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NURTURING HOSPITALITY, TOURISM AND WELLNESS WORLD

TOURISM CLUSTER

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Factors Affecting Continuance of Mobile Applications Use Among Tourists in Malaysia

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ABSTRACT

Mobile application in tourism industry is widely used by both international and local tourists which guides them with navigation, service promotions, accommodation booking and other travel information. This paper aims to examine the role of performance expectancy, effort expectancy and social influence towards the continuance mobile application usage among tourists in Malaysia. Quantitative approach was used to collect the data in this study. To achieve the objectives of this study, 384 respondents were selected for online questionnaire distribution and researchers manage to get back 250 responses among those who answered the questionnaires. The data were then analysed by using Statistical Packages for Social Science (SPSS) version 25. The data analysis that has been used in this study is reliability test, descriptive statistics and Pearson Correlation. The study revealed that there is positive relationship between performance expectancy, social influence and effort expectancy with continuance mobile applications use among tourists in Malaysia.

Keywords: Mobile Application, Performance Expectancy, Effort Expectancy, Social Influence

INTRODUCTION

Mobile applications (apps) in tourism have increased incredibly and have been used widely by tourists either local or foreigner both inside and outside Malaysia. Tourism mobile apps basically help tourists to plan tour, make accommodation booking, ticket booking, transportation booking, route mapping and more (Rishabh Software, 2017). By using mobile apps, tourists may have options for navigation services such as Global Positioning System (GPS) services, route scheduling and maps, while the social updates on social media as travel updates, reviews and picture galleries to help tourists to have smooth travelling experience. The data on tourist movement data can be effectively obtained through cell phones and enhances the knowledge of explorers from varying backgrounds. Therefore, this study emphasizes on the factors that influence the continuance in mobile applications use among tourists in Malaysia.

The topic of mobile tourism has been researched by few researchers namely; Kang and Seok (2014) with the title of factors affecting intention to use mobile application and Brown, Barry, Chalmers and Matthew (2003) with the title of tourism and mobile technology found that the tourism industry needs mobile technology to enhance the tourists accessible while travelling. However, limited studies have been conducted in Malaysia with similar interest. As compared to other countries, such as Ireland, United States, and other Europe countries, less studies have been done on mobile travel in Malaysia. Malaysians are still low as compared to neighborhood travel industries due to the mobile internet frequency range is narrow than the fixed lines and network. Besides, mobile devices' specifications are different as compared to desktops. Other than that, the anxiety brings negative influence to the relationship between mobile system practice and mobile users.

Therefore, this study aims to explore the factors that affect the continuance of mobile applications use among tourists in Malaysia. The continuance in mobile applications use among tourists who travel in Malaysia is probably influenced by performance expectancy, effort expectancy, and social influence. Therefore, this paper is organized as follow: first, an introduction of the underlying. Second (underlying theory), review of literature. Third, methodology. Forth, result and discussion. Finally, discussion, recommendation and conclusion.

There are three objectives of this research:

1. To identify the relationship between the performance expectancy and the continuance mobile applications use among tourists in Malaysia.
2. To measure the relationship between the effort expectancy and the continuance in mobile applications use among tourists in Malaysia.
3. To examine the relationship between the social influence and the continuance in mobile applications use among tourists in Malaysia.

Significance of the study

Researchers

The result of the study helps researchers to get the perception of the respondents regarding the reasons affecting the continuance in mobile applications (apps) use among tourists in Malaysia. The connection between the factors mentioned which are performance expectancy, effort expectancy, social influence and continuance in mobile apps use among tourists in Malaysia will be evaluated by the researchers. The researchers will be able to understand continuance in mobile apps and the factors affecting thereafter

Owners

This study will discuss about the continuance in mobile apps use among tourists in Malaysia. This study will focus on factors such as performance expectancy, effort expectancy and social influence to get the result on how these factors affect the continuance in mobile apps use among tourists in Malaysia.

Tourism Industry

This study will show the result of if tourists in Malaysia adopt mobile apps while travelling in. The data may help the related parties to understand about the factors affecting the continuance in mobile apps use. Thus, the certain parties may improve the ease and usage of mobile apps in Malaysia. Since the mobile apps' usage is widespread, the number of travellers will increase year after year.

LITERATURE REVIEW

Performance Expectancy

Chiu and Wang (2008) characterised the performance expectancy as “the degree to which an individual trust that a system upgrades his or her performance” . This is a parallel plan to see helpfulness and comparative favourable position (Alwahaishi & Snásel, 2013). As shown by Bhattacharjee (2001), client fulfilment was controlled by declaration of desires from prior use and saw helpfulness (execution anticipation).

Adjusted to this research, if the adaptable applications client feels that utilizing a portable application is useful, he or she will get more fulfilment from its utilization. Then again, to develop execution anticipation, as far as utility, has dependably been had all the earmarks of being the most indicator decidedly impact on the apparent convenience, of IT, and of social expectation (Venkatesh et al., 2003, Yang & Lin, 2015). Therefore, mobile applications clients will keep on utilizing them on the off chance that they believe that the versatile applications tend to have a positive result.

Effort Expectancy

Chiu and Wang (2008) stated that effort expectancy is “the degree to which a learner believes that using a system is free of effort”. According to Davis (1989), when users trust that a mobile application is valuable, in the meantime they may likewise trust that the mobile applications is hard to use, and the advantages of using it are balanced by the effort to use the mobile applications. Prior research has shown that the simpler an invention is, the higher the amount of people select to practice it again, particularly amongst customers (Venkatesh & Brown (2001); Brown & Venkatesh (2005).

Besides, Venkatesh et al. (2003) specified there is a positive influence on continuance intention from effort expectancy, in addition to its indirect effect via attitude. From our background, the more is the effort related with using mobile applications is, the lower is the user inclination for continuing to use it.

Social Influence

Social influence is how much an individual considers how others trust the individual should utilize an innovation (Chiu & Wang, 2008). At the end of the day, it mirrors how much an individual's frames of mind, practices, and practices are affected by others (Wang et al., 2013). Previous research, for instance, Shen et al. (2011) and Zhou and Li (2014) stated that social influences need and essential consequences for duration use. With respect to this research, the more noteworthy is the social impact of a portable application, the more prominent is the progression of utilization by its clients.

According Kang and Seok (2014), the confidence of important people executes on acceptance called social influence. Social influence is an encouraging forecaster of mobile publicity use in mobile communication field (Yang, 2007). Social influence has predicted the acceptance of 3G mobile technology (Chong et al., 2010). Inherently, social influence can be perceived as an indicator of continuance of tourists to use the mobile applications in this case.

Continuance in Adoption

Continuance is the level of the strength of someone's intention to accomplish a specific consumption preference continuously. It is an intermediary of actual continuous practice of an information technology or system. Limayem et al. (2007) characterised continuance as a form of post-adoption behaviour. Mobile application is stated as the software which is used for general production and information salvage purposes. However, an enormous surge in user demand and the broad availability of developer tools have driven a fast expansion to include other categories of mobile apps including games, social networking platforms, and others providing access to information on business, finance, lifestyle, and entertainment (Hsu & Lin 2015).

The research on the widespread implementation of new mobile applications has been facilitated because of the fame and tremendous development of smartphone usage (Hsiao et al. 2016). Users hold for continuance may not be the same set of beliefs that lead to the initial adoption (Karahanna et al., 1999). In the earliest stage of technology introduction, users are making acceptance decisions that are systematically different from the continuance decisions as user experiences increase (Venkatesh et al., 2000).

Relationship Between Performance Expectancy, Effort Expectancy, Social Influence and Continuance in Mobile Applications Use Among Tourists in Malaysia

Performance expectancy enables people to achieve their goals in communication technology so that people will consider the mobile applications (apps) are valuable (Venkatesh et al., 2003). People are ready to invest for mobile apps as the values and innovations are worthy (Arya, 2011). The Unified Theory of Acceptance and Use of Technology (UTAUT) was employed by Pynoo et al. (2011) to examine the factors of that affect teachers to accept the digital education materials. The results proved that performance expectancy was particularly predictive on acceptance of digital education in view of the maximization of educational effect. The increase of performance expectancy will encourage users to use the mobile apps continuously.

Effort expectancy also determines local governments' acceptance of a new media system for service to the public (Gupta et al., 2008). Effort expectancy predicts medical practitioners' intention of mobile system use for patient management (Han et al., 2006). According to UTAUT, the practice intention will be affected by effort expectancy both direct or indirectly through performance expectancy. Users feel that simplicity of technology generates self-efficacy of task performance with the technology (Bandura, 1997; Davis et al., 1989).

According to previous research for effort expectancy, users tend to have acceptance intention of technology when the effort on learning and understanding a new technology is low. For instance, simplicity and the self-effectiveness has given an effect to PR practitioners' intention of social media adoption (Curtis et al., 2010). Effort expectancy is a positive predictor of the acceptance of information communication technologies (ICTs) in both private and public sectors.

For social influence, the UTAUT is a well-documented theoretical model but faces challenges due to its parsimony; the theory condenses many concepts into one model (Park, 2010). Even though the theory employs many technology adoption theories and models, it is likely oriented toward functional and social concepts in the adoption process. As a result, the theory presents the problem of construct validity that needs to be compensated with additional concepts. Communication theories in media research count individual differences in adoption and use of technologies. Individuals have different motivational reasons for technology use.

Hypothesis 1: There is a significant relationship between performance expectancy and the continuance in mobile applications use among tourists in Malaysia.

Hypothesis 2: There is a significant relationship between effort expectancy and the continuance in mobile applications use among tourists in Malaysia.

Hypothesis 3: There is a significant relationship between social influence and the continuance in mobile applications use among tourists in Malaysia.

Conceptual Framework

A research framework has been formed to investigate the connection between performance expectancy, effort expectancy, social influence and continuance in mobile applications use among tourists in Malaysia.

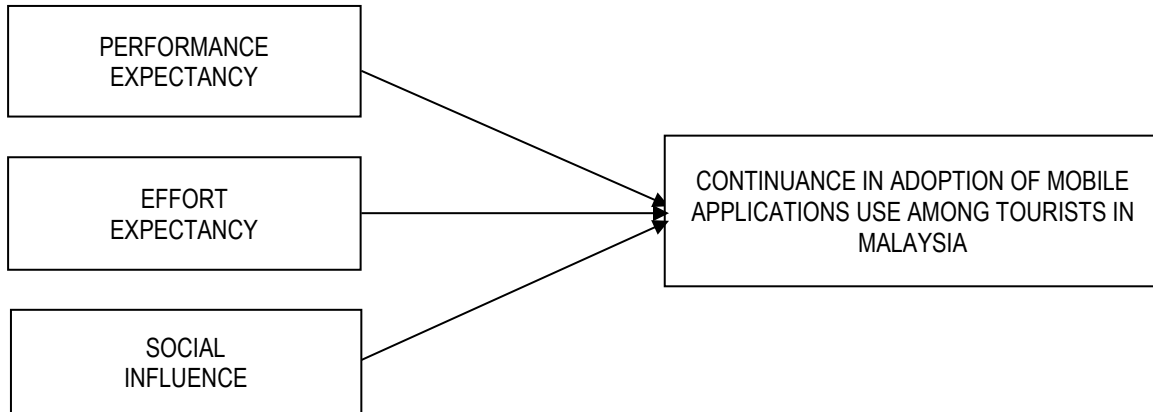


Figure 1: Conceptual framework of Relationship between Performance Expectancy, Effort Expectancy, Social Influence and Continuance in Mobile Applications Use among Tourists in Malaysia

Source: *The role of conceptual frameworks in epidemiological analysis* (Victora, C. G., Huttly, S. R., Fuchs, S. C., & Olinto, M. T., 1997)

METHODOLOGY

Research Design

Quantitative research design has been used in this study in order to get the results on the relationships between measured variables to explain, predict and manage the phenomena. Purposes of quantitative methodology are to maximize the objectivity, replicability and generalizability of the results and usually involve in hypotheses forecasting.

Data Collection

This study gathered information from versatile application respondents in order to test their continuation aim by answering the online questionnaire. This study used quantitative data collection method and it includes questionnaire with close-ended questions. Researchers observed tourist in Malaysia making good use of mobile applications while travelling and has the continuance intention to use it. The questionnaire is posted through online survey format and 384 respondents were targeted to answer the questions.

Sampling

This research has targeted the number of tourists travel in Malaysia which is 25.83 million in the year 2018 as the population. The sample in this research is the number of tourists travelling in Malaysia while using mobile applications as their guide. According to the arrival of tourists, if the number of tourists exceed one million therefore the sample size of 384 respondents are determined for this study. Based on the table for Determining Sample Size from a given population (Krejcie & Morgan, 1970), 1,000,000 population equals to 384 sample size of respondents.

The probability sampling method is employed in this study and cluster sampling is used to collect data. Cluster sampling is feasible method of probability sampling method because sampling frames for the target populations are lists of clusters. As for this study, 384 respondents are targeted locally and internationally from domestic and inbound tourists around the world. Participants of respondents are selected from the population of tourists travel in and out of Malaysia. The subjects were tourists and smartphone users who use mobile applications while travelling in Malaysia, equipped with the continuance in using mobile applications. The link of questionnaire is posted on social media and cross-platform instant messaging application such as WhatsApp.

With the growth of internet and widely use of online platform for all purposes, the online survey is becoming one of the most common survey methods these days thus the respondents were asked to complete an online questionnaire on which factors influencing continuance in mobile applications among tourists in Malaysia. The questionnaires were distributed to individuals through Google Form and expected to be fulfilled by the targeted respondents. However, this study manages to get back 250 responses from overall respondents.

Data Analysis

In this study, there were three data analysis used namely; frequency analysis, descriptive analysis and reliability analysis. Statistical Package for the Social Science (SPSS) version 25 was used to analyse the obtained data.

FINDINGS

Table 1 depicts the respondents' profile whom participate in this study. Out of 250 respondents, 51.2 percent were male and 48.8 percent were female. The majority of the respondents belong to the following age groups: 21 to 30 years old (67.2 percent), 31 to 40 years old (22.4 percent), below 20 years old (6.4 percent) and 41 and above (4.0 percent). For marital status, majority of the respondents are single (69.6 percent) and the rest are married (30.4 percent). As for employment status, majority of the respondents are students (38 percent), followed by employee (32.8 percent), self-employed (24.8 percent) and unemployed (4.4 percent). In terms of tourist type, most of the respondents are international tourist (53.2 percent) and the rest are domestic tourist (46.8 percent). For purpose of visit, majority of the respondents are travelling for leisure (40.8 percent), for studies (13.2 percent), for recreation (34.4 percent) and for research (11.6 percent). As for number of travel apps owned by the respondents, the highest percentage is more than 1 (46 percent), follow by more than 3 (33.2 percent), more than 5 (12.4 percent) and 0 (8.4 percent).

The majority of the respondents use mobile apps while travelling (94.8 percent) and the rest do not use mobile apps while travelling (5.2 percent). The highest percentage of the devices usage while travelling is smartphone (96.4 percent), follow by tablet (11.2 percent) and iPad (10.8 percent). For the usage of mobile apps in each stage of trip, most of the respondents uses mobile apps both before the trip and at the destination (57.6 percent), uses mobile apps before the trip only (15.2 percent) and uses mobile apps at the destination only (27.2 percent).

The highest percentage on type of mobile apps used is travel guide (62.0 percent), followed by social media (61.6 percent), offline map (46.0 percent), tour booking (45.6 percent) and public transport (50.4 percent).

Demographic Profile of Respondents

Table 1: Demographic Profile of Respondents

Demographic	Characteristic	Frequency	Percentage
Gender	Male	128	51.2
	Female	122	48.8
Age	Below 20 years old	16	6.4
	21 to 30 years old	168	67.2
	31 to 40 years old	56	22.4
	41 years old and above	10	4.0
Marital Status	Married	76	30.4
	Single	174	69.6
Occupation	Student	95	38.0
	Employee	82	32.8
	Self-employed	62	24.8
	Unemployed	11	4.4
Tourist Type	International Tourist	133	53.2
	Domestic Tourist	117	46.8
Purpose of Visit	Leisure	102	40.8
	Study	33	13.2
	Recreation	86	34.4
	Research	29	11.6
Number of Travel Apps Own	0	21	8.4
	More than 1	115	46.0
	More than 3	83	33.2
	More than 5	31	12.4
Usage of Mobile Apps while Traveling	Yes	237	94.8
	No	13	5.2
Devices Using when Traveling	Smartphone	241	96.4
	Tablet	28	11.2
	iPad	27	10.8
Usage of Mobile Apps in Each Stage of Trip	Before the trip only	38	15.2
	At the destination only	68	27.2
	Before the trip and at the destination	144	57.6
Types of Travel Apps Used	Travel guide	155	62.0
	Social media	154	61.6
	Offline map	115	46.0
	Tour booking	114	45.6
	Public transportation	126	50.4

Reliability Test

Reliability analysis was used to measure the reliability of the questionnaires. Pilot test has been done with 30 respondents before it was distributed to 384 respondents through Google survey.

Table 2: Result of Reliability Coefficient Alpha for the Independent Variables and Dependent Variable

Variables	Number of Item	Cronbach's Alpha Coefficient
Performance Expectancy	4	0.897
Effort Expectancy	4	0.948
Social Influence	4	0.885
Continuance in Adoption	4	0.958

Table 2 shows the value of Cronbach's Alpha Coefficient for independent variables and dependent variable in this study. According to Table 2, all variable reached the value of 0.8 and above. Thus, it can be emphasized that the questionnaire is reliable. There were four questions for each variable. The highest result for Cronbach's Alpha Coefficient is the continuance in adoption questions (0.958), followed by effort expectancy questions (0.948), then the performance expectancy questions (0.897), and lastly the social influence questions (0.885). Therefore, the coefficient obtained for all of the questions were reliable.

Descriptive Statistics

Table 3: Descriptive Statistics

Variables	N	Mean	Standard Deviation
Performance Expectancy	250	8.5090	1.20102
Effort Expectancy	250	8.4130	1.12684
Social Influence	250	8.1420	1.13135
Continuance in Adoption of Mobile Apps	250	8.3620	1.32494

Table 3 shows the number of respondents, mean and standard deviation of independent variables and dependent variable. The highest mean for all variable is scored by performance expectancy (8.5090), followed by effort expectancy (8.4130), then the continuance in adoption of mobile apps (8.3620) and social influence (8.1420). Standard deviation for independent variables is respectively 1.20102 (performance expectancy), 1.12684 (effort expectancy), 1.13135 (social influence) and continuance in adoption of mobile apps is 1.32494.

Pearson Correlation

The Pearson Correlation Analysis is one of the important analysis that measures the linear relationship between two variables. This analysis is to determine whether the correlations exist between the independent variables and dependent variable. The strength of the variables is determined by Rule of Thumb in this section.

Table 4: Rule of Thumb for Interpreting the size of a Correlation Coefficient

Size of Correlation	Interpretation
.90 to 1.00 (– .90 to – 1.00)	Very high positive (negative) correlation
.70 to .90 (– .70 to – .90)	High positive (negative) correlation
.50 to .70 (– .50 to – .70)	Moderate positive (negative) correlation
.30 to .50 (– .30 to – .50)	Low positive (negative) correlation
.00 to .30 (.00 to – .30)	Negligible correlation

Source: Guildford Rule of Thumb (1973)

Table 4 shows the Rule of Thumb to interpret the size of Correlation Coefficient. According to Guildford Rule of Thumb (1973), there are five correlation sizes and each size has representative different interpretation either positive or negative which are very high positive/negative correlation (.90 to 1.00/- .90 to -1.00), high positive/negative correlation (.70 to .90/- .70 to - .90), moderate positive/negative correlation (.50 to .70/- .50 to - .70), low positive/negative correlation (.30 to .50/- .30 to - .50) and negligible correlation (.00 to .30/.00 to - .30).

Hypothesis 1: The Role of Performance Expectancy in Determining the Continuance in Mobile Applications use Among Tourists in Malaysia

Table 5: Correlation Coefficient for Performance Expectancy in Determining Continuance in Adoption of Mobile Apps

		Continuance in Adoption of Mobile Apps	Performance Expectancy
Continuance in Adoption of Mobile Apps	Pearson correlation	1	0.801**
	Sig. (2-tailed) N	250	0.000
Performance Expectancy	Pearson correlation	0.801**	1
	Sig. (2-tailed) N	250	0.000

** . Correlation is significant at the 0.01 level (2-tailed)

Table 5 illustrates Pearson Correlation Coefficient, significant value and the number of cases which is 250. The p-value is 0.000, which is less than the significant level of 0.01. The correlation coefficient of 0.801 suggests a high positive correlation between performance expectancy and continuance in adoption of mobile apps.

Hypothesis 2: The Role of Effort Expectancy in Determining the Continuance in Mobile Applications use Among Tourists in Malaysia

Table 6: Correlation Coefficient for Effort Expectancy in Determining Continuance in Adoption of Mobile Apps

		Continuance in Adoption of Mobile Apps	Effort Expectancy
Continuance in Adoption of Mobile Apps	Pearson correlation	1	0.770**
	Sig. (2-tailed) N	250	250
Effort Expectancy	Pearson correlation	0.770**	1
	Sig. (2-tailed) N	250	250

** . Correlation is significant at the 0.01 level (2-tailed)

Table 6 demonstrates Pearson Correlation Coefficient, significant value and the number of cases which is 250. The p-value is 0.000, which is less than the significant level of 0.01. The correlation coefficient of 0.770 suggests a high positive correlation between effort expectancy and continuance in adoption of mobile apps.

Hypothesis 3: The Role of Social Influence in Determining the Continuance in Mobile Applications use Among Tourists in Malaysia

Table 7: Correlation Coefficient for Social Influence in Determining Continuance in Adoption of Mobile Apps

		Continuance in Adoption of Mobile Apps	Social Influence
Continuance in Adoption of Mobile Apps	Pearson correlation	1	0.732**
	Sig. (2-tailed) N	250	250
Social Influence	Pearson correlation	0.732**	1
	Sig. (2-tailed) N	250	250

** . Correlation is significant at the 0.01 level (2-tailed)

Table 7 illustrates Pearson Correlation Coefficient, significant value and the number of cases which is 250. The p-value is 0.000, which is less than the significant level of 0.01. The correlation coefficient of 0.732 suggests a high positive correlation between social influence and continuance in adoption of mobile apps.

Table 8: Summary of Hypothesis Tests

Hypothesis	Results
H ₁ : There is a relationship between performance expectancy and the continuance in adoption of mobile applications among tourists in Malaysia.	H ₁ accepted
H ₂ : There is a relationship between effort expectancy and the continuance in adoption of mobile applications among tourists in Malaysia.	H ₂ accepted
H ₃ : There is a relationship between social influence and the continuance in adoption of mobile applications among tourists in Malaysia.	H ₃ accepted

Table 8 shows the summary of the hypothesis tests for all of the independent variables. There is a relationship between performance expectancy, effort expectancy, social influence and the continuance in mobile applications among tourists in Malaysia. All of the hypothesis is accepted.

DISCUSSION AND RECOMMENDATION

The usage of mobile applications in tourism industry is widespread nowadays. This study aims to examine the relationship between performance expectancy, effort expectancy, social influence and continuance in mobile applications use among tourists in Malaysia. This study can help to increase the productivity of tourism activities.

Once the mobile application is fully utilized in this field, people can get travel related information easily and effectively. While travelling, mobile applications can help people in managing the whole trip such as tour booking, travel destination's entrance ticket purchasing, route planning, language translating, offline maps and others. From the study, tourists nowadays can easily adopt mobile application for travel use. Most of the respondents agreed that mobile applications are understandable and effective. Thus, the respondents are able and willing to adopt mobile applications to help out their trip.

The continuance in mobile applications use among tourists in Malaysia is important as it can connect tourists with locals easily. Tourists can search information easily if they have met some problems that is hard to be solved. Mobile application which consists of a particular country's emergency contact number appears to be helpful to those in need. Mobile applications also include social media. In this modern era, people used to share their experience in their personal social media platforms namely, Facebook, Instagram, Twitter and others. Most of the people are willing to use mobile applications while travelling because they want to share their travel experience and it can define as a method to store their memories.

Upon completion of this study, there are several recommendations suggested by researchers to future researchers who are interested in this field of research. First, future researchers are recommended to enlarge the sample size to get exact results and better represent the population of tourists who visits Malaysia.

The greater the sample size of respondents, the more accurate and reliable the result is (Nuijten et al., 2015). Thus, future researchers are suggested to expand the sample size to increase the accuracy and reliability of the study.

Secondly, this research has only attended three factors that influence the continuance in mobile application use among tourist in Malaysia. However, this study might have ignored the other significant factors which play an important role in influencing the continuance in adoption of mobile applications use among tourists in Malaysia. Hence, including more variables such as social context and environmental context to carry out similar study are recommended to future researchers in order to produce new findings in their study.

Lastly, interview method can be used by future researchers when conducting similar investigation instead of using questionnaire only. Respondents' enquiries can be answered directly by researchers when interview method is used. This can avoid the respondents facing problem when understanding the questions. Any ambiguity can be eliminated immediately. Thus, this approach will reduce the misunderstanding and produce better results of study. Beside the future researcher may allow the respondents to make comments at the end of the survey or answer some open-ended questions.

CONCLUSION

In conclusion, the use of mobile application among tourists in Malaysia has become common and familiar. Most of the tourists who travel both to and within Malaysia will continue to use the mobile application while travelling. The tourists agreed that usage of the mobile application helps them to get more information while travelling and this will simplify the preparation for their trip. They can also contact their family and friends easily even in overseas. The respondents can share their travel life through mobile application such as social media easily. This can be a method for them to show their experience when they are out of the country. Mobile applications are easy to learn and use, the functions of mobile applications are more diversified and may fulfil the needs and wants in different group of tourists. Throughout this study, researchers found that the performance expectancy, effort expectancy and social influence are actually affecting the continuance in mobile applications among tourists in Malaysia.

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