

Review Paper

Exploring Issues of M-Commerce on Tourism in Malaysia

Vijayan Subramaniam and Nafis Nirman
Taylor's University, Malaysia

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Abstract: Tourism in Malaysia is a significant revenue-contributing component for the country, but the slow adaptation rate towards mobile commerce (m-commerce) in the tourism segment amongst Malaysians due to complexity and security issues may slow the growth of the industry. Following years of financial exploitation in Malaysia, fraud prevention and deterrence measures are now formalised under the Malaysian Financial Services Act 2013. This Act provides regulation and supervision of financial institutions, payment systems and other relevant entities that also affect various industries, especially the tourism industry in Malaysia. Although common interest in e-commerce is being revived in domestic and international online trading systems, with a focus on m-commerce and activities facilitated by new technologies such as “smartphone”, the related consumer safety and security issues are less pronounced. M-commerce is intended to serve a somewhat different requirement of protection but both are necessary in establishing and maintaining electronic transactions in enhancing the tourism industry of a country. The influence of knowledge and ideology on the basic theoretical framework of m-commerce is becoming more prominent, especially within the current m-commerce and Malaysian tourism-oriented society paradigm which users adapt to the m-commerce theory. This study takes a closer look at major issues that represent Malaysian user-related operating hindrances that might affect today's utilisation of m-commerce. This study is supported by recent reports, surveys and scholarly papers retrieved from various genuine online databases.

Keywords: M-commerce, smartphones, security, issues, complexity, tourism.

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Correspondence: Vijayan Subramaniam, Taylor's University, Malaysia. E-mail: s.vijayan@taylors.edu.my

Introduction

Literature evidence demonstrates that over the past five years, there have been numerous studies on the e-commerce environment, in general and some pertain to e-commerce in the tourism sector. Today, the issue of a paradigm shift in e-commerce is particularly of interest to researchers, where industrial revolution, specifically e-commerce, is no longer bound to traditional computers but can be liberated to consumers via access of wireless computing devices or handheld terminals better known as mobile devices that has led to mobile commerce (m-commerce). The mobile device revolution has overwhelmingly succeeded in positively affecting the tourism industry worldwide. The need for more desirable solutions in technology has prompted the growth of mobile applications and their abundance of usage that is designed to run on devices and insure consumer productivity. Better and faster technologies leading to improved and faster information processing services have encouraged consumers' interest for mobile-oriented services. Furthermore, the exceptional proliferation of mobile networks further pushes developers to develop the smartphone to patronise native and web applications. These views surfaced mainly in relation to m-commerce which comprises part of e-commerce and will probably grow in 2016 and further facilitate the tourism industry as a whole. However, it should not be forgotten that m-commerce is not a replacement of e-commerce but is merely the advancement of e-commerce with the mobility that it offers. M-commerce offers more precise and easier online financial transactions for users, thus reducing risks and raising customer productivity which would empower indirectly the tourism sector of a country.

M-Commerce

M-commerce has an enormous impact on the tourism industry in Malaysia. One of the remarkable impacts is the pre-experience that the tourist gains, or the pre-visit, during their travel and post-tourism experiences that act as a reference that is a click away, anytime and anywhere. The sharing and evaluation of post-tourism experiences/feedbacks by travelers in cyber space which aids well the planning of trips is another significant contribution of m-commerce to the tourism industry. Mobile applications such as GUIDE which support the identity, social and environment aspects of tourism (Cheverest, Mitchell & Davies, 2002) and CRUMPET which assist in location, network, identity and device settings (Poslad et al., 2001) are examples of tools that were developed a long time ago and these have been further enhanced by various new mobile applications today such as the implementation of smartphone applications with GPS-assisted services that has helped travellers tremendously. Tourism-related mobile applications have been continuously developed, tested and implemented with some emerging as success stories (Repo, 2006). In addition to all

the reasons listed above, m-commerce also facilitates payments and assists in seeking clarifications or verifications.

M-commerce is defined as using wireless computing, handheld devices for the purpose of communication and initiation of electronic-oriented commerce transaction to bring about an intended result. In fact, m-commerce is marked by the fast growth and succession rate of device evolution and extensive connectivity in spite the prevailing geographical constraints of suburban or rural users who can now stay connected and get the best mobile internet experience (Moshkovic, 2013).

Recent evidence suggests that the estimation of smartphone users for 2015 in Malaysia is quite pronounced. This statistical estimation reflects a significant achievement and regulates the converging communication industry and multimedia in Malaysia that can be viewed as a factor that can enhance the tourism market of the country. The results are computed based on the analysis of 2013 and 2014.

In 2013, it was reported that the frequency of Internet accessibility via mobile devices was 44.6% of the total tested mobile market population (ZhouYu & JinBo, 2014), and in 2014, it increased to 63.3% and was forecasted to increase further in the future. This distribution is only a small percentile that represents featured phone and other types of mobile devices, the rest being accounted as smartphones. Furthermore, in 2014, with the wide range of mobile app available on smartphones, the frequency of Internet accessibility increased further (ZhouYu & JinBo 2014). This effect is extended to the use of video-conferencing, listening to harmonised sounds and acoustics, visual-recording, confirming information and affiliating trade relations, which boost tourism further. Previous findings suggest that m-commerce warrants more research that can enable tourism practitioners determine future practices.

In the past decade, there has been relatively very few communication networks used worldwide and these networks can be categorised into four distinguishable generations: The 1st generation, the 2nd generation, the 3rd generation and at the current moment, is the 4th generation. The 1st generation was well-designed for perfecting the transmission of outgoing and incoming voice-oriented calls while, the 2nd generation was distinctive for its more-than-call service despite the limited capacity for data transmission service. The 3rd generation tended to focus more on transmission speed for better quality in multimedia services which adopted to different kinds of conditions and the 4th generation has a definite concern for downloading speed.

Jones mentioned that the ideal purpose of integrating mobile-oriented elements is to create digital-formed cash for smartphone users (2014). A prototype sample of a digital-formed cash or better known as e-wallet is a detailed account of a certain aspect of monetary value which only the smartphone-based architecture is able to

show. The relevance of the e-wallet can be clearly seen when a person forgets to bring cash or wallet but is still able to purchase the desired items.

While some may argue that users can also forget to bring their smartphone to a tourism fair, that probability is probably lower than forgetting to bring cash or wallet (Jones, 2014). This particular case illustrates that transactions via the smartphone is similar to credit card transaction. In economics, consumers are described as utilities that extract money from a cash bag in stores and influenced the creation of the e-wallet used by financial intermediaries such as banks. As such, the e-wallet is a utility whereby it provides tourism shoppers, the mobile integration services provided by a financial institution.

Ivan and his team proposed two types of m-commerce mobile apps (Ivan, Milodin & Zamfiroiu, 2013). A supplementary tool completes or enhances an existing e-commerce app when added to it, which includes new tools as a necessary part to improve overall efficiency and a brand new designated mobile app specifically created for m-commerce to make ease of accessing and moving in time towards the completion of the mobile integration with smartphones.

The study also suggested that mobile apps and security defences for smartphones allow users access to mobile apps by authenticating and verifying their identity (personal information such as username and password (PIN) is required). One study defined authentication as the act of establishing and confirming consistency of data which is declared by an entity. There are two main steps of authentication in sequence: The first step involves providing an identity; the second, that identity needs to be verified and finally, the claimed identity will be approved and validated.

This inference meets the expectations and working order of the authentication process. Furthermore, mobile apps which are a part of the inference are conditioned to accept or approve the identity where it should be aligned with the authentication process. The same study stated that the authentication process consists of three steps.

The first step involves exchanging verbal or non-verbal information through mobile devices (e.g. sending text messages, making and receiving phone calls, making transactions) which are common activities of a mobile device. These activities must be carried out with caution as in the event of malfunctions, this might cause detrimental effects in some cases.

The second step involves data storing on a computer or a computer programme as a precautionary measure to back up and restore user data in case of smartphone-related incidents (e.g. misplaced or lost or stolen device) as it is very difficult to recover data from lost or damaged smartphones.

The third step requires data encryption. Data encryption is defined as a management solution which might help protect and maintain structured or unstructured data security in case the mobile device is stolen. The phone is protected

by a set of encrypted algorithms (e.g. text, image, audio, video) which only the owner is aware of.

These features are some of the important factors in the growth of m-commerce in Malaysia that have improved business transactions in the tourism industry immensely. These distinctive attributes should be improved to enhance the quality of mobile apps while increasing safety and security features which can spur confidence in users, namely tourists.

Mobile Communication Usage in Malaysia

In 2014, mobile phone users increased to 87.9% and are expected to grow this year (MCMC, 2015). 20.9% of this number were from Selangor while the rest, 62.3% were from the rest of the country. Of particular interest, is the fact that mobile phone users with Internet access have increased to more than 63.3% which is above the present statistical percentiles, and this is expected to grow and shift in the following years (MCMC, 2015).

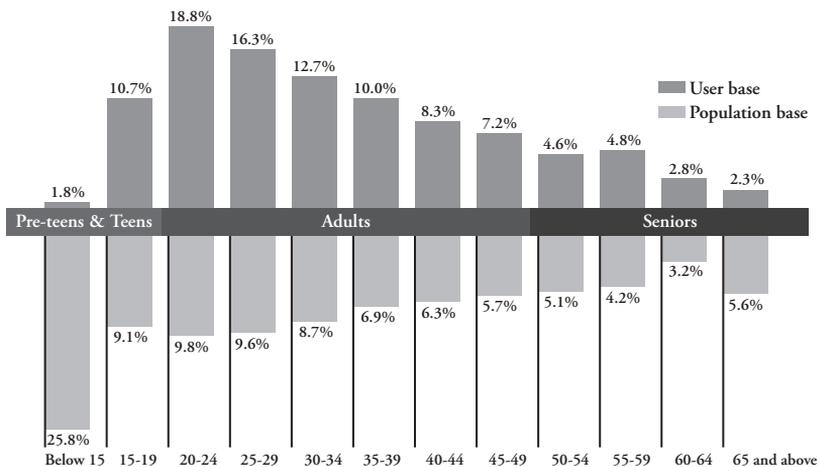


Figure 1. Mobile phone users by age

In fact, Eu in his study, highlighted that West Malaysia has good communication service between main towns with the provision of microwave transmissions also known as microwaves (2015). However, there are exceptional wavelengths that could still be received in the heart of Borneo. Malaysia East Asia Satellite (MEASAT) owned by Satellite System Sdn Bhd of Malaysia and PALAPA owned by Indosat of Indonesia are two good examples of high-capacity domestic satellite communication systems. These satellite systems are connected with several earth terminal complexes. In general, the big three (Malaysia) telecommunication operators are Maxis, Celcom

and Digi. A recent statistic report showed that Maxis had 12.91 million subscribers, Celcom 12.97 million and Digi 11.42 million in the fourth quarter ending 31 December 2014 (MCMC, 2015).

Issues and Complexity

Issues

Past studies have shown that m-commerce experienced problems of unmet expectations (Zhou Yu & Jin Bo, 2014) even at the preliminary stage. Although the benefits of m-commerce outweigh the benefits of traditional commerce, users continue to be wary that these benefitting advantages may cost a lot especially in the form of authority and governing fees which might be a drawback for business sectors such as tourism in Malaysia. In fact, many showed concern over the reliability of the system and governance of privacy (Malik, Kumra & Srivastava, 2013). This behavioural trait may affect user trust and their personal commitment (Yap & Hii, 2009). This study suggests that more research efforts related to m-commerce issues should be able to increase and build user trust for Malaysian consumers, especially current and potential tourists.

Survey data collected from Webcredible identified several behaviours associated with smartphone users. These data revealed that respondents alluded to the notion of easy-to-solve reasons as unrelated and off the subject.

In particular, if users such as tourists carry out online purchases, there are a number of barriers for m-commerce users to consider (Moshkovic, 2103). In a previous study, it was found that the three most concerning emerging issues that could raise difficulties for users when using their smartphone (Wei, Marthandan, Yee-Loong Chong, Ooi & Arumugam 2009) include: the capacity of interconnecting platforms, safety and security and display measures.

The capacity of interconnecting platforms

Furthermore, it was found that users faced many situations where their internet connection was unstable. However, this problem can also be attributed to when their smartphone signal is low or is connected to unstable signal source platforms. It is commonly known that unstable internet connections can cause transaction failures commonly related to errors which may lead to incorrect billing information.

Safety and security

Recent evidence shows that safety and security has emerged as a primary concern for m-commerce that might affect tourism business generally. It was also mentioned that

users may feel agitation or anxiety caused by unwelcomed viruses and cyber-attacks attacking their smartphones, resulting in possible identity theft and data abuse in breaches (Ivan, Milodin & Zamfiroiu, 2013).

It has been generally agreed that users prefer to conduct e-commerce transactions in private spaces (e.g. home, office etc.). Private spaces give users a familiarity that enable them to be comfortable in handling technological ambiguity (Wei, Marthandan, Yee-Loong Chong, Ooi & Arumugam, 2009). The most likely cause for seeking comfort are feeling safe and secure in attempting to avoid financial-oriented fraud and scams that may cause monetary loses.

Thus, attention is fully focused on safety and security given legitimate conditions. However, at the moment, there is a lack of evidence of user reputation and crediting of security of m-commerce in smartphones.

Ivan, Milodin and Zamfiroiu found that respondents perceived a high level of identity exposure, concerning random observations of people who peak over their smartphone and steal valuable information during transaction processes (2013). As a consequence of uncontrollable exposure, it appears that respondents felt more secure buying from websites where financial records are safely kept in data retention systems provided by website owners.

Display measures

Previous findings from m-commerce research have found that users feel distaste for small-sized smartphone displays (Wei et al., 2009). This results in the user preferring a hands-on experience rather than reviewing information which is available online (Moshkovic, 2103). Apart from users who are closely associated or well-informed about smartphone and its mechanics, most users will usually have less interest in buying items through their smartphones.

Display features need to be assessed properly and taken into account whether it is worth the effort to perform m-commerce by means of mobile apps, namely in the tourism industry. Over the past five years, as smartphones and mobile operating systems developed gradually, new methods of formal, promising logic and facts have emerged, which are reported to have the ability to increase technological possibilities and make m-commerce user-friendly without presenting any great effort to limitations of display (e.g. head mount displays, phablets, smartwatches etc.).

This is one of the reasons why m-commerce development remains a challenge for smartphone makers and their inventive capabilities in Malaysia (Wei et al., 2009; ZhouYu & Jin Bo, 2014). This phenomenon might affect tourism agencies whose primary business is to sell services to customers or clients using smartphones (Yap & Hii, 2009). However, the inconveniences caused by small-sized displays on

smartphones may not be dealt anytime soon; therefore, the rise of phablets may override the m-commerce significance more than the smartphone.

Conclusion & Recommendations

This study has shown that m-commerce tourism is “nothing new under the sun” and soon it may no longer be a favourable alternative in the future. In general, m-commerce empowerment has changed the payment of services and the way consumers purchase using their smartphones. According to a study by Criterio, the mobile share for m-commerce is currently 34% from the overall e-commerce transactions worldwide. Smartphone growth outpaced other mobile devices by an average of 94.5% and is expected to reach 99% by the end of 2015 (Criterio, 2015). Although mobile conversion rate is lower than desktop at 2.7%, smartphone usage for m-commerce is reported to be popular, particularly in early mornings where smartphone purchases are 28% higher than transactions via desktop (Criterio, 2015). These findings clearly support the relevance of exploring issues of m-commerce on smartphones. Overall, this study strengthened the idea that researchers and practitioners might need to collaborate and create a new benchmark in m-commerce and future shopping habits especially in the field of tourism industry which is a major contributor to Malaysia’s economic growth.

However, more research on safety and security needs to be undertaken before m-commerce applications can be fully understood. There is consensus among technological scientists that security-related issues may increase in m-commerce (Mohd & Osman, 2005). These aspects may be classified on the basis of safety and security of m-commerce and some other elements.

The first element involves allowing the balance of power to shift toward a more cooperative interaction between an online business and its customer. The second element necessitates building an open-source platform offering social interaction and facilitates m-commerce communities providing user support and affiliation with other users. The third element proposes a software update service with self-protection capabilities against unverified system updates. Finally, this study calls for developing adequate policies for cybercrimes because simple failures in policy could reduce the readiness to adopt amongst general users and specifically tourists, which could affect an important segment of the country’s revenue generation.

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References

- Criterion. (2015). State of mobile commerce: Growing like a weed Q1 2015. Retrieved from <http://www.criteo.com/media/1894/criteo-state-of-mobile-commerce-q1-2015-ppt.pdf>.
- Cheverst, K., Mitchell, K., & Davies, N. (2002). The role of adaptive hypermedia in a context-aware tourist GUIDE. *Communications of the ACM*, 45(5), 47-51.
- Eu, G.T. (2015). Telco deep dive: How Malaysia's industry fared in Q1 2015. *Digital News Asia*. Retrieved from <https://www.digitalnewsasia.com/mobility/telco-deep-dive-how-malaysia-industry-fared-in-q1-2015>.
- Ivan, I., Milodin, D. & Zamfiroiu, A. (2013). Security of m-commerce transaction. *Journal of Theoretical and Applied Economics*, 584(7), 59-76.
- Jones, W. (2014). M-commerce: Building the opportunity for banks. *Journal of Payments Strategy and System*, 8(3), 300-306.
- Malaysian Communications and Multimedia Commissions (MCMC). (2015). Hand phone Users Survey 2014. Retrieved from <http://www.skmm.gov.my/skmmgovmy/media/General/pdf/Hand-Phone-User2014.pdf>.
- Malik, A., Kumra, R. & Srivastava, V. (2013). Determinants of consumers' acceptance of m-commerce. *South Asian Journal of Management*, 20(2), 103-126.
- Mohd, F. & Osman, S. (2005). Towards the future of mobile commerce (m-commerce) in Malaysia. *International Conference Web Based Communities* (pp. 23-25).
- Moshkovich, H. (2013). Influence of previous experiences on the acceptance of mobile commerce: a pilot study. *Franklin Business & Law Journal*, 2013(1), 59-79.
- Poslad, S., Laamanen, H., Malaka, R., Nick, A., Buckle, P., & Zipl, A. (2001). *Crumper: Creation of user-friendly mobile services personalised for tourism*. In Second International Conference on 3G Mobile Communication Technologies (pp. 28-32).
- Repo, P. (2006). Traveling from B2B to B2C: Piloting a moblog service for tourists. In *ICMB'06 International Conference on Mobile Business* (pp. 16-16).
- Wei, T.T., Marthandan, G., Yee-Loong Chong, A, Ooi, K.B., & Arumugam, S. (2009). What adoptions Malaysian m-commerce adoption? *Industrial Management & Data Systems*, 109(3), 370-388.
- Yap, C. S., & Hii, J. W. H (2009). Factors affecting the adoption of mobile commerce in Malaysia. *Journal of Information Technology*, 5(3), 24-37.
- Zhou Yu, Z, & Jin Bo, S. (2014). Review of the development of mobile electronic commerce. *Applied Mechanics & Materials*, 738-739, 1201-1204.