Predecessors of mobile technology usage intention in travelling: A study of foreign and domestic visitors in Sri Lanka

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Article Information

Abstract

Information and communication technologies have been playing a notable role in every industry and sector including tourism during the last decades and, as a sub-sector, the development of mobile technologies during the recent decade has been remarkable. This development has made tremendous changes in tourism sector as it has forced to emerge a new tradition of travelling born on mobile devices and technologies. Consequently, many of the travelers are now completely depend on their mobile devises to fulfil their travel requirements. Whilst recognizing the applications of mobile technologies by both tourism service providers and the consumers, this particular study evaluates the factors behind the usage of mobile technologies by the travellers. Taking a quantitative approach, a survey questionnaire was administered to collect data from sample of 150 foreign and domestic tourists visited Anuradhapura sacred city in July 2019. Usefulness, technology experience, and motivation were found to be the main antecedents of travellers' intention to use of mobile technologies in travelling. These findings are helpful in developing user oriented mobile technology applications in travel industry and marketing promotion campaigns.

Introduction[*]

Mobile technology is a technology used for cellular communications and it is vital in many industries including tourism industry. Most of the travelers are now have started to use mobile technologies in fulfilling their travel requirements and, therefore, this particular segment of technology has greatly influenced on tourism and hospitality industry today (Sunio & Schmöcker, 2017). Among the travelling community, the adoption to smart phones has been growing usually in activities such as searching products, booking hotels, trading stocks, finding nearby restaurants, or simply browsing the internet. Moreover, travelers use mobile technology for many reasons including connecting with global travel producers and sellers, information search, quick decision making on accommodation, food, activities, and shopping etc. (Wang, Xiang, & Fesenmaier, 2016). In terms of the reasons and factors that influence the use of mobile technologies and devices in travel, the usefulness, technology support, attitudes, availability of technologies in the particular area, technology experience, and motivation are notable in many studies (Tussyadiah, 2013; Wang, Xiang, & Fesenmaier, 2016). The trend of use of mobile technologies in travelling in Sri Lanka context is worthwhile to study as it can reveal what factors drive the use of mobile technology with the intensity of each of the factor. Consequently, this particular research study investigates the factors behind the intention to use mobile technologies and devices of visitors in Sri Lanka by considering both the domestic and foreign visitors. The findings of this research can be definitely helpful to identify the main factors to consider when improving the use of mobile technologies by travelers.

Literature Review

Mobile technology and tourism

The mobile technology users are increasing every year globally. The numbers of smartphones users also are increasing every year in the world (Kwon, Bae, & Blum, 2013). In year 2014, mobile phone users were more than seven billion in the worldwide and it is increasing continuously (Vassilakaki, Moniarou-Papaconstantinou, & Garoufallou, 2016). Moreover, during the last few years, mobile technology (laptops, tablets, etc.) has changed in terms of technology, network coverage, and the applications. Great development of mobile technology has influenced the hospitality & tourism industry in modern world (Im & Hancer, 2014) and the mobile technology-based services are also growing in the world (Al-Jabri & Sohail 2012). Mobile technology has changed the hospitality industry in many ways. A USA researcher claimed that 40 percent of leisure travelers in the USA use smartphone and 25 percent of smartphone users book their trip by phones and many travelers want to get online all the time before, during, and after the trip (Hjalager and Jensen, 2012). Moreover, the ancillary services such as guiding, providing on the trip food and drinks, shopping also use the mobile technology in relation to the provisions of the services (Peres, Correia, & Moital 2011). By the meantime, the technology and service providing companies have introduced new and innovative products and services to the travel and tourism. Mobile phones facilitate every stage in traveler's behavior from the stage of information search to after-the-visit stage providing a range of features such as helping with driving directions, air travel, lodging, food services marketing and public transportation navigation, information search etc. (Rasinger, Fuchs, & Ho ¨pken, 2007).

Acceptance of mobile technology and the research variables

Technology Acceptance Model (TAM) and subsequent extended models are prominent in the literature of the technology adoption and it have been applied in almost every empirical study with related to the technology adoption and usage (Davis, 1989; Venkatesh, & Davis, 2000). Amongst the number of variables described in these models, this research has selected usefulness,

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attitudes, and intention to examine the technology adoption context of the mobile phone usage in travelling purposes as some of the similar past studies (Nizar & Rahmat, 2018; Kim, 2016). Apart from the concepts extracted from technology acceptance models, some other variables are also were employed namely motivation, technology experience and technology support (Kim et al, 2015). The subsequent sections of this paper describe the main concepts/variables associated with the study.

Usefulness

To understand how the mobile technologies are useful for travelers, it is worthwhile to explore why travelers use mobile technologies for travel related activities. Among the possible reasons, travelers use mobile technologies to see the online comments with regard to the products and services that they intend to buy or try (Wang et al, 2016). At the same time, travelers use mobile devices to search information through social media (Gretzel, 2006; Wang et al, 2016). Moreover, online information search, posting comments, photos and videos on social media and traveler sites, doing online transactions, booking hotels and airlines, dealing with online travel agencies, etc. are some of the uses of mobile technologies in travelling (Loureiro, 2017; Xiang & Gretzel, 2010). In this connection, the mobile technologies are useful for travelers to plan the trip in many ways such as checking airfares and booking of air tickets, searching and booking accommodations, rent cars, searching and visiting restaurants, knowing of events, knowing weather, doing currency conversion, getting maps, accessing to travel news, and reading travel related articles etc. (Bernstein & Susan, 1999).

Attitudes

With the depiction of Davis (1989) and Venkatesh, & Davis (2000), the attitude to use technology is concerned with the user's evaluation of the desirability of using a particular technological application. With this conception, the attitude towards the mobile technologies by the travelers also can have an association or influence on the usage intention of mobile technologies with regard to their travelling purposes. In terms of the features of mobile devices and services, screen size and sensitive keyboards affect user's attitude and behavior (Im & Hancer, 2014). In terms of advertising, consumers have positive attitudes to words various mobile activities such as: advertising, media, and social media (Ghazali et al., 2018).

Technology Experience

The experience on using technologies can have an effect on the usage intention of mobile technologies while travelling. According to Katsura & Sheldon (2008) and Coussement & Teague (2013), mobile technology gives more power in their experiences access to information of time and location which eventually ensures a good advantage in using mobile technologies while travelling. Sarker & Wells (2003) also have depicted that the experience with regard to mobile devises and technologies do tremendously effect the actual use of or intention to use mobile technologies in accomplishing travel related requirements like arranging travel trips. Therefore, the user technology experience can be considered as one of the important factors affecting the intention to usage mobile technologies by travelers.

Technical Support

To get the advantage of mobile technologies, the devices must be connected. Many countries and travel destinations today have paid their fullest attention in increasing the connectivity coverage for mobile devices to fulfill one of the main requirements of modern travelers. In terms of travel and tourism, travel guides can operate by downloading data to a phone or to another portable device and share that information with travelers and others can look much information by connecting to the internet (Shrode, 2012). The technology and network coverage are usually available in major population and commerce centers. However, the areas located in remote and rural regions get lesser coverage compared to urban areas and, as a result, prescribed areas get less benefits in terms of giving travelers the required mobile coverage (Rahaman, Tootoonchi, & Monahan, 2011).

Motivation

It is widely accepted that motivation as a predictor of human behavior toward particular phenomenon (McClelland, 1987). Given that, it is important to use motivation as a construct in examining the intention towards the use of mobile technology by the travelers. People have social perceptions with technology since the early 1980s (Turkle, 1984). When it comes to the human behaviors and mobile technology, mobile devices are considered the most familiar

technology for people as it supports complex tasks for daily activities, testing of people and the mobile phones can be both positive and negative for people. The tourists can enhance their travelling experiences with mobile devices and technologies at all stages of the trip; pre-trip, on-trip, and post-trip. Moreover, mobile connectivity enables to keep in touch with friends and family when travelling (Merr, 2012) and also to communicate with the tourism and hospitality service providers to get the access to the infrastructure such as self-services check in machines (Pesonen, Komppula, & Riihinen, 2015).
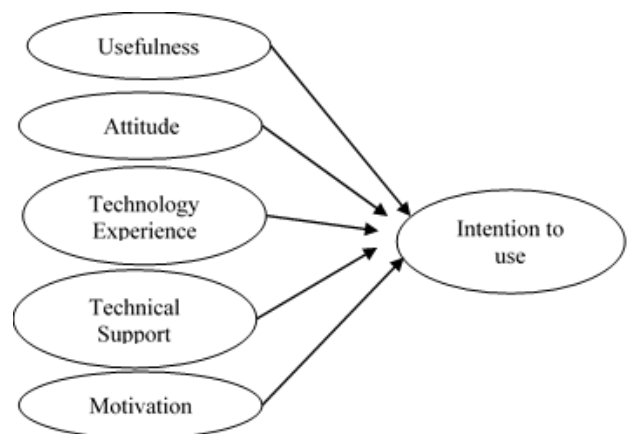
Intention to use

Behavioral intention is extensively used in the human behavior literature to predict the likelihood someone will behave in a particular behavior (Ajzen, 1991). Intention to use mobile technologies is the main dependent variable of this research. Usage intention has been the prominent dependent variable in many technology adoption and usage researches. In terms of technology adoption, intention to use is a measure of the likelihood a person will employ the application (Davis 1981). In line with this definition, the current research also intends to measure the usage intention with regard to use of mobile technologies by travelers as many researchers suggested (Mang, Piper, & Brown, 2016; Peres, Correia, & Moital, 2011).

Conceptual framework and research hypotheses

The literature review outlined above mainly identified the predecessors of usage intention of mobile technologies in travelling. Literature presents extensive evidences for intention to a particular behavior is determined by the attitudes. Apart from that, as the literature review explained, usefulness, technology experience, technical support, and motivation also were identified as the predecessors of intention to use mobile technologies in traveling. Figure 1 shows the conceptual framework of the research.

Figure 1: Research conceptual framework

Depending on the literature review and the conceptual framework, following hypotheses were developed:

H_1; Usefulness has a positive impact on intention to use of mobile technologies by travelers

H_2; Attitude has a positive impact on intention to use of mobile technologies by travelers

H_3; Technology Experience has a positive impact on intention to use of mobile technologies by travelers

H_4; Technical support has a positive impact on intention to use of mobile technologies by travelers

H_5; Motivation has a positive impact on intention to use of mobile technologies by travelers

Methodology

Grounding on the post-positivism philosophical stance of research, this research takes a quantitative approach selecting the survey method to collect data. The cross-sectional research design is applied and the unit of analysis is the individual traveler.

The main independent research constructs are mainly drawn from the past literature and the questionnaire items used to measure the constructs also were developed based on the measures used in past relevant studies. Therefore, the validity of the research instrument is guaranteed.

Both foreign and domestic visitors visiting Sri Lanka were considered as the population of the research and 150 respondents were taken conveniently in to the sample. Data collection was taken place in July 2019 in the Anuradhapura scared city by approaching the visitors while they are hugging around the main attractions of Sri Maha Bodhiya and the Ruwanveli Seya. Moreover, it was managed to represent both domestic and foreign visitors equally in the sample. Descriptive analysis was employed to analyze the sample profile and each of the questionnaire items to determine the degree of ratings. The correlation analysis and regression analysis were the main data analysis techniques used to analyze the data to test the main research hypotheses. The analysis was conducted using the SPSS software.

Data Analysis and Results

Sample profile

The sample was consisted with both domestic and foreign tourist representing 50% of the total sample by each of the category. The main foreign countries represented were France, India, Germany, and Russia. In terms of gender distribution of the sample, there were 94 (62.7%) female respondents and 56 (37.3%) male respondents. With regard to the age distribution, majority (59) of the respondents represented the age group 20-39 representing 39.3% in the sample. The next highest representation was reported for the age group 30-39 and the figures were 42 and 28%. With regard to the types of primary mobile devices, 107 (71.3%) respondents use smart phones and 38 (25.3%) respondents use tablets.

Correlation Analysis

Correlation analysis was carried out to find out the nature and degree of relationship between independent and dependent variables. The independent variables are; usefulness (5 questionnaire items), attitudes (3 questionnaire items), technology experience (3 questionnaire items), technical support (3 questionnaire items), and motivation (6 questionnaire items). The usage intention (3 questionnaire items) is the dependent variable of the research. Before applying the correlation analysis, the Cronbach's Alpha for each of the variable meet the threshold of greater than 0.7 and, therefore, the internal consistency of the variables was confirmed. Table 1 depicts the correlation statistics between variables.

Table 1: Correlation Statistics

Variable	(1)	(2)	(3)	(4)	(5)	(6)
Usefulness (1)	1	.247**	.264**	.247**	.266**	.329**
Attitudes (2)	.247**	1	0.053	0.027	0.081	-0.012
Technology experience (3)	.264**	0.053	1	.428**	.496**	.475**
Technical support (4)	.247**	0.027	.428**	1	.613**	.293**
Motivation (5)	.266**	0.081	.496**	.613**	1	.529**
Intention to use (6)	.329**	-0.012	.475**	.293**	.529**	1

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

According to the results, many variable relationships are found to be positive, strong, and significant. Notably, when the independent-dependent relationships are examined, motivation and intention to use shows the strongest relationship. Afterwards, the independent variables technology experience, usefulness, technical support show positive relationships with the intention to use of mobile technologies by travelers. Based on the results of correlation analysis, it can be then understood that all the independent variables except attitudes show a significant positive relationship with the dependent variable of intention to use.

Multiple regression analysis

Multiple regression analysis was conducted to see the degree of impact of each of the independent variables on dependent variable. Before looking at the individual beta scores for each of the independent variables, the model fit indices were assessed. A significant ANOVA output was produced confirming that the independent variables collectively predict the dependent variable with a good degree of prediction. The R^2 value of 0.386 claimed that the

independent variables can explain approximately 39% variance of the dependent variable. Table 2 shows the regressions values of independent variables on dependent variable of intention to use.

Table 2: Regression statistics

Model	Unstandardized Coefficients		t	Sig.	Collinearity Statistics	
	β	Std. Error			Tolerance	VIF
(Constant)	1.209	0.375	3.224	0.002		
Usefulness	0.223	0.078	2.856	0.005	0.849	1.178
Attitudes	-0.058	0.036	-1.6	0.112	0.936	1.069
Technology experience	0.287	0.082	3.504	0.001	0.715	1.399
Technical support	-0.133	0.083	-1.6	0.111	0.598	1.674
Motivation	0.449	0.091	4.918	0.000	0.551	1.816

According to the results, three independent variables have a positive and significant impact on dependent variable. Out of that, the highest beta value was owned by the motivation and it depicts one unit of change in motivation can result 0.449 of change in the intention of use of mobile technologies. Likewise, technology experience and usefulness also show that they have significant impacts on the intention to use of mobile technologies. The multi-collinearity issues are not evident as the tolerance values are greater than 0.2 and values of VIF are reported less than 2.

Testing of hypotheses

Both the regression and correlation analysis results with respect to the research hypotheses are summarized in table 3. According to the table 3, the hypotheses number 1, 3, and 5 can be accepted. To explain further, usefulness, technology experience, and motivation have a significant positive impact on the intention to use mobile technology. Rest of the two variables do not show a significant impact on the dependent variable. However, technical support has a stronger link with the intention to use compared to attitude. Importantly, attitude shows no significant impact intention to use and no relationship between intention to use. This is quite a contradiction with technology adoption theories. However, according to the results of this research, it can be concluded that the external forces like contextual factors do have more impact on use of mobile technologies than internal oriented factors like attitudes.

Table 3: Summary results of correlation and regression

Research hypotheses	Correlation Results	Regression Results
H₁; Usefulness has a positive impact on intention to use of mobile technologies by travelers	Supported	Supported
H₂; Attitude has a positive impact on intention to use of mobile technologies by travelers	Not supported	Not supported
H₃; Technology Experience has a positive impact on intention to use of mobile technologies by travelers	Supported	Supported
H₄; Technical support has a positive impact on intention to use of mobile technologies by travelers	Supported	Not supported
H₅; Motivation has a positive impact on intention to use of mobile technologies by travelers	Supported	Supported

Discussions and Conclusions

The main purpose of this research was to test the degree of impact of influencing factors on use of mobile technology by visitors. It is clear that the modern traveler uses mobile technologies as a means to fulfil their travelling requirements. The research findings also have proved that trend clearly. Therefore, the association between traveler and the technology cannot be overlooked by any party engaging in tourism related businesses.

Usefulness and adoption are always strongly associated. Loureiru (2017) postulated this relationship with regard to traveler use of mobile technologies, and therefore, consistent with current research findings. At the same time, the notion of the positive and significant impact of motivation on intention to use of mobile technologies is also supported by Merr (2012). Moreover,

technology support also has been found to be one of the main determinants of travelers' use of mobile technologies (Coussement & Teague, 2013; Sarker & Wells, 2013).

This research study has both theoretical and managerial implications. The conceptual framework, which was empirically tested, comprised with both the technology adoption factors and the mobile technology related factors. That combination of factors can be used in subsequent research with some contextual improvement and additions. The managerial implications are even more important of this type of research findings. The tourism practitioners will use the findings to address the information requirement of the travelers through the facilities of mobile phones. The marketing practitioners in the travel and tourism industry would utilize the findings of this research in marketing promotion and segmentation purposes aligning with the company's marketing strategy. Furthermore, the mobile technology developers can come out with novel and innovative ideas with regard to fulfillment of travelers' requirements.

Overall, the travel industry in future will not exist without technological platforms and, therefore, the parties involving in the business should always formulate and implement strategies to facilitate the requirement of the traveler by incorporating the technology related features.

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