BEHAVIOURAL INTENTION TO USE TRAVEL MOBILE APPS IN MALAYSIA

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Abstract: Mobile apps have changed the world and our daily lives. It is also changed the way we travel by making it more affordable, convenient and efficient. Recognizing the enormous impact of travel apps toward the tourism industry, it has drawn the researchers to further understand factors that affecting traveller's intention to use travel apps. Furthermore, the Unified Theory of Acceptance and Use of Technology (UTAUT) model are among the user's behavioural intention model that is still new and was limitedly applied in the tourism industry. Thus, this paper is aiming to examine the intention of a local resident to use travel mobile apps by using the UTAUT model. This study will contribute to providing new insights into users' adoption and preferences of mobile apps, particularly in the tourism context. In addition, it will provide practical guidance to the mobile application developer in designing features of mobile apps that are most likely by traveller.

Keywords: UTAUT, Mobile Apps, Technology Acceptance, Travel Apps
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Introduction

In the modern world, internet is one of the most essential part of our daily life. According to Internet World Stats (2017), more than 51.7% of the world's population is connected to the internet every day. As internet has altered every aspect of our lives, it has also transformed the tourism industry where evolution in technology has converted the operations of tourism business especially in a way the business interacts with the customers (Meiliana, Irmanti, Hidayat, Amalina & Suryani, 2017). Furthermore, many businesses invest in technology to competitively positioning the business in the current market and help to increase the business revenue (Mengyang, ChunHung, Soocheong, Tang & Xinran, 2017; Malaysia Digital

Association, 2016). The same scenario can also be seen in Malaysia where the rapid development of tourism sector is also due to the result of evolution in technology and supported facilities (Meiliana et al., 2017; Musa, Janiffa, Mior Harris, Adam, Dzahar, Haussain, & WanLokman, 2016). According to Musa et al. (2016), many travel companies are now focusing on new emerging mobile-commerce (M-commerce) where it run on mobile devices such as smart-phone and tablet. The authors further stated that the use of this advanced technology has created new ways for the tourism industry player to offer their customer highly value-added services, namely convenience, interactivity, and ability to find information without having to faced geographical and time constraints.

Furthermore, the rising number of company adoption towards mobile apps is closely link with the rising penetration of mobile internet subscriber in Malaysia. This is backed by the insight released by Malaysia Digital Association (2016) which indicated that from 31,545,990 of the total population in Malaysia (as of February 2016), there were 21,056,126 are internet users and above all report shows that a total of 44,509,884 mobile subscriber were made which is about 144.8% of mobile penetration. According to Malaysian Communications and Multimedia Commission (2017), Generation Y dominates in using mobile internet as they are more familiar and more technological-savvy. Additionally, studies conducted by Nielsen (2016) identified that most Malaysian consumer used their mobile devices to do activities such as connected to social media (78%), accessing emails (73%), viewing YouTube (63%), checking a bank account balance (53%) playing free games (52%) research about product (50%) and book flight ticket and hotel stays (35%). This had positioned Malaysia as the top five countries in the world with the most 'connected traveler' who use used a smart-phone to plan or book a trip (Tripadvisor, 2015).

Travel mobile apps installed are used for the purposes of logistical, keeping in touch with friends, travel planning and search information on restaurant or hotel and read reviews (Tripadvisor,2015; Dickinson et al., 2015). Among the popular travel apps downloaded by Malaysians people are Airasia, Booking.com, Airbnb, Malaysia Airlines, Agoda, Expedia, and Traveloka (EcommerceIQ, 2016). Despite the increasing popularity and greatness of these travel mobile apps, it was discovered that more than 50% travelers are not interested to use these travel apps (AARP real responsibilities, 2017). Hence, it is relevant to examine the factors affecting the adoption of travel apps among tourist. Similarly, it is observed that published literature examining the tourist's intention to use or adopt travel mobile apps are generally scarce. Most studies have only focused on consumer behavior (Gitau & Nzuki, 2014; Swilley, 2018) the impact of travel apps (Mengyang et al., 2017) leaving an unexplored area of research. Due to the potentiality of travel mobile apps in future and its scarcity of literature (Lu, Mao, Wang & Hu, 2015; Ismail, Hemdi, Sumarjan, Hanafiah, & Zulkifly, 2017), it has drawn this study to further investigate the acceptance of Malaysian in accepting travel mobile apps. Hence, this paper is organized as follows: first, a brief on UTAUT theory, second, a review of the literature on performance expectancy, effort expectancy, social influence, facilitating condition, behavioral intention, and use behavior is provided; third, development of the propositions and conceptual framework; and finally, the conclusion of the paper.

Literature Review

Unified Theory of Acceptance and Use of Technology (UTAUT)
Unified Theory of Acceptance and Use of Technology (hereafter UTAUT) has been widely used in various technology acceptance research (Evon and Lau, 2016). It is a model that

comprise eight established theories, namely, Theory Planned Behaviour (TPB) model, Model of PC Utilisation (MPCU), Social Cognition Theory (SCT), Theory of Reasoned Action, (TAM), Innovation Diffusion Theory (IDT), and Motivational Model (MM) in assessing the usage of the new technology system (Venkatesh, Morris, Davis, & Davis, 2003). For the present study, UTAUT is used to examine the user acceptance towards travel mobile apps and it will be used to provide a strong theoretical foundation on technology acceptance behaviour. Moreover, UTAUT model was able to explain 70% of technology acceptance behaviour. While, other technology acceptance theories explain 40 % of technology acceptance only (Venkatesh et al., 2003) Thus, this paper will examine the effect of facilitating conditions, social influence, effort expectancy, and performance expectancy on users' intention behaviour in adopting travel mobile apps.

Behavioural Intentions

Behavioural Intentions can be described as an individual's tendency to take part in a particular behaviour (Suki & Suki, 2017). The authors elaborated in their study that individuals will have a tendency to be in a particular behaviour if their intention towards that behaviour is positive. Moreover, Mafe, Blas and Tavera-Mesias (2010) in their study stated that behavioural intention predicts the usage of mobile services and use behaviour as well. Tourism companies should understand their customers and identify elements of their behavioural intention in purchasing product online in order to have a successful business. (Parsaei, Reseal, & ArabJafari, 2014)

Proposition Development

Performance Expectancy

Performance expectancy (PE) is defined as the degree an individual believes on performance of particular system would be improved (Miadinovic & Xiang, 2016). PE shared similar characteristics with others five theories from other models, namely relative advantage (IDT) job-fit (MPCU), perceived usefulness (TAM), extrinsic motivation (MM), and outcome expectations (SCT) (Evon & Lau, 2016). Potential user will have a greater tendency to use the mobile apps if they believe the apps could offers low waiting period, greater convenience and more efficient response. In other words, if performance expectancy rises, users will have the tendency to continue to use mobile apps (Kang, 2014).

Various studies have shown that PE is an important determinant of behaviour intention to use technologies across various context including mapping apps for tourist (Gupta & Dogra, 2017), travel apps (Gupta, Dogra & George, 2018), website of rural accommodation (Gutiérrez & Herrero, 2012), low cost carrier website (Escobarrodriguez & Carvajal Trujillo, 2014) and mobile payment (Slade, Williams, Dwivedi & Piercy, 2014). Based on discussion above, the authors suggest the following hypothesis:

Hypothesis 1: High performance expectancy (PE) will have high intention to use travel mobile apps.

Effort Expectancy

Miadinovic and Xiang (2016) defined Effort Expectancy (EE) or perceived of used as how much individual's effort is required to use an information system. Higher EE will attain quicker acceptance by the potential users as lesser learning effort is required (Evon & Lau, 2016). Users feel that the simpler the mobile application, users will feel more confidence in performing certain task using the mobile apps.

Studies using UTAUT revealed that EE has positive impact on the intention to use technology across many contexts namely travel apps (Gupta et al., 2018), mobile applications (Kang, 2014), mobile commerce (Alkhunaizan, 2013) e-health applications (De Veer, Peeters, Brabers, Schellevis, Rademakers, & Francke, 2015) and mobile internet (Wang, 2010). Since many scholars discovers that EE can strongly influence the behavioural intention. Therefore, the following hypothesis is recommended:

Hypothesis 2: *High effort expectancy (EE) will have high intention to use travel mobile apps.*

Social Influence

According to Evon and Lau (2016), Social Influence (SI) is also similar to subjective norm in TAM model by Davis (1989) and TPB by Azjen and fishbein (1980). It can be defined as the weather individual usage of the system is affected by people's recommendations and insight. The authors further stated in their study that, the apps adopters will rely on recommendation and suggestion made by friends and family members if they do not have any prior experience on using technology system.

SI has been considered as the main predictor to technology adoption in several research contexts. For example, in a study by Hsu and Lin (2016) on user's intention to make in-app purchases found out that people's opinion is one of the factors that influence customer to make in-app purchase. Moreover, similar result was testified by Morosan and DeFranco (2016) where the author discovered that social influences have an effect towards NFC- Mobile purchase in hotels. However, different result was reported by Gupta and Dogra (2017) where the authors stated that there is no significance relationship between SI and tourist behavioural intention in adoption of mapping apps. Thus, the following hypothesis is suggested:

Hypothesis 3: *Perceive high social influence (SI) will have high intention to use travel mobile apps.*

Facilitating Conditions

Facilitating Conditions (FC) can be defined as whether the existing organizational, technical infrastructure and facility help to facilitate the usage of the system (Venkatesh, Thong & Xu, 2012). Examples of facilitating condition are internet connectivity, smart-phone's memory to downloaded apps and other required knowledge needed to adopt mobile apps. According to Venkatesh et al (2012), both behavioural intentions and actual usage were influence by facilitating conditions.

Facilitating conditions has been considered as an antecedent to technology adoption in several research contexts. For instance, Gupta and Dogra (2017) stated that facilitating conditions was another major antecedent of behavioural intentions among tourist in adoption of mapping apps while travelling. However, contradict result reported by Gutiérrez and Herrero (2012) where the authors stated that facilitating condition is not the main antecedent among tourist in making reservations or booking directly through the websites of the rural accommodations. Hence, the following hypothesis is formulated:

Hypothesis 4: *Perceive high facilitating conditions will have high intention to use travel mobile Apps.*

Conceptual Model

Given that the adoption of travel apps in tourism industry is an innovative behaviour that implies the use technology, the Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003) is used as a reference framework for this research. This model is selected based on its integrative approach as it incorporate a wide variety of explanatory variables such as theoretical models, technology acceptance and use. It will include four independent variables: performance expectancy, effort expectancy, social influence and facilitating conditions as shown in Figure 1.
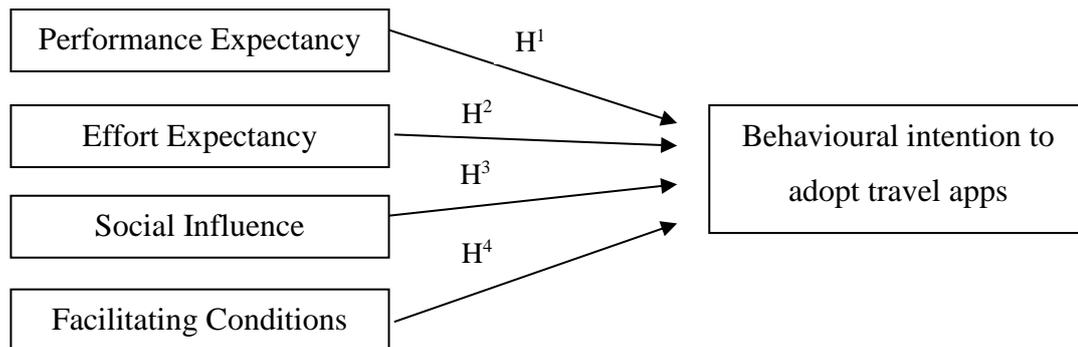

Performance Expectancy	H^1	
Effort Expectancy	H^2	Behavioural intention to
Social Influence	H^3	adopt travel apps
Facilitating Conditions	H^4	

Figure 1: Behavioural Intention to Use Travel Mobile Apps in Malaysia

Studies over the past two decades have provided important information on UTAUT model which it is widely use in explaining technology acceptance among user. It is considered as the most updated and sensitive model that explains variance behavioural intention and technology acceptance (Khatun, Palas & Ray, 2017). Moreover, UTAUT model explains around 70% of the variance in behavioural intention to adopt technology (Venkatesh et al., 2003). The reliability and validity of the model are also generally meritable. There is a growing body of literature that recognises the reliability and validity of UTAUT as predictive model that are able to predict factor adoption of new technology (Gupta & Dogra, 2017; Morosan & DeFranco, 2016; Gutiérrez & Herrero, 2012). Thus, this study aims to contribute to this growing area of research by exploring the significance of UTAUT model in describing the behavioural intention of users to adopt travel apps.

Conclusion

Within the last few years, hand-held mobile devices, including smart-phones, tablet computers and satellite navigation systems, have become familiar features of modern society. The increasing affordability of these new mobile technologies has freed users of internet-ready smart-phones, tablets and laptops from the spatial and temporal constraints imposed by fixed distribution networks, cable internet, and conventional opening hours and, in so doing, enabled them to perform existing activities more effectively and/or more efficiently. In charting the development of mobile apps in the tourism industry from its origins in the 1960s to the present day, this paper intends to show how UTAUT model will affect local traveller intention to address the adoption of travel apps. In particular, UTAUT also has suggested that the era of technology and M-commerce of the early 21st century which was characterised by websites that delivered digital content to customers and, later, process reservations and handle schedule changes, has been transformed by an era of mobile apps in which individual travellers can customise how and when they interact with travel apps via handheld wireless devices and mobile apps. Thus, the main goal of the present study was to examine the determinants that

affecting local traveller intention to adopt travel mobile apps. One of the more significant findings that will be emerged from this study is that it will provide several notable theoretical and managerial contributions such as it will contribute to the existing literature of application adoption and mobile technology particularly in travel and tourism context. This study also will benefit industry player, such as travel mobile apps developer, tourism businesses as well as the decision makers by providing them an insight of traveller preferences and usage of travel mobile apps. This knowledge can be used in developing and refining new travel apps which in the end will lure more potential traveller and achieve better revenue.

References

AARP real responsibilities (2017), "Travel Research: 2017 Travel Trends". Retrieved from https://www.aarp.org/content/dam/aarp/research/surveys_statistics/life-leisure/2017-travel-trends.doi.10.26419%252Fres.00134.001.pdf

Abd Murad, S. M., & Aziz, N. A. (2017), Examining factors influencing travellers purchase intentions via online travel intermediaries' websites: A conceptual model. *International Journal of Economic Research*, 14(2), 289-304.

Alkhunaizan, A. (2013), What drives mobile commerce? An empirical evaluation of the revised UTAUT model. *International Journal of Management and Marketing Academy,* 2(1), 82-99.

Alshehri, M., Drew, S., & AlGhamdi, R. (2013), Analysis of Citizens Acceptance for E-government Services: Applying the UTAUT Model. *Presented to IADIS International Conference Theory and Practice in Modern Computing and Internet Applications and Research*

De Veer, A. J. E., Peeters, J. M., Brabers, A. E. M., Schellevis, F. G., Rademakers, J. JD. JM., and Francke, A. L. (2015), Determinants of the intention to use e-Health by community dwelling older people. *BMC Health Services Research,* 15(103), https://doi.org/10.1186/s12913-015-0765-8

Dickinson, J. E., Cherrett, T., Hibbert, J. F., Winstanley, C., Shingleton, D., Davies, N., Norgate,S. and Speed, C. (2015), Fundamental challenges in designing a collaborative travel app. *Transport policy,* 44, 28-36. https://doi.org/10.1016/j.tranpol.2015.06.013

EcommerceIQ (2016), *Malaysia's Ecommerce Landscape: 5 Takeaways From Its Online Playground*. Retrieved January 22, 2018 from https://ecommerceiq.asia/malaysia-ecommerce-landscape-ecommerceiq/

Escobar-Rodríguez, T and Carvajal-Trujillo, E. (2014), Online purchasing tickets for low cost carriers: An application of the unified theory of acceptance and use of technology (UTAUT) model. *Tourism Management*, 43, 70–88. https://doi.org/10.1016/j.tourman.2014.01.017

Evon, T. and Lau, J. L. (2016), Behavioural intention to adopt mobile banking among the millennial generation. *Young Consumers,* 17(1), 18-31. https://doi.org/10.1108/YC-07-2015-00537

Gitau, L. and Nzuki, D. (2014), Analysis of Determinants of M-Commerce Adoption by Online Consumers. *International Journal of Business, Humanities and Technology,* 4(3), 88 - 94.

Gupta. A and Dogra, N. (2017), Tourist Adoption of Mapping Apps: A Utaut2 Perspective Of Smart Travellers. *Tourism and Hospitality Management,* 23(2), 145-161. https://doi.org/10.20867/thm.23.2.6

Gupta. A., Dogra, N. and George, B. (2018), What determines tourist adoption of smartphone apps? An analysis based on the UTAUT-2 framework. *Journal of Hospitality and Tourism Technology,* 9(1), 50-64. https://doi.org/10.1108/JHTT-02-2017-0013

Gutiérrez, Héctor & Herrero-Crespo, Ángel. (2012), Influence of the user's psychological factors on the online purchase intention in rural tourism: Integrating innovativeness to the UTAUT framework. *Tourism Management,* 33(2), 341-350. https://doi.org/10.1016/j.tourman.2011.04.003

Hsu, C.-L., and Lin, J. C.-C. (2016), Effect of perceived value and social influences on mobile app stickiness and in-app purchase intention. *Technological Forecasting and Social Change*, 108, 42–53. https://doi:10.1016/j.techfore.2016.04.012

Internet world statistic (2018), *World Internet Users and 2018 Population Stats*. Retrieved January 20, 2018 from https://www.internetworldstats.com/stats.htm

Ismail, M.N.I., Hemdi, M.A., Sumarjan, N., Hanafiah, M.H. & Zulkifly, M.I. (2017), Customer's acceptance, usage and M-Satisfaction of Mobile Hotel Reservation Apps (MHRA). *Journal of Tourism, Hospitality & Culinary Art*, 9(2), 425-442.

Kang, Seok. (2014), Factors influencing intention of mobile application use. *Int. J. of Mobile Communications,*12, 360 - 379. https://10.1504/IJMC.2014.063653

Khatun F, Palas M. U. & Ray P. K. (2017) Using the Unified Theory of Acceptance and Use of Technology model to analyze cloud-based mHealth service for primary care. *Digit Med,* 3, 69-75.

Lu, J., Mao, Z., Wang, M. and Hu, L. (2015), Goodbye maps, hello apps? Exploring the influential determinants of travel app adoption, *Current Issues in Tourism,* 18 (11), 1059-1079. https://doi.org/10.1080/13683500.2015.1043248

Mafe, C. R., Blas, S. S. & Tavera-Mesias, J. F. (2010), A comparative study of mobile messaging services acceptance to participate in television programmes. *Journal of Service Management, 21*(1), 69-102.

Malaysian Communications and Multimedia Commission (2017), *Hand Phone Users Survey 2017: Statistical Brief Number Twenty-Two.* Retrieved from https://www.skmm.gov.my/skmmgovmy/media/General/pdf/HPUS2017.pdf

Malaysia Digital Association (2017), *Malaysia Digital Landscape: Exploring the Digital Landscape In Malaysia Boosting Growth For A Digital Economy.* Digital Integration & Business Transformation Asia Conference, Kuala Lumpur. Retrieved from http://www.malaysiandigitalassociation.org.my/wp-content/uploads/reports/2016/mda-2016-malaysia-digital-landscape.pdf

Meiliana, D Irmanti, MR Hidayat, NV Amalina, D Suryani (2017), Mobile Smart Travelling Application for Indonesia Tourism. *Procedia Computer Science,* 116, 556-563. https://doi.org/10.1016/j.procs.2017.10.059

Mengyang, Q., ChunHung T., Soocheong, Tang., and Xinran, L. (2017), Mobile app introduction and shareholder returns. *Journal of Hospitality and Tourism Management,* 31,173-180. https://doi.org/10.1016/j.jhtm.2016.11.006

Miadinovic, J. and Xiang H. (2016), *A Study on Factors Affecting the Behavioral Intention to use Mobile Shopping Fashion Apps in Sweden.* Bachelor's Thesis in Business Administration. International Business School, Jonkoping University.

Morosan, C. and DeFranco, A. (2016), It's about time: revisiting UTAUT2 to examine consumers' intentions to use NFC mobile payments in hotels. *International Journal of Hospitality Management,* 53, 17-29.

Muda, M., Mohd, R. and Hassan, S. (2016), Online Purchase Behavior of Generation Y in Malaysia. *Procedia Economics and Finance,* 37, 292 – 298. https://doi:10.1016/S2212-5671(16)30127-7

Musa, R., Janiffa, S., MiorHarris, M. H., Adam, A. A., Dzahar, F. D., Haussain, S. S, and WanLokman, W. M. (2016), The Predictors and Consequences of Consumers' Attitude

Towards Mobile Shopping Application, *Procedia Economics and Finance,* 37. 447-452. https://doi.org/10.1016/S2212-5671(16)30150-2

Nielsen (2016), *Mobile Ecology: Are Malaysian Consumers Ready For The New Frontier Of Mobile Banking & Payment?*, Retrieved January 20, 2018 from http://www.nielsen.com/my/en/insights/news/2016/are-malaysian-consumers-embracing-the-virtual-wallet.html

Norzaidi, Mohd & Kassim, N.E.M. & Said, W.S.R.W.M. & Noor, M.M.M. (2011), Determining critical success factors of mobile banking adoption in Malaysia. *Australian Journal of Basic and Applied Sciences,* 5, 252-265.

Parsaei, F., Reseal, M., & ArabJafari, M. (2014), "Evaluating Behavioral Intentions of Tourists in e-Tourism", *Journal of Computing and Security*, 1(2), 95-109

Slade, E., Williams, M., Dwivedi, Y., & Piercy, N. (2014), Exploring consumer adoption of proximity mobile payments. *Journal of Strategic Marketing*, 1(1), 1-15.

Suki, N. M. and Suki, N. M. (2017), Flight ticket booking app on mobile devices: *Examining the determinants of individual intention to use, Journal of Air Transport Management,* 62, 146- 154. https://doi.org/10.1016/j.jairtraman.2017.04.003

Swilley, E. (2018), An Empirical Examination of The Intent Of Firms To Adopt Mobile Commerce As a Marketing Strategy. (Doctor of Philosophy, the Florida State University, United States of America). Retrieved from http://diginole.lib.fsu.edu/islandora/object/fsu:168554/datastream/PDF/view

Tripadvsior (2016), *TripBarometer 2016: Traveler Trends & Motivations Global Finding* Retrieved January 20, 2018 from https://www.tripadvisor.com/TripAdvisorInsights/wp-content/uploads/2018/01/TripBarometer-2016-Traveler-Trends-Motivations-Global-Findings.pdf

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003), User acceptance of information technology: Toward a unified view. *MIS Quarterly,* 27(3), 425-278. https://doi.org/10.2307/30036540

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012), Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of *technology. MIS Quarterly,* 36(1), 157-178.

Wang, H. (2010), User Acceptance of Mobile Internet Based on The Unified Theory Of Acceptance And Use Of Technology: Investigating The Determinants And Gender Differences. *Social Behaviour and Personality*, 38(3), 415-426.