
Adoption of Mobile Commerce: An Empirical Study among Mobile Users

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Abstract

Mobile commerce (M-commerce) being the subset of e-commerce, signifies a new field of business opportunity. The future of mobile commerce depends on how the mobile users' intend to adopt this new technology induced business model. With the success of e-commerce in India, there is a huge potential for m-commerce growth. As m-commerce technologies grow and mature, it is the users' experience and adoption of m-commerce that will drive its growth. The users' adoption of m-commerce depends upon various factors which influence his/her attitude towards m-commerce. The current research is an effort to identify such antecedents that affects attitude of mobile users towards m-commerce. A survey was conducted among 150 internet mobile users in Chandigarh city using structured self-administered questionnaire to identify such factors. The results show that perceived enjoyment and perceived usefulness are the most important factors followed by trust and perceived cost, which affects mobile users' attitude to use m-commerce. Perceived ease of use and social influence was not found to have significant influence on mobile users' attitude. The findings of this research show strong empirical base for all marketers and strategists who are looking to take full advantage of the strength of m-commerce.

Keywords: *Adoption, Attitude, Mobile commerce, Mobile users, Technology adoption.*

1. Introduction

Innovation is involved in every field, being it science or management. To survive and grow in the business world, the organizations need to continuously innovate and adapt to the changing business environment. In India, with the tremendous growth in internet penetration and advancement in wireless and mobile technologies, mobile phones are reshaping the modes how corporates do business and; also the ways how consumers interact with businesses. From business point of view, every business wants to grow and expand in a unique way but it is very difficult because of huge competitive market. Mobile commerce provides a unique way to expand the business by reaching new segment of consumers' i.e. the mobile users and providing better product and services. For adopting this new technology induced business model the business needs to consider those factors which drives mobile users to use m-commerce in the Indian scenario.

Mobile commerce (M-commerce) being the subset of e-commerce, signifies a new field of business opportunity. M-commerce supplements electronic commerce by allowing consumers to conduct online transactions via handheld device (Mahatanankoon, 2007). M-commerce is a way of doing business in a state of motion. Feng et al. (2006) defined m-commerce as a new and innovative business opportunity with unique characteristics like mobility and broader reachability. Shankar et al. (2010) described m-commerce to create a shift in the sales paradigm where instead of consumers arriving in the company's sales environment it is the seller who influences the consumer's environment without any limitations of time and place through mobile devices. It is acknowledged that the web is taking part as a crucial role in our lifestyle. The web has become a vehicle for services instead of simply a static repository of knowledge. M-commerce offers multiple advantages like

Ubiquity, personalization, flexibility, and distribution, instant connectivity, immediacy; it is going to be next generation mode of business.

As compared to other developing nations, India is at the point of a digital revolution. With a tremendous increase in internet users and mobile users reaching over 400 million, India is entering into the phase of the Second Information Technology Revolution due to increased connectivity and Digital Revolution. As per IAMAI and IMRB report (2016), India has one of the fastest growing populations of internet users in the world—432 million as of December 2016 and growing rapidly. As per Internet world stats report, (2017), India has the second largest Internet population of 462 million in the world, after China who is having 738 million. The growth in the internet base in India has been exponential. The primary drivers of this exponential growth have been expansion of small town / rural India, increased affordability due to low cost data-enabled handsets, and the ever increasing awareness of, and need for, the Internet. According to IAMAI and IMRB, (2016) report the number of mobile internet users in India has reached 389 million as on December 2016 of which close to half of the mobile internet users are below 25 years of age and majority of them are students and young professionals. In term of usage activities on mobile internet; communication, social networking and entertainment are the top most usage activities in urban India and in rural India entertainment is mostly used by the people followed by social networking and communication.

Consumers today lead an increasingly fast-paced life and demand smaller, better, faster, and more reliable wireless technology to keep up with their lifestyles. M-Commerce is the solution to this demand because it makes traditional e-commerce tasks available to be performed wirelessly through a cell phone or PDA. Mobile is the latest happening thing not only in India but in the world. The advent of latest technologies in mobile handsets and sophisticated services by service providers has made Indian Mobile telecom market a buzz. The future of mobile commerce depends on how the mobile users' intend to adopt this new technology induced business model. With the success of e-commerce in India, there is a huge potential for m-commerce growth. As m-commerce technologies grow and mature, it is the users' experience and adoption of m-commerce that will drive its growth.

In India there is lot of potential for businesses to grow in m-commerce, because it is still at infancy stage. So to study the adoption of m-commerce previous studies of other countries shows that they have used Technology Acceptance Model and its extended versions to identified factors which influence the adoption of m-commerce. But most of these studies had been carried out in other countries like Taiwan, China, USA. These studies were also based on traditional models like Technology Acceptance model (TAM), Theory of Planned Behaviour (TPB), Unified Theory of Acceptance and use of Technology (UTAUT), Diffusion of Innovation (DOI) model etc. There has been very few papers which focuses on identifying the factors which affects the attitude of mobile users which will lead to adoption of mobile commerce in Indian context. So this study will provide a literature review on the acceptance of m-commerce factors which impact the attitude of mobile users. After that based on literature review a research model will be framed. The study integrates empirical modeling methods for testing the hypotheses and obtain the results which shows the significant factors which affect mobile users' adoption towards m-commerce.

2. Literature review and Hypotheses development

2.1 Mobile Commerce

Mobile commerce is relatively new term, it is still at growing stage as compared to other information systems like e-commerce, internet banking, online shopping etc. New applications of mobile commerce are constantly developing with the advancement in m-commerce technology. So over a period of time the definition of m-commerce has also evolved. Barnes (2002) defined m-commerce as any transactions, either direct or indirect with a monetary value implemented via a wireless telecommunication network. Various researchers have defined m-commerce as an extension of e-commerce (Nagi and Gunasekaran, 2007 and Wei et al., 2009). They concluded that m-commerce is just an extension of electronic commerce and only difference is that the transactions are conducted over wireless internet technologies using mobile devices. On the other hand various

authors have argued that m-commerce is much more than an extension of e-commerce. According to them M-commerce provides different business model than e-commerce as they interact differently with different users, they have different usage patterns and value chain (Feng et al., 2006). Tiwari and Basu (2007) stated m-commerce as m-business which not only include monetary transactions but also it has features which distinguish it from e-commerce like ubiquity, personalization, flexibility etc.

2.2 Factors affecting Attitude towards M-commerce

Previous studies on mobile commerce includes various models and frameworks to determine the adoption m-commerce technology in other countries. Various models are used like Technology Acceptance Model (TAM) (Davis, 1989), Theory of Planned Behaviour (TPB) (Ajzen, 1991), Diffusion of Innovation (DOI) (Roger, 1995), Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975). These models has been used by various authors to study the adoption of various Information technologies/ Information System. But the individual sturdiness and prediction vary for different kind of information technology. With respect to m-commerce, TAM is the most important model which has been used by various authors (Wei et al, 2009; Chong et al, 2012; Chong, 2013; Cho, 2008) in which two major variables i.e. perceived ease of use and perceived usefulness have been identified as crucial factors which predicts users' adoption of new technology. But many researchers have also suggested that TAM should be extended with additional variables to better predict users' attitude towards m-commerce. So based on different characteristics of mobile commerce, the following variables has been identified from extensive literature review to extend the TAM by including additional variables which has an impact on adoption of mobile users' towards m-commerce in India.

2.2.1 Perceived Usefulness

Perceived usefulness is defined as “the degree to which a person believes that using a particular system would enhance his or her job performance” (Davis, 1989). In a meta-analysis study by Jeyaraj et al. (2006) on information systems adoption it was found that perceived usefulness is most important and frequently studied factor. Perceived usefulness with respect to mobile commerce adoption has also been found as significant factors in various studies (Chong et al. 2010, Wei et al. 2009, Yang 2005). Chong (2013) has identified that m-commerce is acceptable by mobile users only when they find it more useful than its alternatives like e-commerce. This conclusion has also been supported by Schiertz et al. (2010), who also mentioned that one of the main reason of not using a new technology is that the users are not able to see the benefits of new technology. The usefulness of mobile services influences the usage pattern of m-commerce which include ubiquity, timeliness, customization etc. (Wong and Hiew, 2005). Therefore this study consider perceived usefulness as important variable which impact attitude of mobile users. So, following hypothesis is proposed:

H1: Perceived Usefulness has a positive and significant relationship with attitude towards m-commerce.

2.2.2 Perceived Ease of Use

Perceived ease of use is one of the two crucial and important variable of TAM. Perceived ease of use is defined as “the degree to which a person believes that using a particular system would be free of effort” (Davis, 1989). An individual may find the technology useful, but it might be difficult to use. The technology of mobile devices is evolving consistently, so the users need to adapt to the latest technology with ease. Perceived ease of use variable has been studied and found to be an important determinant by many researchers in adoption of various latest technologies like the internet (Chang,2004), mobile internet (Kim et al., 2007), m-commerce (Lin and Wang, 2005; Wang and Barnes, 2007). But in India, m-commerce is at initial stage of growth; it is important to study whether mobile users consider ease of use as important factor which influence his/her behaviour towards using m-commerce. Users are nowadays familiar with using mobile devices very efficiently, but new applications and features are introduced at a very rapid rate in the market. Chong et al. (2010) has identified an issue of tradeoff between ease of use and functionality of mobile devices which affects the designing of interface of mobile application. Some authors have also mentioned that the degree of complexity in using m-commerce is highly affected by customer perception (Riquelme and Rios, 2010). So based on literature review, the following hypothesis is developed:

H2: Perceived Ease of Use has a positive and significant relationship with attitude towards m-commerce.

2.2.3 Perceived Enjoyment

Perceived enjoyment is found to have very important role in adoption of various information systems (Thong et al., 2006). A mobile user will use internet on their mobile phone if he/she feels enjoyment, excitement or joy while using the internet and ultimately adopt the technology. The perceived enjoyment factor has been included in the extended versions of the TAM model because it was found to have direct and significant relationship with mobile commerce adoption (Kim et al., 2007). Teo (2005) found that perceived enjoyment is the main reason the users use internet on mobile phones for browsing and messaging. Therefore, the following hypothesis is proposed:

H3: Perceived Enjoyment has a positive and significant relationship with attitude towards m-commerce.

2.2.4 Trust

Trust is an important factor which affects consumer behaviour. Over the years trust has been studied in various literatures. Pavlou (2003) studied trust in the context of e-commerce and stated that it is the willingness of consumers to become vulnerable to the online retailers. Wei et al. (2009) defined trust as the extent to which an individual believes that using mobile commerce is secure and will have no privacy threats. Trust in online business plays an important role because the buyer and seller never meets face to face (Chong et al. (2010)). Gefen et al. (2003) also found that trust plays a vital role in influencing users' online purchasing intentions. M-commerce is a new phenomenon and due to lack of regulation framework in India and lack of confidence among the users, trust becomes a vital factor which helps in building confidence among the users to adopt m-commerce. So, this study propose following hypothesis:

H4: Trust has a positive and significant relationship with attitude towards m-commerce.

2.2.5 Perceived Cost

The perceived cost of using m-commerce is one of the vital factors which could affect the growth of m-commerce. The cost of m-commerce includes subscription cost, mobile device purchase price, maintenance cost. Wei et al. (2009) identified that cost can hinder in the successful development of m-commerce. Anil et al. (2003) also concluded that cost is a significant factor which influence the adoption of m-commerce in Singapore. Previous studies have shown negative relationship of cost with different information technologies (Xin, 2004, Ong et al., 2008, Anil et al., 2003). In India the main concern is whether the mobile users consider cost as an important factor which impact his/her attitude towards m-commerce or not. Most of the mobile users are young users who can be more sensitive to price than other categories of users. So it is vital to understand the impact of perceived cost on attitude of mobile users towards m-commerce. Therefore, this study hypothesis that:

H5: Perceived cost has a negative and significant relationship with attitude towards m-commerce.

2.2.6 Social Influence

Social influence is defined as “the degree to which an individual perceives that important others believe he or she should use the new system” (Venkatesh et al., 2003). Fishbein and Ajzen (1975) defined social influence as to an extent an individuals' perception is affected by the belief of others who are important to him/her towards the use of an innovation. Many researchers have described social influence as subjective norms (Lu et al. (2003), Chong et al. (2010)) and has identified it as significant factor in various models like Theory of Reasoned Action, Theory of Planned Behaviour, extended TAM and UTAUT. An individual behaviour of a mobile users is influenced by various external variables. Roger (1995) has divided social influence into two forms i.e. mass media and interpersonal variables. Mass media includes newspaper, social media, television, internet, magazines etc. and interpersonal variables includes, family and friends, peers, society etc. Fan et al. (2005) have found out that the social influence has more impact on m-commerce than perceived usefulness and perceived ease of use. So based on literature review, following hypothesis is developed:

H6: Social Influence has a positive and significant relationship with attitude towards m-commerce.

3. Research Framework

The research model proposed for this study is shown in Figure 1. This study propose a research framework in which six independent variables has been identified through review of literature i.e. perceived usefulness, perceived ease of use, perceived enjoyment, trust, perceived cost and social influence. The impact of these independent variables will be studied on the adoption of mobile users towards m-commerce. This study is an effort to enhance the usage intention of mobile users in India by integrating four additional variables that extend the TAM.

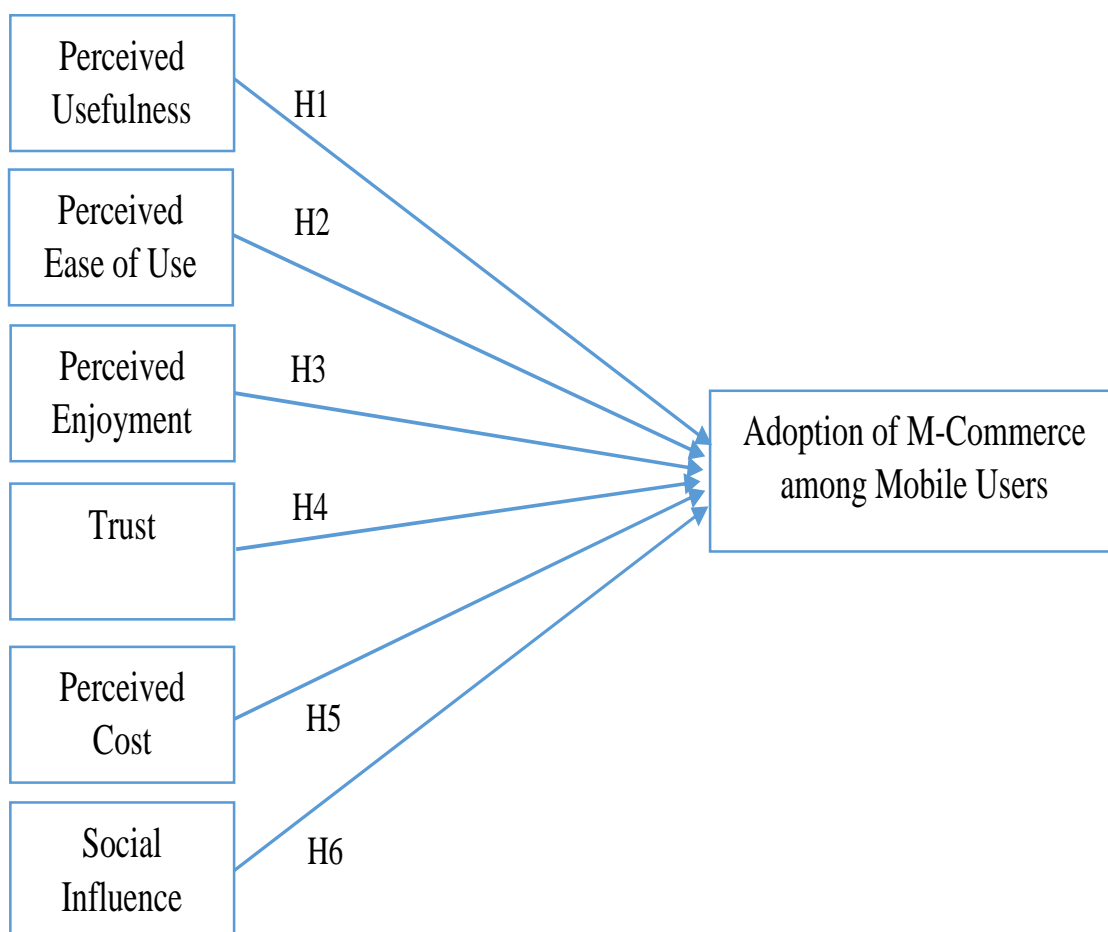


Figure 1: Research Framework

1. Research Methodology:

4.1 Sampling and data collection

Based on previous literature, a research model was developed, which included attitude factors which have direct influence on mobile commerce adoption. Then the proposed model was pre tested with 20 mobile commerce users to ensure the content validity, which includes experts in the area of technology and university professors. Based on their feedbacks relevant changes were made and the final model was then empirically assessed to test the hypotheses using a survey questionnaire from 150 respondents using convenience sample approach. The data were collected from the internet mobile users of Chandigarh. The younger generation has been considered for data collection because they constitute as the largest segment for the use of latest technology as they adopts innovative technology quickly and also influence on older age segment of people to use the technology. All respondents had previous experience with mobile commerce and are currently using the internet on their mobile devices.

4.2 Variable Measurement

The proposed model examines the factors which affect the attitude of mobile users towards mobile commerce. The independent variables of m-commerce adoption has been derived from existing literature review. The questions were modified to fit the context of m-commerce. A total of 21 items for six constructs were used to identify the m-commerce adoption. These variables have been taken from previous studies of Davis (1989), Wei et al. (2009), Luarn and Lin (2005), Wang (2005), Moon and Kim (2001) and Chong (2013). To measure the mobile users' attitude towards m-commerce four items were used which was derived from original TAM and other studies i.e. Luarn and Lin (2005), Shin (2007), Liao et al. (2007). Five point Likert Scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) is used to measure independent and dependent variables.

5. Data Analysis

5.1 Profile of Respondents

The demographic profile of respondents is shown in Table 1. The demographic profile is categorized into three main categories, i.e. age, gender and education level. Among the 150 respondents majority of them were females (58.7%) compared to males (41.3%). As young mobile users of Chandigarh were considered for the study, most of the respondents lie in the age category of 18 to 22 years with 52%, followed by 39.3% respondents of 23 to 27 years of age and 8.7% were between 28 to 32 years of age. The education qualification level of the respondents were categorized in four parts and it was found that the majority of them hold post-graduation degree (60.7%). 36% respondents were graduate. The other qualifications of respondents were identified as diploma and PhD. which constitutes 3.3%. Majority of the respondents were seen using m-commerce for 1 to 3 years i.e. 40.7% and only 18.7% of respondents were assessing m-commerce for more than 5 years which shows that m-commerce is still very new phenomenon and at infancy stage in India. In a day 34 per cent of the respondents were using m-commerce for 1 to 3 hours followed by 26 per cent respondents using it for 3-5 hours.

Variables		Frequency	Percentage
Age	18-22	78	52
	23-27	59	39.3
	28-32	13	8.7
Gender	Male	62	41.3
	Female	88	58.7
Education Level	Graduation	54	36
	Post-Graduation	91	60.7
	Others	5	3.3
Assessing M-commerce Frequency	Less than 1 year	29	19.3
	1-3 years	61	40.7
	3-5 years	32	21.3
	More than 5 years	28	18.7
Using M-commerce in a day	Less than 1 hour	36	24
	1-3 hours	52	34.7
	3-5 hours	39	26
	More than 5 hours	23	15.3

Table 1: Demographic Profile of Respondents

5.2 Reliability and Validity Analysis

Reliability of the questionnaire was tested using Cronbach's Alpha measurements and validity of the data was verified by applying Exploratory Factor Analysis. Table 2 shows the results from Reliability analysis done using Cronbach's Alpha. As Cronbach's Alpha values of all the variables are greater than 0.7, all factors of the construct are reliable as recommended by Nunnally (1978).

Variables	Cronbach's Alpha
Perceived Ease of Use	0.778
Perceived Usefulness	0.737
Perceived Enjoyment	0.807
Trust	0.795
Perceived Cost	0.719
Social Influence	0.772
Attitude	0.730

Table 2: Reliability Analysis

Construct validity is defined as “the degree to which a scale is measures what it intends to measure” (Garver and Mentzer, 1999). Exploratory Factor Analysis using Principal components extraction with varimax rotation was applied to test the construct validity of 25 items. Factor loading of 0.5 or more were considered as cutoff value for all the items and factor extraction was based on the Eigen value higher than 1 as suggested by Teo (2001) and Hair et al. (2010). The Kaiser-Meyer-Olkin (KMO) is measured at 0.681, which is above the threshold limit of 0.5 given by Field (2005). The Bartlett's test results of this study is significant with chi-square of 1025.471 (p-value < 0.01). So both the results confirms that factor analysis is appropriate for data set.

Table 3 shows the result of factor analysis of all constructs with their factor loadings and Eigen value. As all the items have loading of 0.5 or more, the variables are considered to be unidimensional and factor distinct and all items are loaded on a single factor (Teo (2001)). The cumulative percentage of variance explained by six factors is 70.06, which shows that 70 per cent of total variance shared by the 21 items can be explained by the six factor identified.

Constructs	Scale Item	Factor Loadings	Eigen Values	Percentage of Variance
Perceived Usefulness (PU)	PU1	0.607	2.271	13.817
	PU2	0.612		
	PU3	0.714		
	PU4	0.781		
Perceived Ease of Use (PEOU)	PEOU1	0.560	1.633	10.777
	PEOU2	0.610		
Perceived Enjoyment (PE)	PE1	0.753	2.707	12.893
	PE2	0.778		
	PE3	0.789		
	PE4	0.800		
Trust (T)	T1	0.675	2.589	12.330
	T2	0.784		
	T3	0.805		
	T4	0.813		
Perceived Cost (PC)	PC1	0.679	2.072	10.867
	PC2	0.768		
	PC3	0.828		
Social Influence (SI)	SI1	0.515	1.969	9.376
	SI2	0.610		
	SI3	0.658		

	SI4	0.833		
Attitude (BI)	BI1	0.666	2.099	63.060
	BI2	0.709		
	BI3	0.754		
	BI4	0.765		

Table 3: Factor Analysis

5.3 Correlation Analysis

In the first step of the statistical analysis, average score of multiple items for a factor was computed and used for measuring correlation and multiple regression. Pearson correlation analysis was conducted to examine the relationship between the variables (Wong and Hiew, 2005). As per Field (2005), the correlation coefficient value should not be more than 0.80 to avoid multicollinearity. Since the highest correlation coefficient is 0.603, there is no problem of multicollinearity.

All the variables were found to be statistically significant at level $p < 0.01$ (Table 4). All the six factors i.e. perceived Usefulness ($r=0.603$, $p < 0.01$), perceived ease of use ($r=0.510$, $p < 0.01$), trust ($r=0.446$, $p < 0.01$), social influence ($r=0.360$, $p < 0.01$), perceived enjoyment ($r=0.573$, $p < 0.01$) were found to be significantly and positively correlated to attitude of mobile users' towards m-commerce. While perceived cost ($r=-0.198$, $p < 0.01$) was significantly correlated to attitude negatively. The correlation between perceived enjoyment and attitude was the strongest, followed by perceived usefulness and perceived ease of use.

Constructs	PU	PEOU	T	PC	SI	PE	BI
PU	1						
PEOU	0.689*	1					
T	0.312*	0.427*	1				
PC	-0.045*	-0.053*	0.024*	1			
SI	0.287*	0.186*	0.149*	0.042*	1		
PE	0.301*	0.335*	0.054*	-0.050*	0.212*	1	
BI	0.603*	0.510*	0.446*	-0.198*	0.360*	0.573*	1

Note: *Correlation significant at the level 0.01 (two-tailed)

Table 4: Pearson Correlation Coefficient Analysis

5.4 Multiple Regression Analysis

Multiple Regression analysis is applied to study the relationship between a single dependent variable and several independent variables (Hair et al., 2005). The multiple regression analysis is used to test the hypotheses generated to study the attitude of mobile users towards m-commerce. The results of the analysis is shown in Table 5.

To test the multicollinearity among the independent variables, Variance inflation factor (VIF) and Tolerance were calculated. The results showed that the VIF values of all the predictor variables i.e. perceived usefulness, perceived ease of use, perceived enjoyment, trust, perceived cost, and social influence were less than 10 and tolerance indicator were greater than 0.1. So these results indicate that there exist no multicollinearity among the predictor variables.

The multiple regression analysis results shows that the F statistics ($F=45.556$) was significant at $p < 0.01$, thus confirms that the model is fit. This concludes that there is significant relationship between the adoption factors and attitude of mobile users. The R^2 i.e. coefficient of determination was 62.8 per cent. In other words, it can be derived that the identified adoption factors significantly account for 62.8 per cent in the attitude of mobile users towards m-commerce.

Hypotheses were tested using multiple regression analysis and it was found that perceived usefulness, trust, perceived cost, perceived enjoyment have significant relationship ($p < 0.01$) with the mobile users' attitude

towards m-commerce. Perceived ease of use and social influence was not found to have significant effect on attitude of mobile users.

Predictor Variable		t-value	Sig	Tolerance	VIF
Perceived Usefulness	0.192	5.525	0.003	0.722	1.385
Perceived Ease of Use	0.077	1.004	0.317	0.699	1.431
Trust	0.159	4.387	0.008	0.931	1.079
Perceived Cost	-0.204	-2.932	0.004	0.858	1.165
Perceived Enjoyment	0.429	6.112	0.000	0.845	1.184
Social Influence	0.020	1.222	0.276	0.852	1.174

Note: Overall Model F= 45.556; $p < 0.01$; $R^2 = 0.628$; Adjusted $R^2 = 0.548$

Table 5: Multiple Regression Analysis

6. Discussion

M-commerce is at a very preliminary stage in India, so the need to understand the intention of mobile users' towards m-commerce is very important. The foremost objective of this study was to empirically examine the extended Technology Acceptance Model (TAM) given by various authors in context of mobile commerce and specifically in the Indian scenario because there has been very limited studies which consider Indian users' intention towards mobile commerce. Other than original TAM variables i.e. perceived ease of use and perceived usefulness; perceived cost, trust and perceived enjoyment were found to be significant. These results are consistent with prior researches done on m-commerce adoption (Luarn and Lin, 2005; Lin and Wang, 2005; Khalif and Shen, 2008).

In line with various studies conducted on m-commerce adoption, perceived usefulness emerged as important factor to predict m-commerce adoption (Lewis et al, 2010; Yadav et al., 2016; Chong, 2013; Wei et al., 2009). M-commerce provides considerable advantages like ubiquity, immediacy, personalization to the customers. So when the mobile users find m-commerce more useful only then they will have positive attitude towards m-commerce. Perceived Enjoyment was found to be the most significant factor which impact attitude of mobile users to use m-commerce. This shows that because m-commerce is still new in India, mobile users mainly perceive enjoyment by using m-commerce entertainment activities. These findings are in consistence with Thong et al. (2006) and Ha et al. (2007) who identified that mobile users mainly uses m-commerce for applications like games, videos and social networking. It is important to note that perceived enjoyment plays more vital role than perceived usefulness. This shows that mobile users are more attracted to entertainment than the usefulness of m-commerce.

Trust was also found to be vital factor which derive attitude of mobile users. The finding of this study is in support with the previous research works (Wei et al, 2009; Chong, 2013; Cho et al., 2007; Lin and Wang, 2005). As m-commerce is much newer than e-commerce, the issue of privacy and security is a major concern for consumers. The trust of mobile users is depended on the privacy and security of the transactions they do on mobile devices. Perceived cost was found to have significant but negative impact on attitude of mobile users. Which implies that although many m-commerce applications are free but the consumers are still influenced by the mobile purchasing cost and internet subscription cost (Wei et al., 2009; Lin and Wang, 2005; Chong, 2013). Most mobile users will use m-commerce if the cost of using m-commerce is reduced and reasonable.

Perceived ease of use was found to have insignificant relation with attitude of mobile users towards m-commerce. This results contradict prior studies (Lin and Wang, 2005; Luarn and Lin, 2005) but it is in consistent with Cho et al. (2007), Wei et al. (2009), Chong (2013). This is mainly because now users are familiar with m-commerce devices and application, so they do not find m-commerce difficult to use. Social influence was also found to be insignificant in predicting m-commerce adoption. These results is in contradict with previous studies

(Shin, 2007; Wei et al., 2009). This can be because m-commerce is much newer phenomenon and the users might not be influenced by the society or friend and family but by the usefulness of the technology.

7. Implications of the Study

This research studied the factors which affects the attitude of mobile users towards m-commerce. Major implications of the study which will be helpful to all m-commerce service providers, marketing agencies, telecommunication companies, m-retailers etc. for developing long term customer relationships are as follows.

Perceived enjoyment and perceived usefulness were the most significant factors which shows that mobile users' intention to use m-commerce will increase when they find it useful and enjoyable. So it is recommended that the service providers and strategists should focus on developing that content and application for mobile devices which are valuable and exciting for the users by considering unique characteristics of m-commerce such as ubiquity, personalization etc. Strong relationship of trust with attitude of mobile users was found which implies that service providers should focus on the security and privacy protection of mobile users which ultimately develop their trust towards m-commerce. Furthermore, strategists should also consider the cost related to m-commerce as to attract more mobile users to use m-commerce by reducing cost and developing different promotion and pricing strategies.

Perceived ease of use and social influence were found to have insignificant relationship with attitude of mobile users which implies that since majority of mobile users belong to young generation and have the experience of using internet on their computers so they found using internet on mobile devices very easy. The managers must take into account the demographic profile of its target customers while creating m-commerce marketing campaigns. Because this study has shown that different age groups and education qualification level of the users might have different impact on attitude towards m-commerce due to the level of awareness, knowledge and confidence level among them. The strategists should focus on developing usable applications and systems which are valuable and exciting to increase the adoption of mobile users' towards m-commerce.

The m-commerce service providers should also promote various usage and benefits of using mobile commerce by providing training and doing campaigns among rural people because future growth of m-commerce is in the rural sector of India. The findings of this research show strong empirical base for all the marketers and strategists who are looking forward to take full advantage of the strength of the mobile commerce.

8. Limitation and Future Studies

There are a few limitations of this study. Firstly, India is a geographically dispersed country with the majority of people residing in rural areas, so the sample size taken for this study is not that significant as more people can be considered for generalizing results for the entire country. Secondly, the study was limited to Chandigarh only due to time constraint, so the future studies on vast scale can be conducted on different age groups of m-commerce users and also of different geographical areas. And lastly, this study identified only six factors which affects attitude of mobile users towards m-commerce but there are other factors also which have an impact on mobile users' adoption. So there is scope of considering other factors like self-efficacy, compatibility, variety of service, personal innovativeness, perceived risk to study their impact on mobile commerce adoption in the future research model.

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