economical to use.

❖ **DIMENSION 2: Obstacles to Consumer Adoption of M-commerce**

Dimension 2 here depicts the Obstacles to consumer adoption of M-commerce. Table 5 specifies Mean scores and Rank of each item of Dimension 4. The mean of factor F3 (M=4.10) has been found to be maximum (mean>4.0) as compared to all other factors. Only, Factor F9 (M=3.71) has mean closer to 4.0 & factor F1 has the lowest mean (M=1.10) out of all other factors of dimension 2.

Table 5: Mean scores and Rank of each item of Obstacles to Consumer Adoption of M-commerce

Factors		Mean	Rank
Expensive pricing of services	(F1)	1.10	R_9
Security concerns	(F2)	3.09	R_4
Lack of user experience or training.	(F3)	4.10	R_1
Difficult to use	(F4)	2.24	R_5
Lack of applicability	(F5)	1.18	R_8
Less reliability	(F6)	2.06	R_6
Stability of mobile network (failure in network delivery)	(F7)	3.54	R_3
Limited speed and efficiency	(F8)	2.04	R_7
Limited screen size, memory & computing power	(F9)	3.71	R_2

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Significant factors: Table 6 represents the significant factors of obstacles to consumer adoption of M-commerce. Most of categories agreed highly on only one factor, F3 where mean >4.0 for obstacles to consumer adoption of M-commerce.

Table 7 highlights the differences in mean score of the significant factor (F3) using t-test and ANOVA F-test. Table 6 shows that the respondents below 18 years of age have been found to agree more on all factors of obstacles to consumer adoption of M-commerce. Mean score of rural regions also depicts that e-Governance services (facilities) are still not reaching the common man and rural region citizens feeling disconnected from the digitized world. Mean scores of the respondents with Matric/10+2 & not incomes tax payers also felt these hindrances. Mean score of Unemployed persons indicate that they bear more agreed opinion on all factors of obstacles to consumer adoption of M-commerce in comparison to other profession of citizens because of their craze about M-commerce/mobile services and its features. Rural females and unemployed found that Lack of user experience or training (F3) is the main reason or seen as main obstacle to consumer adoption of M-commerce because less awareness, training or guidance has left them deprived from taking advantage of e-Governance facilities available in urban regions. All categories strongly disagreed for Expensive pricing of services (F1) as they found mobile services to be more affordable than other existing services. Majority of the respondents disagreed for Lack of applicability (F5) since they find mobile/M-commerce services convenient and efficiently used in many e-Governance projects.

From Table 7, it is found that gender, qualification, income and profession showed significant difference. Mean score of female showed that females bear less agreed opinion for obstacles in using M-commerce than males since most of them are still involved with household chores, especially in rural regions and are unaware about M-commerce. F value for region, qualification, income and profession levels of respondents showed significant difference on factor F3. Therefore, it is concluded that according to different levels, majority of the respondents have different opinion on factor F3. Mean score indicated that majority of respondent in the age group of 18-60 years and staying in rural regions bear more agreed opinion on obstacles in consumer adoption of M-commerce. The major factor behind this could be the rural people not getting any guidance or training & still there exists a great digital divide between the rural and urban citizens, depriving them of the significant e-Government facilities. Mean score of Matric/10+2 respondents depicted many obstacles in consumer adoption of M-commerce in comparison to other categories. Majority of respondents who are unemployed and non-tax payers showed more concerns about obstacles in using M-commerce since they lack in resources and are not fully aware of the M-commerce benefits & availing mobile services in their lives.

❖ DIMENSION 3: Security & Privacy of M-commerce System

Dimension 3 here depicts the Security & Privacy of M-commerce System. Table 8 represents the Mean scores and Rank of each item of Dimension 3. The mean of factor F1 (M=3.44) has been found to be maximum than all other factors (F3, F4 and F5). The mean score of all factors have been found to be less than 4 for all factors of security & privacy of M-commerce system.

Table 8: Mean scores and Rank of each item of Security & Privacy of M-commerce System

Factors	Mean	Rank
Chances of losing money through mobile payment (F1)	3.44	R1
Identity theft or loss of mobile phone may occur (F2)	3.31	R2
Hacking/Virus/Spam may occur (F3)	3.05	R3
M-commerce can't be trusted to safeguard user's privacy info (F4)	2.83	R4
Privacy information of client can be used in a wrong way (F5)	2.54	R5

Significant factors: Table 9 represents the distribution of factor for security & privacy of M-commerce system. The average of most of categories has been found to be less than 4.

In Table 9, Mean of females indicate that females agreed more for security & privacy of M-commerce system since they are always found to be more curious and sensitive on such issues. Respondents below 18 years old have been found to be more agreed than other categories since they might be using it for all kind of available mobile/M-commerce services like using internet services on mobile & social networking (facebook, twitter, etc.) services. Illiterate respondents staying in semi-urban regions have been found to fear more of security & privacy issues of M-commerce system as they might find themselves ignorant on the these sensitive issues. Mean score of Unemployed indicate that they bear more agreed opinion in comparison to other categories of profession since they are availing these services & might be concerned about the ill-effects of the security and privacy issues related with M-commerce in case of loss of mobile or password loss or monetary loss. Mean score of females showed that females fear more about security and privacy of M-commerce than males since they might fear it in case of identity theft or loss of mobile phone. Also, it might be due to the sensitivity about social stigma and society issues related with females in comparison to the males.

Table 10 determines the difference in mean scores of the significant factors (F1, F2, F3, F4 & F5) using t-test and ANOVA F-test. From t-test, it was found that gender showed significant difference on F2 and non-significant differences were found for factors F1, F3, F4 and F5. In Table 10, F value for age, region and profession respondents showed significant difference on all factors and income showed non-significant difference on all factors. Therefore, it is concluded that according to different levels, majority of the respondents have different opinion on all factors. Mean score indicated that majorities of respondents below 18 years showed significant difference on all factors. Respondents agreed more on F2, F3 and F5 because of their availing internet services on mobiles & in M-payment services. Respondents who stay in semi-urban region showed significant difference on all factors. Majority of respondents showed more opinion on F2 & F3 factors. Mean score of illiterate & unemployed/ non-working respondents showed more opinion on Hacking/Virus/Spam may occur (F3) & Privacy information of client can be used in a wrong way (F5).

This could be due to their ignorance & not getting any type of training or guidance through Govt. policies leaving them deprived of e-governance procedures & services.

VI. CONCLUSIONS

In this research paper, an attempt has been made to identify the critical (significant) factors that form the opinion of common citizens for the adoption & use of M-commerce services in the state of Punjab in India. The main conclusions from this study are as under:

❖ The significant aspect of this research study is that near-about half (49%) of the total respondents are from rural region, out of which majority of them are farmers.

❖ Respondents under 18 years of age considered advantages of M-commerce in offering various types of M-transaction services & also due to the affordable price of transactions. Respondents in the urban region considered M-commerce to be more flexible & having affordable price. Respondents in the age group of 18-60 years & residing in rural regions have been found to be more concerned towards hindrances in consumer adoption of M-commerce due to the existing digital divide between urban and rural citizens. Matric/10+2 respondents have been also found to be of the same opinion.

❖ Majority of the respondents in the age group of 18-60 years & staying in rural regions found M-commerce difficult to use because of the less no. of training and guidance facilities for the rural citizens. Other factor might be the language barriers or constraints existing within the rural regions.

❖ Females have been found to be more concerned with security & privacy issues of M-commerce due to their relative high sensitivity in comparison to the males. Since the respondents below 18 years old are using more of social networking and entertainment services, they also felt high concern for these issues. Illiterate respondents because of their ignorance are unaware about the privacy and security issues related with M-commerce.

The findings of this study can really be the stepping stone for research on studying the behavior pattern of the mobile consumers. The benefit concern will be the people involved in the development of information systems & decision support systems, particularly related with mobile commerce. The lack of resources, lack of faith topped up with the disgruntled leadership have been the major obstacles in the implementation of e-Government facilities. Moreover, most of our society is divided into caste, creed and religions. So, the people only have to make concerted efforts to make e-Governance a success like in e-Railways (IRCTC-Indian Railway online system) which is an indigenously developed e-Project in India. The design and modeling of any information system can be done only after the uses and benefits of particular services have been analyzed, like in this case - mobile commerce services.

VII. SUGGESTIONS & RECOMMENDATIONS

Following are some of the recommendations based on the conclusions of this study & analysis in determining the critical factors of consumers' perception towards mobile commerce in e-Governance implementation.

❖ Proper training and guidance should be imparted to the technology deprived sections of the society particularly BPL and illiterates so as to get them acquainted with the latest in the field of M-commerce technology & M-services which will generate more awareness.

❖ Incentives should also be given for using M-commerce in e-Government services (like government web portals or paying utility bills), thus ultimately leading to the saving of time and resources. Like in the case of BSNL (Bharat Sanchar Nigam Limited) – Govt. of India telephony service, 1% discount is given to the customers who make use of online services to pay their utility bills.

❖ Proper knowledge about the security aspects of M-commerce/mobile services should be ensured and training should be imparted in order to make customer fearless while availing these services. Awareness about keeping passwords confidential & using best encryption techniques (third party authentication mechanism) can ensure security at the maximum for the client when availing mobile services.

❖ Below poverty line (BPL) citizens and other deprived sections of the society should be given more facilities in order to increase their awareness about mobile services, helping them to uplift their standard of living. The Internet facilities need to be provided free of cost so that they could make use of various facilities such as Net-banking and Internet banking, making efficient use of e-Governance facilities.

❖ The maximum bandwidth and speed available to the common citizens residing in urban and rural regions for accessing the internet services is still costly, especially 3G services – which have been launched in India. India is already part of the Internet superpath but bandwidth, speed and cost issues need to be sorted at the earliest so that it can have the widest impact on all the sections and regions of India.

❖ India being a developing country, there was late adoptionof computer, internet and mobile services in comparison to the developed countries like USA. Also, due to the ever-increasing corruption, administrative procedural hassles and pathetic state of affairs in availing Government services, people have lost faith in Government services. So, this faith of common citizens can only return back if proper guidance and training be imparted for efficiently utilizing the M-commerce/mobile services for e-Government services.

VIII. FUTURE SCOPE

Although this study is based on the actual empirical data but it has got certain limitations. A substantial portion of the selected respondents belong to the age group of 18-60 years with majority of them as farmers. Still the large section of the society is illiterate, less computer-aware & has poor mobile phone usage. So, they are not aware of the latest mobile tools, technologies and services related with e-Governance services and about their benefits. The security aspect is important while dealing with M-commerce services as many still fear of losing their personal details or confidential information. The study is also confined to only the citizens, coming for availing services at the government help centres set-up in each district. The consumer behaviour patterns regarding M-commerce services could further be analyzed for all cities in Punjab which will surely have future implications for both researchers and marketers.

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Table 3: Significant factors of Advantages/Benefits of using M-commerce

Factors	Gender		Age			Region			Qualification			Income			Profession				
	Male	Female	Below 18	18-60	Above 60	Urban	Semi-Urban	Rural	Graduate	Matric/ 10+2	Illiterate	BPL	Not income tax-payer	Income tax-payer	Unemployed	Employed	Businessman	Student	Farmer
F1	4.2	4.0	4.0	4.2	4.0	4.5	4.2	4.1	4.0	4.3	4.4	4.0	4.2	4.3	4.4	4.4	4.0	3.0	4.2
F2	4.2	4.8	4.0	4.3	3.7	4.2	4.2	4.2	4.0	4.3	4.2	4.0	4.2	4.2	4.4	4.6	4.0	4.0	4.1
F3	4.8	4.8	4.0	4.8	4.3	5.0	4.9	4.6	4.7	4.7	5.0	5.0	4.8	4.7	4.0	5.0	4.9	4.0	4.7
F4	4.4	4.9	5.0	4.4	4.5	4.4	4.3	4.5	4.3	4.6	4.3	4.0	4.4	4.4	5.0	4.6	4.4	5.0	4.4
F5	4.3	4.2	5.0	4.2	4.6	4.4	4.0	4.3	4.3	4.3	4.3	4.0	4.3	4.3	4.6	4.3	4.4	5.0	4.2
F6	4.9	5.0	5.0	5.0	4.2	5.0	5.0	4.7	4.6	5.0	5.0	5.0	4.9	4.8	5.0	4.9	5.0	5.0	4.8

Table 4: Difference in Mean scores of significant factors (t-test & ANOVA F-test) - Dimension 1

*** Significant at 0.01;* Significant at 0.05 level*

Factors	Gender		Age			Region			Qualification			Income			Profession				
	Male	Female	Below 18	18-60	Above 60	Urban	Semi-Urban	Rural	Graduate	Matric/10+2	Illiterate	BPL	Not income tax-payer	Income tax-payer	Unemployed	Employed	Businessman	Student	Farmer
F1	2.29*		5.83**			28.52**			29.09**			2.02			18.96**				
F2	-6.07**		36.23**			0.57			28.07**			0.26			16.90**				
F3	-0.77		29.91**			36.19**			15.04**			0.90			13.28**				
F4	-4.96**		2.45*			7.48**			17.60**			0.89			7.06**				
F5	1.20		16.92**			22.12**			0.12			0.47			5.86**				
F6	-1.93		183.93**			25.18**			54.06**			1.27			3.13*				

Table 6: Significant factors of Obstacles to Consumer Adoption of M-commerce

Factors	Gender		Age			Region			Qualification			Income			Profession				
	Male	Female	Below 18	18-60	Above 60	Urban	Semi-Urban	Rural	Graduate	Matric/10+2	Illiterate	BPL	Not income tax-payer	Income tax-payer	Unemployed	Employed	Businessman	Student	Farmer
F1	1.1	1.0	1.0	1.1	1.1	1.0	1.2	1.1	1.1	1.1	1.0	1.0	1.1	1.0	1.0	1.1	1.0	1.0	1.1
F2	3.1	3.2	4.0	3.0	3.5	2.9	3.2	3.2	3.1	3.2	2.9	3.0	3.2	2.9	4.4	2.8	2.8	4.0	3.1
F3	4.1	4.8	4.0	4.1	4.0	4.2	4.0	4.1	4.0	4.2	4.0	4.0	4.1	4.0	4.4	4.0	4.0	4.0	4.1
F4	2.2	2.2	3.0	2.2	2.2	2.1	2.6	2.1	2.2	2.4	2.1	2.0	2.2	2.2	2.1	2.1	2.4	3.0	2.3
F5	1.2	1.0	3.0	1.2	1.1	1.0	1.6	1.1	1.2	1.2	1.1	1.0	1.2	1.1	1.9	1.4	1.2	1.0	1.1
F6	2.1	2.0	2.0	2.1	2.1	2.0	2.1	2.1	2.0	2.1	2.1	2.0	2.1	2.0	1.6	2.1	2.0	2.0	2.1
F7	3.5	3.7	4.0	3.7	2.1	3.7	4.0	3.2	3.2	3.7	3.7	4.0	3.6	3.5	2.9	3.8	3.5	2.0	3.5
F8	2.1	1.3	4.0	2.1	1.6	2.0	2.5	1.8	1.9	2.1	2.1	2.0	2.1	2.0	3.3	2.1	2.2	2.0	2.0
F9	3.7	3.7	4.0	3.9	2.6	4.0	4.0	3.4	3.5	3.8	3.8	4.0	3.7	3.7	2.4	3.9	3.7	3.0	3.7

Table 7: Difference in Mean scores of Significant factors (t-test & ANOVA F-test) - Dimension 2

** Significant at 0.01;* Significant at 0.05 level

Factors	Gender		Age			Region			Qualification			Income			Profession				
	Male	Female	Below 18	18-60	Above 60	Urban	Semi-Urban	Rural	Graduate	Matric/10+2	Illiterate	BPL	Not income tax-payer	Income tax-payer	Unemployed	Employed	Businessman	Student	Farmer
F1	3.4	3.7	2.0	3.5	3.0	3.6	3.4	3.4	3.4	3.5	3.5	4.0	3.5	3.3	1.6	3.4	3.2	2.0	3.5
F2	3.3	3.9	4.0	3.3	3.6	3.1	3.3	3.4	3.3	3.3	3.3	3.0	3.3	3.4	4.4	3.4	3.4	4.0	3.2
F3	3.0	3.2	4.0	3.1	3.0	2.9	3.3	3.0	3.1	3.0	3.0	3.0	3.1	3.0	4.0	3.1	3.1	3.0	3.0
F4	2.8	2.8	2.0	2.9	2.6	2.9	2.8	2.8	2.8	2.8	3.0	3.0	2.9	2.6	2.9	2.7	2.6	2.0	2.9
F5	2.6	2.3	4.0	2.5	2.6	2.7	2.6	2.4	2.6	2.4	2.8	2.0	2.6	2.4	4.0	2.5	2.5	3.0	2.5

Table 9: Significant factors of Security & Privacy of M-commerce System

Factors	Gender		Age			Region			Qualification			Income			Profession				
	Male	Female	Below 18	18-60	Above 60	Urban	Semi-Urban	Rural	Graduate	Matric/10+2	Illiterate	BPL	Not income tax-payer	Income tax-payer	Unemployed	Employed	Businessman	Student	Farmer
F3	-13.34**		3.04			4.72*			28.83**			7.73**			5.70**				

Critical Factors in Consumers Perception towards Mobile Commerce in E-Governance Implementation: An Indian Perspective

Factors	Gender		Age			Region			Qualification			Income			Profession				
	Male	Female	Below 18	18-60	Above 60	Urban	Semi-Urban	Rural	Graduate	Matric/10+2	Illiterate	BPL	Not income tax-payer	Income tax-payer	Unemployed	Employed	Businessman	Student	Farmer
F1	-1.27		10.80**			2.33**			0.47			2.42			14.03**				
F2	-5.69**		8.36**			10.67**			0.44			1.26			11.51**				
F3	-1.59		10.74**			41.62**			5.23*			9.42			14.19**				
F4	-0.08		10.95**			4.41*			3.12			2.82			7.38**				
F5	1.41		6.69**			3.97*			12.24**			0.83			8.42**				

Table 10: Difference in Mean scores of Significant factors (t-test & ANOVA F-test) – Dimension 3

** Significant at 0.01; * Significant at 0.05 level

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