# MOBILE TOURISM THE HIDDEN JEWEL OF THE TOURISM INDUSTRY?

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## ABSTRACT

*Purpose: Purchasing tourism related products and services have often been limited to either bricks-and-mortar stores or desktop computers. With the growing popularity of mobile devices (m-devices) and technological innovation in wireless networks, mobile tourism (m-tourism) is expected to emerge as the next frontier in the area of mobile commerce.  While the development has present consumers with another method in purchasing and ideally realistic for acceptance in the tourism industry, the adoption rate using m-device as another purchasing channel is not widespread among consumers. Likewise, the study on the adoption of m-devices in tourism sector has also been neglected by many academicians although the findings bring immense important in tourism research. Since substantial investments are needed by organizations to develop the infrastructure and building on these critical gaps, the research addresses on the factors influencing consumers' intention to adopt m-devices as another alternative purchasing channel by developing a conceptual framework.*
*Design/methodology/approach: Given that m-tourism is relatively a new concept, the study adapts the Unified Theory of Acceptance and Usage of Technology (UTAUT) as the main theoretical background since the model can explain up to 70 percent of behavioural intention. Additionally, the study also extends the model with two additional psychological constructs namely Personal Innovativeness in Information Technology (PIIT) and Perceived Enjoyment (PE) with the objective of increasing predictive power. The constructs were added as consumers' purchasing decision is also grounded from the person's characteristic.*
*Research implications: The conceptual framework provides valuable information to travel related organizations, mobile developers and government agencies when strategizing their mobile marketing efforts.*
*Originality/value: In additional, the study also extends the applicability of UTAUT in the area of m-tourism from the perspective of an emerging market.*

**Keywords:** Mobile Tourism, Malaysia, UTAUT, Psychological Science, Mobile Commerce
**Classification:** Conceptual paper

## INTRODUCTION

Purchasing tourism products and services were once confined to either brick-and-mortal stores or desktop computers. However with the technological innovation in wireless networks and as mobile devices (m-devices) become more advanced in terms of processing power (Wong et al., 2012) more consumers are adopting m-devices as a new source of purchasing channel. Hence, for tourism related organizations this represents a new business model and an opportunity to employ mobile tourism (m-tourism) services within the internet (Goh et al., 2010). Langelund (2007) explained that m-devices are an ideal distribution channel in the tourism industry as the functionalities are centered on the travel value chain. Siau et al. (2001) identified four characteristic of m-devices namely ubiquity, personalization, flexibility and dissemination which makes the devices appropriate for the adoption in the tourism industry. Compared with the traditional stores or desktop computers, the adoption of m-devices as another source of purchasing channel can result in significant benefits to consumers and business communities. Scholars like Lu and Su (2009) opined that consumers can shop 'anywhere' and 'anytime' since there is no connectivity interruption. Wong et al., (2012) described that purchasing using m-devices render benefits such as convenience and time saving. Yang (2010) commented on the benefits of personalization and ubiquity using m-devices. Similarly, hotels, travel agencies and other tourism related organizations can adopt to this alternative channel to improve customer loyalty and create additional revenue streams (Kim, Park and Morrison, 2008). The channel can also serve as a strategy to differentiate the organization's product from competitors. Regardless of the contributions, the adoption of m-devices has opened up new business possibilities and has impacted every facet of consumers' lives (Luo et al., 2010). PhoCus Wright, (2013) forecasted that travel booking using m-devices in the United States alone will reach USD$ 25.8 billion by 2014.

While evidence so far suggested that consumers are indeed accessing mobile sites (m-sites) using their m-devices as another channel to book for hotel rooms, rent cars and flights (New Media Trend Watch, 2012), many consumers in Malaysia do not adopt them. In a recent survey released by Malaysia Communications and Multimedia Commission, (a government agency that focuses on the multimedia industry in Malaysia), only 8.8 percent of Malaysian have actually transacted using their m-devices (MCMC, 2012). The survey was confirmed by Chong, Chan and Ooi (2012) whereby Malaysian was reported to access m-devices mainly for information rather than for purchases. The statistics also stated that Malaysia has 36,661,000 m-devices users while the number of 3G subscribers is approximately 10,335,000 in 2011 (MCMC, 2012). With Malaysia's population estimated at 28 millions (Tan, Tan and Ooi, 2011), this shows than an average Malaysian owns more than one m-devices. While such high penetration rate exists, (i.e. the m-device users divided by the total population) surprisingly the actual number of mobile transactions remains low. Malaysia remains an interesting place to study on the adoption of mobile commerce (m-commerce) in view of the low transactions rate and despite having modern telecommunication infrastructures and technologic savvy consumers (Chong, Chan and Ooi, 2012). As browsing travel related products and services on a m-device is different from browsing a website on a computer, practitioners must understand the factors leading to this low acceptance rate in order to create a successful mobile marketing strategy. While there have been numerous work related to online purchases using m-devices, the studies are mainly related to established

markets with little perspective from emerging markets like Malaysia. Furthermore, past researches conducted on m-tourism have often confined to specific viewpoints (e.g., Ahas et al., 2007; Lee and Mills, 2010; Goh et al., 2010; Pesonen and Horster, 2012). Consequently dearth research have been investigated on consumer's intention to purchase tourism related products and services using m-devices. This is puzzling as tourism industry is closely related to a nation's progress as it contributes to the country's economy and general well-being (Goh et al., 2010). Without the viewpoint from the mobile perspective, the study on tourism is considered to be incomplete. In addition, as the platform to develop a successful mobile infrastructure can come up to millions of dollars, tourism related organizations can only reap benefits if consumers are actually adopting to this new technology (Rogoski, 2005). Hence, it is imperative for the present research to study on why consumers adopt or reject a certain Information Technology (IT).

Taking together all of these arguments and the fact that purchasing tourism related products and services using m-device is still a new concept, we decided to modify the definitions proposed by Wong et al., (2012) regarding mobile shopping (m-shopping) in Malaysia and to define m-tourism as "any monetary transactions that is related to the purchases of tourism related products and services conducted using internet-enable mobile phone/smart phone or with connectivity to the wireless telecommunication networks". As online purchases include airline tickets, rental cars and hotel accommodations (Kim, Park and Morrison, 2008), we decided to limit our study from this perspective. The study decided to integrates the psychological science construct with the Unified Theory of Acceptance and Usage of Technology (UTAUT). The integrated model will help to provide a clearer insight on the consumer's acceptance and ultimately helps to improve the quality of services among practitioners. The study offers a set of benefits. Firstly, by understanding how consumers behave online, the study helps practitioners such as travel agencies, hotels, airline organizations, government agencies, mobile developers and other tourism related organizations to further improve on their mobile websites (m-websites) so that they can device a successful mobile marketing strategy. As consumer behaves differently when compared to bricks-and-mortal stores, it is therefore important to understand what motivates them to shop virtually. Secondly, by understanding the needs and motivation leading to consumers to shop for tourism related products and services using their m-devices, the findings can also help to boast the number of tourists' arrival to Malaysia. In sum, the size and contribution of the tourism industry towards the country's GDP and the opportunities to create a number of tourism related jobs presents a considerable potential for the adoption of mobile technology and the rationality why this research should be conducted. The remainder of this paper is structured as follows. First we provide a review on the theoretical basis of our research frameworks. This is followed by the research hypotheses and our proposed research framework. Subsequently we present our implications to theory and practice. Finally the limitation, future research and conclusion are discussed.

# A REVIEW OF THEORETICAL MODELS OF INFORMATION TECHNOLOGY ACCEPTANCE

In the field of Management Information Systems (MIS), there are many frameworks that have been developed to predict consumers' intention to accept new IT. The traditional frameworks proposed so far by IT, psychologists and marketing scholars include the Theory of Reason Action (TRA) (Fishbein & Ajzen, 1975), Technology Acceptance Model, (TAM) (Davis, 1989), Theory of Planned Behavior (TPB) (Ajzen, 1991) and the Diffusion of Innovation (DOI) (Rogers, 1995). However, focusing solely on the traditional frameworks may not be adequate in explaining the intention usage. Thus, some of the traditional frameworks have also been integrated to increase predictive powers. The integrated frameworks include the Decomposed Theory of Planned Behavior (DTPB) (Taylor and Todd, 1995), TAM 2 (Venkatesh and Davis, 2000) and UTAUT (Venkatesh et al., 2003). While TAM has been one of the most robust model in the explanation of IT adoptions, the model has limitations in terms of IT predictions.TAM and the extended TAM 2 can only explained up to 40 percent of the system usage (Lu, Yao and Yu, 2006). Given that m-tourism is relatively a new concept in Malaysia, the study decided to adapt the Unified Theory of Acceptance and Use of Technology (UTAUT) as the main theoretical background. According to Yang (2010), UTAUT integrates several competing models such as the TAM, TRA, TPB, DOI, combination of TAM and TPB, PC Utilization (MPTU), motivational model and Social Cognitive Theory (SCT). The model was found to outperform each of the competing models respectively. Venkatesh et al., (2003) in their explanation further commented that the direct determinants of usage intention is predicted by Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI) and Facilitating Conditions (FC) while gender, experience, age and voluntariness of use is posited to moderate the usage intention. However as the model can only explain up to 70 percent of behavioural intention (Venkatesh et al., 2003), the present study decided to integrate the framework with two psychological science constructs namely the Personal Innovativeness in Information Technology (PIIT) and Perceived Enjoyment (PE). The constructs were integrated as the motivation to purchase online products and services are influenced by the consumers' characteristic. With the integrated framework, the consumers' intention to purchase tourism related products and services can be better explained. The framework however only includes gender and age as the moderating effect since they have been validated in many IT adoption studies and to exclude voluntariness and experience. Finally, in determining the independent variable, the study decided to adopt intention than actual behaviour since m-tourism is relatively at an infancy stage in Malaysia. Therefore consumers' intention is a better measurement than actual purchase. Moreover, according to Fishbein and Ajzen (1975), there is a strong correlation between intention and actual behaviour. The study was also supported by Davis (1989) in the TAM study whereby behavioural intention is assumed to be a good indicator in predicting actual usage. See figure 1 for the proposed research framework.
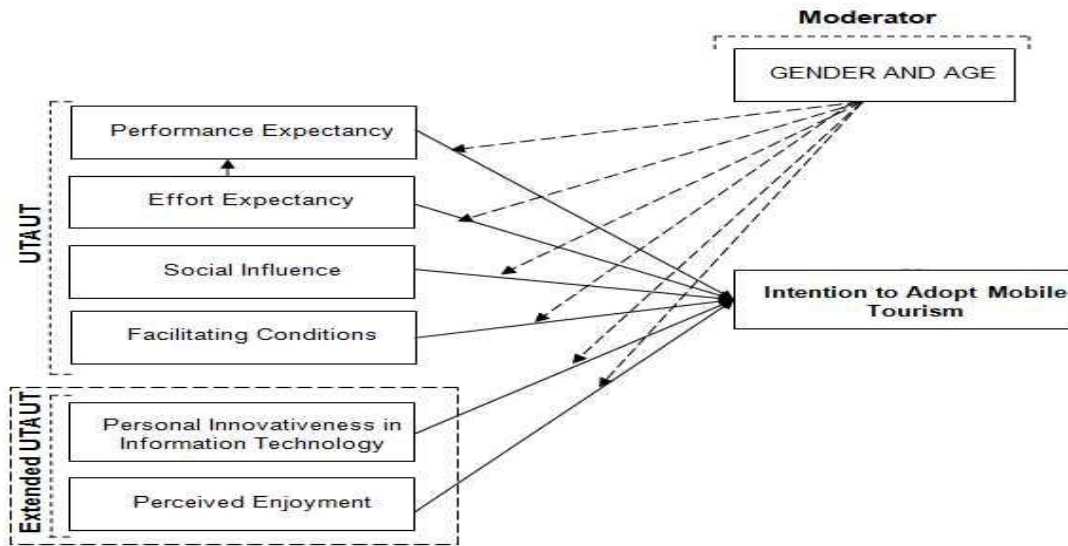
**Figure 1 Proposed Research Framework**

## CONCEPTUAL MODEL AND PROPOSITIONS FOF M-TOURISM

The proposed research framework was drawn from the UTAUT model. The framework has also been extended with two additional psychological science constructs namely PIIT and PE to increase predictive power.

### 1 Performance Expectancy (PE)

Performance Expectancy (PE) reflects the individual believes whether adopting a particular system will bring benefits in terms of task performance (Venkatesh et al., 2003). The definition is similar with Perceived Usefulness in TAM (Davis, 1989) and Relative Advantage in DOI (Rogers, 1995). Many past studies have found that EE has a significant influence on the intention to use such as in the adoption of mobile services in Finland (Carlsson et al., 2006) and m-shopping in Taiwan (Lu and Su, 2009). Wong et al, (2012) in their study regarding m-shopping in Malaysia, asserts that consumers can shop anytime and anywhere due to the 'portable' and 'always on' features of m-devices. Thus the adoption translates to time saving, convenience and flexibility for consumers while on the move (Shin, 2010; Yang, 2010). If consumers perceived that there are advantages adopting m-tourism when compared to the traditional bricks-and-mortal stores, this in turn will increase the intention to adopt. Thus, the following proposition has been formulated:

Proposition 1: PE has a significant relationship with the intention to adopt m-tourism in Malaysia.

## 2 Effort Expectancy (EE)

Effort Expectancy (EE) reflects the individual believes that adopting a particular system would be free of effort (Venkatesh, et al., 2003). In view of the strong predictive power, the construct has been adopted in various technology frameworks such as TAM (Davis, 1989) and DOI (Rogers, 1995). EE has also been found to have significant influence in the intention to adopt various IT innovations by many scholars (Carlsson et al., 2006; Gupta, Dasgupta and Gupta, 2008). While m-tourism has beneficial outcomes, consumers may not adopt the innovation if the innovation is complex (Davis, 1989). Hong, Thing and Tam (2006) found that that ease of use is important in the study of wireless environment. M-devices are characterized with limited screen size, short battery life-span, awkward input mechanisms and other ergonomics problem which may create frustration among consumers during transactions (Wong et al., 2012).This may diminish the overall satisfaction of consumers and the perception that the technology is not easy to use. Thus, in order to improve EE, Yang (2010) in his study on m-shopping in the United States stressed on the ease of access and navigating m-sites. Additionally, consumers will adopt m-tourism if the payment transaction is straightforward and easy to learn (Shin, 2010). If consumers experience the simplicity of adopting m-tourism, they are more likely to adopt m-devices as a purchasing channel for tourism related product and services. Thus, the following proposition has been formulated:

Proposition 2: EE has a significant relationship with the intention to adopt m-tourism in Malaysia.

In UTAUT, EE has positive correlation with PE (Venkatesh et al., 2003). The findings was confirmed by many past IT studies such as on mobile data services in China (Lu et al., 2008), internet banking in Turkey (Nysveen et al., 2005) and m-shopping services in the United States (Yang, 2010). In this context of study if consumer feels that m-tourism is easy to use and requires minimum effort to operate, this will lead to a greater expectation of PE and thereby increase the intention to adopt. Thus, the following proposition has been formulated:

Proposition 3: EE has significant relationship with PE in Malaysia.

## 3 Social Influence (SI)

Social Influence (SI) reflects whether an individual believes that others important to them think they should or should not engage in a particular system (Carolina, Francisco and Bouwman, 2008). SI has been found to affect user's intention to adopt various IT innovations (Lu et al., 2008; Yang, 2010; Chong et al., 2010; Tan et al., 2011) because it helps to reduce the perceived risks (Rao and Troshani, 2007). According to Venkatesh et al., (2003), SI is similar with subjective norm in TRA and can be distinguished between two parts namely the external and interpersonal (Bhattacherjee, 2000). External factors includes media reports such as newspapers, television, radio, internet and expert opinions while interpersonal factors includes opinions from peers, superiors and colleagues (Carolina, Francisco and Bouwman, 2008; Wei et al., 2009). Ooi (2011)'s study found that media influence has less impact when compared to family and friends influence in Malaysia. As m-tourism is relatively a new concept in Malaysia, the rationale goes

that new consumers may shy away from adopting the technology due to uncertainties. Katz (1980) explained that consumers will then consult their social networks on his or her decision to adopt a particular innovation. If the important referents opined that the consumers should adopt, the consumers will be likely to comply. Thus, the following proposition has been formulated:

Proposition 4: SI has a significant relationship with the intention to adopt m-tourism in Malaysia.

## 4 Facilitating Conditions (FC)

Facilitating Conditions (FC) refers to the individual believes about the availability of resources, knowledge and training to support the adoption of a particular system and is similar with behavioral control (Venkatesh et al., 2003). According to Taylor and Todd (1995) FC has direct influence on the behavioral intention of many IT studies. Yang (2010) found that FC is positive related to the intention to adopt m-shopping in United States using 400 respondents as samples. He explained that consumers are more likely to adopt if they have the knowledge and skills to explore m-websites. In another study, Revels, et al., (2010) found that transaction fees, subscription cost and data services charges affects the adoption of mobile services. The study was supported by Teng and Lu (2010)'s study whereby cost is an important factor in the adoption of PDA phones in Taiwan. In the adoption of m-tourism in Malaysia, the cost may include the 3G subscription fees, transaction fees, handset cost and maintenance cost (Chong et al., 2010). Consumers are unlikely to adopt the particular technology if they do not have the necessary financial resources. Similarly FC also involves the availability of training and supports for consumers (Lu et al., 2008). In this context of study, even if consumers have intention to adopt m-tourism, they are unlikely to adopt the innovation when there are existing barriers. Thus to facilitate usage, the obstacles should be removed (Venkatesh et al., 2003). Hence, the following proposition has been formulated:

Proposition 5: FC has a significant relationship with the intention to adopt m-tourism in Malaysia.

## 5 Personal Innovativeness in Information Technology (PIIT)

Chang, Cheng and Lai (2005) refer personal innovativeness (PI) as the degree whether an individual is willing to adopt new innovations. Agarwal and Prasad (1998), subsequently adapted PI in the IT domain and proposed a new measurement namely Personal Innovativeness in Information Technology (PIIT). Citrin et al., (2000) stressed that all individuals possessed a certain degree of innovativeness. The explanation goes that individuals with high level of PIIT are usually risk takes, active seekers of new ideas and are more venturesome since they have higher tolerance level towards uncertainty  when compared with individuals with lower PIIT (Rogers, 1995; Liu and Li, 2010). Similarly, Lu, et al., (2008) pointed out that when individuals have higher PIIT, they developed more positive perceptions towards usefulness, complexity and compatibility which then contribute to higher intention to adopt. There are numbers of literatures that supports PIIT as an important construct in the study of IT innovations. Using 470 Spanish mobile telephone users as a sample, Joasquin, Carla and Silvia (2009) found that PIIT has significant influence on the intention to adopt m-shopping in Spain. In another study of five

cities across China, Lu et al., (2008) found that PIIT influence the intention to adopt wireless mobile data services using structural equation modelling. Thus, the following proposition has been formulated:

Proposition 6: PIIT has a significant relationship with the intention to adopt m-tourism in Malaysia.

## 6 Perceived Enjoyment (PE)

Perceived Enjoyment (PE) is the degree to whether engaging a particular system is perceived to be enjoyable in its own right and is regarded as an intrinsic motivation (Venkatesh, 2000). Enjoyment can come in the form of pictures, background music, commercial flash, animations, when consumers search for a particular products or services using their m-devices (Lu and Su, 2009). When the technology is perceived to be fun, this creates favourable attitude to adopt. PE has been found to be significant with the behavioural intention of various IT studies (Teo and Lim, 1999) such as in the adoption of mobile internet (Liu and Li, 2010), PDA phones (Teng and Lu, 2010) and mobile phones (Chang, 2010). In this context of study, when consumers experience the feeling of fun, joy or playfulness (Webster et al., 1993) attributed to the adoption of m-tourism, this leads to positive emotions (Revels, Tojib and Tsarenko, 2010) and promote the intention acceptance. Thus, the following proposition has been formulated:

Proposition 7: PE has a significant relationship with the intention to adopt m-tourism in Malaysia.

## 7 Moderating effect: Gender and Age

According to Venkatesh et al., (2003) men are task-oriented in nature and like to focus on problem solving (Gefen and Straub, 1997). Thus this explains why men perceived usefulness more important than women. Women on the other hand are affected by the services and emotional traits and as a result, PEOU are more salient for women (Hu, Said and Hu, 2010; Zhang et al., 2009). In the study of UTAUT, gender was found to moderate the effect of EE, PE, FC and SI (Venkatesh et al., 2003). Furthermore in the study of wireless mobile broadband to access games (Ha Yoon and Choi, 2007) and wireless mobile data system (Lu, Yu, Liu, 2006), findings indicated that gender moderates PE and PIIT respectively. In terms of age, the perception of usefulness on the intention to adopt a particular technology is weaker for older consumers when compared to younger consumers (Venkatesh et al., 2003). The rational goes that young consumers are influenced by extrinsic rewards and in this case the usefulness of using a particular technology (Pan and Maryalice, 2010). In the study of UTAUT2, age was found to moderate FC and hedonic motivation (Venkatesh et al., 2012). Thus, the following proposition has been formulated:

Proposition 8: Gender and age moderates all relationships among variables in the research framework.

# IMPLICATIONS

The study provides important implications for researchers, travel related organizations, mobile developers and government agencies rendering m-tourism services for Malaysian consumers. In terms of the theoretical perspective, the conceptual framework extends the UTAUT with two psychological science constructs namely PIIT and PE to examine the consumers' intention to adopt m-tourism. We believe that the extended UTAUT can provide richer insights than UTAUT alone. The study also contributed to the existing literature for emerging markets by taking into perspective of m-tourism which is currently a neglected area among scholars. The study has contributed by providing the foundation on the factors that may influence the adoption of m-tourism and bringing new perspectives beyond the traditional IT studies. In terms of managerial implications, as PE might have positive influence on the intention to adopt m-tourism, travel related organizations and government agencies should focus their marketing campaigns by disseminating information on the benefits of m-tourism. One of the benefits of m-tourism is the ability to purchase anytime and anywhere thus resulting to time saving and convenience among potential consumers who are always on the go. The adoption also helps to enhance shopping effectiveness among consumers. Thus in order to create a favourable PE among consumers the strategy is to highlight on the potential advantages of adopting m-tourism in the marketing campaign. Secondly, given that EE might be an important construct in promoting the intention to adopt m-tourism, mobile developers should stress on the friendly interface of m-websites To begin with, the m-sites should have easy navigation system, straightforward hierarchical menu design and should display only the relevant information to avoid clogging the bandwidth. Yang (2010) suggested that the interface should takes into consideration the phone processing speed, thus two different types of interface designs should be created; one for the high end device and another for low end device. As m-tourism will involve payment transactions, the payment systems should not be complicated. M-sites should reflect the convenience of payment and have straightforward registration process. Additional support should also be made available by travel related organizations. For example by providing frequently asked questions (FAQ), step-by-step video guides and caring customer support. Additionally, mobile developers should ensure that the m-devices are user friendly. M-devices can be enhanced with bigger screen size, input mechanisms, memory, battery life span and screen resolution, thereby helping to craft a positive EE perception among consumers. Thirdly in view that EE may influence PE, travel related organisations should ensure that m-tourism is easy to operate with minimum efforts. A simple strategy is by conducting a road show or supplement training programs to teach consumers on how to operate and navigate m-websites. Fourthly, given that SN may exert an important influence on the intention to adopt, they should not be ignored. As the opinion of relatives, friends, mass-medias and colleagues are important, government agencies and travel related organizations can apply two strategies. The first one is by promoting their advertisements at popular social networking sites such as 'Facebook', 'Twitter', 'MySpace' and 'Friendster' and to take advantage of the word-of-mouth marketing strategy. Consumers who help to spread positive words to others using the social networking sites should be rewarded with free gifts, discounts, vouchers and travel coupons. The second one involves the invitation of opinion leaders or celebrities to provide a review or testimonial on the relevant m-sites. By publishing their testimonials this will encourage adoption among non-users. Sixthly, in view that PIIT might be important in this study, the market should be segregated since different consumers require

different benefits when adopting to a particular technology. For example in order to stimulate non-innovative consumers at the early stage, travel related organizations and government agencies should focus their marketing strategy by giving our gift vouchers, rebates or cash back. The right marketing communications should also be tailored for this group to increase their confidence level of a particular technology. In light that PE might be an important variable in the consumers' intention to adopt m-tourism, mobile developers should integrate the element of fun in their m-sites such as by including animated graphics, icons, music, avatar and other entertainment elements. The positioning strategy should portray the elements of happiness and fun. Hence this will create a favourable shopping experience for consumers as they will view m-tourism as an enjoyable experience. Finally in view of the importance of FC to promote the intention to adopt m-tourism, they should be given equal attention. Practitioners and government agencies should organize training courses and provide adequate supports to facilitate consumers' familiarity in operating m-websites. Additionally, mobile developers can help to reduce the cost of adopting m-tourism by offering rebates, partnership with telecommunication companies and any other monetary incentives.

## LIMITATION AND FUTURE STUDIES

The study confronts several limitations. The conceptual framework is based on an extended UTAUT which may not be adequate in predicting consumers' intention to adopt a certain IT. In this paper, we did not include constructs such as government supports, perceived risks, perceived trust and etc which may be considered relevant in improving the explanatory power on the consumer's decision whether to adopt m-tourism. Future studies may draw on these constructs. Finally, while the paper provides useful information to mobile developers, travel related organizations or government agencies, the study is conceptual in nature. Thus, future research can extend the scope of study from the quantitative approach such as by using multivariate analysis.

## CONCLUSION

The primary objective of the study is to examine on the intention to adopt m-tourism in Malaysia. In view of the benefits of adopting m-devices and the ever increasing number of m-devices in Malaysia, more consumers are expected to adopt m-devices as another source of purchasing channel. Therefore in order to understand what motivates consumers to shop virtually, a conceptual research framework was developed. Since UTAUT can only explained up to 70 percent of usage intention, additional constructs were integrated. The study decided to extend the framework with two additional psychological constructs namely PITT and PE. The framework contributes to the existing body of knowledge for travel related organizations, mobile developers and government agencies by providing richer insights on the strategy to create a successful marketing campaign from an emerging market viewpoint.

## ACKNOWLEDGEMENT

## REFERENCES

1. Agarwal, R., and Prasad, J. (1998). "A conceptual and operational definition of personal innovativeness in the domain of information technology", *Information Systems Research*, Vol. 9 No. 2, pp. 204–215.
2. Ahas, R., Aasa, A., Mark, U., Pae, T., and Kull, A. (2007), "Seasonal tourism spaces in Estonia: Case study with mobile positioning data", *Tourism Management,* Vol. 28, pp.898-910.
3. Ajzen, I. (1991), "The theory of planned behavior", *Organisational Behaviour and Human Decision Processes*, Vol. 50, pp. 179-211.
4. B. I. Tan., G. W. H. Tan., and K. B. Ooi. (2011), "King's Biscuits Berhad: Crafting the next move?", *Emerald Emerging Markets Case Studies,* Vol. 1 No.1, pp. 1-4.
5. Bhattacherjee, A. (2000), "Acceptance of Internet applications services: The case of electronic brokerages", *IEEE Transactions on Systems, Man, and Cybernetics* - Part A: Systems and Humans, Vol. 30 No. 4, pp. 411-420.
6. Carlsson, C., Carlsson, J., Hyvonen, K., Puhakainen, J. and Walden, P. (2006). "Adoption of mobile devices/services-Searching for answers with the UTAUT". In Proceedings of the 39th Hawaii international conference on system sciences.
7. Carlsson, C., Walden, P., and Bouwman, H. (2006), "Adoption of 3G+ services in Finland", *Journal of Mobile Communications,* Vol. 4 No.4, pp.369–384.
8. Carolina L.N, Francisco J.M.C and Bouwman, H. (2008), "An assessment of advanced mobile services acceptance: Contributions from TAM and diffusion theory models", *Information & Management* Vol. 45 No. 6, pp. 359–364.
9. Chang, M. K., Cheung, W., adn Lai, V. S. (2005). "Literature derived reference models for the adoption of online shopping", *Information & Management,* Vol. 42 No. 4, pp. 543-559.
10. Chang, P. C. (2010), "Drivers and moderators of consumer behaviour in the multiple use of mobile phones", *International Journal Mobile Communications*, Vol. 8 No. 1, pp. 88–105.
11. Chong, A.Y.L., Darmawan,N., Ooi, K.B., and Lin, B. (2010), "Adoption of 3G services among Malaysian consumers: an empirical analysis", International Journal of Mobile Communications, Vol. 8 No.2,p p.129–149.
12. Chong, A.Y.L., Chan, F.T.S., and Ooi, K.B. (2012), "Predicting consumer decisions to adopt mobile commerce: Cross country empirical examination between China and Malaysia", *Decision Support Systems*, Vol. 53 No.1, pp.34-43.
13. Citrin, A., Sprott, D., Silverman, S., Steven, N. and Stern, D. (2000), "Adoption of internetshopping: the role of consumer innovativeness", *Industrial Management & Data Systems*, Vol. 100 No. 7, pp. 294-300.
14. Davis, F.D. (1989), "Perceived usefulness, perceived ease of use, and user acceptance of information technology", *MIS Quarterly*, Vol. 13 No. 3, pp.319-340.

15. Fishbein, M., and Ajzen, I. (1975), Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research. Reading, MA: Addison-Wesley.

16. Gefen, D., and Straub, D.W. (1997), "Gender differences in the perception and use of e-mail: an extension to the technology acceptance model, MIS Quarterly, Vol. 21 No. 4, pp. 389–400.

17. Goh, D.H., Ang, R.P., Lee, C.S., and Lee, C.K. (2010), "Determining services for the mobile tourist", *Journal of Computer Information Systems*, Vol. 51 No. 1, pp.31-40.

18. Gupta, B., Dasgupta, S., and Gupta, A. (2008), "Adoption of ICT in a government organization in a developing country: An empirical study", *Journal of Strategic Information Systems*, Vol. 17, No. 1, pp. 140–154.

19. Ha, I., Yoon, Y., and Choi, M. (2007), "Determinants of adoption of mobile games under mobile broadband wireless access environment", *Information & Management*, Vo. 44 No.3, pp. 276-86.

20. Hong, S.J., Thong, J.Y.L., Moon, J.Y., and Tam, K.Y. (2008), "Understanding the behavior of mobile data services consumers". *Information Systems Frontier*, Vo. 10 No. 4, pp.431–445.

21. Joaquin, A.M., Carla, R.M., and Silvia, S.B. (2009). "Exploring individual personality factors as drivers of M-shopping acceptance", *Industrial Management & Data Systems*, Vol. 109, No. 6, pp.739-757.

22. Katz, R., 1980. "Time and work: toward an integrative perspective", in Staw, B.M., Cummings, L.L. (Eds.), Research in Organizational Behavior. JAI Press, Greenwich, CT, pp. 81–127.

23. Kim, D.-Y., Park, J.-K., and Morrison, A. M. (2008). "A model of traveler acceptance of mobile technology", *International Journal of Tourism Research*, Vol. 10 No.5, pp.393-407.

24. Langelund, S. (2007), "Mobile travel", *Tourism and Hospitality Research*, Vol. 7, No ¾, pp. 282–289.

25. Lee, J.K., and Mills, J.E. (2010), "Exploring tourist statisfaction with mobile experience technology", *International Management Review*, Vol. 6 No. 1, pp.91-101.

26. Liu, Y., and Li, H. (2010), "Mobile internet diffusion in China: an empirical study", *Industrial Management & Data Systems*, Vol. 110 No. 3, pp. 309-324.

27. Lu, H.P., and Su. P.Y.J. (2009), "Factors affecting purchase intention on mobile shopping web sites", *Internet Research*, Vol. 19 No. 4, pp. 442-458.

28. Lu, J., Chang, L., Yu, C.S., and Wang, K. (2008), "Determinants of accepting wireless mobile data services in China", *Information & Management*, Vol. 45 No.1, pp. 52-64.

29. Lu, J., Yu, C.S. and Liu, C. (2006). "Gender and Age Differences in Individual Decisions about Wireless Mobile Data Services: A Report from China. China Mobile Value- Added Services Analysis Report", available at http://helsinkimobility.aalto.fi/papers/Mobile%20Services_1_3.pdf (accessed 11, February 2012)

30. Luo, X., Han. L., Zhang, J., and Shim, J.P. (2010), "Examining multi-dimensional trust and multi-faceted risk in initial acceptance of emerging technologies: An empirical study of mobile banking services", *Decision Support Systems,* Vol 49, pp.222-234.

31. Malaysian Communications and Multimedia Commission (MCMC). (2012). Statistical brief number eleven: Hand phone users survey, available at

http://www.skmm.gov.my/skmmgovmy/media/General/pdf/SKMM-HANDPHONE-
SURVEY-2011.pdf (accessed 22 April 2013)

32. Nysveen, H., Pedersen, P. E., and Thorbjørnsen, H. (2005), "Intentions to use mobile services: Antecedents and cross-service comparisons", *Journal of the Academy of Marketing Science*, Vol. 33 No. 3, pp. 330-346.

33. Ooi, K.B., Sim, J.J., Yew, K.T., and Lin, B. (2011), "Exploring factors influencing consumers' behavioral intention to adopt broadband in Malaysia", *Computers in Human Behavior*, Vol. 27 No. 3, pp. 1168-1179.

34. Pan, S., and Maryalice, J.M. (2010), "Internet use intention and adoption among Chinese older adults: From the expanded technology acceptance model perspective", Computers in Human Behavior Vo. 26, No. 5, pp.1111–1119.

35. Pesonen, J., and Horster, E. (2012), "Near field communication technology in tourism", *Tourism Management Perspectives,* Vol. 4, pp. 11–18.

36. Rao, S., and Troshani, I. (2007), "A conceptual framework and propositions for the acceptance of mobile services", *Journal of Theoretical and Applied Electronic Commerce Research*, Vol. 2 No. 2, pp. 61-73.

37. Revels, J., Tojib ,D., and Tsarenko,Y. (2010), "Understanding consumer intention to use mobile services", *Australasian Marketing Journal* , Vol. 18 No. 2, pp.74–80.

38. Rogers, E.M. (1995), Diffusion of Innovations, 4th ed., The Free Press, New York, NY.

39. Rogoski, R. R. (2005), "Wireless by design", *Health Management Technology*, Vol. 26, No. 1, pp. 1-7.

40. Shin, D.H. (2010), "Modeling the Interaction of Users and Mobile Payment System: Conceptual Framework", *International Journal of Human-Computer Interaction*, Vol. 26 No. 10, pp. 917-940.

41. Siau, K., Lim, E.P., and Shen, Z. (2001), "Mobile commerce: promises, challenges, and research agenda", *Journal of Database Management*, Vol. 12 No. 3, pp. 4-13

42. Tan, G. W. H., Sim, J.J., Ooi, K.B., and Kongkiti, P. (2012), "Determinants of mobile learning adoption: An empirical analysis", *Journal of Computer Information System*, Vol. 52 No. 3, pp. 82-91.

43. Taylor, S., and Todd, P.A. (1995), "Assessing IT usage: the role of prior experience", *MIS Quarterly*, Vol. 19 No. 2, pp. 561-70.

44. Teng, W.C., and Lu, H.P. (2010), "Consumer adoption of PDA phones in Taiwan, *International Journal Mobile Communications*, Vol. 8 No. 1, pp. 1-20.

45. Teo, T.S.H., and Lim, R.Y.C. (1999), "Intrinsic and extrinsic motivation in Internet usage", *OMEGA: International Journal of management Science*, Vo. 27, pp.25-37.

46. Venkatesh, V. (2000), "Determinants of perceived ease of use: integrating control, intrinsic motivation, and emotion into the technology acceptance model", *Information Systems Research*, Vol. 11, pp.342–365.

47. Venkatesh, V. and Davis, F.D. (2000), "A theoretical extension of the technology acceptance model: four longitudinal field studies", *Management Science*, Vol. 46 No. 2, pp. 186-204.

48. Venkatesh, V., Morris, M.G., Davis, G.B., and Davis F.D. (2003), "User acceptance of information technology: toward a unified view", *MIS Quarterly* Vol. 27 No. 3, pp.425–478.

49. Venkatesh, V., Morris, M.G., Davis, G.B., and Davis, F.D. (2003). "User acceptance of information technology: toward a unified view", *MIS Quarterly,* Vol. 27 No. 3, pp.425-478.

50. Venkatesh, V., Thong, J.Y.L., and Xu, X. (2012), "Consumer acceptance and use of information technology: extended the unified theory of acceptance and use of technology", Vol. 36, No. 1, pp.157-178.
51. Webster, J., Trevino, L.K., and Ryan, L. (1993), "The dimensionality and correlates of flow in human-computer interactions", *Computers in Human Behavior*, Vol 9 No.4, pp.411–426.
52. Wei, T.T., Marthandan, G., Chong, A.Y.L., Ooi, K.B. and Arumugam, S. (2009), "What drives Malaysian m-commerce adoption? an empirical analysis", *Industrial Management and Data Systems*, Vol. 109 No. 3, pp.370–388.
53. Wong, C.H., Lee, H.S, Lim, Y.H., Chua, B.H., and Tan, G.W.H. (2012), "Predicting the Consumers' Intention to adopt Mobile-shopping: An Emerging Market Perspective", *International Journal of Network and Mobile Technologies,* Vol. 3 No. 3, pp. 24-39.
54. Yang, K. (2010), "Determinants of US consumer mobile shopping services adoption: implications for designing mobile shopping services", *Journal of Consumer Marketing*, Vol. 27 No. 3, pp. 262–270.
55. Zhang, K.Z.K., Lee, M.K.O., Lee, C.M.K., and Cheung, H.C. (2009), "Understanding the role of gender in bloggers' switching behavior", *Decision Support Systems* Vol. 47 No.4, pp. 540–546.
56. Hu, H.F., Said S.G., and Hu, P.J.H. (2010), "Examining Gender Effects in Technology Acceptance by Arabian Workers:  A Survey Study". In 14th Pacific Asia Conference on Information System, Taipei, Taiwan
57. PhoCus Wright. (2013). PhoCusWright's U.S. Mobile Travel Report: Market Sizing an Consumer Trends, available at http://www.phocuswright.com/research_updates/us-mobile-travel-bookings-to-top-us25-billion-by-2014 (accessed 22 April 2013)
58. New Media Tend Watch (2102) available at http://www.newmediatrendwatch.com/world-overview/91-online-travel-market?showall=1 (accessed 22 April 2013)

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