



Determinants Leveraging M-commerce Adoption in the Midst of Nepalese Customers

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Abstract

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The surface of mobile phones and internet technologies has visibly magnified way in to information and transformed both the social and business landscapes. On this ground, Mobile commerce has become the present-day inclination to perform business. E-commerce business models and procedures conducted on mobile terminal are referred to as M-commerce. The development of mobile devices and its significant growth and penetration rate have created new opportunities for mobile technology, which is leading to the rapid growth of M-commerce. However, its adoption followed by degree of utilization is low in Nepal as compared to other developed nations. The study has made an effort to recognize some determinants that leverage M-commerce adoption in the midst of Nepalese customers based on traditional technology acceptance models.

By adopting a quantitative approach and conducting a survey among three hundred ninety ($N = 390$) Nepalese customers, the study revealed that perceived usefulness, perceived ease of use, perceived trust, perceived cost and perceived privacy are statistically significant and could leverage M-commerce adoption in Nepal. As recommended by the findings, effective promotional activities among final customers to habituate with M-commerce would generate more strike on its adoption. This study adds to the current M-commerce literature by presenting an overview based on perceptions from Nepal.

Keywords: *adoption, M-commerce, perceived cost, perceived ease of use, perceived privacy, perceived trust, perceived usefulness*



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Introduction

In recent years, usage of mobile devices has become widespread and has continued to increase dramatically. It is not anticipated that the growing number of mobile users globally would soon decline (Rajabion, 2015). Global mobile phone usage is anticipated to rise (Parasuraman et al., 2017). In terms of number of subscribers and popularity, the mobile cellular market is the one that is expanding the fastest in the telecommunications industry. A large number of mobile phone users have access to the internet at a cheaper price than the users of personal computers where the startup price is high due to the price of personal computers.

The development of mobile devices and its significant growth and penetration rate have created new opportunities for mobile technology, which is leading to the rapid growth of M-commerce. The fast-growing pace of information technology nowadays makes it imperative for businesses to explore how these new technologies could bring influence on M-commerce. Nowadays, there is not much need for people to physically go to their respective stores to perform transactions. Businesses have now explored the idea of allowing customers to perform transactions via mobile phones. The new type of commerce transaction that allows users to use mobile devices over wireless communication technologies is known as mobile commerce or commonly referred to as M-commerce (Rajabion, 2015).

M-Commerce is buying and selling of goods and services using wireless hand-held devices. It is the use of a wireless terminal, such as a cell phone, smartphone or Personal Digital Assistant and a network to access information and carry out transactions that result in the transfer of value in exchange for information, services or goods. According to Coursaris et al., (2003), M-commerce is a natural extension of e-commerce that allows users to interact with other users or businesses in a wireless mode, anytime/anywhere. M-commerce is assumed to have greater opportunities, faster access, more powerful, more effective and absolutely accessible anytime and anywhere to its users (Rajabion, 2015).

Mobile cellular subscriptions in Nepal experienced

significant growth over the years, starting from a mere 0.01 million in the year 2000 and reaching a peak of more than 39 million active subscriptions in the year 2025. The study has aimed to answer the following questions through the study.

What are the different determinants that leverage M-commerce in the midst of Nepalese customers?

How do Perceived Usefulness, Perceived Ease of Use, Perceived Trust, Perceived Cost and Perceived Privacy leverage M-commerce adoption in the midst of Nepalese customers?

Literature Review and Hypothesis

M-commerce

M-commerce is described as e-commerce business processes and models carried out on a mobile terminal. This view can however be expanded to include the other M-commerce services e.g. location-based services, airtime purchases, ringtone downloads and mobile payments (including Point-of-Sale payments). Mohd and Osman (2005) defined M-commerce as the exchange or buying and selling of commodities and services through wireless handheld devices such as cellular telephones and Personal Digital Assistant.

According to Feng, Hoegler and Stucky, (2006), M-commerce is a new and innovative business opportunity with its own unique characteristics and functions, such as mobility and broad reachability. This study adopts the definition of m-commerce as any transaction, involving the transfer of ownership or rights to use goods and services, which is initiated and/ or completed by using mobiles devices to access computer-mediated networks with the help of a mobile device.

Model Development

Adoption is an individual's decision to become a user of a product or a service. The study seeks to find out the determinants that leverage the adoption of M-commerce among Nepalese customers.

Technology Acceptance Model proposed that perceived usefulness and perceived ease of use can be used to predict the behavioral intention to adopt a technology. Perceived usefulness refers to the extent to which an individual's expectation to use

a technology improves his/her job performance whereas perceived ease of use is the belief that using the technology will be free of effort (Davis, 1989; Fusilier & Durlabhji, 2005). This theory therefore supports two constructs, Perceived Usefulness and Perceived Ease of Use.

The Theory of Planned Behavior states that behavioral intention to perform an activity is determined by attitude, perceived behavioral control and subjective norm (Ajzen, 1991; Fusilier & Durlabhji, 2005). According to Khalifa and Shen (2008), TPB focuses on social and individual factors which influence the adoption of a technology.

Diffusion of Innovation Theory states that there are five perceived attributes of an innovation that can determine the adoption of an innovation (Rogers, 1995). The five perceived attributes of the innovation are relative advantage, compatibility, complexity, trialability and observability (Rogers, 1995). Relative advantage is the degree to which an innovation is perceived as being better than the idea it supersedes. Compatibility is defined as the degree to which an innovation is perceived as consistent with past values, past experience, and the needs of the potential adopters. The complexity of an innovation is whether the innovation is perceived as relatively difficult to use and understand. Trialability refers to whether an innovation may be experimented with, on a limited basis. Lastly, observability is whether the results of an innovation are visible to others (Rogers, 1995).

Available studies have identified several determinants that contribute to the M-commerce adoption. The determinants that are identified in the study include Perceived Usefulness, Perceived Ease of Use, Perceived Cost, Perceived Trust and Perceived Privacy among others.

Perceived Usefulness

Perceived usefulness of a system is defined as the extent to which individuals believe that using the new technology will enhance their task performance (Davis, 1989). There is extensive research in the Information Systems and M-commerce that provides evidence of the significant effect of perceived usefulness on usage

or adoption intention (Davis et al., 1989; Kim & Garrison, 2009; Khalifa & Shen, 2008). Therefore, perceived usefulness will influence user intention to accept or adopt mobile commerce. Recently numbers of empirical studies have provided support that perceived usefulness is the primary predictor of M-commerce adoption and it captures the perceived benefits associated with using mobile commerce (Wei et al., 2009; Khalifa & Shen, 2008; Kim & Garrison, 2009). This construct assesses the extrinsic characteristics of mobile commerce as well as shows how mobile commerce can help the users to achieve task-related goals, such as effectiveness and efficiency (Wei et al., 2009). It is also believed that one who believes M-commerce to be useful and convenient will have positive attitudes towards using M-commerce. Based on this literature, the following hypothesis was formed.

H₁: There is a significant leverage of Perceived Usefulness in M-commerce adoption in the midst of Nepalese customers.

Perceived Ease of Use

Perceived ease of use for a system is defined as the degree to which an individual believes that using a particular technology will be free of effort (Davis, 1989). The perceived ease of use has been incorporated as an important factor in adopting Mobile commerce (Davis, 1989; Wei et al., 2009; Bhatti, 2007). Many prior empirical studies have demonstrated that perceived ease of use has a positive influence to adopt M-commerce (Wei et al., 2009; Khalifa & Shen, 2008; Kim and Garrison, 2009). Thus, perceived ease of use reflects the perceived efforts in using M-commerce (Khalifa & Shen, 2008). A number of empirical studies tested ease of use as a predominant determinant of intention to adopt (Agarwal & Karahanna, 2000). Some found that this construct exerted a mediation effect. It is one of the major behavioral beliefs influencing user intention to technology acceptance in both original and the revised TAM models. Furthermore, one who perceives M-commerce technology to be easy to use will have positive attitudes towards using M-commerce. Based on this literature, the following hypothesis was formed.

H₂: There is a significant leverage of Perceived Ease of Use in M-commerce adoption in the midst of Nepalese customers.

Perceived Cost

Perceived Cost is the essentials in the setting up and delivery of M-commerce. Unlike other constructs, the perceived cost is also an important consideration for customers to decide whether to use M-commerce or not (Hong et al., 2008). Cost factor is one of the reasons that could slow down the development of M-commerce (Wei et al., 2009). He also mentioned that cost determinants may consist of initial purchase price such as hand set fee, ongoing usage cost such as subscription fee, service fee and communication fee, and maintenance cost or upgrade cost. In this study, Perceived cost construct has been incorporated and defined as the extent to which an individual believes that using M-commerce is costly. Cost is believed to be an important predictor of M-commerce adoption. Based on this literature, the following hypothesis was formed.

H₃: There is a significant leverage of Perceived Cost in M-commerce adoption in the midst of Nepalese customers.

Perceived Trust

Trust is defined as a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another (Rousseau et al., 1998). Perceived Trust is an important construct which is affecting customers' behavior and it determines the success of M-commerce (Wei et. al., 2009). It is an important predictor to explain the adoption of M-commerce in many existing technology adoption studies (Wei et al., 2009; Cho, Kwon & Lee, 2007). Trust is important because it helps consumers overcome perceptions of uncertainty and risk (McKnight, Choudhary & Kacmar, 2002) and helps build appropriate favorable expectations of performance and other desired benefits (Gefen, 2002). Furthermore, for trust to exist, customers must believe that the sellers have the ability and motivation to reliably deliver goods and services of the quality expected by the customers (Jarvenpaa, Tractinsky & Vitale, 2000). Based on this literature,

the following hypothesis was formed.

H₄: There is a significant leverage of Perceived Trust in M-commerce adoption in the midst of Nepalese customers.

Perceived Privacy

Privacy is defined as the right of an individual to control the information held about them by third parties (Chaffey, 2003). Sheng, Nah and Siau, (2008) found a strong association between privacy and intention to adopt M-commerce. Privacy strongly influenced the behavioral intentions (Korzaan and Boswell, 2008). Based on this literature, the following hypothesis was formed.

H₅: There is a significant leverage of Perceived Privacy in M-commerce adoption in the midst of Nepalese customers.

Conceptual Framework

Perceived usefulness, perceived ease of use, perceived trust, perceived cost and perceived privacy are independent variables in this study while M-commerce adoption is the dependent variable. (see Figure 1)

Independent Variables Dependent Variable

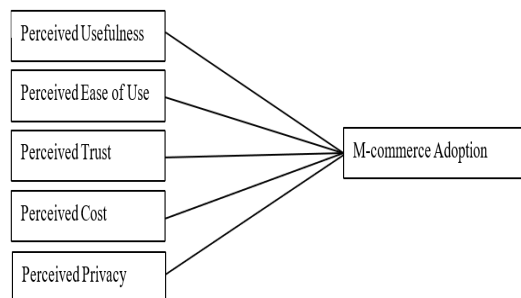


Figure 1. Conceptual Framework

Materials and Methods

A total number of four hundred fifty (N = 450) respondents were approached with questionnaires using both printed questionnaire and google form as needed. Among those sixty (N = 60) questionnaires were omitted due to response error and finally three hundred ninety (N = 390) usable questionnaires were considered for data analysis. Respondents were assured of anonymity and

confidentiality. A convenient sampling method was used for data collection in the research. The duration of the study was from September to November of the year 2025 and geographical area covered were three districts namely Chitwan, Makwanpur and Nawalpur.

The questionnaire was divided into two parts. Section first was related to demographic variables while the second part was related to the determinants identified in the literature review. The constructs were measured by the subjects indicating their agreement with a set of statements using a 7-point Likert scale type (7-strongly agree, to 1-strongly disagree). A series of tests such as correlation and reliability analysis were conducted to confirm the validity and reliability of the instruments. Regression coefficient was used to determine which of the variables that are included in the model contributed to the prediction of the dependent variable.

Regression Analysis was conducted to examine the relationship between perceived usefulness, perceived ease of use, perceived trust, perceived cost and perceived privacy in relation to M-commerce adoption.

Study Results

Respondents' Profile

The results show the profile of the respondents. The sample shows that the number of male (51.03 percent) respondents is higher than the number of female (48.97 percent) respondents. The sample showed that the largest age group that responded was from 16 to 20 years of age (45.13 percent), followed by age 22 to 30 (32.05 percent). (see Table 1)

Regarding academic qualification, 46.92 percent of the respondents were SLC graduates followed by undergraduates (22.83 percent), SEE graduate (11.79 percent), postgraduates (9.49 percent) and under SLC (8.97 percent). Concerning occupation, 47.69 percent of the respondents were students, followed by employed (23.33 percent), self-employed (16.15 percent) and unemployed (12.83 percent). The study showed that the majority of the respondents have annual income of NPR 500,000 and above (34.07 percent) followed by NPR

300,000 – 500,000, below NPR 100,000 (20.80 percent) and NPR 100,000 – 300,000 (17.18 percent). The majority of respondents, 47.69 percent had a mobile phone for 5 - 10 years, 26.67 percent had a mobile phone between 0 - 5 years and 25.64 percent had a mobile phone for 10 years and above. The sample showed that 63.08 percent of respondents are using an Internet connection via mobile data. Finally, the number of respondents who currently used m-commerce in Nepal was 52.31 percent.

Table 1. Demographic Statistics

Demographic Classification	Variables	Frequency	Percentage
Gender	Male	199	51.03
	Female	191	48.97
Age	16-20	176	45.13
	20-30	125	32.05
	30 and above	89	22.82
Academic Qualification	Under SEE	35	8.97
	SEE	46	11.79
	SLC	183	46.92
	Undergraduate	89	22.83
	Postgraduate	37	9.49
Occupation	Employed	91	23.33
	Self Employed	63	16.15
	Student	186	47.69
	Unemployed	50	12.83
Annual Income	Below NPR 100,000	81	20.80
	NPR 100,000 - NPR300,000	67	17.18
	NPR 300,000 - NPR 500,000	109	27.95
	NPR 500,000 and above	133	34.07
Use of Mobile Devices	Yes	284	72.82
	No	106	28.18
Years of use of mobile devices	0-5 Years	104	26.67
	5-10 Years	186	47.69
	10 Years and above	100	25.64
Use of Mobile Data	Yes	246	63.08
	No	144	36.92
Use of M-commerce	Yes	204	52.31
	No	186	47.69

Validity and Reliability

Table 2. Reliability Statistics for Independent and Dependent Variables

Variables	Means	Cronbach's Alpha	No. of Items
P. Usefulness	3.668	0.824	4
P. Ease of Use	3.728	0.812	4
P. Trust	3.789	0.874	4
P. Cost	3.512	0.809	4
P. Privacy	3.623	0.833	4
M-commerce Adoption	3.756	0.892	4

By calculating the principal axis factoring with varimax rotations in SPSS, the internal consistency, reliability, and construct validity were evaluated. The results show Cronbach's alpha coefficients that ranged from 0.809 to 0.892 and number of items. The Cronbach's alpha value of data specifies the good quality of data (Upreti & Venkata, 2021). Every item tested in this study met the criteria for internal consistency, reliability and validity as a study instrument (see Table 2).

Hypothesis Testing

Table 3. Correlation Analysis Between Independent Variables

	P. Usefulness	P. Ease of Use	P. Trust	P. Cost	P. Privacy
P. Usefulness	0.456	-	-	-	-
P. Ease of Use	0.569	0.414	-	-	-
P. Trust	0.216	0.316	0.369	-	-
P. Cost	0.349	0.216	0.353	0.313	-
P. Privacy	0.553	0.223	0.275	0.271	0.283

The direction and strength of the linear relationship between two variables are summarized numerically by Pearson product-moment correlation. A correlation coefficient is a statistical measure of the degree to which changes to the value of one variable predict change to the value of another variable. A positive correlation indicates the extent to which those variables increase or decrease in parallel and a negative correlation indicates the extent to which one variable increases as the other decreases (Upreti & Venkata, 2021). It may be concluded that all proposed relationships were

supported based on the data (see Table 3)

4. Regression Analysis

Variables	Beta	Sig.
Perceived Usefulness	0.129	0.015
Perceived Ease of Use	0.096	0.122
Perceived Trust	0.313	0.033
Perceived Cost	0.114	0.039
Perceived Privacy	0.061	0.008
R Square (R ²)	54.9 %	
F – value	11.343 Sig (000)	
	Best Predictor: Perceived Trust	
	Beta .302 Sig. (.000)	

The regression model included perceived usefulness, perceived ease of use, perceived trust, perceived cost, and perceived privacy as independent variables with M-commerce adoption serving as the dependent variable. The regression analysis in Table 4 shows that the regression coefficient of R square (R²) = 0.549 suggests that all independent variables explain 54.9 percent of the variance in M-commerce adoption.

Findings and Discussions

Data from this study provided strong support for the suggested theoretical model. As anticipated, perceived usefulness, perceived ease of use, perceived trust, perceived cost and perceived privacy were key predictors for M-commerce adoption among Nepalese customers. The perceived usefulness determinants had a positive influence on intention to use mobile commerce. The correlation coefficient value of the tested relationship between both variables was 0.456 at significant level $p < 0.01$. This result is consistent with other studies such as Hong et al. (2008), Wong and Hiew (2005) and Kim and Garrison (2009). The perceived ease of use determinant had a positive influence on intention to use mobile commerce. The correlation coefficient value of the tested relationship between both variables were 0.569 at significant level $p < 0.01$. This result is reliable with other studies (Chew, 2006). The perceived determinant of trust positively impacted the intention to engage with mobile commerce.

The correlation coefficient for the examined relationship between the two variables was 0.216 at a significance level of $p < 0.01$. This finding aligns with another research (Cho et al., 2007). It showed that Nepalese customers have confidence in mobile commerce.

The perceived determinant positively affected the intention to engage in mobile commerce. The correlation coefficient for the examined relationship between the two variables was 0.349 at a significance level of $p < 0.01$. This finding is consistent with another research, including Sadi and Noordin (2011) and Li, Fu and Li, (2007). The perceived privacy determinant positively affected the intention to utilize mobile commerce. The value of the correlation coefficient for the examined relationship between the two variables was 0.553 at a significance level of $p < 0.01$. Overall, the model accounted for 54.9 percent of the intent to utilize mobile commerce, leaving 45.1 percent of the variance unexplained by this theoretical framework. This study adds to the current M-commerce literature by presenting an overview based on perceptions from Nepal.

Conclusion

Based on traditional technology acceptance models, the study aimed to uncover some of the determinants that strike M-commerce adoption in the Midst of Nepalese Customers. Perceived usefulness, perceived ease of use, perceived trust, perceived cost and perceived privacy were found to be statistically significant and to have the potential to influence M-commerce adoption in the Midst of Nepalese Customers. Customers' perceptions of risk and uncertainty are mitigated by trust, making it a significant determinant. Effective marketing campaigns encouraging end users to become accustomed to M-commerce would increase its uptake.

Limitations and Research Gap

Since 45.1% of the variances are still not explained by the theoretical framework, the study could be expanded to incorporate more pertinent constructs. Larger sample sizes and more geographic coverage can be used in future studies. To comprehend the determinants influencing M-commerce adoption in

the midst of Nepalese customers, both quantitative and qualitative approaches can be taken into consideration.

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Conflict of Interest

The researcher declares no conflict of interest in this research study.

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