



RECOGNIZING RECEPTION OF MOBILE PAYMENT SERVICES BY USING TECHNOLOGY AMENDMENT MOCK-UP

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Abstract

This study intends at introducing a modified Technology Amendment Model (TAM) to investigate key factors that affect individuals' intention to adopt and use mobile payment (M-payment). It also helps merchandisers to avoid spending thousands or even millions of dollars on investments, may have minimal and modest effect on whether or not the individuals tend actually to adopt and to use. To reach such ends, a questionnaire was distributed to collect data from 475 undergraduate university students by using a proportional stratified random sample, and analyzed by using a Structural Equation Modeling (SEM). Results show that user' s adoption and use of M-payment services can be anticipated from users' behavioral intentions, which are significantly affected by the following: perceived usefulness, perceived ease of use, subjective norm, image, output quality, and playfulness. Although there are many advantages associated with M-commerce, such as ubiquity, accessibility, convenience, localization, personalization, time sensitivity, there are as well disadvantages associated with it, such as battery consumption, limited memory, keyboards and the tiny and awkward-to-use screens on mobile phones. Heterogeneity of devices operating systems and network technologies are also challenges for a uniform end user platform. In addition, mobile phones are also more prone to theft and destruction. This study shows that there is a promising and bright future for M-payment services as more than 62% of respondents are willing to merchandise by using their mobile phones.

Keywords: *Technology Amendment Model (TAM); Perceived ease of use, self efficacy, perceptions of external control*

1) INTRODUCTION

In the late 1990's, Mobile commerce (M-commerce) emerged as a technology that could radically affect the electronic commerce industry by putting both voice and data transfers in consumers' hands. We have observed evolution of mobile communication and transferring from inconvenience of wired environments to wireless environment and performing business without



any limitation in space and time. Electronic commerce (E-commerce) generally refers to the use of the internet and the web to transact business. Internet has become 'the key to success' for businesses especially in E-commerce and E-business. More specifically, e-commerce is about digitally-enabled commercial transactions between and among organizations and individuals. E-commerce provides opportunities for many organizations to enlarge their customer base and establish competitive business models to increase their revenue. Commercial transactions, however, involve the exchange of (e.g., money, products, services, information) across organizational or individual. However, the intangible nature of e-commerce may cause online consumers to be uncertain about whether products, if ordered online, will meet their needs or perform to increasing expectations.

2) LITERATURE REVIEW

To enlighten with the concept of mobile payment services by using Technology Adaption Model, Abedi et al., (2002) claimed that mobile features a wide range and an increasing number of access devices; this improved the use of mobile services such as M-commerce, M-payment, M-banking, and M-education. Mobile services have increasingly become a part of everyday life and are expected to provide a new and great business opportunity. The topic of M-commerce is very important at present time. There are many definitions for M-commerce, one of these definitions highly relates it to wireless E-commerce, where mobile devices are used to conduct internet businesses, either B2B or B2C market. Also, M-commerce has been defined as any transaction with monetary value-either direct or indirect that is conducted over a wireless telecommunication network. Khalifa and Ning said that M-commerce applications have been taken off for services that are time-critical; that accomplish a task more efficiently than other methods. Jaradat and Twaissi said that "mobile phones create a new meaning for business such as mobile financial application, mobile banking, wireless electronic payment systems, micro payments, wireless wallets, and bill payment, mobile shopping, advertising and mobile intra-business. There are more consumers who have a mobile phone than those who have a personal computer. The total number of mobile phone subscribers has reached 8.984 million with 140% penetration rate at the end. Despite the rapidly growing number of mobile phone users in Jordan, M-commerce is relatively new phenomenon in Jordan when compared with other markets, like Europe, U.S., and Asia.

Ondrus and Pigneur said that internet and M-commerce create requirements for new payment instruments to enable feasible and convenient transactions Mobile payment (M-payment). M-payment services can be considered as a special form of the electronic handling of payments. Abdullah et al. said that mobile based payment system or M-commerce is an emerging issue of E-commerce; it is recognized as one of the fastest growing and preferable medium for conducting business transactions. Mobile technology is increasingly common today in daily life; the Central Bank of Jordan (CBJ), along with the National Payment Council (NPC) adopted an initiative strategy and developed a framework with participation of all stakeholders to acquire a national mobile payment switch: Jordan Mobile Payment System (JoMoPay). The CBJ has assumed a leadership role in setting the payment systems strategy in order to coordinate the necessary actions to achieve an improvement of payment systems in Jordan. Consumer's general



adoption of mobile payment (M-payment) solutions is low when compared with the amendment of traditional forms of payments. Stone and Kharif claimed that the proliferation of bank accounts, credit cards, Internet banking, and the success of online payment providers such as PayPal make M-payments seem like the next natural step in the evolution of payments over World Wide Web. Therefore, this research aims to determine the factors that influence individuals' intention to adopt and use M-payment services and should help merchandisers avoid spending thousands or even millions of dollars that, on investment, may have minimal and modest effect on whether or not the individual may actually adopt and use M-payment in Jordan.

3) THEORETICAL BACKGROUND

This study extensively investigates the key factors that affect individuals' intention to use M-payment in Jordan. These key factors include Subjective Norm, Image, Output Quality, Job Relevance, Result Demonstrability, Self Efficacy, Perceptions of External Control, Anxiety, Playfulness, Perceived Ease of Use, Perceived Usefulness, Experience and Voluntariness as moderators. These factors are chosen because of their strong agreement received from previous studies and because of their applicability and suitability in the context of M-payment. This research will evaluate the effects of these factors by using the Technology AMENDMENT Model 3 (TAM3).

1) Mobile payment:

M-payment is one of the most critical drivers for successful M-commerce or M-business. M-payments are defined as any payment transaction which uses a mobile communication device (e.g. mobile phone) to initiate, activate, and to confirm the payment. Mallat defined M-payments as the use of a mobile device to conduct a payment transaction in which money or funds are transferred from payer to payee either via intermediary or directly. Pousttchi defined M-payment as "a type of payment transaction processing in the course of which-within an electronic procedure – the payer (at least) uses mobile communication techniques in conjunction with mobile devices for initiation, authorization, or completion of payment". M-payment refers to a system using mobile devices to handle local or international transactions, such as pay bills and perform banking transactions. Shin claimed that M payment system can be understood as a point-of-sale payment made through a mobile device, such as a cellular phone or personal digital assistant. M payment refers to a payments for goods, services, bills, Call costs, Digital content such as (mobile ring tones, online game subscription, news, video etc.), Costs for using services and Costs for transportation affairs using a mobile device (such as a mobile phone, smart-phone, or personal digital assistant (PDA), PALM Mobile phones have several characteristics which make them useful for payment purposes.

- 1) The proliferation of mobile telecommunications technology has made mobile phones increasingly common and available for users as we mention above (8.984 million with 140% penetration rate).
- 2) When compared with fixed-line computers and telephones, mobile phones are closer to the user. They support the storing of personal information and facilitate its use as a payment instrument.



3) Existing telecom (Zain, Orang, and Umniah) operator billing systems are already suitable for handling micropayment transactions.

4) The success of early mobile content services such as logos and ring tones suggests that consumers are already accustomed to using their mobile devices for payment purpose. Stone and Kharif said that "Sixty years after the creation of the plastic credit card, big corporate names are backing a new wave of payments technology a tap with a phone by using NFC, rather than a swipe with a credit card". Near Field Communication (NFC) defined by Kuspriyanto et al. as a short-range wireless technology which is the advanced development of RFID, NFC technology is currently used for namely sharing, pairing, and transacting. It occurs in a very close distance of less than 10 cm, so, it will be very secure. Khan claimed that currently M-payments are a small portion of overall payment amendment. However M-payment will be an evolution not revolution. Thus, M-payment amendment is an unprecedented opportunity for merchandisers. Mobile devices can be used to carry out payment transactions for physical goods or digital content (e.g., ring tones, coupons, logos, news, music, or games), for auctions, tickets, parking fees and transport fares, or to access electronic payment services to pay bills and invoices.

CONCLUSION

Based on theoretical considerations, we derived a research model based on TAM; to specify key drivers of an individual's intention to adopt and use of M-payment services. Using data from a large-scale survey conducted in Jordan, we found empirical support for the proposed model. Moreover, it does have a significant and indirect effect on both Behavioral Intention to use and Actual Use through Perceived Usefulness of M-payment services, and also has a significant, positive and direct effect on Perceived Usefulness of M-payment services, implying that those who consider M-payment to be useful (improve performance, increase productivity, enhance effectiveness) also perceive it as easy to use (clear and understandable, does not require a lot of mental effort, easy to get what they want) without any effort and easy to use procedure, which is consistent with prior research.

REFERENCES

- 1) Abdelkarim, A. and Nasereddin, H. (2010). 'MOBILE COMMERCE', Journal of Mathematics and Technology, Vol.1, No. 4, pp. 51-55.
- 2) Abdullah, H., Bohari, A., Warokka, A. and Abdussalam, A. (2011). 'Strategic Role of Mobile Commerce (M-Commerce) Payment System: Establishing New Competitive
- 3) Ajzen, I. and Fishbein, M. (1980). 'Understanding attitudes and predicting social behavior', Englewood Cliffs, NJ: Prentice-Hall.



- 4) Al-Dala' in, T., Luo, S., Summons, P. and Colyvas, K. (2010). 'Evaluating the Utilisation of Mobile Devices in Online Payments from the Consumer Perspective', *Journal of Convergence Information Technology* Vol. 5, No. 2, pp. 7-16.
- 5) Alrawi, K. and Sabry, K. (2009). 'E-commerce evolution: a Gulf region review', *Int. J. of Business Information Systems*, Vol. 4, No. 5, pp. 509-526.
- 6) Behrend, T., Wiebe, E., London, J. and Johnson, E. (2011). 'Cloud computing adoption and usage in community colleges', *Behaviour & Information Technology*. Vol. 30, No. 2, pp. 31– 240.
- 7) Brown, S. A., Massey, A. P., Montoya-Weiss, M. M. and Burkman, J. R. (2002). 'Do I really have to? User AMENDMENT of mandated technology', *European Journal of Information Systems*, Vol. 11, No. 1, pp. 283-295.
- 8) Campbell D. T. (1960). 'Recommendations for APA test standards regarding construct, trait, or discriminant validity', *The American Psychologist*. Vol. 15, No.8, pp. 546- 553.
- 9) Chandra, S., Srivastava, S. and Theng, Y. (2010). 'Evaluating the Role of Trust in Consumer Adoption of Mobile Payment Systems: An Empirical Analysis', *Communications of the Association for Information Systems*, Vol. 27, No. 29, pp. 561-588.
- 10) Chen, L. (2012). 'A knowledge marketing model: determinants of organisational resource-based capabilities on e-retail performance', *Int. J. Business Information Systems*, Vol. 9, No. 1, pp. 89-107.
- 11) Chin, W.W., Marcolin, B.L. and Newsted, P.R. (2003). 'A Partial Least Squares Latent Variable Modeling Approach for Measuring Interaction Effects: Results from a Monte Carlo Simulation Study and an Electronic-Mail Emotion/Adoption Study', *Information Systems Research*. Vol. 14, No. 2, pp. 189-217.
- 12) Compeau, D. R. and Higgins, C. A. (1995). 'Application of social cognitive theory to training for computer skills', *Information Systems Research*, Vol. 6, No. 2, pp.118- 143.
- 13) Dahlberg, T., Mallat, N., Ondrus, J. and Zmijewska, A. (2008). 'Past, present and future of mobile payments research: A literature review', *Electronic Commerce Research and Applications*, Vol. 7, No. 2, pp. 165– 181.
- 14) Davis, D. and Cosenza, R. (1993). 'Business research for decision making' (3ed.), California: Wadsworth Publishing Company.
- 15) Davis, F. (1989). 'Perceived usefulness, perceived ease of use, and User AMENDMENT of Information Technology', *MIS Quarterly*. Vol. 13, No. 3, pp. 318-339.
- 16) Dwivedi, Y., Alsudairi, M. and Irani, Z. (2010). 'Explaining factors influencing the consumer adoption of broadband', *Int. J. of Business Information Systems*, Vol. 5, No. 4, pp. 393-417.
- 17) Elasmr, M.G. and Carter, M.E. (1996). 'Use of e-mail by college students and implications for curriculum', *Journal of Mass Communication Educator*, Vol. 51, No.2, pp. 46-54.
- 18) Fishbein, M. and Ajzen, I. (1979). 'A Theory of Reason Action: Some application sand Implications', In *Nebraska Symposium on Motivation*, H. Howe and Page (edn). University of Nebraska Press (pp. 65-116),



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- 19) Lincoln, NB. Fishbein, M. and Ajzen, I. (1975). 'Belief, Attitude, Intentions and Behavior: An Introduction to Theory and Research', Boston: Addison-Wesley.
 - 20) Fornell, C., and Larcker, F.L. (1981). 'Evaluating Structural Equation Models with Unobservable Variables and Measurement Error', Journal of Marketing Research, Vol. 18, No. 1, pp. 39-50.