

Conference Paper

What Drives the Adoption of Smart Travel Planning Apps? The Relationship between Experiential Consumption and Mobile App Acceptance

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Abstract

The increased use of the smart travel planning apps as a new tool in hospitality and hotel industry has changed the way travelers make their travel plans. The apps users obtained their preferred tour itinerary and subsequently determine the choice of their tour destinations. Therefore, the objective of this study is to investigate the effects of itinerary plans developed by smart travel planning apps on the choice of tour destination. The underpinning theories were unified theory of acceptance and use of technology model and experiential consumption (UTAUT). The study was conducted in Malaysia and the sample consisted of 307 travelers who are familiar with apps usage. Variance-based-PLS technique was used to analyze and test the hypotheses. The result confirmed that UTAUT dimensions have significant relationship with the intention to use the itinerary. Both hedonic and utilitarian values from personal consumption perspective significantly motivate travelers' behavioral intention to use the smart travel apps. This study contributes to the research on the intention and usage behavior of mobile apps technologies by developing an integrative model to explain the intentions and usage behavior of the tour itinerary.

Keywords: tour planning apps, mobile apps, smart travel app, experiential consumption, tourist behavior, tour itinerary.

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1. Introduction

The mushroom growth and extensive use of smart app is the current trend in many industries and this applies to tourism and hospitality as well [1, 2]. It has turn into part of the travelers' experience, including comfortable hotel stay, attractions and local cuisine. Many studies has relates the use of technology and its impact on the satisfaction by the travelers' overall travel trip [2, 3]. This is due to the integration of mobile app technology has increase the utilitarian and hedonic aspects of the travelers [4]. Furthermore, good deployment of mobile apps in the tourism particularly drives customer to provide good feedback and widely distributed via social media [5]. With the increased popularity of

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the mobile device usage, tourism industry is on the verge in incorporating new mobile apps in its various operations.

Many travel assisted tools and services are available in mobile app platform such as GooglePlay and AppleStore. These include hotel selection [6], restaurant [7] and airline ticket [8]. Likewise, apps used for organizing and planning the trip for the travelers are gaining popularity among the app users [9]. Using these apps has become the current trend, i.e. Sygic Travel, Malaysia Travel App, Vidi, Triplt, TripTrip, TripHobo, Google Trips. Among these new features, this kind of apps is designing the personalised travel itinerary. It requires the travel confirmation information such as flight, hotel, restaurant and car rental, are collected and automatically create a master itinerary [6]. In addition, these apps provide additional features, i.e. maps to allow users to view a map of the local area and the airport terminal. Thus, it highly personalized and useful for travel purpose. The ever increasing usage of smart travel app on mobile phones by travelers who are taking advantage of the enhanced functionalities provided by the apps. The apps are useful and delivered convenience to the travelers. Travel itinerary is one of these highly sought artefact designed by the smart travel app. Often, travel destination choice were decided based on the itinerary planned.

Despite the fact that consumers are enjoying the benefits of the travel planning apps as a whole, itinerary as the artefact of the apps was not investigated and missing in the literature. The extant literature focus was more the psychological effect i.e. adoption [10], satisfaction level [11], and functionalities [6]. The benefits of enjoying the information and guidance provided by itinerary are importance to grasp the full picture of the use of smart travel planning apps. Investigation on traveler's decision making using such travel itinerary warrants the conduct of this study.

The smart travel app is one key mobile technology deployment in the travel and tourism industry. They are using itinerary produced by the mobile apps in making their trips more enjoyable. Therefore, the use of Venkatesh, Morris [12]'s Unified Theory of Acceptance and Use of Technology (UTAUT) as the theoretical lenses is suitable owing to its strong discourse power in predicting adoption of mobile apps in tourism [13, 14].

Although UTAUT has been used extensively in the realm of mobile technology, it lacked the antecedents needed in explaining the factors in igniting the use the apps. On the contrary, personal consumption theory [15] has the power in unlocking the missing antecedents needed to paint the full picture of the itinerary plan. Therefore, this study applied personal consumption theory in explaining the motivational elements in investigating the use of itinerary with UTAUT theory. The aim of this study is to

investigate the effect of both task-related and hedonic motivational values in influencing the usage of smart travel app.

The antecedents for UTAUT variables can further understanding the motivation behind in using mobile apps. However, the need to understand the motivational factors leading the travelers to use the artifact was not investigated yet. Hence, there is a need to investigate the role of motivational factors as antecedents for UTAUT theory in the use of smart travel app. This study contributed and uncovered the existing literature gap in the use of smart travel planning technology. First, we provided new dimensions in the use of the mobile tourism apps with an integrative theoretical framework. This new integrative model extends theory of (UTAUT) with experiential consumption theory. Second, the empirical results deduced that the role of hedonic and utilitarian values as antecedent to the technology usage dimensions of the smart travel apps.

2. Literature Review

2.1. Intention use of travel itinerary

One of the major benefit of using smart travel plan apps is the creation of personalised travel itinerary. Within the apps usage environment, users being assisted by the travel-related information from the apps. The artifact i.e. travel itinerary contains useful information for the convenience of the app users.

By doing this, it provided the travel related information on the itinerary, specifically the information about the tour destination. Apps are furnishing useful information, i.e. tour destination, hotel choice, restaurant selection and attractions of the destination. The choice of travel destination is affectively and cognitively depend on how relevant is the travel plan [16]. Bekk, Spörrle [17] concluded that tourists require concrete information in helping them to decide the tour destination. With the personalized itinerary provided, it makes the travel plan more efficient. Therefore, the use of technology adoption models are needed to explain the usage behavior. In this study, we developed an integrative framework in combining UTAUT and personal consumption theories to explain the motivations leading to the use of itinerary of smart travel apps. The theoretical framework is depicted in Figure 1.

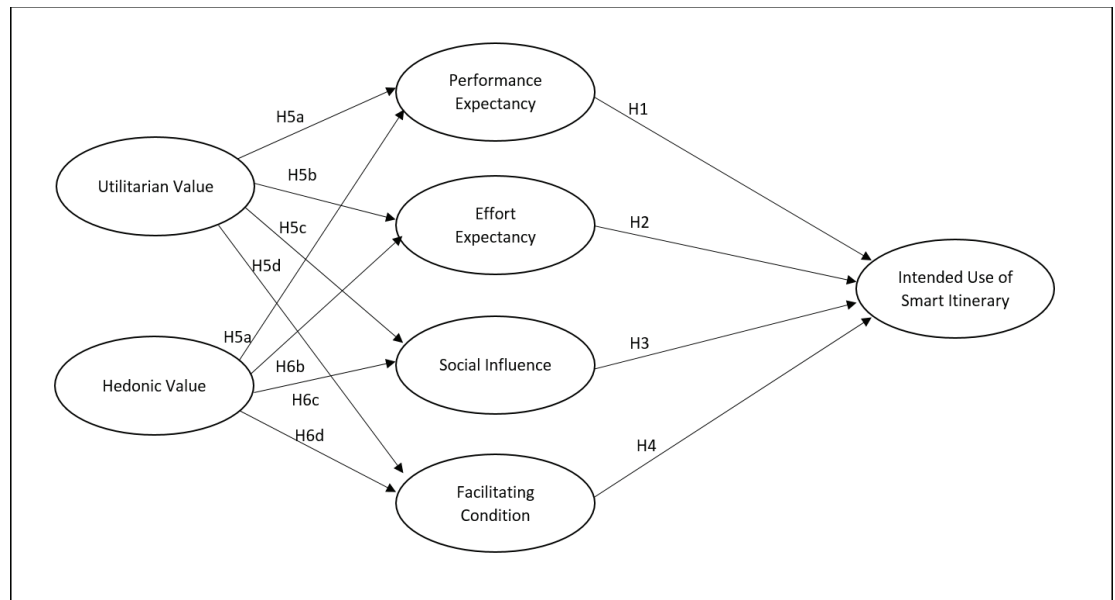


Figure 1: The conceptual framework.

2.2. Unified Theory of Acceptance and Use of Technology (UTAUT)

The shift to mobile phone environment for travel-related tasks led to a number of empirical researches aimed to better understanding of consumer adoption of apps. Venkatesh, Morris [12] developed Unified Theory of Acceptance and Use of Technology (UTAUT) from the functional usage perspective. UTAUT have been implemented to predict private user's acceptance on online transaction [18], to explain technology adoption and acceptance in organizational context [19], and to predict consumers when ordering food and beverages [20]. UTAUT provides a comprehensive model in combining both functional and adoption perspective.

The UTAUT aims to explain user intentions to use a technology tool and subsequent usage behavior, which examines a different view from other adoption models. Specifically, the UTAUT is based on system perceptions in linking the attitudinal and behavior [21]. We adopted this theory due to its strong predictive power from functional perspective. Many studies relating to apps usage had use UTAUT as the underlying theoretical base such as airline ticket purchase [22], tour mapping apps [23] and mobile payment in hotel [24]. In this study, the UTAUT model was adapted and consisting of performance expectancy, effort expectancy, social influence and facilitating condition.

2.3. Performance expectancy

Performance expectancy is defined as the degree of the use of technology applications in assisting the users to achieve their tasks [12]. Based on this definition, performance expectancy refers to the task completed with a personalized trip itinerary. Moreover, smart travel planning apps are producing itineraries that help the app users in planning their trips. Prior studies have confirmed that people would use the technology in order to learn about the tour destination [25]. In addition, the linkage between expected benefits of using the apps was significantly influence the adoption of the apps. For example, room booked by the hotel reservation app [26] and hotel proprietary app [6]. In this study, the travelers can expect to plan their trip after using the itinerary generated by smart travel planning app. We expect this could motivate travelers to keep on using this app. Thus, we hypothesize the following:

H1: Performance expectancy is positively influence the intention to use the itinerary from the smart travel app.

2.4. Effort expectancy

The users attained effort expectancy when they believed the use of the system is effortless [12]. In general, apps are designed to make it simple and easy to use for users. The more effort needed to devote to an app, the less likely they will continue to use it over time. The easiness to learn is often the major factor to attract users to a particular app [27]. Most of the existing studies have investigated the effect of effort expectancy on the intention to use apps. For example, Hew, Lee [28] conducted study on mobile applications and confirmed the direct linkage between effort expectancy and mobile application adoption. Another study in m-payments by Teo, Tan [29] demonstrated that effort expectancy have profound effect on the continuance usage of the app. However, Okumus et al. (2018) indicated that effort expectancy of using smartphone apps was not significant predictor of intention to use smartphone diet apps. For this reason, we would like to investigate further on these inconsistent findings on the use of smart travel planning app. In our study, itinerary plan was generated automatically by the app after confirmation information was input into the app without much effort, such as destination attraction and day tours was directly copied into the apps. Hence, this study posits the following hypothesis statement:

H2: Effort expectancy is positively influence the intention to use the itinerary from the smart travel app.

2.5. Social influence

Social influence plays a key role in motivating one to perform tasks their peer think he/she should carry out [30]. In general, human tend to internalize these peer influence in molding the behavior [12]. This kind of social support provides trust, respect, loyalty, common experience and shared social value in building the strong bond [31]. Social influence is one key drivers for behavioral intention of using new technology in tourism. For instance, Book, Tanford [32] examined the high level of support from influential people in one's social network could influenced travelers' attitude and behaviors. The extant studies showed that social influence have direct influence on the acceptance of apps significantly [33, 34]. There is lack of study on the artifacts produced by the app. Hence, it is necessary to investigate the following hypothesis:

H3: Social influence is positively influence the intention to use the itinerary from the smart travel app.

2.6. Facilitating Condition

Facilitating condition refers as the users' perception on the level of both operational and technological supports provided by the systems [12]. Facilitating conditions in using smart apps are the required technology resources i.e. the memory of the mobile device, speed of the internet and the proficiency of the users in using the app. For this reason, the need of facilitating conditions had confirmed in the mobile apps studies [35]. Existing studies validated the direct path between facilitating condition and intention to use app, such as mobile wallets [36]. However, our study focus on the artifact produced, i.e. itinerary instead of the satisfaction over the apps. The smart travel app requires the users to share information from other applications. For example, the users need to transfer related confirmed information such as flight and hotel to the app. Therefore, we formulate the following hypothesis:

H4: Facilitating condition positively influences tourists' behavioral intention to adopt the itinerary from the smart travel app.

2.7. Experiential consumption theory

Holbrook and Hirschman [15]'s experiential consumption theory was referenced in our study. This study proposed that consumption experience is determined by consumption values derived from the judgments and evaluation of the consumers. It stated that consumers would visit a retail shop if they could emotionally attached and gained the utilitarian and hedonic values. The dual characterization of experiential consumption consists of utilitarian and hedonic value. The use of mobile app is motivated by both utilitarian and hedonic value. Evidently, utilitarian and hedonic value are validated as predictor in users' continued usage intentions, such as mobile hotel booking [37] and fashion garment app [38].

The dual dimensions of experiential consumption aligned with our perspective on the use of travel planning apps as an interactive travel assisted tool. Similarly, motivational factors were needed and explain consumers engagement in social commerce [39]. In our study, app users need to accomplish the task and enjoy the benefits of the itinerary generated.

2.8. Utilitarian value

Hirschman and Holbrook [40] defined utilitarian value as task-centered, rational and goal oriented value needed in accomplishing the tasks. These tasks include obtaining product information, product selection, payment and other functions. Utilitarian value is motivating the users to use these functions [41]. The objective of using the apps is often goal-oriented and users expect the app to perform the required task efficiently. For example, the expected performance of airline booking app is achieved when the air tickets were booked [8]. This is because customers viewed utilitarian value critical in influencing them to buy what they expected to have [22]. In our study, the completion of personalized itinerary by the apps is directly causing the attainment of user satisfaction.

In general, we would perform a given task when we are convinced that it is permissible and acceptable by our own community. This is often true when it comes to app usage because we would use an app after the recommendations from their close friends and relatives. Interestingly, app users would share and recommend useful apps to friends when they are satisfied with the concerned apps. On the other hand, people also would consult friends or expert users of the apps. However, the app can be only useful if the app recommended is the task needed by the users.

We could accomplish a task smoothly if we have the required resource and ability. Similarly, app users would successfully perform a task with given sufficient degree of control over the environment. In order to use apps, the Internet connectivity and reliability play important role in enhancing the utilitarian value. Therefore, facilitating conditions are required to make full use of the apps' functionalities effectively. The users need to have the complete itinerary based on their travel requirements. Hence, we posit the following hypotheses:

H5a: Utilitarian value has positive effect on the performance expectancy of the smart travel app. H5a: Utilitarian value has positive effect on the effort expectancy of the smart travel app.

H5c: Utilitarian value has positive effect on the social influence of the smart travel app.

H5d: Utilitarian value has positive effect on the facilitating conditions of the smart travel app.

2.9. Hedonic value

Hedonic value refers to the fun feeling and enjoyment obtained during the shopping process [40]. In the existing literature, a number studies validated the role of hedonic motivation in app usage [42, 43]. For example, Tamilmani, Rana [44] highlighted that hedonic motivation is the most critical determinants for behavioral outcome, due to the emotional elements and the nature of the predominant cognitive aspect.

In this study, the intention to use the travel smart app for hedonic value is more likely to be intrinsic motivation and lead to high performance expectancy. As a result, the hedonic value expected to enhance the performance of the travel apps, because the travelers are expected provided with useful information in relation to their travel intention. Within app usage context, the easy to learn and shorter time taken to use an app is one of the key determinants for the high adoption of the apps [27]. For example, the study conducted by [45], less effort and time consumed to use smart app for booking hotel reservation directly contributed to the enjoyment gained.

Consumers are more likely to seek their friends' opinions before they made the purchase [46]. The influence from friends who had the experience in using a particular app can motivate the adoption of the app. Hedonic value encompasses the enjoyment and good feeling towards the consumption of the products bought. Similarly, the past good experience obtained from the app often entice the users to use next release or

version of the app. App users expect the facilitating conditions would be enhanced with the introduction of new app. Therefore, the hedonic value is expected to provide the sufficiency of the facilitating conditions. Therefore, we developed the following hypothesis. H6a: Hedonic value has positive effect on the performance expectancy of the smart travel app. H6b: Hedonic value has positive effect on the effort expectancy of the smart travel app.

H6c: Hedonic value has positive effect on the social influence of the smart travel app.

H6d: Hedonic value has positive effect on the facilitating conditions of the smart travel app.

3. Research Methodology

3.1. Questionnaire development

UTAUT constructs consisting of four dimensions, i.e. performance expectancy, effort expectancy, social influence and facilitating conditions, were adapted from [20, 47]. The five items to measure intention to use were adapted from [48, 49]. Hedonic and utilitarian value were adapted from [50, 51]. All items were rated using 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree).

3.2. Data collection process

In this study, respondents are travelers who have used apps as a platform for a travel destination for at least one time. The questionnaires were collected through a self-administered online questionnaire developed using GoogleForm and a link to the survey was developed. The survey was distributed via several travel agents who forwarded the link to their customers. A total of 500 travelers were participated in this study, and 307 completed questionnaires were used for further analysis.

4. Data Analysis and Results

4.1. Common method variance

Common method variance issue occurs when self-reported questionnaire are used to collect data from the same resource [52]. Most of scholars suggested testing Harman's single factor for analyzing common method variance [53]. After running the test, the

results showed that the 8-factor explained 65% of the variance, with 35% of the variance explained by the first factor and indicating the common method variance is not an issue. In order to justify the research objectives, the Smart-PLS 3.0 software was performed using variance-based structural equation modelling approach. Two steps was conducted, i.e. measurement model and structural model.

4.2. Measurement Model

Measurement model was constructed to assess the convergent validity using the factor loadings, average variance extracted (AVE), and composite reliability (CR). Table 1 shows that all factor loadings (0.551- 0.916), AVE (0.620-0.758), and CR (0.888-0.926) exceeding the cut-off values 0.50 [53]. Two approaches was developed to confirm the discriminant validity: the Fornell-Larcker's procedure [54] and the Heterotrait-Monotrait (HTMT) technique [55]. As shown in Table 2, the results of Fornell & Lorcker's assessment indicating that the square root of AVE between each pair of factors is greater than the correlation estimated between factors, thus demonstrate adequate discriminant validity. Table 3 shows the Heterotrait-Monotrait (HTMT) ratio of correlations explaining all values of HTM are lower than the recommended level of 0.90, thus indicating the satisfactory discriminant validity.

4.3. Structural Model

In order to test the hypotheses, Smart-PLS 3.0 and a bootstrapping procedure with 5000 subsamples was performed. In the structural model analysis, Hair et al. 2018 suggested for reporting path coefficient (β), coefficient of determination (R^2), and effect size (f^2). Table 3 shows the result of hypothesis testing for each hypothesis. The relationship between hedonic and utilitarian motives have significant relationship with performance expectancy, effort expectancy, social influence, and facilitating conditions. The relationship between facilitating and intentions to use is not significance. Interestingly, social influence, effort expectance and performance expectancy have significant relationship with intention to use apps. More importantly, PE, EE, SI & FC explains 54.4% ($R^2 = 0.544$) of the variance in intention to use apps when booking itinerary. Meanwhile, HV and UV explains PE (43%), EE (37%), SI (51%), and FC (40%). Table 3 shows the effect size for all independent variables to dependent variables. PE, EE, SI & FC had small effect (0.2) on

TABLE 1: Construct validity.

Constructs	Items	Loadings	CR	AVE
Utilitarian value	UV1	0.668	0.898	0.640
	UV2	0.830		
	UV3	0.851		
	UV4	0.830		
	UV5	0.806		
Hedonic value	HV1	0.842	0.926	0.758
	HV2	0.893		
	HV3	0.860		
	HV4	0.887		
Effort expectancy	EE1	0.845	0.905	0.705
	EE2	0.895		
	EE3	0.737		
	EE4	0.872		
Facilitating	FC1	0.796	0.904	0.701
	FC2	0.854		
	FC3	0.876		
	FC4	0.822		
Performance expectancy	PE1	0.845	0.919	0.739
	PE2	0.868		
	PE3	0.879		
	PE4	0.847		
Social influence	SI1	0.816	0.899	0.691
	SI2	0.846		
	SI3	0.860		
	SI4	0.802		
Intentions to use	BI1	0.551	0.888	0.620
	BI2	0.806		
	BI3	0.883		
	BI4	0.916		
	BI5	0.726		

intentions to use Apps. Meanwhile HV and UV had medium effect size on PE, EE, SI & FC.

TABLE 2: Discriminant validity.

Constructs	1	2	3	4	5	6	7
Fornell & Larcker							
1. Intention to use	0.787						
2. Effort expectancy	0.596	0.840					
3. Facilitating	0.629	0.645	0.837				
4. Hedonic motive	0.614	0.588	0.612	0.871			
5. Performance expectancy	0.562	0.691	0.556	0.576	0.860		
6. Social influence	0.710	0.679	0.804	0.694	0.591	0.831	
7. Utilitarian motive	0.690	0.532	0.548	0.689	0.627	0.600	0.800
Heterotrait-Monotrait Ratio (HTMT)							
1. Intention to use							
2. Effort expectancy	0.691						
3. Facilitating	0.722	0.748					
4. Hedonic motive	0.720	0.656	0.691				
5. Performance expectancy	0.646	0.784	0.632	0.648			
6. Social influence	0.820	0.792	0.939	0.790	0.679		
7. Utilitarian motive	0.834	0.606	0.614	0.784	0.716	0.677	

TABLE 3: Summary of hypothesis tests.

Hypothesis	Beta	Std. Error	t-value	p-value	R ²	f ²	Decision
H1. PE -> Intentions	0.158	0.063	2.508	0.006	0.544	0.027	Supported
H2. EE -> Intentions	0.109	0.069	1.584	0.057	0.544	0.010	Supported
H3. SI -> Intentions	0.464	0.068	6.803	0.000	0.544	0.144	Supported
H4. FC -> Intention	0.097	0.072	1.356	0.088	0.544	0.007	Not supported
H5a. UV -> PE	0.438	0.064	6.899	0.000	0.433	0.178	Supported
H5b. UV -> EE	0.242	0.071	3.418	0.000	0.377	0.050	Supported
H5c. UV -> SI	0.231	0.068	3.402	0.000	0.510	0.057	Supported
H5d. UV -> FC	0.240	0.073	3.278	0.001	0.405	0.051	Supported
H6a. HV -> PE	0.274	0.070	3.900	0.000	0.433	0.070	Supported
H6b. HV -> EE	0.421	0.078	5.406	0.000	0.377	0.149	Supported
H6c. HV -> SI	0.535	0.058	9.183	0.000	0.510	0.307	Supported
H6d. HV -> FC	0.446	0.077	5.831	0.000	0.405	0.176	Supported

Notes: Significant at level 5%

5. Conclusion

5.1. Theoretical contribution

This study examined the factors that influence the use of itinerary plan generated by the smart travel app. The two underpinning theories were UTAUT and experiential consumption theories. We extended and introduced the experiential consumption values as the precursor in using the itinerary generated by the travel apps. The main theoretical contribution is the positioning of consumption values as antecedents of adoption factors in creating personalized travel itinerary. In addition, this study also validate the UTAUT dimensions serve as the linkage between the consumption values and adoption of the travel itinerary.

This study confirmed that hedonic and utilitarian values were the main contributors in influencing the consumers' decision to use the apps for travel planning. These findings are consistent with other technology adoptions studies [37, 56]. Specifically, it also aligned with studies of motivations for the use of mobile phones in the past decade that highlighted the need of entertainment and utility elements in mobile technology [57, 58]. Hence, it is clear that both values are contributors in driving the acceptance of travel apps. Between them, utilitarian value was validated as more critical as compared to hedonic value. After all, use of mobile travel app is task oriented and users obtained the required travel services [57].

The findings showed that performance expectancy, effort expectancy and social influence were significant in leading to the intended use of the personalized itinerary after the users provided their requirements. The only insignificant hypothesis was the influence of facilitating conditions on the intended behaviour. Facilitating conditions in mobile app environment refers to the internet connectivity, mobile device functionality and other technology features. However, the effect of facilitating conditions in smart phone era are not critical anymore. This is due to the higher reliability of internet connectivity that available in everywhere we go. In addition, app functions and interface has been further improve in term of user-friendliness. Most mobile users can learn a new app in a glimpse of seconds. Hence, mobile users would not feel that the importance of facilitating conditions as compare to other older form of technologies [34]. As the complexity decreases, the adoption is likely to increase.

In a nutshell, this study combined motivation values and UTAUT theory for the usage of smart apps. We validated the importance of hedonic and utilitarian values in facilitating

the adoption of itinerary produced by the apps concerned. Hence, this integrative model offers an explanation on the new development of smart tourism apps. With more travellers opt for the use of apps, this theoretical framework provided an explanation on its adoption for better travel planning.

5.2. Managerial contribution

The usefulness of smart travel apps could not be underestimated as it has drawn much attention from the travellers that depend on it for travel-related decisions. Both the utilitarian and hedonic values are motivating the use of itinerary plan in making travel easier and enjoyable. Hence, travel operators could transfer the insight of this research in creating travel plan more compelling to the users. For utilitarian purpose, travel operators should emphasize a variety of practical functionalities to increase the usage rate. Travel itinerary should comprise not just the destination attraction, but also include other useful information such as popular local eateries, transportation routes, and local souvenir and cultural craftwork. Therefore, once the itinerary was designed by the apps, it should also provide the opportunity for the travel operators to engage with the customers. By doing so, other required services could be provided by the travel operators. On the other hand, hedonic values were also highly anticipated by the app users. In this case, personalised itinerary was designed solely for the particular users only. The users cultivate the sentiments of ownership towards the artefact they obtained from the apps. It should prompt the travel operators to gain personal information and provide more personalized services.

5.3. Future direction and limitations

It is necessarily to discuss the limitations of our study. The current study was based on data collected via cross sectional design and hence it could be limited in term of causation effect. Although the developed hypotheses were tested with the use of SEM analysis, longitudinal study could have improve the generalisability. The other weakness was the sample of general Malaysian travel app users. Since Malaysian is a multi-racial nation, a better approach is to use stratified sampling to investigate the behaviour of different groupings and cultures.

The current study emphasized on the intention to use the itinerary designed by the smart travel apps from the functional and motivational perspectives. It did not evaluate

the service dimension of the use of app. Therefore, customer service for both before and after usage of the apps are important in helping the users to enjoy the apps. Other related variables concerning technology adoption were not examined in our study. These included perceived risk [59], familiarity [60] and trust [61]. Future studies can include these factors and further understand the comprehensiveness of the itinerary of the travel apps.

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Conflict of Interest

The authors have no conflict of interest to declare.

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