J. Basic. Appl. Sci. Res., 4(4)80-88, 2014

ISSN 2090-4304
Journal of Basic and Applied Scientific Research
www.textroad.com

Mobile Commerce Adoption: An Empirical Analysis of the Factors Affecting Consumer Intention to Use Mobile Commerce

[1]Muhammad Usman Shah; [2] Syeda Fatimee; [3]Dr. Muhammad Sajjad

[1,2]Management Scholar, Department of Management Sciences, COMSATS Institute of Information Technology, Attock, Pakistan
[3]Assistant Professor, Department of Management Sciences, COMSATS Institute of Information Technology, Attock, Pakistan

Received: January 18 2014
Accepted: March 6 2014

ABSTRACT

In this era of exponential advancements in information and communication technology, the world has witnessed a high pace contribution of technology in every filed of life. The use of mobile services for doing commerce activities is increasing day by day. Mobile companies are concerned to know the factors to increase the usage even further. This research measures the factors which foster the consumers' intention to use mobile commerce. Technology acceptance model is used in order to measure intention to use mobile commerce by analyzing the effect of various other variables on it. Intention to use is taken as dependent variable and perceived ease of use, perceived usefulness, social influence, perceived trust and awareness are the explanatory variables of the study. For testing the hypothesis the sample included was consisted of 313 respondents from faculty of Pakistani universities. Structured questionnaire is used as a measurement tool. Regression analysis was used for finding the factors that influence the intention to use mobile commerce.

The findings of the research depicts that perceived ease of use, perceived usefulness, social influence, perceived cost and awareness have strong impact on intention to use mobile commerce while "perceived trust" has been found as the insignificant predictor of intention to use. This research study would provide help to the companies offering mobile commerce services, and various facilities and features through mobile communication services provided by the mobile network operators. On the basis of findings, this research will help mobile commerce service providers to keep in view the influential factors that lead to develop consumer's intention to use while providing mobile commerce services.

KEYWORDS: mobile commerce, consumer's intention to use, information and communication technology

INTRODUCTION

Information and communication technology has provided a step ahead of electronic commerce and provided new skylines for commerce activities and named it mobile commerce. Mobile commerce provides new horizons of opportunities for conducting commerce and business activities using mobile handheld devices (Tarasewich, Nickerson & Warkentin, 2002). Due to the reach of cellular networks and internet reach to faraway places doing business activities are quite simple and easy as compared to the past decades. The term mobile commerce refers to the exchanging of goods and services or buying or selling of goods and services by using wireless based handheld devices which may include cellular phones, smart phones, personal data assistants, tablet computing devices, and laptop computers (Wei, Marthandan, Chong, Ooi & Arumugam, 2009).

In Pakistan mobile phone usage is increasing day by day and has crossed 120 million customers covering sixty two percent of the total population. This figure was 112 million last year. It means tremendous growth of mobile phone usage in Pakistan. Pakistan telecommunication authority has also played a pivotal role in this availability. This massive availability has paved ways for the mobile commerce opportunities as this is an untapped segment in Pakistani market. It will help mobile network operators, banks and other financial institutions. The future of business transactions are now in mobile commerce activities (Anus, Qureshi, Malik, Abbasi, Chaudhry & Mirza, 2011; Anwar, 2013).

Technology acceptance model is useful in measuring adoption factors of mobile commerce in Pakistan (Gao & Rafiq, 2009). This model will measure the drivers of adoption, by which customers are attracted towards mobile commerce transaction process. Technology acceptance model has been used for examining the electronic commerce adoption so it can be easy to use this model for measuring mobile commerce adoption. It can be used for measuring

***Corresponding Author:** Muhammad Usman Shah, Department of Management Sciences, COMSATS Institute of Information Technology, Kamra Road, Attock Pakistan. Tel: 0092-57-9316330 (129)-Fax: 0092-57- 9316329. Mob: 0092-333-595-1799. Email: usmanlutfi@yahoo.com.

any form of information and communication technology adoption (Heijden, 2003; Horton, Buck, Waterson, & Clegg, 2001).

Aims and objectives of the Study

The aim of this research is to identify the factors which impacts on consumer's intention to use mobile commerce. Through empirical analysis factors will be identified which drives consumer's intention to go for mobile commerce. Technology acceptance model will predict the influential factors which lead to consumer's adoption decision by developing a relationship with intention to use mobile commerce. Extending constructs in technology acceptance model will ensure the simplicity in the model and will help the readers to identify the most influential factors of mobile commerce adoption.

LITERATURE REVIEW

Mobile commerce can be defined as the extended division of electronic commerce. Mobile commerce includes buying or selling of products and services or exchange of goods and services using devices which use wireless technology. Mobile commerce activities are done using wireless enabled handheld devices which include cell phones and personal digital assistant and other smart phones (Varshney & Vetter 2002; Feng, Hoegler & Stucky, 2006). In some other words mobile commerce is like doing commerce activities using wireless based handheld electronic devices but in the recent era it has become an emergent field of doing commerce activity than that of electronic commerce (Gunsaekaran & Ngai, 2003).

Mobile commerce has been enabled using mobile data services which include sharing information contents, commercial transactions, communication and messaging services, and entertainment services (Ngai & Gunasekaran, 2007). These data services further includes, mobile music downloads, downloading ring tones, booking tickets for many entertainment purposes, retrieving information about different event, reading news items, sending email messages, sending multimedia messages, transferring funds from one bank to another, availing other banking facilities. These all activities and transactions lie under the umbrella of mobile commerce and it uses mobile data services using wireless enabled handheld devices (Faziharudean & Li, 2011)

Mobile commerce has an extended scope than that of electronic commerce. Hosein (2011); Shen & Chiou, (2010) have discussed this scope of mobile commerce by elaborating its features and structures. They found that mobile commerce can be done using mobile data services which consist of information sharing, commercial transactions, messaging services, mobile entertainment services.

Factors Affecting Mobile Commerce Adoption in Pakistan

In recent studies various methods have been adopted to find out the factor which predicts the intention behavior for mobile commerce adoption (Min, ji& Qu, 2008). The theoretical model previously used to measure the behavioral intention is being discussed in this section. Factors which predict the adoption behavior are adopted from existing literature and tested in Pakistani environment.

Technology Acceptance Model (TAM)

Technology acceptance model has been enhanced in this research by adding constructs from theory of reasoned action and theory of planned behavior. The new extended model implies the simplicity of the constructs to be measured in this research. Many previous research on adoption intention have also validated this extended approach in technology acceptance model (Cho, 2011; Lin and Wang, 2005; Luarn & Lin, 2005; Olson & Boyer, 2003; Wang & Barnes, 2007; Widjana & Rachmat, 2011). The new extended technology acceptance model has added perceived cost, perceived awareness, perceived trust, and social influence. This model will predict the adoption of mobile commerce in Pakistani consumers (Anus et al., 2011). As Pakistani mobile commerce market is on early phases and this extended version of technology acceptance model will predict the intention to adopt mobile commerce in a more sophisticated way. Some extraction from the original technology acceptance model has also been made in order to maintain the simplicity in the extended version (Fusilier & Durlabhji, 2005; Wong & Hiew, 2005).

Hypothesis development on the bases of existing literature

Perceived Usefulness

Perceived usefulness can be considered as the major factor influencing the adoption of information and communication technology oriented services. Perceived usefulness can be defined as the point in the evoked set of one's mind which gives perception about certain system that, using that system would lead to enhanced performance (Davis, 1989). Some previous researches have highlighted the fact that perceived usefulness plays a pivotal role in

acceptance of mobile commerce services (Wong & Hiew, 2005; Liao, Liu, Kuo & Chuang, 2011). Technology acceptance model had theorized perceived usefulness as a significant and appealing factor for the adoption of technology based products and services. According to Hosein (2011) perceived usefulness is the major element which impact on mobile commerce adoption. It enables user of mobile commerce service to think that using this phenomenon would be enhancing his performance. Therefore it can be hypothesized that,
H1: *Perceived usefulness has positive relationship with intention to use M-Commerce.*

Perceived Ease of use

Perceived ease of use has been considered as the most favorable factor that influences the adoption of technology based systems. It can be defined as the point to which a person perceives that using this system would be easy to use and understandable by all means and this would not take much of his efforts (Davis, 1989). Hosein is his study describes that perceived ease of use is the degree of perception upon which one believe that the use of mobile commerce system would be easy and this would not be toilsome for them (Hosein, 2011). He also describes that one of the element of mobile commerce services which is mobile banking would be easier to use and would be free of tedious work. When such type of system is available one would go for using it at the earliest and would show interest in using that service (Gefen, 2003; Chang, Chen & Zhou, 2009; Lin & Wang, 2005; Wang & Barness, 2007). Therefore it can be hypothesized that,
H2: *Perceived ease of use has positive relationship with intention to use M-Commerce.*

Social Influence

In the literature a few studies have indicated that the social influence happens to be a direct factor for the understanding of behavioral intention (Lederer, Maupin, Sena & Zhuang, 2000). It has also been discussed as a subjective norm for many theories that include Theory of Planned Behavior, Technology Acceptance Model etc (Venkatesh et al. 2003). A few of the studies in literature have found that social influence posts a vital effect on the ease of use (Tiwari & Buse, 2007). However, on contrary, some other studies found that social influence poses no vita influence on behavior intention (Davis 1989;Feng et al., 2006: Olson & Boyer, 2003). After the above mentioned multiple studies it is also important to test whether the social influence has a significant effect on the behavior intention (Venkatesh et al. 2003). Therefore it can be hypothesized that,
H3: *Social influence has positive relationship with intention to use M-Commerce.*

Perceived Trust

In any business or commerce deal trust is an important element. When dealing with technological and information technology enabled system for commerce activities like electronic commerce and mobile commerce than it is important to comprehend about the security and privacy concerns (Sathye, 1999; Howcroft, Hamilton & Hewer, 2002; Hosein, 2011). Trust can be developed through spreading the right information and giving customers or users of mobile commerce furnished details about the mobile commerce system to ensure the easily manageable use of mobile commerce system (Pavlov, 2003).

Security and privacy are found to be the major obstacle in adoption of internet based commerce activities. Customers tend to avail those facilities which they believe to be the secured one and which are from some credible source. People generally first think about the trustworthiness of communication network and then about the mobile commerce service provider (Yeh & Li, 2009). Many researchers have found that privacy and security concerns which encompasses the trust factor, is found to be the most important and significant factor impeding the adoption of mobile commerce activities (Horton et al., 2002;Gunsaekaran&Ngai, 2003;Nasri, 2011). Therefore it can be hypothesized that,
H4: *Trust has positive relationship with intention to use M-Commerce.*

Perceived Cost

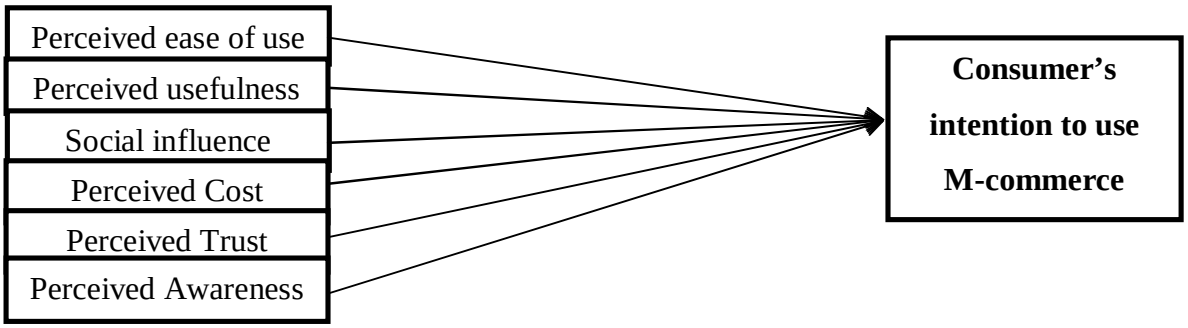
When it comes to adopting mobile commerce the cost and benefit analysis is important factor to be considered (Luarn and Lin, 2005). The important factor is the non-negligible cost that must be considered while making the decision of switching between the services. The behavioral decision theory indicates that some additional expenses must be considered by consumers when switching from wired electronic commerce to mobile commerce (Islam, Ahmad, Khan & Hasmat, 2010; Min et al., 2008). Following this pattern is also significant for both perceived usefulness and perceived ease of use. Thus the adoption cost is an important factor when making decision for mobile commerce and high or low cost impacts on the adoption decision as well (Wu & Wang, 2005). Therefore it can be hypothesized that,
H5: *Perceived cost has positive relationship with intention to use M-Commerce.*

Perceived Awareness

Awareness of mobile commerce can be defined as the concern of mobile commerce users on what they knew about the features of mobile commerce services. Zhang, Zhu and Liu, (2012) argues that availability of knowledge about the services and features of mobile commerce and sensitivity shown towards these services lies under awareness archetypes. Researches highlighted the fact that higher the availability of information and knowledge would lead to the higher probability of adoption intentions (Sun, Wang & Cao, 2009; Islam et al., 2010). The extent of mobile commerce awareness purely depends upon two main factor, one in the spread of information and knowledge from the service provider and secondly the user's ability to explore information and knowledge about the services and features of mobile commerce (Lee, Cheng & Cheng, 2007). Therefore it can be hypothesized that,

H6: *Perceived Awareness has positive relationship with intention to use M-Commerce*

Theoretical framework



Research Model for Mobile Commerce Adoption

METHODOLOGY

Sample

A structured survey instrument was developed to collect data for hypothesis testing. The main theme of this research was to identify the factors affecting intention to use mobile commerce. For ensuring content validity for the scale being used, items for each construct were adapted from previous researches. A total of 44 items were there in questionnaire comprising seven constructs. The survey instrument was consist of six independent and one dependent variable and items are adapted from the researches of Aboelmaged and Gebba, 2013; Ho and Ko 2008; Hosein, 2011; Islam, 2011; Lee et al., 2006; Lu, Cao, Wang and Yang, 2011; Nasri, 2011; Shen et al., 2010; Wei et al., 2009; Widjana and Rachmet, 2011; Wu and Wang, 2005; Yang, 2005; Yang, 2010.

Data Collection

The item related to Intention to use mobile commerce and factors influencing the intention decision were rate by using a five point likert scale. 1 represented Strongly Disagree, 2 as Disagree, 3 as Not Sure, 4 as Agree, and 5 as Strongly Agree. Intention to use mobile commerce is the dependent variable in this study and other independent variables used in this study are perceived usefulness, perceived ease of use, social influence, perceived cost, perceived trust, and perceived awareness. Seven constructs of this study comprises of 44 items used in the instrument.

Procedure and Sampling

Data was collected through the help of self-administered questionnaire. Items were adopted from different researches. Questionnaires were distributed amongst students and faculty of different Pakistani universities on the bases of convenient sampling. From 350 questionnaires 320 received and 7 were having missing values. So only fully completed 313 questionnaires were processed using SPSS version 18. Response rate was 89.42 per cent. Linear regression was used for statistical testing of data.

Variables were tested for reliability using SPSS and all values were above 0.7 and more. This is sufficient according to Clarke (2001), and for each variable cronbach's alpha values are given below.

Reliability statistics

Variable Name	No. of items	Cronbach's Alpha
Perceived Usefulness	7	0.838
Perceived Ease of use	6	0.829
Social Influence	6	0.846
Perceived Cost	6	0.839
Perceived Trust	6	0.741
Perceived Awareness	6	0.819
Intention to Use	7	0.829

RESULTS

SPSS version 18 was used for data analysis. Results were obtained by applying linear regression. On the first step demographics of the respondents were checked and then means and standard deviation of all constructs was measured. Factor analysis was done using Principal Component Factor for checking the validity of the items in the questionnaire. To check the overall significance of the model one way analysis "ANOVA" was done. For checking relationship amongst variables and for checking the significance of independent variables on the dependent variable i.e. upon "intention to Use" regression analysis was performed. All statistical measures were performed at 5% significance level.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.782[a]	.612	.604	.42621

a. Predictors: (Constant), PA, PC, PU, PT, SI, PEOU

Linear association amongst the variables is measured by "R" the value of "R" in this research is .782 which shows that there is positive correlation amongst the variables and they tend to incline towards the influential factors for mobile commerce adoption. The concurrent model for determining the adoption of mobile commerce is 78 percent statistically significant in measuring the adoption of mobile commerce. The value of adjusted R is showing good enough capacity of model to predict the accurate prophecy of factors which influence the adoption of mobile commerce. The error variance in this case is about 40 percent. Collectively on the basis of this model summary the model can be said as reliable model.

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	96.127	6	16.021	80.468	.000[a]
	Residual	60.925	306	.199		
	Total	157.052	312			

a. Predictors: (Constant), PA, PC, PU, PT, SI, PEOU

b. Dependent Variable: IU

This ANOVA table is predicting a substantial and significant relationship amongst the observed and the predicted variables. As the level of significance is less than 0.05 so we can say that the proposed model of measuring mobile commerce adoption is significant and it shows clear image of the factors which affects the intention to use mobile commerce.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.019	.179		.109	.914
	PU	.126	.042	.132	3.020	.003
	SI	.213	.049	.192	4.346	.000
	PT	-.082	-.042	-.085	-1.959	-.051
	PC	.131	.042	.154	3.438	.003
	PEOU	.419	.044	.449	9.582	.000
	PA	.128	.045	.133	2.860	.005

a. Dependent Variable: IU

From the above table we used unstandardized coefficients for making more comparable model of intention to use mobile commerce. Table shows that Perceived Trust (PT) has no impact on intention to use mobile commerce as its value of significance is greater than 0.05 and the rest of the independent variables having significant value less than 0.05 impacts on intention to use mobile commerce. Values of regression coefficient Beta for perceived usefulness, social influence, perceived ease of use and perceived awareness are also showing positive impact on dependent variable i.e. on intention to use (IU) mobile commerce.

DISCUSSION

Perceived usefulness was found as the most sustainable and significant element in determining Intention to use mobile commerce in Pakistan. The results obtained from the responses matches with the prior researches, primarily for those who extended technology acceptance model in predicting intention to use mobile commerce (Lederer et al., 2000; Ngai & Gunasekaran, 2007; Olson & Boyer, 2003). All of these researchers have identified in their researches that perceived usefulness plays a pivotal role in determining the intention behavior for mobile commerce adoption. In simple words researches on technology adoption says that intention would increase when consumers of mobile commerce perceives it as beneficial and they think that it might be adding value to their daily life by distinctive fringe benefits like immediacy and contiguity (Fusilier & Durlabhji, 2005; Liao et al., 2011).

Perceived ease of use (PEOU) was also found as a significant predictor of mobile commerce adoption. Result of perceived ease of use matches with previous research studies of (Luarn & Lin, 2005; Lin & Wang, 2005; Khalifa & Shen, 2008; Wei et al., 2009). Thus it can be said that perceived ease of use has significant impact on consumer intention to use mobile commerce. In many of the extended technology acceptance studies PEOU was found as a significant predictor for intention to use mobile commerce.

From the results social influence also has significant values showing positive correlation on intention to use mobile commerce and this significance can also be seen in prior researches (Luarn & Lin, 2005; Wong and Hiew, 2005; Wang & Barnes, 2007). In the recent technological advancement primarily on social networks, research studies shows that impact of social influence is incubating as a strong predictor of technological adoption literature. Social influence has been found as an important predictor and in the concurrent situation people are more inclined in getting addiction of social networks, which ultimately leading in increased social influence. This important indication has to be grabbed by mobile commerce service providers in order to cater more customers (Liao et al., 2011; Yang, 2005; Yeh & Li, 2009).

The results of perceived cost are also consistent with existing literature and previous studies supports the results of perceived cost in this model (Luarn & Lin, 2005; Wang & Barness, 2007; Wong & Hiew, 2005; Wei et al., 2009). Results show that perceived cost has significant relationship with intention to use. It means that increasing the cost would reduce the intention to adopt the mobile commerce services. In many of the responses it has been found that consumers would go for developing intention to use mobile commerce when they think that the cost would be lesser and affordable for them. These results show that providers of mobile commerce service would focus on affordable pricing strategies in order to increase the adoption rate.

Perceived trust in this study has insignificant values which contradicts with the prior research studies of (Frolick & Chen, 2004; Heiden, 2003; Lin & Wang, 2005; Wei et al., 2009). This insignificant value is quite surprising as in previous researches, trust has been found as an important and influential predictor of technology acceptance. While in this research it has been observed as non-significant factor which do not have such impact which tends to predict the positive behavior towards acceptance.

Perceived awareness in this research has been found as a significant predictor and which also matches with the existing literature. In previous researches of Sun et al., (2009) and Islam et al., (2010) perceived awareness has been found as an important element in predicting intention to use mobile commerce. These results predicts that vendors and service providers of mobile commerce services would focus on creating positive word of mouth and spread information and knowledge about mobile commerce which ultimately will lead to increased rate of mobile commerce adoption.

Conclusion

This research has statistically has proved that the extended technology acceptance model can be able to predict the behavioral intentions and adoption intents of the users. The extended technology acceptance model also has predicted that behavioral and social norms can be added into original technology acceptance model for prediction of factors which influence the mobile commerce adoption. Perceived usefulness, perceived ease of use, social influence, perceived cost and awareness are found as the most important factors leading to develop the attitude that develops the intention to use mobile commerce. This model has successfully presented the factors which influence

adoption of mobile commerce. As in concurrent situation technological advancements are on a very high pace, so in future there is room for further research on the factors which can also be the influential factors in predicting the adoption of mobile commerce.

Acknowledgment:
The authors declare that they have no conflicts of interest in this research.

REFERENCES

Aboelmaged, M., & Gebba, T. R. (2013). Mobile Banking Adoption: An Examination of Technology Acceptance Model and Theory of Planned Behavior. International Journal of Business Research and Development (IJBRD), 2(1).

Anwar, Y. (2013). 6th International Conference on Mobile Banking in Pakistan, Karachi, March 14th, 2013.

Anus, S., Qureshi, F. A., Malik, S., Abbasi, A., Chaudhry, A., & Mirza, S. N. (2011). Trust and initial acceptance of Mobile Banking in Pakistan. *International Journal of Scientific & Engineering Research* Vol. 2 No.8.

Clarke, I. (2001). Emerging value propositions for m-commerce. Journal of Business Strategies, 18(2), 133–148.

Davis, F.D., (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technologies. MIS Quarterly 13 (2), 319–340.

Faziharudean, T. M., & Li-Ly, T. (2011).Consumers' behavioral intentions to use mobile data services in Malaysia. *African Journal of Business Management, 5*(5), 1811–1821.

Feng, H., Hoegler, T. and Stucky, W. (2006), "Exploring the critical success factors for mobile commerce", Proceedings of the International Conference on Mobile Business (ICMB'06), Copenhagen, Denmark.

Frolick, M. N., & Chen, L.-D. (2004). Assessing M-Commerce Opportunities. Information Systems Management, 21(2), 53–61.

Fusilier, M., & Durlabhji, S. (2005). An exploration of student internet use in India: the technology acceptance model and the theory of planned behaviour. Campus-Wide Information Systems, 22(4), 233–246.

Gao, P., & Rafiq, A. (2009). The transformation of the mobile telecommunications industry in Pakistan: A developing country perspective. Telecommunications Policy, 33(5-6), 309–323.

Gefen, D., 2003. TAM or just plain habit: A look at experienced online shoppers. Journal of End User Computing 15 (3), 1–13.

Ho, S. H., &Ko, Y. Y. (2008). Effects of self-service technology on customer value and customer readiness: The case of Internet banking. Internet research,18(4), 427-446.

Hosein, N. Z. (2011). Internet Banking: An Empirical Study Of Adoption Rates Among Midwest Community Banks. Journal of Business & Economics Research (JBER), 7(11).

Horton, R.P., Buck, T., Waterson, P.E., Clegg, C.W., (2001).Explaining intranet use with the technology acceptance model. Journal of Information Technology 16, 237–249.

Howcroft, B., Hamilton, R., & Hewer, P. (2002).Consumer attitude and the usage and adoption of home-based banking in the United Kingdom. International Journal of Bank Marketing, 20(3), 111-121.

Islam, M. A., Ahmad, T. S. B., Khan, M. A., & Hasmat, M. (2010). Adoption Of M-Commerce Services: The Case Of Bangladesh. World, 2(1), 37-54.

Islam, M. A., Khan, M. A., Ramayah, T., & Hossain, M. M. (2011). The Adoption of Mobile Commerce Service among Employed Mobile Phone Users in Bangladesh: Self-efficacy as a Moderator. International Business Research, 4(2).

Khalifa, M., & Shen, K. N. (2008).Explaining the adoption of transactional B2C mobile commerce. Journal of Enterprise Information Management, 21(2), 110–124.

Lu, Y., Cao, Y., Wang, B., & Yang, S. (2011). A study on factors that affect users' behavioral intention to transfer usage from the offline to the online channel. Computers in Human Behavior, 27(1), 355-364.

Luarn, P., & Lin, H.-H. (2005). Toward an understanding of the behavioral intention to use mobile banking. Computers in Human Behavior, 21(6), 873–891. doi:10.1016/j.chb.2004.03.003

Liao, C., To, P.-L., Liu, C.-C., Kuo, P.-Y., & Chuang, S.-H. (2011). Factors influencing the intended use of web portals. Online Information Review, 35(2), 237–254. doi:10.1108/14684521111128023

Lederer, A.L., Maupin, D.J., Sena, M.P., Zhuang, Y.L., 2000. The technology acceptance model and the World Wide Web. Decision Support System 29, 269–282.

Lee, C.-C., Cheng, H. K., & Cheng, H.-H. (2007). An empirical study of mobile commerce in insurance industry: Task–technology fit and individual differences. *Decision Support Systems*, *43*(1), 95–110. doi:10.1016/j.dss.2005.05.008

Lin, H.H. and Wang, Y.S. (2005), "Predicting consumer intention to use mobile commerce in Taiwan", Proceedings of the International Conferences on Mobile Business (ICMB'05), Sydney, Australia.

Min, Q., Ji, S., & Qu, G. (2008). Mobile commerce user acceptance study in China: a revised UTAUT model. *Tsinghua Science & Technology*, *13*(3), 257–264.

Gunsaekaran, A., Ngai, E., (2003). Special issue on mobile commerce: Strategies, technologies and applications. Decision Support Systems 35, 187–188.

Nasri, W. (2011).Factors influencing the adoption of internet banking in Tunisia. International Journal of Business and Management, 6(8), p143.

Ngai, E. W. T., & Gunasekaran, A. (2007).A review for mobile commerce research and applications. *Decision Support Systems*, *43*(1), 3–15. doi:10.1016/j.dss.2005.05.003

Olson, J.R., Boyer, K.K., (2003). Factors influencing the utilization of internet purchasing in small organizations. Journal of Operations Management 21 (2), 225–245.

Pavlou, P.A., (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the Technology Acceptance Model. International Journal of Electronic Commerce 7 (3), 101–134.

Sathye, M. (1999). Adoption of internet banking by Australian consumers: an empirical investigation. International Journal of bank marketing, 17(7), 324–334.

Shen, C.-C., & Chiou, J.-S. (2010). The impact of perceived ease of use on Internet service adoption: The moderating effects of temporal distance and perceived risk. Computers in Human Behavior, 26(1), 42–50. doi:10.1016/j.chb.2009.07.003

Sun, Q., Wang, C., & Cao, H. (2009).An extended TAM for analyzing adoption behavior of mobile commerce. In Mobile Business, 2009.ICMB 2009. Eighth International Conference on (pp. 52-56). IEEE.

Tarasewich, P., Nickerson, R. C., &Warkentin, M. (2002).Issues in mobile e- commerce. Communications of the association for information systems, 8(1), 41-64.

Tiwari, R. and Buse, S. (2007), The Mobile Commerce Prospects: A Strategic Analysis of Opportunities in Banking Sector, Hamburg University Press, Hamburg.

Van der Heijden, H. (2003). Factors influencing the usage of websites: the case of a generic portal in The Netherlands. Information & Management, 40(6), 541-549.

Varshney, U., & Vetter, R. (2002). Mobile commerce: framework, applications and networking support. *Mobile Networks and Applications*, *7*(3), 185–198.

Venkatesh, V., Ramesh, V., & Massey, A. P. (2003).Understanding usability in mobile commerce. *Communications of the ACM*, *46*(12), 53–56.

Wang, S. and Barnes, S. (2007), "Exploring the acceptance of mobile auctions in China", Proceedings of the Sixth International Conference on the Management of Mobile Business, Toronto, Canada

Widjana, M. A., & Rachmet, B. (2011). Factors Determining Acceptance Level Of Internet Banking Implementation. Journal of Economics, Business, and Accountancy Ventura, 14(2). Retrieved from http://journal.perbanas.ac.id/index.php/ventura/article/view/5

Wei, T. T., Marthandan, G., Chong, A. Y.-L., Ooi, K.-B., & Arumugam, S. (2009). What drives Malaysian m-commerce adoption? An empirical analysis. *Industrial Management & Data Systems*, *109*(3), 370–388. doi:10.1108/02635570910939399

Wong, C.C. and Hiew, P.L. (2005), "Diffusion of mobile entertainment in Malaysia: drivers and barriers", Enformatika, Vol. 5, pp. 263-6.

Wu, J.-H., & Wang, S.-C. (2005). What drives mobile commerce? *Information & Management*, *42*(5), 719–729. doi:10.1016/j.im.2004.07.001

Yang, K. C. C. (2005).Exploring factors affecting the adoption of mobile commerce in Singapore. *Telematics and Informatics*, *22*(3), 257–277. doi:10.1016/j.tele.2004.11.003

Yang, K. (2010). Determinants of US consumer mobile shopping services adoption: implications for designing mobile shopping services. Journal of consumer marketing, 27(3), 262–270.

Yeh, Y. S., & Li, Y.-M. (2009). Building trust in m-commerce: contributions from quality and satisfaction. Online *Information Review*, *33*(6), 1066–1086. doi:10.1108/14684520911011016

Zhang, L., Zhu, J., & Liu, Q. (2012).A meta-analysis of mobile commerce adoption and the moderating effect of culture. Computers in Human Behavior, 28(5), 1902–1911.