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觀光業的行動行銷：行動應用程式之使用行為
對消費者觀光造訪意圖之影響

MOBILE MARKETING IN TOURISM: ADOPTION OF
CUSTOMERS ON MOBILE APPLICATION FOR TOURISM
DESTINATION VISITING

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Abstract

Technology is developing rapidly, which introduces the smartness to all communities and organizations. In recent year, although mobile marketing has produced an interest between academics and practitioners, Short Message Services (SMS) and Multimedia Message Services (MMS) now are ineffective when most of mobile users have little interested in. To take advantages from the development of smartphone for purpose introducing an efficient marketing technique for tourism industry, this study demonstrates how customers adopt mobile tourism application. Afterward, destinations through exploring tourism applications in destination and addressing both opportunities and challenges it possessed, and study examines whether the application adoption of customers would affect positively to their intention to visit tourism destinations. This study combines Technology Acceptance Model (TAM) and Stimulate-Organism-Respond (SOR) theory as the foundation to address the consumers' adoption of mobile application. The interaction effects of E-servicescape and Word-of-mouth on the impact of online environment stimuli to inner organism are also discussed in this study. It also concluded some of the implications of the findings on theory and practice,

which can provide some ideas for tourism marketers and mobile application designers, and travel agencies.

Keywords: Mobile Application Adoption, Tourism Marketing, TAM, E-Service Scape And Word of Mouth



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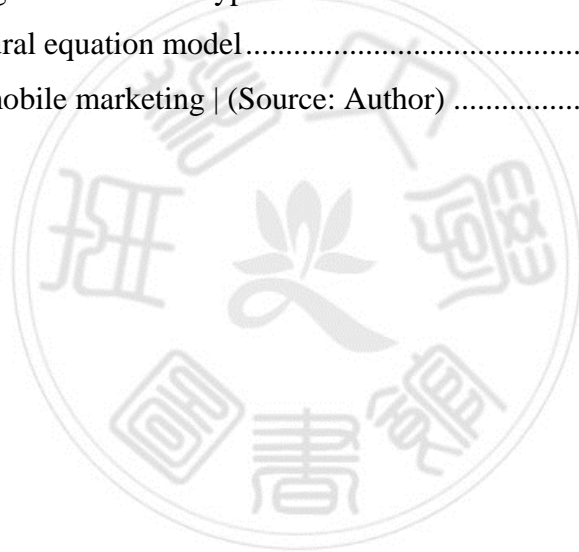
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CHAPTER ONE

INTRODUCTION

Nowadays, Information Technology (IT) has been growing rapidly for fifteen years. It has not only brought many advantages for people in every aspects of life, the development of IT also challenges users' ability to adapt new technology. This challenge also was indicated as Digital Darwinism Era by Brian Solis (2011). He indicated that the technology developed strongly which was changing quickly which evolution of customers' behaviour could not adopt. In particular, this development affects every aspects of society, especially in receiving information. Because of IT development, there are many methods to receive information in both active and passive ways, which affects the most to marketing function (Singh & Krishnamurthy, 2005). Along with the growing power of information technology, mobile technology provides new potential technique for marketing function, especially in tourism industry.

1.1 Research Background and Research Motivation

1.1.1 Information Technology and Tourism Industry

When Information Technology – its development has grown faster than the other – and Tourism Industry – the fastest growing industry (Sheldon, 2001) – combine, it will open a new channel for communication and a distribution for suppliers as new travel services, product (Castaneda et al., 2007). With the help of Internet, travelers do not only easily search information of tourism field, they also can interact each other by e-communication or gaining suppliers' help quickly, which give a growth to global connectivity. The relationship among tourism and Information technologies now is becoming the pillar which facilitates tourism (Sheldon, 2001). It is clear that, there is unlimited possibility in tourism when the synergy combined with technology on the mobile devices.

In general, the impact of information explosion through IT development is huge on tourism sector. It can be seen that communication and IT can be defined as the combination between electronic innovation and communication technology, which is used for “*the acquisition, processing, analysis, storage, retrieval, dissemination, and application of information*” (Buhalis, 2003). With this being said ICTs effect to tourism is immense. That makes it also possible for the travelers and general public to interact with the companies and

their partners (Buhalis, 2003). In particular, Internet affects to tourism industry can be seen through the marketing perspective. To market travelling facilities in the Internet is not only inevitable in today's world but also vital to the tourism business in general. For tourism business, Internet is fundamental source to seek information about travelling (Egger & Buhalis, 2008).

Looking at the consumers point of view, planning a trip consist of efficient, accurate and timely information flows, that link between the travel service provider and the consumer. Between those two it is inevitable to have the marketers who will get the right people into the right places. The use of Information Technologies to market tourism is making it happen seamlessly when there are no issues on transmitting the information in time or the links breaking down and working incorrectly. Marketing information in this sector is also highly intangible because of the fact that the consumers are not able to see, touch or feel a purchased trip in advance. That is why they need detailed information of the destination, service or product.

New technological developments occur almost every day but also the demand for this is growing. Users and buyers are more involved in the making of the products. There are many devices today which are being used by consumers from daily basis and as the web content is available on and offline. Users are starting to expect feedback from the tourism industry '24/7' where the time zones have no limits whatsoever. Internet changed the perception of time and place what means for tourism business new strategic models in marketing and new methods to the field in general (Buhalis & Costa, 2006).

1.1.2 Mobile Marketing for Tourism.

Because of mobile's inherent characteristics, it is constantly concerned becoming an attractive marketing area. Mobile marketing was defined "A set of practices that enables organizations to communicate and engage with their audience in an interactive and relevant manner through any mobile device or network" (Mobile Marketing Association, 2008). In recent years, besides development of mobile technology, mobile phone has a rapid proliferation, thus, it becomes a potential technique for marketers (Varnali & Toker, 2010). Berthon and Zinkhan (2002) indicated that technical benefit of mobile phone presenting a new marketing environment where business should join in.

Due to the development of e-commerce field, marketing is changing over and over, especially in marketing trends and technique. Global businesses now apply new technology

tools for their marketing on internet based automatic system as website, social network or mobile application. In fact, mobile advertising captured \$30.45 billion during 2015. It will increase in 2016 to \$42.01 billion, and is predicted to reach more \$23 billion during next 3 years (eMarketer, 2015).

	2014	2015	2016	2017	2018	2019
Display	\$9.65	\$15.55	\$21.58	\$26.21	\$29.83	\$33.70
—Banners, rich media, sponsorships and other*	\$8.11	\$12.77	\$17.50	\$21.02	\$23.85	\$26.89
—Video	\$1.54	\$2.78	\$4.08	\$5.19	\$5.98	\$6.82
Search	\$8.72	\$13.62	\$18.54	\$22.18	\$25.11	\$28.25
SMS/MMS/P2P messaging	\$0.24	\$0.26	\$0.27	\$0.26	\$0.24	\$0.23
Other (classifieds, email, lead gen)	\$0.55	\$1.02	\$1.63	\$2.18	\$2.77	\$3.30
Total	\$19.15	\$30.45	\$42.01	\$50.84	\$57.95	\$65.49

*Note: ad spending on tablets is included; numbers may not add up to total due to rounding; *includes ads such as Facebook's News Feed Ads and Twitter's Promoted Tweets*
Source: eMarketer, Sep 2015

Figure 1-1 Mobile Advertise Spending

Mainly, tourism always is an information oriented (Sheldon, 1997) which is prompt and sensible in applying new technology communication and digital channel, recent tourism industry requires information technologies. Prior studies proved that modern tourists required higher and higher quality in products, services, especially in information. Mobile now is becoming significant role for tourism, although many businesses in this field are still spending much money day by day for advertising on traditional information technologies (e.g. television or radio). There is no denying that mobile devices are not only provides a method for suppliers to sell their products anytime, it also is a convenient channel for travelers to communicate directly with sellers, or request relevant information anytime and anyplace (Olmeda and Sheldon, 2002). Number of consumers using mobile to seek information related tourism such as location of hotel, booking flight ticket, etc,... are growing quickly. Tourism marketers still may not ignore

an opportunities to approach huge of customers and effect of mobile in distribution oriented travel information.

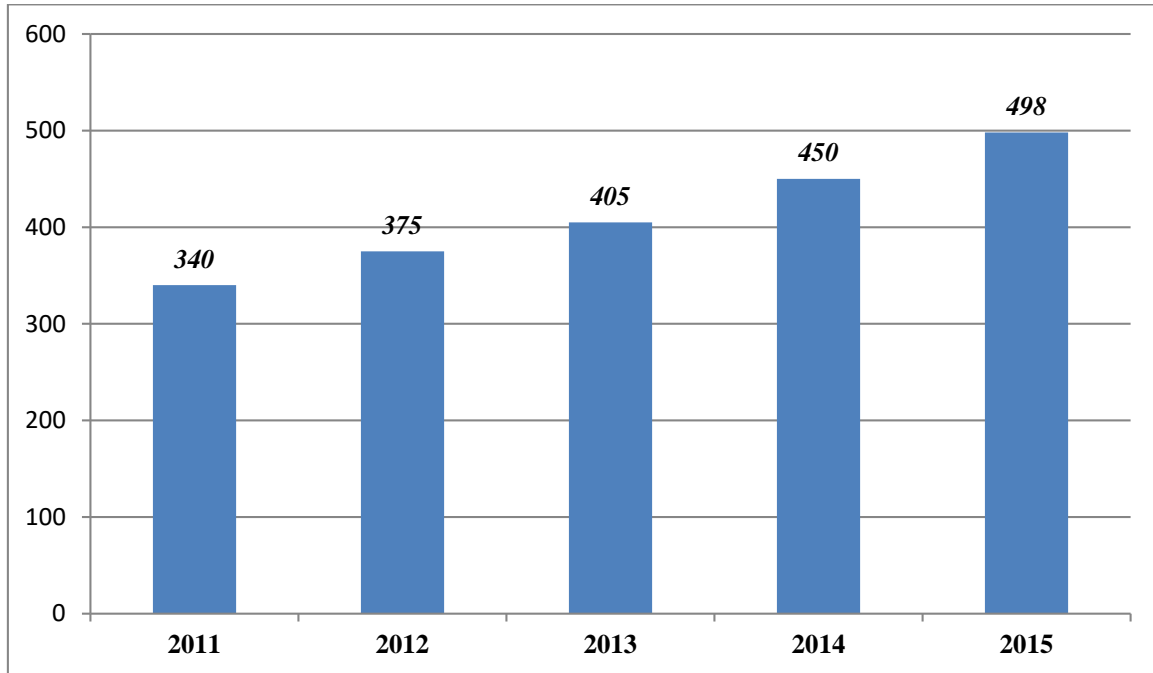


Figure 1-2 Online gross travel bookings revenue worldwide

Source: The Statistics Portal, 2016

Although the potential of mobile marketing is huge, it can't be exploited effectively. The reason may be that lack of experience in mobile marketing (Ong, 2010). There were many prior researches to define and evaluate that mobile environment affects to customer's intention. Since 2000s, Multimedia Message Services (MMS) and Short Message Services (SMS) are the two popular marketing techniques through mobile channel. It attracted 580 million users in 2002 (TTI, 2003). However, these techniques now are ineffective when most of mobile users have little interested in SMS ads. (Almossawi, 2014). Reality requires other mobile marketing tools which are stronger, more effective to exploited better.

1.1.3 Opportunities for Vietnam's Tourism

In the past, tourism industry of each ASEAN members was promoted by themselves until 2003, when ASEAN decided establish ASEAN Community Vision 2015. This event demonstrated the great opportunity for tourism to increase tourists, especially the foreigners.

ASEAN Economic Community which is one of ASEAN Community's three pillars which has just established, impulses the development of members' tourism industry and adding up ASEAN becoming single destination.

The AEC pillar will permit the flow of labour between ASEAN countries in eight sectors, which are included tourism industry. It means that AEC will afford opportunities to employment when it is public, and then ASEAN members pay attention to the liberalisation of three major areas, which are trade, labour, and investment. Experts hope that the demand of tourism industry would increase from two to three times than before, which is other key sectors such as education, health care and finance (Vietnamnet, 2016).

Table 1-1 *TTCI (Travel and Tourism Competitiveness index)*

	Singapor	Malaysia	Thailand	Brunei	Indonesi	Vietnam	Philippin	Cambodi	Asean (Mean)
TM 2011 Ranking	10	35	41	67	74	80	94	109	75
1.Policy rules and regulations	1	21	76	120	88	67	70	132	73
2.Environmental sustainability	41	64	97	136	127	115	94	82	96
3.Safety and security	13	83	94	23	72	68	109	79	76
4.Health and hygiene	65	75	80	70	115	89	97	133	85
5.Prioritization of Travel Tourism	2	46	38	127	15	107	70	13	42
6. Air transport infrastructure	14	34	23	41	58	85	80	113	50
7.Ground transport infrastructures	2	36	50	49	82	77	114	103	67
8.Tourism infrastructure	33	74	40	91	116	110	98	131	95
9.ICT infrastructure	20	52	81	47	96	67	98	123	74
10. Price competitiveness	29	3	15	1	4	16	20	31	19
11. Human resources	2	37	74	47	61	72	86	109	62
12. Affinity for Travel & Tourism	12	17	24	78	121	87	65	21	45
13. Natural resources	96	22	21	38	17	51	70	53	45
14. Cultural resources	30	33	32	91	39	36	76	111	38

The TTCI calculates and compares national tourism competitiveness which is based on wide range of criteria. Standing at #6 in ASEAN, Vietnam understands their strongest position is Natural resources and Price competitiveness. Therefore, opening ASEAN Community is It an opportunity for Vietnam to ameliorate the standard of tourism sector to welcome huge of

travelers (Vu H, 2013). Besides, many Vietnam tourism companies now try applying internet to marketing for their services. In fact, amount of mobile users over the world increased sharply to 40% in the end of 2014, and is predicted keep increasing global base almost 70% in 2020. It means that mobile phone now is becoming a potential marketing area (Mobile Economy, 2015). In the near future, mobile phone will become a main channel for advertise, looking like the position of newspaper in the past (Scornavacca, 2004).

Consequently, reality requires a strong marketing technology which effectively, quickly approach tourists, smart tourism should be create based on smartphone, especially mobile application. Based on mobile devices' adoption (comScore, 2013) along with the development of tourism application, offering new products on smartphone is very important for tourism industry (Kennedy-Eden, & Gretzel, 2012), while Vietnam market for tourism is very potential with its cultural heritage, historical heritage.

1.2 Research Object

Based on the above discussion, this study aims to collect data of travelers who are using, or want to use internet for travel, especially using mobile application for tourism purpose which can be able to answer the research objectives as follows:

- To investigate the effect of online environment stimuli on customer's application adoption as response outcome
- To investigate interaction effects of e-Servicescape and e-Word-of-Mouth on the relationship between consumers' awareness and perceived usefulness.
- To investigate whether effect of customer's adoption on their intention to visit tourism destination

1.3 Research Structure

First of all, study chose a marketing topic related to tourism, after that literature was explored related to marketing tourism, especially about mobile marketing, human behaviour, and visiting intention. Second, study identified research framework and hypotheses with interrelationships between each constructs. Finally, questionnaire survey was designed to collect from consumers. The respondents are Vietnamese consumers and other ASEAN consumers.

This study has five chapters. There is a summary of each chapter:

- Chapter one: Introduction

Chapter One introduces the background and motivation of research, and then to raise the objectives based on delimitation and research flow.

- Chapter two: Literature Review and Hypothesis Development

Chapter two mentions the previous literature which related to marketing tourism based on two systems. The first is Technology acceptance model which is an information system theory, hence, variable using in this study is perceived ease of use, perceived usefulness, attitude toward using, intention behaviour also would explained. Another is S-O-R theory on human behaviour.

- Chapter three: Method of research

Chapter three introduces the construct measurements and research design. Affecting of every independent variable to the dependent and moderating impact of moderator variable on the relationship among independent and dependent variable propose research model. Besides, sampling plan, data collection and data analysis techniques have been discussed in this chapter.

- Chapter four: Empirical Result

Chapter four presents the statistical and descriptive result, including data collection, basic information of respondents, descriptive statistics of research items, and factor analysis. After that, the results will combine with each hypothesis which also is presented in this chapter. There are four kind of method research will be used to examine hypotheses.

- Chapter five: Conclusion

The summary of thesis will be indicated in this chapter. Based on results, suggestion and future research will be discussed.

Data analysis and hypotheses will be analyzed by technique:

- Descriptive Statistics Analysis
- Factor Analysis and Reliability Check
- Hierarchical Regression
- Structure Equation Model (SEM)

The flow chart of this study may be shown in the figure below

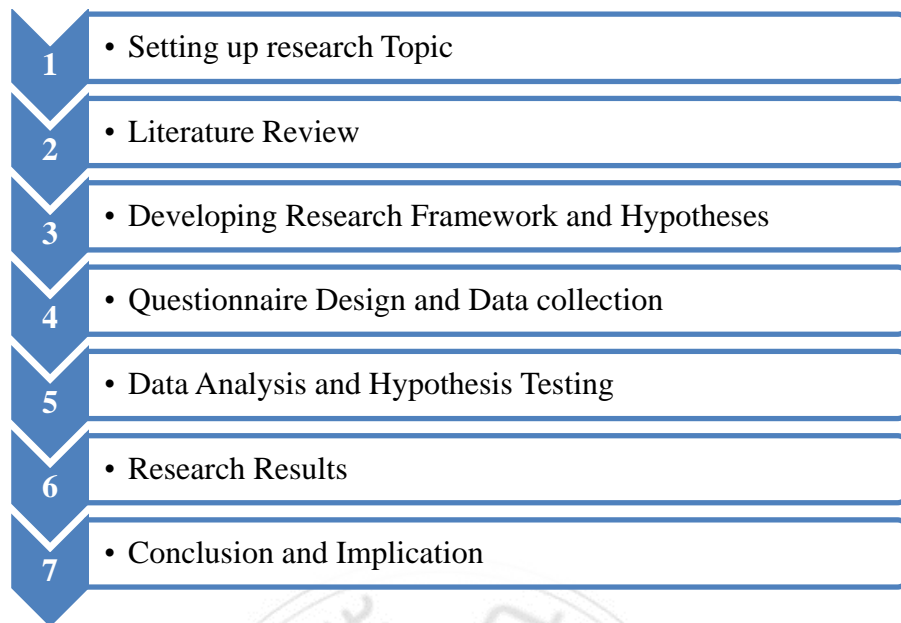


Figure 1-3 Research flow

1.4 Research Delimitation

This study designed limitations for contribution of specific knowledge to recommend strategic in specific area. Therefore, to raise up the chances of success, the

- E-commerce

Because of utilize the development of information technology, this study applies in e-commerce's field to investigate the potentiality of ASEAN market for Vietnamese tourism industry. E-commerce is one of the best ways to approach foreign consumers and advertise Vietnamese tourism products.

- The smartphone

This is the most important limitation because this study strictly focused on smartphone technology, including tablet, laptop, and other mobile devices. However, the distinction between each mobile device, smartphone would be chosen to focus the most

- ASEAN market

This study's scope will focus on the respondent in ASEAN market, especially in Vietnam because of this study attach special importance to Vietnamese destination. The respondents are student, worker, and other who incline to travel.

CHAPTER TWO

LITERATURE REVIEW

2.1 Mobile marketing

Marketing is a function of business considered to become the most promising service, which is delivered effectively through digital device (Guo & Zhao, 2010). Unlike other devices are able to connect internet such as computer or laptop, mobile device may be connected longer, typically always with users, because it enables to connect sellers and buyers constantly (Kaplan, 2012). Lindstrom (2011) stated that the always-connecting-internet characteristic of mobile device is an important characteristic which users frequently feel stress when devices and its owner are separated. Therefore, this marketing method can be considered as the solution of internet marketing when consumers now are losing their interest in traditional channels (Hinz, 2011). Recent studies worried whether retail turnover can be increased by mobile marketing or it is simple switching from one channel to another (from internet to mobile) (Huang, 2016). Compared to website, although mobile phone has low media richness, it exploits its own characteristics which are ubiquitousness and portability, then increasing interest of customers (Wang, 2015).

Unlike traditional marketing channel, such as traditional print and television advertising, mobile devices have another characteristic which easily make marketers create marketing offers, immediacy. The first, this characteristic may enable the speed from promotion planning to reception. The second effect is cancelling an offer very quickly, obviously this is also based on immediate responses. That is a reason why a business can test easily the effectiveness of marketing campaigns, develop or change quickly special marketing campaigns based on many kinds of conditions to promote products/services effectively.

Likely other marketing strategies, Maduku (2016) states that mobile marketing uses wireless mobile technologies to develop interactive communication among firms and customers. Mobile marketing strategies also were defined differently which it was created based on the way consumers access online sources through smartphones (Chou, Chuang, & Shao 2016). In fact, these strategies may succeed when using the strong relationship between consumers and mobile, engaging them with advertising messages, m-commerce, mobile stores (Watson, 2013).

Method of these strategies includes text message (SMS), interactive response, viral marketing, mobile advertising, and mobile telemarketing (Lamarre et al, 2012). It started to use SMS and MMS for advertise purpose. These strategies are the most basic type of mobile marketing from the beginning (Hsu,2014). However, as stated before, this strategy lead negative consumer reaction, because of their impuissance in restricting advertise delivered to their mobile phone (Andrews, 2012). Afterwards, many marketing tools was create in smartphone. In particular, Near Field Communication which is a technique providing two smartphone connect up to 10cm, and Quick Response Code (QR) – a bi-dimensional barcode providing plentiful product’s information, which can be access by scanning through mobile camera (Ramos-de-Luna, Montoro-Rios, & Liebana-Cabanillas, 2015; Zhao, Smith, & Alanson, 2015)

There are many mobile marketing benefits, such as the unique potential from interaction, which improve operational interaction of business efficiently, or raise up the effectiveness of business marketing communications campaigns (Ström et al., 2014). Mobile becomes powerful channel which enables firms to build brand relationship, brand awareness or attitude, and purchase intentions with consumers loyalty. Constantinou stated the potential of mobile marketing that it increases customers’ perceived value, resulting satisfaction (2009).

2.2 Mobile application

According to prior studies (Borras, Moreno & Valls, 2014; Karanasio, 2012; S. Wagner, Franke-Opitz, Schwartz, & Bach (2013)), classification of mobile applications accessible in tourism sector is presented in Figure 4. There are four main mobile travel applications categories. The first sector is Online Bookings. This sector allows making online reservations for various services. Usually the tourists demand application from this category before the trip. Applications from “Information Resources” category provide the tourist an useful information during their trip (e.g., information about tourist destination, the airport services accessible, and flight tracking.). “Location-Based Services” sector provides the tourist information depend on users’ location (e.g., map and navigation services, police phones). “Trip Journals” sector allows accumulating and analyzing information related to trip (e.g. exchange rate).

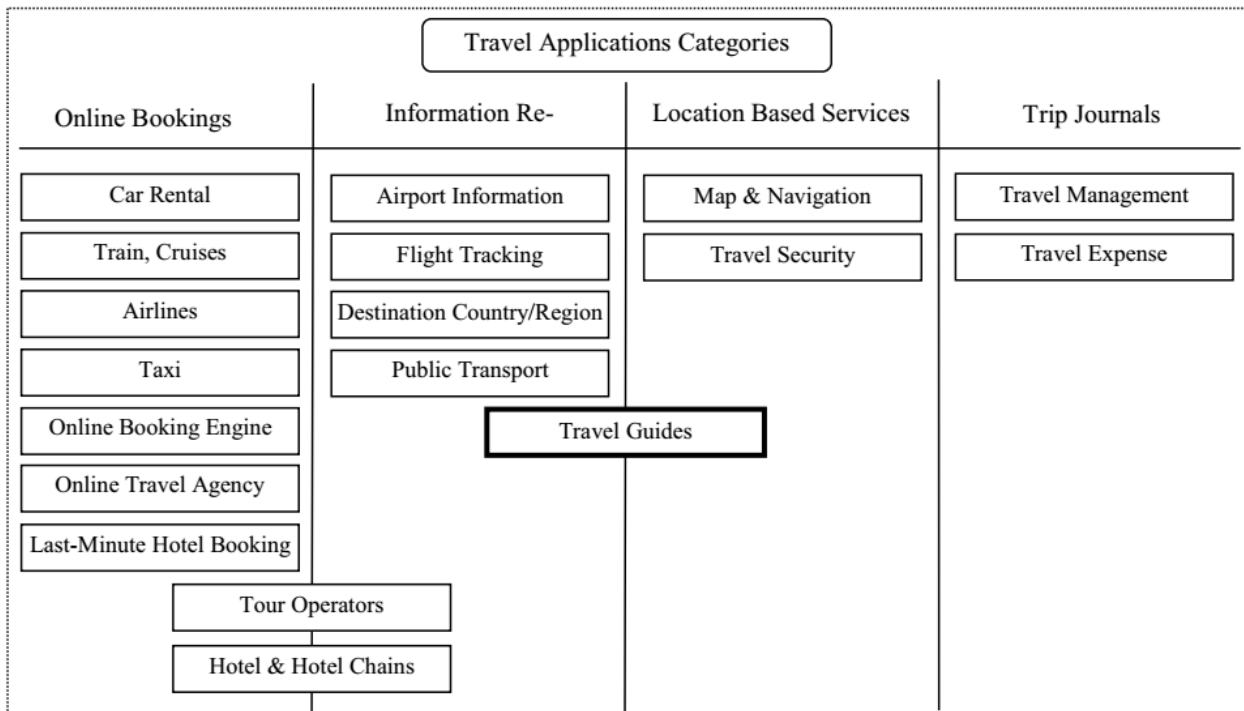


Figure 2-1 Classification of mobile tourism applications

The following groups of applications have been identified based on travel phases (most of applications covers two or all travel phases):

- Pre-travel phase: Provides range of services to facilitate travel-related information search, for instance attractions description, hotel and airplane booking, and etc.;
- Travel phase: Provides real-time travel information about the destination, such as information about events, places, advices, and typical recommendations;
- Post-travel phase: Getting feedback from the tourists (variety of solutions to collect estimation attractive information) and sharing travel experience to others.

The first applications group applications provide tourists possibility to plan their trip, get attractive information for given destination, book hotels and flights. From the second group, these kinds of applications provide the tourist personalized context-based attractive information about destinations. Purpose of third group is to collect photos, posts, videos, and/or estimations about attractions attended by the tourist. This information can help other tourists to decide if he/she would like or not to attend this attraction. There are applications that incorporate two or

all three groups. During the trip, the tourist can use mobile application to see places of interests around.

2.3 Theoretical Background

2.3.1 Technology Acceptance Model (TAM)

Venkatesh (2007) states that TAM is the most basic model to interpret Information Technology usage, which is an information systems theory, was described how new technology is accepted and be used. Davis (1986) was the first who formulated this model, which is adopted from Theory of Reasoned Action. It was born in social psychology field representing users' acceptance about new technology through using directly. In detail, the affection response for using technology of individual ascertains their intention to use this technology, which is a directly deciding factor of behaviour. Moreover, attitude reflects individual's feeling toward using technology is unfavorable or favorable, and TAM determines attitude by using two beliefs: Perceived Ease of Use and Perceived Usefulness. In another words, six constructs of this model describe "*A person's general feeling of favorableness or un-favorableness toward some stimulus object*" (Ajzen, 1985, p. 156). The "Perceived Ease of Use" means consumer hope easily use this technology, and should not complicated (Venkatesh et al., 2003). This factor is an important role in process attracting users and getting their adoption (Venkatesh & Davis, 1996). Besides, "Perceived Usefulness" means people believe use this technical innovation will improve their performance which is equally important. After that, many inventors create technique innovation based on this theory to get user's adoption.

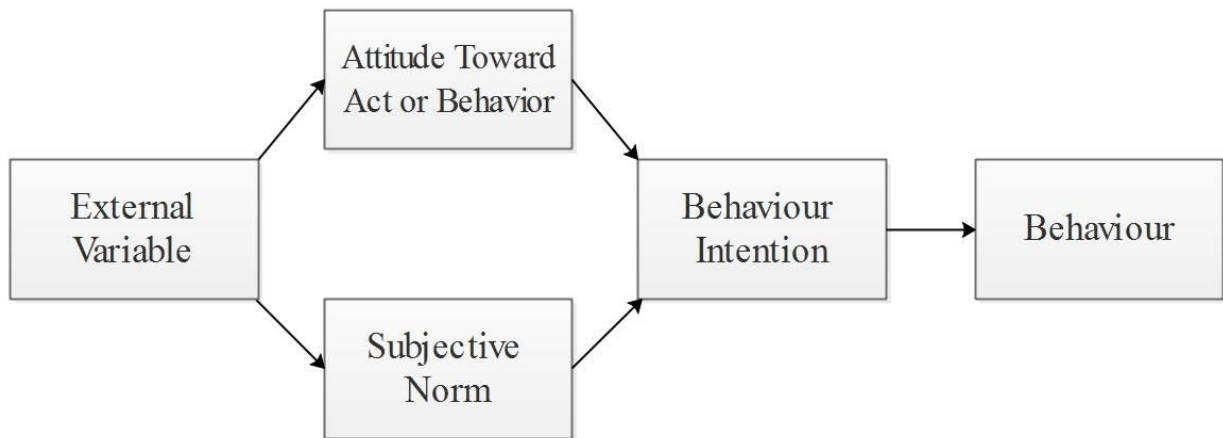


Figure 2-2 Theory of reasoned action | (Ajzen & Fishbein, 1980)

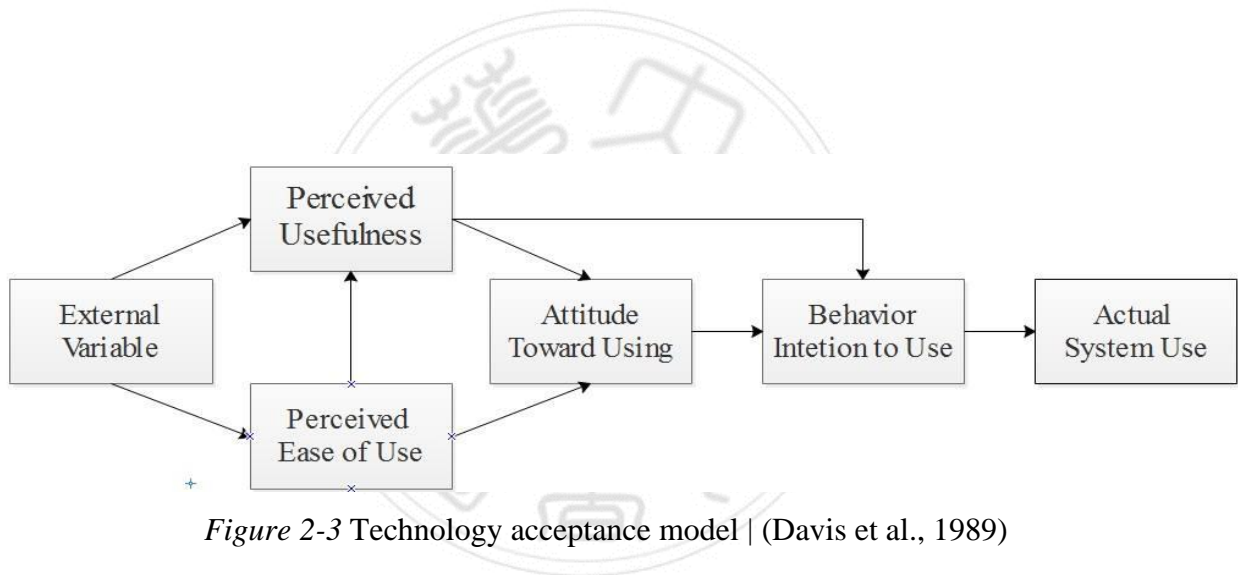


Figure 2-3 Technology acceptance model | (Davis et al., 1989)

Easily see that, these two models are very similar because David formulated TAM based on Aizen’s research, but between them still have some different aspects.

- Subjective norm

It was defined as “*the perceived social pressure to perform or not to perform the behavior*” (Ajzen, 1980). Finlay (1999) defines this term as “*opinion about what important others [italics added] believe the individual should do*”. Nevertheless, this factor is not exist in original TAM, means that Subjective Norm does not influence to Behavioral Intention, and then the exclusion of this factor explain it cannot be direct determinant

- Effect of Perceived Usefulness on Behaviour Intention

Unlike TRA model, Davis (1989) demonstrated traditional TAM proposed one more determinant which affected directly Behaviour Intention beside Attitude. In this model, the Effect of Perceived Usefulness on Behaviour Intention examines the idea that people believe the usefulness or benefits of an innovation regardless of if they have feeling toward behaviour or actual usage. Hence, the intention to use is a perceptive evaluation of what benefits and how this technical innovation improve their process (Davis et al., 1989).

- Two direct determinants of Attitude Toward Using

For TRA, there is no specific effect of attitude, while in TAM there were two factors determine attitude, because of it identifies the belief for context firstly.

Adopted from TAM, some factors will be applied because it might affect the customers' adoption in mobile application, such as Ease of Use, Usefulness. It is proved advantage of mobile is providing "anytime, anywhere" because of mobile's inherent characteristics (Kleinrock, 1996).

2.3.2 *S-O-R theory*

Research about the environment's effect on human behavior was originated from Psychology. Stimulus – Respond theory was regarded as the first theory describing the relationship among environmental stimuli and human behavior was proposed (Mehrabian & Russel, 1974). Afterwards, this theory was criticized because the influence of human on environment ignored (Lazarus, 1988). Other scholars claimed that this relationship misses link, which was the difference of human factor. Therefore, Organism was added into that relationship to become Stimulus – Organism – Respond. The change showed when environmental stimuli affect to human, "inner organism changes" before behavior respond.

From environmental psychology, Stimulus-Organism-Respond (SOR) theory - was public in 1974 by Mehrabian and Russe – explains environmental stimulus (S) affects to customers' cognition and reaction (O), then it leads to their behaviour (R). This paradigm was applied widely in many studies of consumer behavior.

Researchers can base on this model to scrutinize the effect of internet on users' responses due to their reaction. In marketing research, Kotler (1973) indicated that environment affected significantly to human behavior, and he thought it was marketing tools should be developed.

In retail environment, this framework was applied firstly by Donovan and Rossiter (1994). Stimulus is the first signal of behaviour intention process, impact directly to cognition and resulting by action.

Based on the S-O-R framework, the term “servicescape” was created for further advance (Bitner, 1992) with three elements of environment cues. In the online environment, Eroglu (2003) defined that stimuli were cues which are audible and visible to users. That is a reason why in e-commerce area, there are only two senses of online customers – sight and hearing – are affected. Although the online stimuli’ effect is not same as traditional environment which strongly influence five senses of human, virtual online environment has another advantages, which concentrates on flexible space and time. Prior studies demonstrated about stimulus that it impacts on emotional reactions which affect response behaviours such as purchase intention or visiting intention (Eroglu et al, 2003; Lennon, 2010;)

The organism is the emotional reaction which is the human mental the environmental stimuli affects and then change this association. Hence, organism includes every inner emotions and inner states. Bitner (1992) indicated that three factors are combined in organism or internal response: cognition, emotion, and physiologic. Both emotion and cognitive were found the important role when online stimuli affect customer to result behavioral responses (Hwang, 2010; Wu et al, 2013)

My concept model is based on S-O-R theory. This concept represents online environment which acts like stimuli, affect to mobile users’ cognition, gain their adoption, and the behavior directs toward the application. E-servicescape dimensions is played as the online stimuli and e-WOM will be added at this stage as new variable of S-O-R framework, while perceived ease of use, perceived usefulness, are the organism’s cognitive and affective statuses (Parboteeah et al. 2009).

2.4 Definition of Research Construct

2.4.1 Stimulus

2.4.1.1 Awareness

Basic internal and external personal awareness depends upon the brain stem. According to Rogers (1971), customers have to “*through a process of knowledge, persuasion,*

decision and confirmation” before adopting an innovation. In another word, consumers adopt or reject a product/service when they truly aware it. In fact, people aware about something because they lack information about it, and then leading them become curious (George Loewenstein, 1994). Therefore, it is necessary to be aware availability and how adding values in products/services to draw attention, after that the expected value in their mind appear. Sathye (1999) demonstrated the amount of information customer get, which was also an important factor influencing the adoption. Hence, application awareness is a new construct in model of this study to be measured as an environment stimulus.

Application awareness was proceed from customer’s awareness. It was defined that the understanding of an individual about their right as consumer when a product/service was marketed (Ralph Nader, 1962). In the mobile environment, it is manifested in various areas, for example, social network, online shopping, and online tourism services. Mobile was used to be a carrier in the concept of “human-centered” to put forward an opportunity sensing and shared sensing (Campbell, 2008). Besides, Facebook – a social network is designed as mobile application – was used to explore the senses of application can sharing information and privacy issues (Boy & Ellison, 2007).

2.4.1.2 E-servicescapes

- ***Servicescape***

Scholars describe servicesapes is the ideal environment where sellers and customers contact, “*combined with tangible commodities that facilitate performance or communication of the service*” (Booms & Bitner, 1981). In general, servicescape is “*the physical surroundings in service context*” (Bitner, 1992) or “*the environmental cues that impersonal affect customer*” (Zeithaml et al., 2002). Hence, in Bitner’s opinion, the aspects of servicesape are ambience and physical conditions, such as function, signs, and symbols, while Baker (1994) argued about physical environments of services that this was evaluated by customers in relationship with social, ambient, and design.

Ambient conditions include many sensory elements, such as light, design, air quality, sound, which affect directly to customers perception of service context (Nguyen, 2006). Besides, spatial elements also have strong influence in customer’s awareness as well as conveying overall

impression, include signage, personal artifice. Therefore, it can be seen that servicescape framework is a completely version of the S-O-R model.

- *E-servicescape*

Nowadays, internet becomes a major or supplement sales channel for retailers. E-servicescape research has appeared in online environment, which affects to customer feelings, perceptions, and inclinations to run business. (Chang & Chen, 2008; Harris & Goode, 2010). Therefore, concept “servicescape” need to transform into “e-servicescape” concept in online setting. This concept was not only based on the extant literature of offline service settings (Bitner, 1992), but also expanded on existing in the online environment, e-servicescape (also termed cyberscape or virtual servicescape) was constructed as — the online environmental factors which existed during service delivery (Koering, 2003).

State Koering’s opinion, in internet environment, e-servicescape – employing different stimuli - is positive developments which turn from traditional servicescape. It is designed to create well impression, will help customers get better experience (2003). Hakim (2014) also demonstrated that creating good quality and functional design was an important factor for service provider. Customers would like to easily get useful services’ information. Customer’s satisfaction is not only based on single virtual environmental stimulus, but it also contingent upon hold characteristic of holistic view of virtual environment (Bitner 1992).

Based on these studies, mobile application was create to market tourism, so that applying e-servicescape in appeal and layout to design aesthetic interface, which focus on customers’ perception.

- *E-servicescape's Dimensions*

In online environment, these dimensions were mentioned in different aspects. Szymaski (2000) found that convenience, layout design, merchandising, financial security, and e-satisfaction are key factors that consumers use to judge an online marketplace. Online servicescape consists of three dimensions, aesthetic appeal, financial security, and layout and functionality.

The first dimension, aesthetic appeal, is derived directly from the ambient conditions dimension for brick-and-mortar stores (Harris, 2010). For e-commerce businesses, sighting and hearing are the two senses used to draw individuals' intention. Compared to the physical environment, online consumers may not use tactile senses to observe products. Therefore, quality photographs need to be provided to influence users (Kim & Lennon 2008; Lin 2007). Visual appeal speaks directly to the sight sense, and interesting graphics, fonts, and photographs entice consumers to spend more time viewing the application.

Layout and functionality, the second dimension, is related to same dimension from servicescape for physical stores (Harris & Goode, 2010). In original, layout and functionality has four sub-dimensions: interactivity, usability, customization/personalization and relevance of information. Customization is modification of website to meet individual's needs and wants. Some websites feature tools to allow consumers to personalize the website according to their preferences (Grewal, Mullikin, & Munger, 2003). However, in mobile application, this aspect hardly enable because of restricted visibility in display of smartphones. Usability refers to navigation and maneuverability of the website, and is cited as the most effective way in which users assess websites (Donnelly, 2000). Consumers' website evaluations emphasize navigation and usability. Likely website, in mobile environment, users may lose their interest and patience when mobile application loads its function too long, navigation is too complex, or taking long time to wait an application loading (Meyers, 2014). The navigation need clear, easy to read, or flexible ways to access information.

Financial risk is the last dimension which is users' perceptions of the application's security, safety measures and the actual payment processes. This aspect has been researched so much, which indicates the importance need contained inside online exchange process (Montoya-Weiss, Voss, & Grewal 2003; Schiffman, Sherman, & Long, 2003).

According to Lin (2004), in online environment, the visible stimuli directly affects to an individual's perception, and then influencing their each awareness. Because of the limited in senses in online environment, the role of sighting quality becomes more and more important. Actually, there are only hearing and sighting sense are influenced by online environmental stimuli. Internet enables the interaction between firms and customers by core service characteristics (e.g. perishability, inseparability and intangibility) (Zeithaml et al., 2006), or intensify the impact of online environmental stimuli on consumer awareness by focusing on e-servicescapes of application.

2.4.1.3 Electronic Word of Mouth (eWOM)

Characteristic of Word-of-Mouth is communication between persons that receiver perceives information as non-commercial (Arndt, 1967). Godes (2004) stated that Word-of-Mouth significantly affect to purchasing decision of customers, because customers believe a recommendation from somebody about their shopping experience than advertising.

In e-commerce, WOM makes product/service known in the most effective way. E-WOM is described that is an exchange information or viewpoint in internet environment about product/services between each user who have experience (Cabezudo, 2013). Mostly, users have not directly experience about product/service through internet, so they trust other's experience than the product/service advertises. Besides, customers frequently require appreciation from firm and review from other experienced customers (Bronner & de Hoog, 2010). Moreover, the development of information technology has not affect to amount of communication among individuals (Pepitone, 2011).

More recently, eWOM was proved to be influential to the product/services adoption in online communities (Cheung R, 2014). McCarthy (2010) and Verma (2012) found out that travelers followed their travel agency's suggestion for hotels, and then they searched more relevant information to learn more about available hotels. Besides, knowledge-sharing continuance is influence directly to perceived usefulness (Hashim, 2012).

In social media, advancements have transformed the WOM process because it enables users to exchange product/services information at anytime from anywhere. Managing eWOM is complex, because, in online society, consumers act as co-producers of the meaning and value

of marketing messages and information (Chung and Koo, 2015). eWOM involves three elements of communication process, opinion-giving, opinion-seeking and opinion-passing. In addition, opinion-seeking and opinion-passing activities often observed offline. Although the ubiquity and mobility of the Internet enable consumers continue spreading eWOM to amount of recipients immediately after they have experience (Sun et al., 2006). The reason is that members with strong ties to each other share information with each other more frequently than members with weak ties do (Gilbert & Karahalios, 2009).

Word-of-Mouth now is becoming significant factor which emerged from SNS. Reviews from customers are normally available for products/services, which has significant value for firms and customers (Nambisan, 2002). That is a reason why organizations also actively encourage customers to rate and recommend their services online (Bronner & de Hoog, 2010). WOM impacts on two factors. The first is consumers' awareness. Customers are most likely to form impressions and gain more awareness about a product or service, not only through tradition source, such as company, friend or family, but also from internet source (Berry, 2000)

2.4.2 *Organism*

2.4.2.1 Perceived Usefulness

It was defined as “*the extent to which a person believes that using a particular technology will enhance her/his job performance*” (Davis, 1989). These follows from the definition that people would consider a system to be useful when it enhances their performance. In another word, it is the improvement of users' action (Venkatesh, 2000), this factor significantly affect to consumer's acceptance of technical innovation. According to Davis (1989), perceived usefulness is one of sources making users believe they would have positive use performance when using. They are normally added force to well performance within an organizational context (Pfeffer, 1982; Schein, 1980). The hypothesis empower that perceived usefulness impact directly to customer's intention on technical innovation. The rationale behind this hypothesis that if using technology can promote one's work that will be consider as useful and will incentive a person more to use this innovation. Many prior researches proved the positive impact of perceived usefulness to m-commerce adoption (Chau P, 2001, Davis 1989). The argument for the direct influence of the perceived benefits of using intentions for non-work

related situations can be summarized as follows: While technical innovation, or mobile applications, contributes to achieving the consumer of a particular purpose, or if they feels performing in the same task, this innovation will give a higher value or satisfaction, then it construed for being useful. In this way, customers will have higher ambition for the innovation to use or it helps to achieve positive value and satisfaction.

2.4.2.2 Perceived Ease of Use

It is described as “*the degree to which a person believes that using a particular system would be free of effort*” (Davis 1989). Based on the definition, customers will have a service/application as using easily if no additional effort is required of them. In this study, PEOU refers to belief of users about the simply in use of mobile application. If this application may be used easily, consumers will have many amenities in learning it features, and then finding clearer out its usefulness and, finally, continue using application. Davis (1989) indicated that “*the degree to which an innovation is perceived as relatively difficult to understand and use 'parallels perceived ease somewhat closely*”. It means that the less complex innovation is, the easier it will be used. In addition, Davis (1989) demonstrated that the easier an application was expected to use, the easier was accepted. It follows that the less complex of an innovation is, the easier using for users, the less effort it requires, and thus the greater the chance for the user to run the program. Observed ease of use, in addition to an antecedent of perceived to be useful, predicts the end of faith in a technology it has been established and therefore his attitude toward the technology, which in turn accepting it has been established (eg Davis et al 1989, Ma & Liu 2004, Venkatesh & Davis, 2000).

2.4.2.3 Attitude toward using

In TTPB, the term “attitude” was defined as —a reviewer’s evaluation of persons, objects, and issues (Ajzen & Fishbein, 1980). This commonly suggested conception states that attitude may not over behavior but a disposition, which influences behavior. Attitude plays a key value in causal chain because of its functionality. In fact, attitude is a key leading perception, information process, and behaviour (Fazio, 1988). In sum, researchers identified three dimensions of attitude: Intense, amount of information, and change resistance (Culbertson,

1968). It was described as a pre-disposition to respond positively or negatively to an object, event or a specific aspect of an individual.

Inherited from pros-study, Davis identified attitude was a steppingstone in the cognitive process to accept new technical innovation when TAM was created. Moreover, the attitude of customers toward technical innovation is examined by two factors which are Perceived Ease of Use and Perceived Usefulness. This study attempt at scrutinizing in relationship of attitude and both Perceived Ease of Use, Perceived Usefulness, and predict an individual's intention to use of technology. Kim et al. (2009) believed user's attitude towards mobile devices was that the devices are good and entertaining, thus affecting their intention of use. Chang [2008] and Lu and Ling (2009) believed that attitude is important when participating in activities and that it brings about the intention of use in regard to its users.

2.4.3 *Response*

2.4.3.1 Mobile application Adoption

It consists of all responses that are (or, in some cases, can be made to be) externally detectable. These include nonverbal responses, verbal responses, and behavioral responses. Mobile application adoption is a behavioral response.

Liran Einav (2014) stated that users had adopted mobile application when making their first online activity in mobile. In other words, consumers truly adopt an application when it is downloaded. Besides, on the development of the mobile application as well as the increasing number of downloaded applications, means that the application adopters are – on average – more than the non-adopters. In particular, there are many researches about technology adoption. Some of common theories and model include Technology Acceptance Model (TAM), Unified theory of acceptance and use of technology (UTAUT), theory of reasoned action (TRA), theory of planned behavior (TBA). Such as, TAM defines when a person decide to use a technology, their decision strongly influence by technology's perceived usefulness and perceived ease of use. In addition, Information Technology (IT), for example mobile, is a significant component in recent tourism. Researchers pay attention the relationship between IT and tourism (Law, Leung, & Buhalis, 2009). Kaplanidou and Vogt (2006) also demonstrated that using technology

is a motivation for tourism, especially in tourist's intention. This model also is applied in this study to represent how tourists adopt new tourism application.

2.4.3.2 Intention to Visit

In S-O-R theory, Mehrabian (1974) indicated that the response denoted two kind customer's behaviour intention: approach behaviour and avoidance behaviours. Intention to approach represent positive actions may toward into particular, (e.g. intention to purchase, stay, and visit tourism destination). On the other hand, avoidance behaviours are represented as negative actions. In this study, intention to visit destination is selected as the target to approach behavior after tourist adopt tourism application on mobile device.

The difference among intention and attitude is the connection with future acts. Soderlund & Ohman defined this term as a basic factor which appears when individuals has specific plan in the future-oriented cognitive activities (2003). In another word, intention is an act of determining mentally which relies on result before (in this study, the result is intention to visit tourism destination). In fact, many researches indicated that intention to visit was influenced by attitude, especially in tourism and hospitality researches (Cheng & Cho, 2011; Kim, 2008).

CHAPTER THREE

METHOD OF RESEARCH

3.1 Hypothesis Development

3.1.1 *The effect of Application Awareness on Perceived Usefulness*

According to Pikkarainen et al. (2004) the amount of information about mobile banking and its benefit is a determinant factor in motivating customers to use mobile application for banking services. Moreover, Sathye (1999) demonstrated that low awareness about technology's benefits is a main factor causing customers not to adopt this technology. In addition, Howcroft et al. (2002), found that deficiency in awareness of mobile banking application and its benefits were considered to be reasons for consumers' hesitancy to use this application. Therefore we propose the following hypotheses:

Hypothesis 1: Application Awareness will positively affect to Perceived Usefulness

3.1.2 *The moderating effect of e-Servicescapes on the relationship of Application Awareness and Perceived Usefulness*

According to Lin (2004), the visible stimuli in online environment influences directly an individual's perception, and then affecting to his or her per awareness of physical aspects, In internet environment, the role of sighting quality becomes more important because of the limited in senses. Actually, there are only hearing and sighting sense are affected by online environmental stimuli. In another words, Internet enables the relations among firms and customers by core service characteristics, such as perishability, inseparability, intangibility (Zeithaml et al. 2006), or intensify the effect of online environmental stimuli on consumer awareness by focusing on e-servicescapes of application.

Besides, recent studies also highlighted e-servicescape influences on the customer behavior (Kandampully & Suhartanto 2000; Nguyen 2006). An e-servicescape can stimulate feelings of customers and their perception toward an application on mobile device, then impact their intention to use. Lindgaard and Dudek (2003) investigated that consumer's perceived

usefulness with a website primarily depends on the degree of aesthetic appeal, and this also happen exactly the same in mobile environment. Therefore, it is hypothesizes that:

Hypothesis 2: The more aesthetic, functional E-servicescapes, the greater relationship between Application Awareness and customer Perceived Usefulness

3.1.3 The moderating effect of e-Word-of-Mouth on the relationship of Application Awareness and Perceived Usefulness

Word-of-Mouth now is becoming one of the keys which emerged from SNS. Reviews from customers are normally available for products and services, which has significant value for both firms and customers (Nambisan, 2002). That is a reason why firms also actively encourage their customers to rate and review their services online (Bronner & de Hoog, 2010). WOM impacts on two factors. The first is consumers' awareness. Customers are most likely to form impressions and gain more awareness about a product or service, not only through tradition source, such as company, friend or family, but also from internet source (Berry, 2000)

Secondly, this electronic Word-of-Mouth which is produced in Internet affects customer's perceived usefulness, and then promoting their purchasing decision to buy product or their intention to try an innovation (Pan & Chiou, 2011), because customers trust online reviews more than they trust traditional media (Cheung & Thadani, 2012) In fact, Amazon.com is a well example of applying e-WOM, customer's rate and review, to promote buying their products with nearly ten million available (Do-Hyung et al. 2007). Moreover, recommendations are another tool widely used by potential customers.

In this study, eWOM play as environmental stimuli affecting customer's awareness and their perceived usefulness, so that there are only two elements would be involved in eWOM constructs. The opinion-passing element will be reject because, in particular, the opinion-passing process can be activated when customer absolutely experience a product or service. Therefore, it is hypothesized that:

Hypothesis 3: The stronger and comprehensive information giving, the greater relationship between Application Awareness and customer Perceived Usefulness

3.1.4 The effect of Perceived Usefulness on Attitude Toward Using, and Application Adoption

According to Davis (1989) the hypothesis empower that perceived usefulness is a determinant of customers who intention to use technology. The rationale behind this is that if the system or application is to promote one's work that will be seen as useful and will incentive a person more to use the system or application as it helps to use a positive relationship to gain performance. In banking, mobile application was demonstrated that its usefulness was found as a determinant of customers' attitude which encouraged them to use more innovative and user-friendly mobile applications give them better autonomy in banking transactions, and in purchasing financial products (Pikkarainen et al, 2004).

Besides, there are evidences prove the importance on the effect of perceived usefulness on customer's adoption. Lin (2005) suggested that the perceived usefulness is a critical factor in determining innovation adoption. It means that an innovation perceived to be useful is likely to be adopted and customers will take advantage of the innovation such as mobile tourism application which is useful for their travel process.

Hypothesis 4: Perceived Usefulness will positively affect to Attitude Toward Using Application

Hypothesis 5: Perceived Usefulness will positively affect to Application Adoption

3.1.5 The effect of Perceived Ease of Use on Perceived Usefulness, Attitude Toward Using, and Application Adoption

Perceived Ease of Use is the degree to which an individual believes that using a technical innovation would be free of effort (Davis, 1989). Information system researchers demonstrated that PEOU affected positively to the end-users' behavioral intention as well as the PU of the system (Chin & Todd, 1995).

Yang (2005) observed that perceived ease of use influence significantly on perceived usefulness. Lu, Liu & Yao (2003) also found that perceived usefulness influences users' intention through perceived ease of use. When mobile payment is perceived a high ease of use, users will likely recognize the convenience of this application and to try using, experiencing a higher level of usefulness.

In addition, researchers using TAM have shown that perceived ease of use has a significant influence on user's behavioral intention (Chang & Tung, 2008; Venkatesh & Davis, 2000; Shi, Shambare, & Wang, 2008). In some studies, perceived ease of use and perceived usefulness have been found to have significant impact on the adoption behavior. Yang (2005) indicated that PEOU factor affected to the users' attitude towards m-commerce, coupled with the individual's creativity, relevant knowledge, past experience, technology groups, gender, age, and occupation. Moreover, Hung (2003) showed that perceived ease of use influences attitudes to positive use mobile application. Therefore, it can be hypothesized that:

Hypothesis 6: Perceived Ease of Use will positively affect to Perceived Usefulness

Hypothesis 7: Perceived Ease of Use will positively affect to Attitude Toward Using Application

Hypothesis 8: Perceived Ease of Use will positively affect to Application Adoption

3.1.6 The effect of Attitude Toward Using Application on Application Adoption

TAM suggests that attitude is based on the salient beliefs which a person has about the consequences of a given behavior and his or her evaluation of those consequences. Specifically, Polatoglu (2001) suggested that customers' attitude is comprised of one's beliefs about an object and attribution in making decision to adopt. In the mobile application, consumers attitude is assorted in terms of perceptions of feeling, belief, or opinion of approval or disapproval towards an application, form of personalization, visual appeal, navigation, entertainment, and enjoyment.

Understanding the contributing of consumers' attitude, many researchers proved that this attitude had a strong, and positive effect on consumers' intentions to actually use the technical innovation (Eriksson et al., 2005; Hernandez & Mazzon, 2007; Jaruwachirathanakul and Fink, 2005)

Hypothesis 9: Attitude Toward Using Application will positively affect to Mobile Application Adoption

3.1.7 The effect of Application Adoption on Intention to Visit

IT technologies such as mobile application are crucial components in tourism, and many researchers pay attention to the linking of IT and tourism because its utilization affects on tourist'

experiences and behaviors (Law, Leung, & Buhalis, 2009). While using tourism application at heritage sites or destinations, visitors form positive or negative attitudes toward tourism application. Individuals who formed an attitude from experiencing tourism application will create heritage destination images through tourism application. In addition, Kaplanidou (2006) indicated that using travel application is a motivation for tourism destination. Therefore, using destination IT such as tourism application is a promotion and influencing tool for a destination; it can be a crucial factor for forming visitors' intention to visit tourism destinations. Hence, this work proposes the following hypothesis:

Hypothesis 10: Mobile Application Adoption will positively affect to Visit Intention

3.2 Research Framework

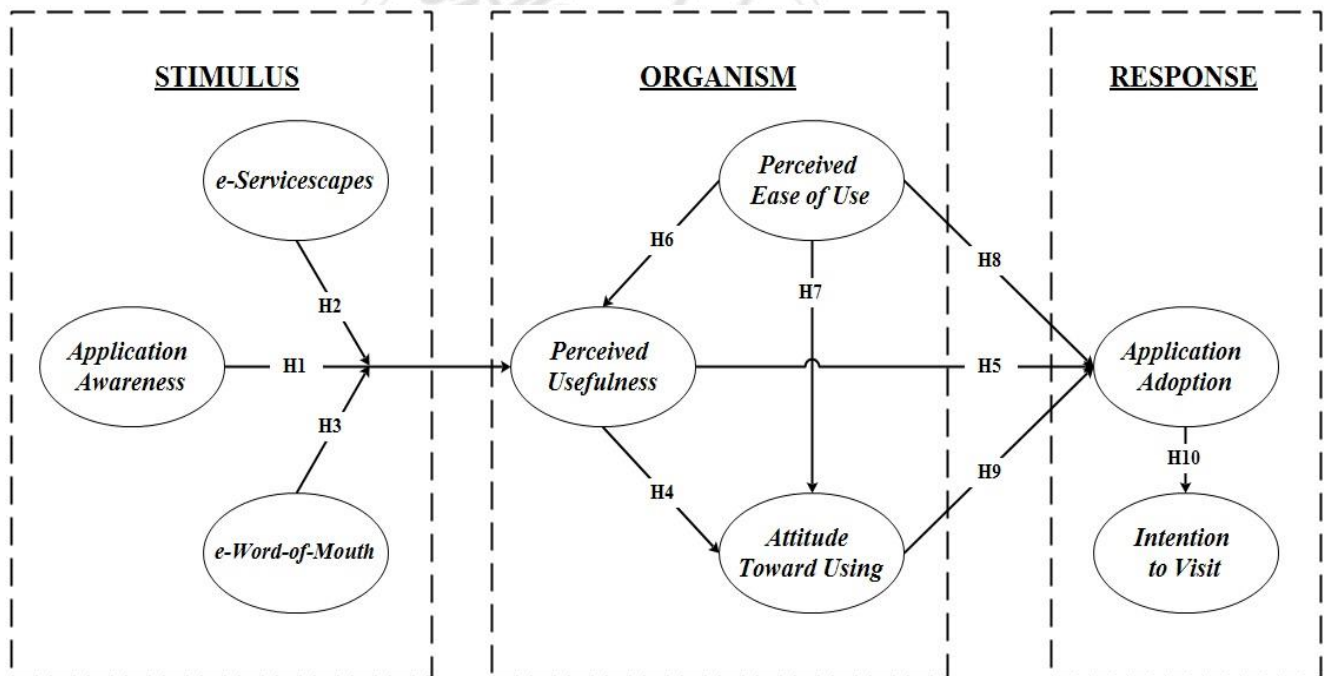


Figure 3-1 Research framework

The purpose of this study is to develop new tourism marketing strategy, using mobile application. The main point of study is examining how mobile users adopt to use new mobile application, then using this application to create new marketing channel for tourism. Based on the literature review, this study develops a research model as shown in Figure. It suggested that

the influence of online environmental stimuli as e-servicescape and e-WOM to relationship between application awareness and customer's perception (Perceived Usefulness), increasing their attention to new application on mobile device. Because of developing new technology, the two theory was applied as a cornerstone are Technology Acceptance Model and S-O-R theory. After that, study suggests a marketing strategy based on new application to promote customers travel by rising up their visit intention.

3.3 Research Instruments

This study identified 10 research constructs and evaluated the inter-relationship among constructs. These constructs are Application Awareness, e-servicescape, e-WOM, Perceived Usefulness, Perceived Ease of Use, Attitude Toward Using, Application Adoption, and Intention to Visit. For each construct, the operational conceptions and measurement items were also identified. The detailed questionnaire items are shown in Appendix.

3.3.1 Application Awareness

Application awareness was defined that is an understanding of an individual about their right as consumer when a mobile application was marketed. On the basic of the study of mobile banking adoption (Akturan, U. & N. Tezcan 2012), cited by (Mohammed Al-Husein, Muhammad Asad Sadi, 2015), this construct was measured with 4 items. Sample item include *“I have received enough information about tourism application on mobile device”* and *“I am aware about the benefit of tourism application on mobile device”*. All of the above items were measured based on a five-point Likert scale, with “1” indicating *“totally disagree”* and “5” indicating *“totally agree”*

Appendix 1 Measurement of application Awareness

Application Awareness
(AAW1) I have received enough information about tourism applications on mobile device.
(AAW2) I have received enough information of how to use tourism applications.
(AAW3) I think I fully understand what tourism application on mobile device is.
(AAW4) I am aware about the benefit of tourism applications on mobile device.

3.3.2 *E-servicescapes*

On the basis of the study of Harris and Goode (2010), e-servicescape was measured with 52 items by three dimensions, such as aesthetic appeal, layout, and functionality, and financial security dimensions that could influence trust in website. Aesthetic appeal was measured by perceived visual appeal (five items), originality of design (four items), and entertainment value (five items). Layout and functionality was measured by usability (eleven items), relevance of information (five items), customization/personalization (seven items), and interactivity (five items). Financial security was measured with ease of payment (five items) and perceived security (five items).

Then, this study also adopted the e-servicescape dimensions of Harris and Goode (2010) and conducted an exploratory analysis to identify a shortened version. The e-servicescape dimensions of the study will be measured with 15 items modified from Tran et al. (2012). In particular, aesthetic appeal is comprised 4 items. Layout and functionality is measured through 2 sub-dimensions: interactivity (2 items), usability (5 items). Sample survey items for measuring layout and functionality included “*The functions on this application are easy to operate*”. Financial security is measured with 4 items. All of the above items were measured based on a five-point Likert scale, with “1” indicating “*totally disagree*” and “5” indicating “*totally agree*”

Appendix 2 Measurement of E-servicescape

E-servicescape
<u><i>Aesthetic Appeal</i></u>
(AA1) Tourism applications should be visually attractive (AA2) It uses stimulating images and graphics (AA3) Displays products in an attractive or desirable fashion (AA4) It is aesthetically appealing
<u><i>Layout and functionality</i></u>
(LF1) There are useful navigational aids (LF2) The links are obvious in their intent and destination (LF3) The functions on this application are easy to operate (LF4) Navigation through this application is intuitively logical (LF5) This application has instruction for use (LF6) This application is user-friendly. (LF7) In general, this is an easy application to use

3.3.3 E-Word-of-Mouth (e-WOM)

e-WOM is defined that share consumer's opinions about application or experience of using application. To measure e-WOM, three dimensions with 16 items, such as opinion receiving (5 items), opinion seeking (7 items), and opinion passing (4 items) (Chu and Kim, 2011; Sun et al., 2006).

Then, this study also adopted the e-WOM dimensions of Tien Wang (2016) and conducted an exploratory analysis to identify a shortened version. The e-WOM dimensions of the study will be measured with 7 items modified from Tien Wang (2016). In particular, opinion receiving is comprised 3 items. Opinion seeking is comprised 4 items. Sample survey items for measuring layout and functionality included “*My contacts often introduce me using mobile application which they like*” and “*I tend to seek out or search for others' opinions or comments regarding new application to download*”. As mention before, because e-WOM play a role as online environmental stimuli so that the third dimension, opinion passing, may not be

suitable for this study. All of the above items were measured based on a five-point Likert scale, with “1” indicating “*totally disagree*” and “5” indicating “*totally agree*”

Appendix 3 Measurement of E-Word-of-Mouth

E-Word-of-Mouth
Opinion Receiving
(OR1) My contacts often introduce me using mobile application which they like (OR2) My choice of mobile applications is partly influenced by my friends and contacts. (OR3) I download applications partly based on mutual use by friends and family
Opinion Seeking
(OS1) When I consider to use new mobile application, I ask my contacts on social networks for advice (OS2) I like to get my contacts’ opinions on social networks before I download new mobile application (OS3) I tend to seek out or search for others’ opinions or comments regarding new application to download (OS4) I like to seek out negative reviews about new application on internet before I make a decision to download it

3.3.4 Perceived Usefulness

Perceived usefulness defined as “*the extent to which a person believes that using a particular technology will enhance her/his job performance*” (Davis, 1989). These follows from the definition of perceived usefulness that people will consider a system to be useful when it enhances their job performance. To measure Perceived Usefulness, 4 items was measured based on Mohammed Al-Husein (2015).

Then, this study also adopted the Perceived usefulness of Mohammed Al-Husein (2015) and conducted an exploratory analysis. Perceived usefulness of the study will be measured with 4 items modified from Mohammed Al-Husein (2015). Sample survey items included “*Using tourism application help save much time*” and “*It is convenient when using tourism*

application to plan out a trip". All of the above items were measured based on a five-point Likert scale, with "1" indicating "totally disagree" and "5" indicating "totally agree"

Appendix 4 Measurement of Perceived Usefulness

Perceived Usefulness
(PU1) Using tourism application help save much time
(PU2) Tourism application helps me searching many tourism destination
(PU3) Tourism application provides much useful information for my travel
(PU4) It is convenient when using tourism application to plan out a trip

3.3.5 Perceived Ease of Use

Perceived ease of use is described as "the degree to which a person believes that using a particular system would be free of effort" (Davis 1989). Based on the definition of the perceived ease of use, a person will have a service / application as easy to use if no additional effort is required of him/her. To measure Perceived Usefulness, 4 items was measured based on Mohammed Al-Husein (2015).

Then, this study also adopted the Perceived ease of use of Mohammed Al-Husein (2015) and conducted an exploratory analysis. Perceived ease of use of the study will be measured with 4 items modified from Mohammed Al-Husein (2015). Sample survey items included "It is easy to learning how to use tourism application" and "Many flexible ways to access information on tourism application". All of the above items were measured based on a five-point Likert scale, with "1" indicating "totally disagree" and "5" indicating "totally agree"

Appendix 5 Measurement of Perceived Ease of Use

Perceived Ease of Use
(PEOU1) It is easy to learning how to use tourism application
(PEOU2) Instruction of tourism application would be clear and understandable.
(PEOU3) Many flexible ways to access information on tourism application
(PEOU4) The user-friendly aspect of tourism application is very important

3.3.6 Attitude Toward Using

Attitude Toward Using was defined as —a reviewer’s overall evaluation of persons, objects, and issues (Ajzen & Fishbein, 1980). This commonly suggested conception states that attitude is not over behavior but a disposition, which influences behavior. To measure Attitude Toward Using, 4 items was measured based on Mohammed Al-Husein (2015).

Then, this study also adopted the Attitude Toward Using of Mohammed Al-Husein (2015) and conducted an exploratory analysis. Attitude Toward Using of the study will be measured with 4 items modified from Mohammed Al-Husein (2015). Sample survey items included “*Mobile tourism application development will support travellers*” and “*Overall, my attitude towards using this kind of tourism application is positive*”. All of the above items were measured based on a five-point Likert scale, with “1” indicating “*totally disagree*” and “5” indicating “*totally agree*”.

Appendix 6 Measurement of Attitude Toward Using

Attitude Toward Using
(AT1) Mobile tourism application development will support travelers
(AT2) I will use these kind of tourism application in the future
(AT3) I am not satisfied without using tourism application when creating travel plan
(AT4) Overall, my attitude towards using this kind of tourism application is positive

3.3.7 Application Adoption

Liran Einav stated that users had adopted mobile application when making their first online activity in this application (2014). Besides, on the development of the mobile application as well as the increasing number of downloaded applications, means that the mobile adopters are – on average – more than the non-adopters, with the difference being pronounced for the mobile adopters. To measure Attitude Toward Using, 3 items was measured based on Samsiah Bidin (2012).

Then, this study also adopted the Application Adoption of Samsiah Bidin (2012) and conducted an exploratory analysis. Application Adoption of the study will be measured with 3 items modified from Samsiah Bidin (2012). Sample survey items included “*I decide to use*

this kind of tourism application for the next travel” and *“I will use tourism application when travelling”*. All of the above items were measured based on a five-point Likert scale, with “1” indicating “totally disagree” and “5” indicating “totally agree”

Appendix 7 Measurement of Application Adoption

Application Adoption
(AAp1) I decide to use this kind of tourism application for the next travel
(AAp2) I will use tourism application to make travel plan
(AAp3) I will use tourism application when travelling

3.3.8 *Intention to Visit*

Intention is an act of determining mentally relies on result before (in this study, the result is intention to visit tourism destination). To measure Attitude Toward Using, 3 items was measured from Oliver, (1997), Kozak & Rimmington, (2000). Then, this study also adopted the Intention to Visit of Kozak & Rimmington, (2000) and conducted an exploratory analysis. Intention to Visit of the study will be measured with 3 items modified from Kozak & Rimmington, (2000). In this study, intention to revisit was evaluated with 3 items such as *“After using tourism application, my travel intention is clearer”*, *“Choosing firstly tourism destinations which are searched through application when I plan to travel”*, *“I predict I will travel more with this tourism application”*. The measures indicate how likely the respondent will choose to visit destination which recommended or found through application. All of the above items were measured based on a five-point Likert scale, with “1” indicating “totally disagree” and “5” indicating “totally agree”

Appendix 8 Measurement of Intention to Visit

Intention to Visit
(IV1) After using tourism application, my travel intention is clearer
(IV2) Tourism destinations suggested by travel applications are usually my first choice when I plan on travelling
(IV3) I predict I will travel more with this tourism application

3.4 Data Analysis Procedure

In order to achieve the purposes of this research and test the hypotheses, SPSS 22.0 and SmartPLS software will be employed to analyze the collected data. We have conducted the following data analysis:

3.4.1 Descriptive Statistic Analysis

To better understand the characteristics of each variable, descriptive statistic analysis is used. Firstly, respondents profile will be illustrated which use descriptive statistical techniques in terms of frequency of distribution. Lately, the research will show the means, and standard deviation of each research variables.

3.4.2 Factor Analysis and Reliability Test

To purify the measurement scales, to identify dimensionality, principal component factor analysis was applied to condense the collected data into certain factors. After factor analysis was done, item-to-total correlation and internal consistency analysis (Cronbach's alpha) were employed to confirm the reliability of each research factors.

- Factor Analysis

Factor analysis takes a huge number of variables, and puts them into a small number of factors, within which all of the variables are related to each other. Factor analysis can identify the basic underlying variables which account for the correlations between actual test scores. The purpose of this method is to explore underlying variance structure of correlation coefficients. It can be used not only to reduce or summarize data but it also can use for confirmatory purpose. It assumes that a small number of unobserved constructs are responsible for the correlation between a huge number of observed variables. The latent constructs cannot be observed directly, but they affect variables. More specifically, this method assumes that the variance of every observed variable comes from 2 parts: a common part which is shared with other variables that cause correlation among them, and a unique part which is different from another variable.

- Internal Consistency Analysis (Cronbach's Alpha)

Coefficient alpha (α) is a measure of squared correlation between observed scores and true scores. It means that, reliability is measured in terms of the ratio of true score

variance to observed score variance. It can test the internal consistency of each factor to avoid additional dimensions produced by factor analysis due to garbage items. The coefficient alpha will be high if the scale items are highly correlated. If the α is low, it is possible that the measurement scale used did not adequately measure the construct which it was intended to measure (Churchill, 1979). In this study, α which is greater than 0.70, is highly satisfactory for most research purposes (Hair et al., 2014) and if $\alpha < 0.3$, then it implies that there is low reliability.

3.4.4 *Confirmatory Factor Analysis (CFA)*

Confirmatory factor analysis (CFA) is other form of factor analysis, which is commonly used in social research. It is used to test whether measures of a dimension are consistent with a researcher's understanding of the nature of that Dimension (or factor). The objective of CFA is to test if the data fit a measurement model. We put all the main variables together with each factors in this stage of analysis. The figure of CFA in this study can be seen in below section. This study conducts this analysis before doing the Structural Equation Model (SEM) analysis.

3.4.5 *Structural Equation Model (SEM)*

Structure Equation Model (SEM) compasses an entire family of models known by names, among them covariance structure analysis, latent variable analysis, CFA and often simply LISREL analysis. Structural-equation modeling combines the logic of CFA, multiple regressions, and path analysis in the application of a single technique (Henley, Shook, & Peterson, 2006).

With this technique, multiple relationships are tested concurrently; variables can be treated as dependent and independent variables simultaneously. Therefore, researchers are allowed to test the full scope of their hypothesized relationships within one statistical approach rather than being forced to use multiple approaches consecutively as in prior research (Shook, Ketchen, Hult, & Kacmar, 2004). Furthermore, the inclusion of the confirmatory-factor-analysis component of the technique via the measurement model allows the researcher to measure and account for measurement error explicitly. Therefore, both hypothesis testing and factor analysis can be accomplished through the application of this single method (Shook et al., 2004).

CHAPTER FOUR

EMPIRICAL RESULTS

4.1 Descriptive Analysis

To show off information about characteristics of respondents and the results, preliminary analyses were conducted in this section.

4.2 Response rates and Data Collection

The data were gathered through questionnaire survey five – month – period from the middle of July 2016, to the middle of December 2016 in Hanoi, Vietnam. A total of 400 survey questionnaires are sent to the travelers who have used mobile tourism application before. Given the responses of 250 filled in questionnaires, a response rate of 62.5% is obtained. There are no missing data from the 250 questionnaires; hence there were 250 are usable.

4.3 Characteristics of Respondent

Table 4–1 indicates the basic attributes of the sample responses. There are four major points in this study: (1) Gender, (2) Age, (3) Income, (4) Nationality. Looking in the table below, there are more female respondents than males, which stand at 54 percentages. Besides, mostly respondents are young people below than 30 year old, which make up 80 percentages of sample, so that amount of people earning less than 300USD per month achieve 61.6 percentages, which is approximate to 154 persons. Finally, because of conducting sample in Vietnam, amount of Vietnamese respondents hold more than half of sample size (54%), another are foreign travelers who are travelling in Vietnam. Philippine is approximate the least, there was only 16 persons answered this questionnaire.

Table 4-1 *Characteristics of the Respondents (N = 250)*

Classification	Respondents	
	Frequency	Percentage (%)
<i>Gender</i>		
Male	115	46%
Female	135	54%
<i>Age</i>		
< 20	91	36.4%
21 – 30	110	44.0%
31 – 40	29	11.6%
40 – 50	13	5.2%
> 50	7	2.8%
<i>Income (USD/month)</i>		
< 300	139	55.6%
301 – 600	60	24.0%
601 – 900	21	8.4%
901 – 1200	19	7.6%
1200	11	4.4%
<i>Nationality</i>		
Vietnam	135	54.0%
Indonesia	19	7.6%
Malaysia	26	10.4%
Thailand	30	12.0%
Singapore	24	9.6%
Philippine	16	6.4%

Besides, respondents also answered which tourism application on mobile device they were used. This study chose three applications are representative of four common kinds of tourism which people frequently use; there are Google Maps (location based services), Agoda (online booking), TripAdvisor (trip journals), and UNESCO (information resources). Looking in the graph 4-1 below, 243 respondents have used Google Maps, which is approximate the most. UNESCO and TripAdvisor were used in order 62 and 75, respondents said.

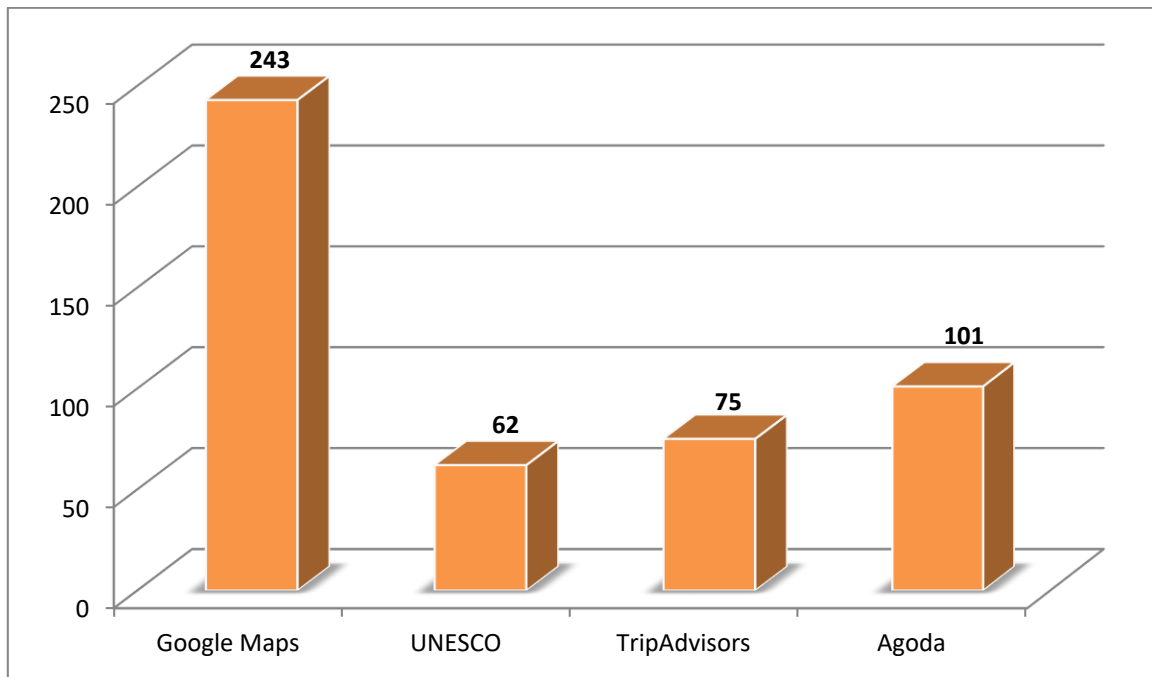


Figure 4-1 Mobile tourism applications from different sources

4.4 Descriptive Analysis of Research Variables

Table 4–2 indicates the descriptive statistics by questionnaire items for sample. There are four items of Application Awareness, seven items of Word – of – Mouth (three items of Opinion Receiving, four items of Opinion Seeking), eleven items of e-Servicescapes (four items of Aesthetic Appeal, seven items of Layout and Functionality), four items of Perceived Usefulness, four items of Perceived Ease of Use, four items of Attitude Toward Using, three items of Application Adoption, three items of Intention to Visit

As show in Table 4-2, for Application Awareness, the sample cases show a range of item’s mean value from 3.80 to 4.32 in the 5 – point Likert scales, and item AW4 has highest mean value in factor which is 4.32. Items of Word-of-Mouth factor are more than Application Awareness factor, but the difference between these items is inconsiderable, from 3.86 to 4.08. In term of e-Servicescapes, the highest mean value is LF6 which is 4.45, while the lowest mean value is AA1 which stands only 3.90. Besides, a range of item’s mean value from 4.27 to 4.38 in 5 – point Likert scales of factor Perceived Usefulness. Factor Perceived Ease of Use indicated mean value of its items in 5 – point Likert scales, which ranges from 4.12 (PEOU2) to 4.37

(PEOU4). In factor Attitude Toward Using, there are a similarity between items' mean value, which are AT1 (4.12), AT2 (4.13), AT3 (4.13), while AT4 has highest mean value which is 4.27. For the Application Adoption, the sample case shows a range from 4.25 to 4.30 in the 5-point Likert scales. For the Intention to Visit, the sample case shows a range from 3.95 to 4.22 in the 5-point Likert scales.

Table 4-2 *Descriptive Analysis for Questionnaire Items*

Item	Description (5 – point scale)	Mean	Std. Dev
<i><u>Application Awareness</u></i>			
AW1	I have received enough information about tourism applications on mobile device.	3.80	0.958
AW2	I have received enough information of how to use tourism applications.	4.13	0.875
AW3	I think I fully understand what tourism applications on mobile device are.	4.00	0.982
AW4	I am aware about the benefit of tourism applications on mobile device for travel purpose.	4.32	0.856
<i><u>Word – of – Mouth</u></i>			
OR1	My contacts often introduce me using mobile applications which they like.	4.02	0.957
OR2	My choice of mobile applications is partly influenced by my friends and contacts.	3.87	0.962
OR3	I often try using new application based on suggestion or advertise on internet.	3.86	1.005
OS1	When I consider using new mobile application, I ask my contacts on social networks for advice.	3.92	1.017
OS2	I like to get my contacts' opinions on social networks before I download new mobile application	3.89	1.117
OS3	I tend to seek out or search for others' opinions or comments regarding new mobile application to download.	4.08	1.000
OS4	I like to seek out negative reviews about new application on internet before I make a decision to download it.	3.89	1.142
<i><u>e-Servicescapes</u></i>			
AA1	It is visually attractive	3.90	1.001
AA2	It uses stimulating images and graphics	3.96	0.960
AA3	Displays products in an attractive or desirable fashion	4.07	0.940
AA4	It is aesthetically appealing	4.23	0.923
LF1	There are useful navigational aids	4.35	0.880
LF2	The links are obvious in their intent and destination	4.30	0.841

LF3	The functions on this application is easy to operate	4.33	0.872
LF4	Navigation through this application is intuitively logical	4.21	0.913
LF5	This mobile application has clear instructions for use	4.33	0.876
LF6	This mobile application is user-friendly.	4.45	0.859
LF7	In general, mobile applications should be easy to use	4.44	0.858
<i>Perceived Usefulness</i>			
PU1	Using tourism applications helps me save much time	4.28	0.837
PU2	Tourism applications help me easily search many tourism destinations.	4.27	0.854
PU3	Tourism applications provide useful information for my travel.	4.28	0.851
PU4	It is convenient when using tourism application to plan out a trip	4.35	0.843
<i>Perceived Ease of Use</i>			
PEOU1	It is easy to learn how to use tourism applications	4.24	0.859
PEOU2	Instruction of tourism applications would be clear and understandable.	4.12	0.867
PEOU3	Many flexible ways to access information on tourism applications	4.19	0.865
PEOU4	The user-friendly aspect of tourism applications is very important.	4.37	0.855
<i>Attitude Toward Using</i>			
AT1	Mobile tourism application development will support travelers	4.12	0.865
AT2	I will use these kind of tourism applications in the future	4.13	0.866
AT3	I am satisfied when using tourism applications for creating travel plan	4.13	0.875
AT4	Overall, my attitude towards using this kind of tourism applications is positive	4.27	0.871
<i>Application Adoption</i>			
AAp1	I have decided to use these kind of tourism applications for the next travel	4.25	0.839
AAp2	I will use tourism applications to make travel plan	4.28	0.889
AAp3	I will use tourism applications when travelling	4.30	0.869
<i>Intention to Visit</i>			
IV1	After using tourism applications, my travel intention is clearer	4.05	1.063
IV2	Tourism destinations suggested by travel applications are usually my first choice when I plan on travelling	3.95	1.074
IV3	I expect to travel more with these kind of applications in near future	4.22	1.028

4.5 Factor Analysis and Reliability Tests

To verify the dimensionality and reliability of the constructs, several data purification processes are conducted in this research, including factor analysis, correlation analysis, and coefficient alpha analysis. For factor analysis examines the basic structure of the data.

Correlation analysis confirms the multi-collinearity among variables, and coefficient (Cronbach's) alpha assesses the internal consistency of each variable.

For each research construct, factor analysis is adopted first to select the items with higher factor loading, and then to compare with the theoretically suggested items. After factor analysis, item-to-total correlation, coefficient alpha, and correlation matrix are calculated to provide the internal consistency measurements to each constructs.

Confirmatory Analysis was conducted for all constructs as the data were taken and adapted from former research and following criterions were followed for the factor analysis:

- Factor loading: Higher than 0.6
- Kaiser Meyer Olkin Measure of Sampling Adequacy (KMO): Higher than 0.5 & Bartlett's test Sig below than 0.05
- Eigen value: Higher than 1
- Explained variance (accumulative): Higher than 0.6
- Cronbach's coefficient alpha (α): Higher than 0.7
- Item-to-total correlation: Higher than 0.5

The results of the factor analysis and reliability for each variable are shown in Table 4-3 to 4-11

4.5.1 *Application Awareness*

There are total four items in this construct using to explain the Application Awareness, which are listed in above table 4-3.

In general, the KMO value for all factors in each Construct is 0.771 over 0.7, hence it represents data in each factor are well suitable to perform factor analysis. Bartlett test values are 0.000, which indicates correlations between the variables are significant.

All items have factor loadings higher than 0.6. Between each item, item AA2 "*I have received enough information of how to use tourism applications*" had the highest Factor loading is 0.848, which indicates the highest relation to construct Application Awareness. Besides, construct's Eigenvalue is 2.584 higher than 1, which getting reasonable proportion of Accumulative Explained is 64.590 and substantive sense, which show these are important underlying factors for this construct.

Reliability test showed all variables are significant when the item-to-total correlations of all items are above 0.5, contributing to high value of - Cronbach's coefficient alpha $\alpha = 0.814$, thus representing a high internal consistency in construct.



Table 4-3 Results of Factor Analysis and Reliability Check on Application Awareness

<i>Research Construct</i>	<i>Research Item</i>	<i>Factor Loading</i>	<i>Eigen Value</i>	<i>Accumulative Explained</i>	<i>Item to Total Correlation</i>	<i>Cronbach's α</i>
<u>Application Awareness</u> KMO=0.77 1 BTV=0.000			2.584	64.590		0.814
	AA2 I have received enough information of how to use tourism applications.	0.848			0.696	
	AA3 I think I fully understand what tourism applications on mobile device are.	0.800			0.632	
	AA4 I am aware about the benefit of tourism applications on mobile device for travel purpose.	0.798			0.624	
	AA1 I have received enough information about tourism applications on mobile device.	0.767			0.593	

4.5.2 Word – of – Mouth

There are total seven items in this construct using to explain the Word of Mouth. This construct is divided into two factors for further analysis purposes and items of each factor are listed in above table. (3 items in factor 1 and 4 items in factor 2).

In general, the KMO value for all factors in each Construct is 0.874 over 0.7, hence it represents data in each factor are well suitable to perform factor analysis. Bartlett test values are 0.000, which indicates correlations between the variables are significant.

All items have factor loadings higher than 0.6. Between each item, item OR3 “*My choice of mobile applications is partly influenced by the suggestion or advertises on internet.*” had the highest Factor loading is 0.891, which indicates the highest relation to factor Opinion Receiving of construct Word of Mouth.

In fact, factor 1 has Eigenvalue is 2.070 higher than 1, which getting reasonable proportion of Accumulative Explained is 69.001 and substantive sense, which show these are important underlying factors for this construct. Reliability test showed all variables are significant when the item-to-total correlations of all items are above 0.5, contributing to high

value of - Cronbach's coefficient alpha $\alpha = 0.814$, thus representing a high internal consistency in construct.

For factor 2 – Opinion Seeking, Eigenvalue is 2.434 higher than 1, which getting reasonable proportion of Accumulative Explained is 60.845 and substantive sense, which show these are important underlying factors for this construct. Reliability test showed all variables are significant when the item-to-total correlations of all items are above 0.5, contributing to high value of - Cronbach's coefficient alpha $\alpha = 0.814$, thus representing a high internal consistency in construct.

Table 4-4 Results of Factor Analysis and Reliability Check on Word-of-Mouth

Research Construct	Research Item	Factor Loading	Eigen Value	Accumulative Explained	Item to Total Correlation	Cronbach's α
Word of Mouth KMO=0.874 BTV=0.000	<u>Opinion Receiving</u>		2.070	69.001		0.775
	OR3 My choice of mobile applications is partly influenced by the suggestion or advertises on internet.	0.891			0.712	
	OR2 My choice of mobile applications is partly influenced by my friends and contacts.	0.816			0.585	
	OR1 My contacts often introduce me using mobile applications which they like.	0.781			0.541	
	<u>Opinion Seeking</u>		2.434	60.845		0.785
	OS2 I like to get my contacts' opinions on social networks before I download new mobile application	0.797			0.612	
	OS4 I like to seek out negative reviews about new application on internet before I make a decision to download it.	0.786			0.598	
	OS1 When I consider using new mobile application, I ask my contacts on social networks for advice.	0.773			0.585	
	OS3 I tend to seek out or search for others' opinions or comments regarding new mobile application to download	0.763			0.573	

4.5.3 E-Servicescapes

There are total eleven items in this construct using to explain the e-Servicescape. This construct is divided into two factors for further analysis purposes and items of each factor are listed in above table. (4 items in factor 1 and 7 items in factor 2).

In general, the KMO value for all factors in each Construct is 0.922 over 0.7, hence it represents data in each factor are well suitable to perform factor analysis. Bartlett test values are 0.000, which indicates correlations between the variables are significant.

All items have factor loadings higher than 0.6. Between each item, item LF2 “*The links are obvious in their intent and destination.*” had the highest Factor loading is 0.826, which indicates the highest relation to factor Layout and Functionality of construct e-Servicescape.

In fact, factor 1 has Eigenvalue is 4.211 higher than 1, which getting reasonable proportion of Accumulative Explained is 60.155 and substantive sense, which show these are important underlying factors for this construct. Reliability test showed all variables are significant when the item-to-total correlations of all items are above 0.5, contributing to high value of - Cronbach’s coefficient alpha $\alpha = 0.899$, thus representing a high internal consistency in construct.

For factor 2 – Aesthetic Appeal, Eigenvalue is 2.478 higher than 1, which getting reasonable proportion of Accumulative Explained is 61.946 and substantive sense, which show these are important underlying factors for this construct. Reliability test showed all variables are significant when the item-to-total correlations of all items are above 0.5, contributing to high value of - Cronbach’s coefficient alpha $\alpha = 0.795$, thus representing a high internal consistency in construct

Table 4-5 Results of Factor Analysis and Reliability Check on e-Servicescapes

Research Construct	Research Item	Factor Loading	Eigen Value	Accumulative Explained	Item to Total Correlation	Cronbach's α
<p><i>e-Servicescape</i></p> <p>KMO=0.92 2 BTV=0.000</p>	<u>Layout and functionality</u>		4.211	60.155		0.889
	LF2 The links are obvious in their intent and destination	0.826			0.745	
	LF3 The functions on this application are easy to operate	0.787			0.694	
	LF6 This application is user-friendly.	0.780			0.689	
	LF1 There are useful navigational aids	0.780			0.688	
	LF7 In general, this is an easy application to use	0.766			0.672	
	LF5 This application has instruction for use	0.762			0.667	
	LF4 Navigation through this application is intuitively logical	0.725			0.625	
	<u>Aesthetic Appeal</u>		2.478	61.946		0.795
	AA2 It uses stimulating images and graphics	0.831			0.664	
	AA1 Tourism applications should be visually attractive	0.822			0.649	
	AA4 It is aesthetically appealing	0.752			0.562	
	AA3 Displays products in an attractive or desirable fashion	0.740			0.548	

4.5.4 Perceived Usefulness

There are total four items in this construct using to explain the Perceived Usefulness, which are listed in above table 4-6.

In general, the KMO value for all factors in each Construct is 0.835 over 0.7, hence it represents data in each factor are well suitable to perform factor analysis. Bartlett test values are 0.000, which indicates correlations between the variables are significant.

All items have factor loadings higher than 0.6. Between each item, item PU1 “Using tourism application help save much time” had the highest Factor loading is 0.873, which indicates the highest relation to construct Perceived Usefulness. Besides, construct’s Eigenvalue is 2.922 higher than 1, which getting reasonable proportion of Accumulative Explained is

73.054 and substantive sense, which show these are important underlying factors for this construct.

Reliability test showed all variables are significant when the item-to-total correlations of all items are above 0.5, contributing to high value of - Cronbach's coefficient alpha $\alpha = 0.877$, thus representing a high internal consistency in construct

Table 4-6 Results of Factor Analysis and Reliability Check on Perceived Usefulness

Research Construct	Research Item	Factor Loading	Eigen Value	Accumulative Explained	Item to Total Correlation	Cronbach's α
Perceived Usefulness KMO=0.835 BTV=0.000			2.922	73.054		0.877
	PU1 Using tourism application help save much time	0.873			0.761	
	PU3 Tourism application provides much useful information for my travel	0.868			0.753	
	PU2 Tourism application helps me searching many tourism destination	0.846			0.722	
	PU4 It is convenient when using tourism application to plan out a trip	0.832			0.702	

4.5.5 Perceived Ease of Use

There are total four items in this construct using to explain the Perceived Ease of Use, which are listed in above table 4-7.

In general, the KMO value for all factors in each Construct is 0.821 over 0.7, hence it represents data in each factor are well suitable to perform factor analysis. Bartlett test values are 0.000, which indicates correlations between the variables are significant.

All items have factor loadings higher than 0.6. Between each item, item PEOU3 “*Many flexible ways to access information on tourism application*” had the highest Factor loading is 0.848, which indicates the highest relation to construct Perceived Ease of Use. Besides, construct's Eigenvalue is 2.777 higher than 1, which getting reasonable proportion of Accumulative Explained is 69.420 and substantive sense, which show these are important underlying factors for this construct.

Reliability test showed all variables are significant when the item-to-total correlations of all items are above 0.5, contributing to high value of - Cronbach's coefficient $\alpha = 0.853$, thus representing a high internal consistency in construct

Table 4-7 Results of Factor Analysis and Reliability Check on Perceived Ease of Use

Research Construct	Research Item	Factor Loading	Eigen Value	Accumulative Explained	Item Total Correlation	Cronbach's α
Perceived Ease of Use KMO=0.821 BTV = 0.000			2.777	69.420		0.853
	PEOU3 Many flexible ways to access information on tourism application	0.848			0.715	
	PEOU2 Instruction of tourism application would be clear and understandable	0.838			0.701	
	PEOU4 The user-friendly aspect of tourism application is very important	0.823			0.680	
	PEOU1 It is easy to learning how to use tourism application	0.823			0.680	

4.5.6 Attitude Toward Using

There are total four items in this construct using to explain the Attitude Toward Using, which are listed in above table 4-8.

In general, the KMO value for all factors in each Construct is 0.808 over 0.7, hence it represents data in each factor are well suitable to perform factor analysis. Bartlett test values are 0.000, which indicates correlations between the variables are significant.

All items have factor loadings higher than 0.6. Between each item, item AT1 "Mobile tourism application development will support travelers" had the highest Factor loading is 0.859, which indicates the highest relation to construct Attitude Toward Using. Besides, construct's Eigenvalue is 2.824 higher than 1, which getting reasonable proportion of Accumulative Explained is 70.601 and substantive sense, which show these are important underlying factors for this construct.

Reliability test showed all variables are significant when the item-to-total correlations of all items are above 0.5, contributing to high value of - Cronbach's coefficient $\alpha = 0.861$, thus representing a high internal consistency in construct.

Table 4-8 Results of Factor Analysis and Reliability Check on Attitude Toward Using

Research Construct	Research Item	Factor Loading	Eigen Value	Accumulative Explained	Item to Total Correlation	Cronbach's α
Attitude Toward Using KMO=0.808 BTV=0.000			2.824	70.601		0.861
	AT1 Mobile tourism application development will support travelers	0.859			0.732	
	AT3 I am not satisfied without using tourism application when creating travel plan	0.849			0.721	
	AT2 I will use these kind of tourism application in the future	0.845			0.713	
	AT4 Overall, my attitude towards using this kind of tourism application is positive	0.808			0.663	

4.5.7 Application Adoption

There are total three items in this construct using to explain the Application Adoption, which are listed in above table 4-9.

In general, the KMO value for all factors in each Construct is 0.735 over 0.7, hence it represents data in each factor are well suitable to perform factor analysis. Bartlett test values are 0.000, which indicates correlations between the variables are significant.

All items have factor loadings higher than 0.6. Between each item, item AAp2 “*I will use tourism application to make travel plan*” had the highest Factor loading is 0.910, which indicates the highest relation to construct Application Adoption. Besides, construct’s Eigenvalue is 2.407 higher than 1, which getting reasonable proportion of Accumulative Explained is 80.227 and substantive sense, which show these are important underlying factors for this construct.

Reliability test showed all variables are significant when the item-to-total correlations of all items are above 0.5, contributing to high value of - Cronbach’s coefficient alpha $\alpha = 0.876$, thus representing a high internal consistency in construct

Table 4-9 Results of Factor Analysis and Reliability Check on Application Adoption

Research Construct	Research Item	Factor Loading	Eigen Value	Accumulative Explained	Item to Total Correlation	Cronbach's α
Mobile Application Adoption KMO=0.735 BTV=0.000			2.407	80.227		0.876
	AAp2 I will use tourism application to make travel plan	0.910			0.788	
	AAp1 I decide to use this kind of tourism application for the next travel	0.903			0.776	
	AAp3 I will use tourism application when travelling	0.873			0.723	

4.5.8 Intention to Visit

There are total three items in this construct using to explain the Intention to Visit, which are listed in above table 4-10.

In general, the KMO value for all factors in each Construct is 0.749 over 0.7, hence it represents data in each factor are well suitable to perform factor analysis. Bartlett test values are 0.000, which indicates correlations between the variables are significant.

All items have factor loadings higher than 0.6. Between each item, item IV1 “*After using tourism application, my travel intention is clearer*” had the highest Factor loading is 0.912, which indicates the highest relation to construct Intention to Visit. Besides, construct’s Eigenvalue is 2.465 higher than 1, which getting reasonable proportion of Accumulative Explained is 82.150 and substantive sense, which show these are important underlying factors for this construct.

Reliability test showed all variables are significant when the item-to-total correlations of all items are above 0.5, contributing to high value of - Cronbach’s coefficient alpha $\alpha = 0.891$, thus representing a high internal consistency in construct.

Table 4-10 Results of Factor Analysis and Reliability Check on Intention to Visit

Research Construct	Research Item	Factor Loading	Eigen Value	Accumulative Explained	Item to Total Correlation	Cronbach's α
Intention to Visit KMO=0.749 BTV=0.000			2.465	82.150		0.891
	IV1 After using tourism application, my travel intention is clearer	0.912			0.797	
	IV3 I predict I will travel more with this tourism application	0.909			0.791	
	IV2 Tourism destinations suggested by travel applications are usually my first choice when I plan on travelling	0.898			0.772	

4.6 Hypothesis Testing

4.6.1 Hierarchical Regression

Hierarchical regression indicates the explanation of a statistically significant amount of variance in Dependent Variable (DV) after accounting for all other variables. In another word, this kind of analysis is “*sharing statistical strength*”. Apply hierarchical regression analysis in this study to test how significant of two moderating factor, e-Servicescape and e-Word of Mouth, in the relationship between Application Awareness and Perceived Usefulness.

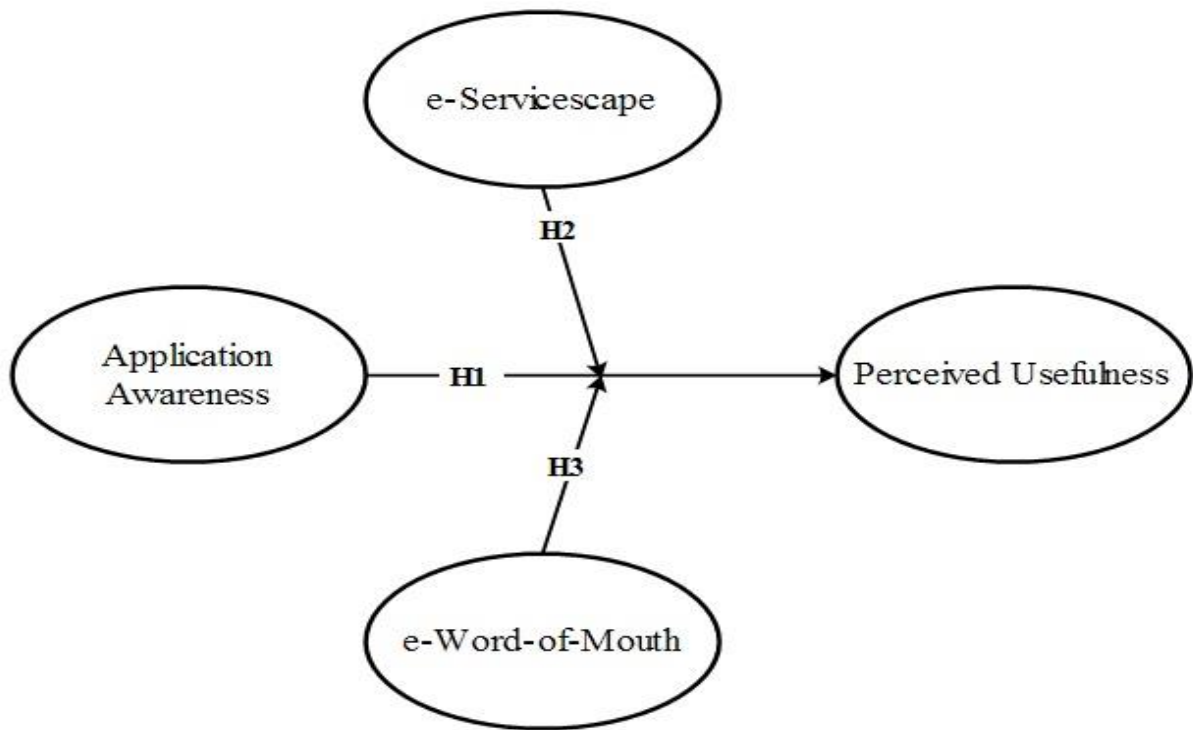


Figure 4-2 Moderating constructs for hypothesis 1

- Moderating effect of e-Servicescape to the relationship between Application Awareness and Perceived Usefulness (H2)

A two-stage hierarchical multiple regression was conducted with “Perceived Usefulness” as the dependent variable. As can be seen in Figure 3-1, Application Awareness affects directly to Perceived Usefulness, so this construct was entered at stage one (model 1) of the regression to control for Perceived Usefulness responding. E-Servicescapes which combines two groups, Aesthetic Appeal (AA) and Layout and Functionality (LF) played as the Attachment variables and it would be entered at stage two. The regression statistics result was presented in Table 4-11.

Table 4-11 Summary of Hierarchical Regression Analysis for Variables (e-Servicescapes) predicting Perceived Usefulness

	Dependent Variable (PU)			
	Model 1	Model 2	Model 3	Model 4
<u>Independent Variable</u>				
AAw	0.604***		0.349***	0.303***
<u>Moderating Variables</u>				
AA		0.200**	0.135*	0.119*
LF		0.532***	0.406***	0.242**
<u>Interaction Variable</u>				
AAw*AA				0.017
AAw*LF				0.238**
R	0.604	0.682	0.746	0.763
R²	0.364	0.465	0.556	0.583
ΔR²	0.362	0.461	0.551	0.574
F-value	142.107***	107.403***	102.678***	68.149***

As can be seen in the table, at Stage one (model 1) of hierarchical regression, $F = 142.107$, $p\text{-value} < 0.001$, it means that Application Awareness contributed significantly in direct way to Perceived Usefulness. Besides, Adjusted R square of model 1 is 0.362, which presents Application Awareness accounted 36.2% of the variation in Perceived Usefulness. Moreover, $t = 11.921$, $p\text{-value} < 0.001$, which demonstrated more the significance of variable Application Awareness in the Hypothesis 1.

In the model 3, two Attachment variables of e-Servicescape factor was added, which changed adjusted R square from 0.362 to 0.551. Introducing the Attachment variables, it explained an additional 55.1% of variation in Perceived Usefulness, and this attachment increased R^2 to 0.556, $F = 102.678$, $p < 0.001$ proving stronger the significance. For Beta of Attachment variables, there are totally significant when $p\text{-value}$ below than 0.05, which indicates that all variables are meaningful in the contribution of Dependent variable. However, model 4 indicates the interaction variable $AA*AAw$ is not significance ($\beta = 0.017$, $p\text{-value} > 0.05$), while another interaction variable affect postively ($\beta = 0.238$, $p\text{-value} < 0.01$). It can be concluded that this hypothesis is partially support

- Moderating effect of e-Word-of-Mouth to the relationship between Application Awareness and Perceived Usefulness (H3)

A three-stage hierarchical multiple regression was conducted with “Perceived Usefulness” as the dependent variable. As can be seen in Figure 3-1, Application Awareness affects directly to Perceived Usefulness, so this construct was entered at stage one (model 1) of the regression to control for Perceived Usefulness responding. E-Word of Mouth which combines two groups, Opinion Receiving (OR) and Opinion Seeking (OS) played as the Attachment variables and it would be entered at stage two (model 3). The regression statistics result was presented in Table 4-11.

Table 4-12 Summary of Hierarchical Regression Analysis for Variables (e-WOM) predicting Perceived Usefulness

	Dependent Variable (PU)			
	<i>Model 1</i>	<i>Model 5</i>	<i>Model 6</i>	<i>Model 7</i>
<u>Independent Variable</u>				
AAw	0.604***		0.481***	0.404***
<u>Moderating Variables</u>				
OR		0.234**	0.173*	0.165*
OS		0.314***	0.071	0.062
<u>Interaction Variable</u>				
AAw*OR				0.161*
AAw*OS				0.001
R	0.604	0.502	0.633	0.646
R²	0.364	0.252	0.401	0.417
ΔR²	0.362	0.246	0.393	0.406
F-value	142.107***	41.687***	54.838***	34.973***

As can be seen in the table, at Stage one (model 1) of hierarchical regression, $F = 142.107$, $p\text{-value} < 0.001$, it means that Application Awareness contributed significantly to the regression model. Besides, Adjusted R square of model 1 is 0.362, which means Application Awareness accounted 36.2% of the variation in Perceived Usefulness. Moreover, $t = 11.921$, $p\text{-value} <$

0.001, which demonstrated more the significance of variable Application Awareness in the Hypothesis 1.

In the model 6, two Attachment variables of factor e-Word of Mouth were added, which changed adjusted R square from 0.362 to 0.393. Introducing the Attachment variables, it explained an additional 39.3% of variation in Perceived Usefulness, and this attachment increased R^2 to 0.401, $F = 54.838$, $p < 0.001$ proving stronger the significance. For Beta of Attachment variables, there is only Opinion Receiving (OR) has meaning in the contribution of Dependent variable when $t = 2.562$, $p\text{-value} < 0.05$, while $p\text{-value}$ of another Attachment variable was 0.337 higher than 0.05, which represents the un-significance in the contribution.

Besides, model 7 shows the un-significant effect of factor OS when it's interaction variable has $\beta = 0.001$, $p\text{-value} > 0.05$. On the other hand, another interaction variable affect positively ($\beta = 0.161$, $p\text{-value} < 0.05$). It can be concluded that this hypothesis is partially support.

4.6.2 Structural Equation Model (SEM)

CFA was conducted for all constructs as the data were taken and adapted from former research and following criterions were followed for the overall model fit assessments:

- Chi square (χ^2): small is better $\rightarrow p > 0.05$; $\chi^2 / d.f. < 3$
- Goodness of Fit (GFI): Higher than 0.90
- Adjust of Goodness of Fit (AGFI): Higher than 0.90
- Root Mean Square Residual Error (RMR): Below than 0.05
- RMSEA: Below than 0.08

Or NFI, CFI, TI higher than 0.90

There are six constructs will be used in this Structural Equation Model to test model fit, which are Application Awareness (AAw), Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude Toward Using (AT), Application Adoption (AAp), Intention to Visit (IV). The fit SEM model was result in figure 4-1 and table 4-12.

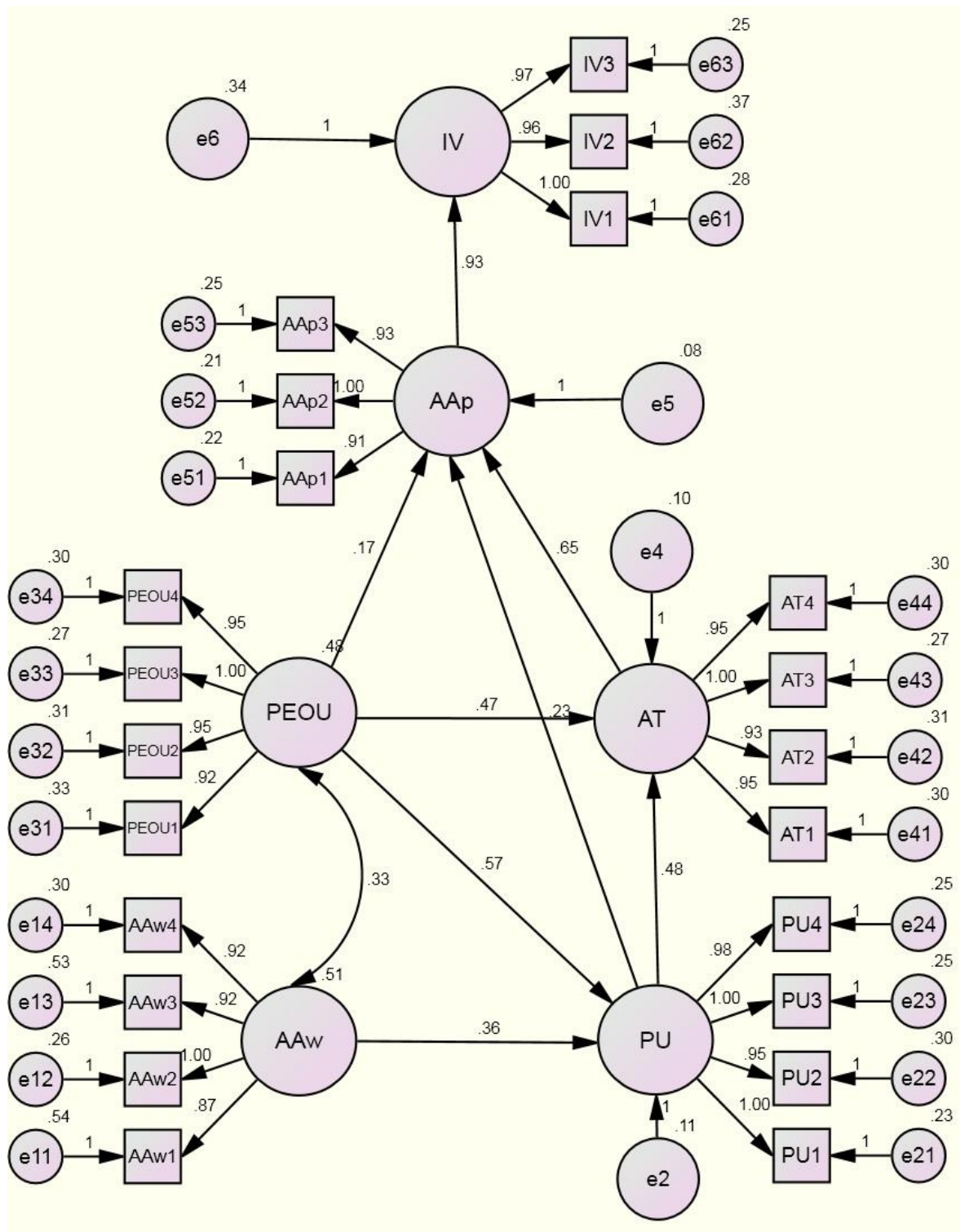


Figure 4-3 The structural equation model

Table 4-13 Table of Structural Equation Model

Relations		Standardized Coefficients	C.R.
Constructs			
Application Awareness	AAw1	0.643***	10.097
	AAw2	0.814***	A
	AAw3	0.670***	10.572
	AAw4	0.766***	12.253
Perceived Usefulness	PU1	0.821***	14.659
	PU2	0.766***	13.375
	PU3	0.810***	A
	PU4	0.800***	14.169
Perceived Ease of Use	PEOU1	0.744***	12.448
	PEOU2	0.761***	12.796
	PEOU3	0.800***	A
	PEOU4	0.766***	12.902
Attitude Toward Using	AT1	0.777***	13.562
	AT2	0.762***	13.224
	AT3	0.807***	A
	AT4	0.773***	13.481
Application Adoption	AAp1	0.826***	16.325
	AAp2	0.859***	A
	AAp3	0.816***	15.997
Intention to Visit	IV1	0.867***	A
	IV2	0.823***	15.905
	IV3	0.875***	17.343
Hypotheses			
Application Awareness → Perceived Usefulness (H1)		0.373***	4.884
Perceived Usefulness → Attitude Toward Using (H4)		0.470***	4.526
Perceived Usefulness → Application Adoption (H5)		0.210*	2.006
Perceived Ease of Use → Perceived Usefulness (H6)		0.574***	7.158
Perceived Ease of Use → Attitude Toward Using (H7)		0.464***	4.404
Perceived Ease of Use → Application Adoption (H8)		<u>0.150</u>	1.390
Attitude Toward Using → Application Adoption (H9)		0.604***	4.778
Application Adoption → Intention to Visit (H10)		0.771***	12.278
Chi – Square (p-value)		327.166 (0.000)	
Degree of freedom (d.f)		200	
Chi – Square/d.f		1.636	
GFI		0.893	
AGFI		0.865	
RMR		0.038	

*Note: ***p-value <0.001; **p-value < 0.010; *p-value <0.050 (using a significance level of 0.05, critical ratios (t-value) that exceed 1.96 would be called significant)*

It can be seen in that table ... the results of the structural equation modeling analysis with six constructs. The first step was to get the best model fit through Confirmatory Factor Analysis (CFA) in AMOS. After completing this step, model would be moved on to Structural Equation Modeling (SEM). SEM is used to examine simultaneously a number of multiple interrelated dependence relationships. It is a confirmatory analysis used to test a theory of the relationships.

In the first section of the table, Variables label indicates the significance of the relationships between the individual constructs and their variables. If the C.R. value of a variable is higher than 1.96, this variable has meaning in the contribution of its construct because it implies a p-value below 0.05. If C.R value lower than 1.96, this variables does not contribute well to its construct because the p-value higher than 0.05. Looking in the table, easily see from Variables label that all variables have C.R index reaching to the standard when all of them higher than 1.96. In another words, all variables are significant to its construct. Other index demonstrates the significance of variables come from Figure 4-1. All of them are higher than 0.7 which prove for its meaning. Therefore, the interrelationships between indicators and dimensions are at significant level.

The second section of the table points out how significant relationships between various constructs are. Using same measurement, C.R. value of each hypothesis higher than 1.96, which denotes relationship between constructs are significant. There is only one hypothesis 8 got the low C.R index, which means that Perceived Ease of Use was not support to Application Adoption.

The last section indicates the overall fit of model. Chi-square, Degree of freedom, CMIN/DF, GFI, AGFI and RMR is used to evaluate the fitness of the model. The first index need to be taken notice is RMR (root mean square residual), the sample covariances and variances differ from its estimates which are obtained under the assumption that whether model is correct. Besides, The smaller the RMR is, the better model is, so that the standard for RMR is 0.05. In fact, RMR of this model is 0.038, which reach the standard, demonstrated the model is fit. Other index should be focused on are GFI and AGFI (Jöreskog & Sörbom, 1984). The

higher these index are, the fitter model is. In the table, GFI is 0.893 and AGFI is 0.865. These index need to reach to 0.9 to get model fit, and getting nearly 0.9 can be considered acceptance. Hence, it certainly provides substantial support to the fit between this research model and the real data.



CHAPTER FIVE

CONCLUSIONS

This chapter contains three parts: Conclusion, limitation, implication and suggestion. The results of this study are concluded in Conclusion part. Limitations of the study, managerial implications for marketing tourism and the suggestions for future research are also included

5.1 Research Conclusions

The major objective of this study is to examine how customers adopt a mobile tourism application and using this application to orient customers' intention to visit tourism destinations. This objective is examined based on three factors Perceived Usefulness, Perceived Ease of Use, and Attitude toward using application which are taken from Technology Acceptance Model – an information systems theory. Survey data from 250 respondents brought the important result which partially supports research hypotheses. Based on the analyses discussed in the previous chapter, the results of hypotheses testing are summarized in Table 5-1

Table 5-1 *Hypotheses and Results of Empirical Test*

	Research Hypotheses	Results
H1	The more customers are aware in mobile tourism applications, the more they perceive its usefulness	Support
H2	The more aesthetic, functional E-servicescapes of mobile tourism application, the greater relationship between application awareness and perceived usefulness of customers	Partially Support
H3	The stronger Word-of-Mouth about mobile tourism applications, the greater relationship between application awareness and perceived usefulness of customers	Partially Support
H4	Customers have more positive attitude toward using mobile tourism applications when they perceive more positively its usefulness	Support
H5	Customers more positively adopt mobile tourism applications when they perceive more positively its usefulness	Support
H6	The more customers perceive the Ease of use of mobile tourism applications, the more they perceive its usefulness	Support
H7	Customers more positively adopt mobile tourism applications when they perceive more positively its ease of use	Support
H8	Customers more positively adopt mobile tourism applications when they perceive more positively its ease of use	Not Support
H9	Consumers have more positive adoption of mobile tourism application when they have positive attitude toward using it.	Support
H10	Consumers have more positive intention to visit tourism destination after they used mobile tourism application	Support

Based on the result which is shown in the table 5-1, the first conclusion is that Perceived Usefulness and Attitude Toward Using tend to become positive related to the Adoption of customers about a mobile application. According to attribution theories, this study confirmed one more times the importance these factor because the perception that an innovation (mobile tourism application) is compatible with an individual's need, which lead to its usefulness (Sheng et al, 2011; Hsu et al., 2011). Because of purpose, survey collected opinion of all respondents who have previous experience in using related technological device (mobile application). The reason is that these people have more confidence because of their past experience about using tourism application, and then they have their own reason for their decision to adopt similar kind of tourism application. To evidence more, survey contained an open-end question is why people adopt or continue using mobile tourism application. More than half of respondents answered

that the reason is convenience of this kind of application or information is provided from application is useful.

However, another important factor influencing to adopt an innovation is Perceived Ease of Use was rejected in this model, although it used to be proved its significance before (Hanafizadeh et al, 2014; Püschel et al, 2010). It can be concluded that customers are able to adopt tourism application because of its usefulness even it is hardly used.

The second conclusion is about moderating factors, main contribution of this thesis, which is e-Servicescapes and e-Word-of-Mouth. Looking in the table, e-Servicescape was found the weak contribution in the relationship between Application Awareness and Perceived Usefulness of customers. In previous studies, e-Servicescape was conceptualized as a three-dimensional construct (Harris & Goode, 2010). This concept was drawn from conceptualizations of offline service (Bitner, 1992) but it may exist strongly in the online environment. In this study, e-Servicescape was conceptualized as a two-dimensional service setting because of characteristics of tourism application which is an oriented information source, so that financial security dimension was rejected. For e-Servicescape, it may a key variable to notice customer aware an innovation and its usefulness because of its effect. It means that an application which is focused more on its layout and functionality (images and graphics, sound, etc) will gain more users' attention.

Besides, another moderating factor, the study examined the influence of e-Word-of-Mouth in the relationship between Awareness and Perceived Usefulness, which also was found the weak link with this relationship. In previous studies (Tien & Wang, 2016), eWOM was played a significant role in the adoption of mobile application, especially in mobile banking. In this study, eWOM factor positively impact to relationship between Application Awareness and Perceived Usefulness. Specifically, in the two group of this factor, only Opinion Receiving significantly influenced to customers' awareness and their perceived usefulness, while Opinion Seeking did not become important role. In fact, playing as an environmental stimulus, this result is logical, so that it can be acceptable.

In general, it can be stated that this study demonstrated how consumers adopt a technique innovation (mobile tourism application) based on combination of the two theories which are Technology Acceptance Model and Stimulus-Organism-Response theory. In particular, if

customers learn the benefits of mobile tourism application while hearing the positive talk about mobile tourism application and aesthetic appeal, functionality of this application improving the customer's awareness, they will adopt to use this tourism application. According to the results, travel agencies should be aware that if customers have a positive attitude towards mobile tourism application, they will attempt to use it. Cultural infrastructures, making people aware of advantages of the technology by the means of social networks, increasing tourism information services via mobile software and improving quality of Internet connection, can be useful for marketing tourism and then increasing its usability.

5.2 Limitations and Future Research

Despite the contributions that this study will give, research limitations cannot be avoided. Research limitations that are expected for this study are as follows.

Firstly, this study just used 250 respondents as the sample of this empirical research. Because of focusing on marketing Vietnamese tourism destination for ASEAN market as mention before, so the sample was collected from Vietnam. That is a reason why more than half of them are Vietnamese, and other respondents are some of ASEAN citizen. Besides, most of them are young people, so that opinion of these respondents may not represent ASEAN tourists' opinion. For future research can add more samples and different nationalities, to get more empirical validation in marketing research area.

Secondly, this study did not use originally e-Servicescapes with three dimensions as major online environment stimuli which affected to customer's internal organism. In fact, financial security dimension of e-Servicescapes play an important role in Online booking sector of tourism application because its characteristic is online purchase (Smirnov A, Kashevnik A, & Shilov N, 2014). Therefore, it is suggested that this research issue should be clarified in the future studies.

Finally, because of using positive questionnaire to conduct the results, this study did not test the negative effect of Word-of-Mouth and attitude toward using tourism application. Hence, research may investigate both side of its effect, negative and positive, to find out clearly how customer adopt an innovation and which factor plays important role.

5.3 Implication

Mobile tourism application provides related information for planning the travel and for making decision before and during the journey, so that adoption of travelers about the innovation is already valued as essential to ensure competitiveness among tourism destinations. However, tourism application should be improved few aspects about functionality and information contained inside to cover all perspectives offered by mobile marketing, and then it becomes more interesting and to improve upon

Today, travelers are living in the era of technology development, so they can seek and share much information on online environment such as social network or online feedback mechanisms as an implication of e-word-of-mouth. Therefore, the power of communication influence to the determinants of online trust different across site categories and consumers.

Nowadays, there are more than two billion smartphones are being used, so that tourism industry get great opportunity which is provided by mobile marketing. In fact, this new marketing channel enables simple and fast communication between consumers and firms, no matter what location of the consumer and time of day. Moreover, there is significant possibility of advertising in relation to demographic data and habits of consumers. Tomislav Car indicated that there are various types of mobile marketing based on the goal of marketing campaigns (Figure 1)



Figure 5-1 Types of mobile marketing | (Source: Author)

Mobile application now is considered is the best way to connect with consumers, because it is easier to use than website. Moreover, some applications provide adverts inside application’s design. Based on the contribution of this study, an application need contain online feedback mechanisms as a strong support from application. Remember that, customers are very smart, they searching tourism destinations on website, so they seek support from various mobile applications. Therefore, beside the implication of word-of-mouth, an application should be design display information attractively, and containing comparison information systems to help users easily making decision.

It means that if travel agency has an application standing by their side then it gives them a great opportunity to expand their business. Many tourism infrastructure creators are capitalizing on it; so they have potential plans for expansions as well.

Besides, most of the time, tourists only have limited knowledge and low awareness on destinations they visit. They do have different needs and characteristics. Developing rich-information-sourced applications by using tourists recommendation which can give valuable insight to destinations in snapshotting tourists' demand in timely manner (Haubensak, 2011). So that, through Smart Tourism cored in massive tourism resource data center, supported by Internet, tourism marketers have strong technique to focus on enhancing tourists experience through the smart identification. The contribution of Smart Tourism is to concentrate on tourists' demand and promote service quality, improve tourism management (Huang et al., 2012).



REFERENCES

- Akturan, U., & Tezcan N. (2012). Mobile banking adoption of the youth market: Perceptions and intentions. *Marketing Intelligence & Planning*, 30. pp. 444 - 459
- Mohammed, A.-H., & Sadi, M. A. (2015). Preference on the Perception of Mobile Banking: A Saudi Arabian Perspective. *European Online Journal of Natural and Social Sciences*, 4(1). pp. 161 - 172.
- Almossawi, M. (2014). Effectiveness of SMS advertising (A Study of young customers in Bahrain). *Global Journal of Management And Business Research*, 14(4). pp. 57-71
- Al-Somali, S. A., Gholami, R., & Clegg, B. (2009). An investigation into the acceptance of online banking in Saudi Arabia. *Technovation*, 29(2). pp. 130-141.
- Arndt, J. (1967). Role of product-related conversations in the diffusion of a new product. *Journal of marketing Research*, 4. pp. 291-295.
- Barnes, S. J., & Scornavacca, E. (2004). Mobile marketing: the role of permission and acceptance. *International Journal of Mobile Communications*, 2(2). pp.128-139.
- Benckendorff, P. J., Sheldon, P. J., & Fesenmaier, D. R. (2014). *Tourism information technology*. CABI.
- Berry, L. L. (2000). Cultivating service brand equity. *Journal of the Academy of marketing Science*, 28(1). pp. 128-137.
- Bidin, S., & Ziden, A. A. (2013). Adoption and application of mobile learning in the education industry. *Procedia-Social and Behavioral Sciences*, 90. pp. 720-729.
- Buhalis, D., & Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the Internet—The state of eTourism research. *Tourism management*, 29(4). pp. 609-623.
- Cabezudo, R. S. J., Izquierdo, C. C., & Pinto, J. R. (2013). The persuasion context and results in online opinion seeking: Effects of message and source—The moderating role of network managers. *Cyberpsychology, Behavior, and Social Networking*, 16(11), 828-835.

- Campbell, A. T., Eisenman, S. B., Lane, N. D., Miluzzo, E., Peterson, R. A., Lu, H., ... & Ahn, G. S. (2008). The rise of people-centric sensing. *IEEE Internet Computing*, 12(4), 12-21.
- Chau, P. Y. (2001). Influence of computer attitude and self-efficacy on IT usage behavior. *Journal of Organizational and End User Computing*, 13(1), 26-33.
- Cheng S & Cho V. (2011). An integrated model of employees' behavioral intention toward innovative information and communication technologies in travel agencies. *Journal of Hospitality & Tourism research*, 35(4), 488–510.
- Cheung, C. M. K., & Thadani, D. R. (2012). The impact of electronic word-of-mouth communication: A literature analysis and integrative model. *Decision Support Systems*, 54(1), 461-470
- ComScore (Feb. 22, 2013). Report 2013 Mobile Future in Focus. Retrieved from [http://www.comscore.com/por/Insights/Presentations and Whitepapers/2013/2013 Mobile Future in Focus](http://www.comscore.com/por/Insights/Presentations%20and%20Whitepapers/2013/2013_Mobile_Future_in_Focus)
- Constantinou, I. D., Papazafeiropoulou, A., & Vendelø, M. T. (2009). Does culture affect the adoption of advanced mobile services? A comparative study of young adults' perceptions in Denmark and the UK. *ACM SIGMIS Database*, 40(4), 132–147.
- Cyr, D., Hassanein, K., Head, M., & Ivanov, A. (2007). The role of social presence in establishing loyalty in e-service environments. *Interacting with computers*, 19(1), 43-56.
- Donovan, R. J., Rossiter, J. R., Marcoolyn, G., & Nesdale, A. (1994). Store atmosphere and purchasing behavior. *Journal of retailing*, 70(3), 283-294
- Dovaliene, A., Masiulyte, A., & Piligrimiene, Z. (2015). The Relations between Customer Engagement, Perceived Value and Satisfaction: The Case of Mobile Applications. *Procedia-Social and Behavioral Sciences*, 213, 659-664.
- E. Hsu (2014). Mobile marketing. Retrieved from: emmahsu/files/2014/02/Mobile-Marketing-t5qr6l.pdf
- E. M. Rogers and F. Shoemaker (1971) *Communications in Innovation*. New York: Free Press
- Einav, L., Levin, J., Popov, I., & Sundaresan, N. (2014). Growth, adoption, and use of mobile E-commerce. *The American economic review*, 104(5), 489-494..

- Fox, Zoe (2013),“Global App Downloads to Pass 100 Billion this year,” Retrieved from: http://mashable.com/2013/09/19/app-downloads-100-billion/?utm_cid=mashcom-fb-main-photo.
- Gallarza, M. G., & Saura, I. G. (2006). Value dimensions, perceived value, satisfaction and loyalty: an investigation of university students’ travel behaviour. *Tourism management*, 27(3), 437-452..
- Guo, X., Zhao, Y., Jin, Y., & Zhang, N. (2010). Theorizing a Two-Sided Adoption Model for Mobile Marketing Platforms. In *International Conference on Information Systems* (p. 128).
- Hanafizadeh, P., Behboudi, M., Koshksaray, A. A., & Tabar, M. J. S. (2014). Mobile-banking adoption by Iranian bank clients. *Telematics and Informatics*, 31(1), 62-78.
- Harris, L. C., & Goode, M. M. (2010). Online servicescapes, trust, and purchase intentions. *Journal of Services Marketing*, 24(3), 230-243.
- Hashim, K. F. (2012). Understanding the determinants of continuous knowledge sharing intention within business online communities (Doctoral dissertation, Auckland University of Technology).
- Haubensak, O. (2011). Smart cities and internet of things. In *Business Aspects of the Internet of Things, Seminar of Advanced Topics*, ETH Zurich (pp. 33-39).
- Henley, A. B., Shook, C. L., & Peterson, M. (2006). The presence of equivalent models in strategic management research using structural equation modeling: Assessing and addressing the problem. *Organizational Research Methods*, 9(4), 516-535
- Hsu, E. (2014). Mobile marketing. Retrieved from: <http://blogs.uoregon.edu/>
- Hsu, C. L., Wang, C. F., & Lin, J. C. C. (2011). Investigating customer adoption behaviours in mobile financial services. *International Journal of Mobile Communications*, 9(5), 477-494.
- Huang, X. K., Yuan, J. Z., & Shi, M. Y. (2012). Condition and key issues analysis on the smarter tourism construction in China. In *Multimedia and signal processing* (pp. 444-450).
- J. Borrás, A. Moreno, A.Valls, (2014), Intelligent tourism recommender systems: A survey, *Expert Systems with Applications* 41(16), 7370-7389.

- Jao, A. (2013, 5 April 2013). Travel fragmentation is extending to mobile. Tnooz. Retrieved from <http://www.tnooz.com/2013/04/05/mobile/travel-fragmentation-is-extending-to-mobile/#5iReimJluF1tvhSA.99>
- Kandampully, J., & Suhartanto, D. (2000). Customer loyalty in the hotel industry: the role of customer satisfaction and image. *International journal of contemporary hospitality management*, 12(6), 346-351.
- Kaplan, A. M. (2012). If you love something, let it go mobile: Mobile marketing and mobile social media 4x4. *Business horizons*, 55(2), 129-139.
- Kaplanidou, K., & Vogt, C. (2006). A structural analysis of destination travel intentions as a function of web site features. *Journal of Travel research*, 45(2), 204-216.
- Karanasios, S., Burgess, S., & Sellitto, C. (2012). A classification of mobile tourism applications. *Global hospitality and tourism management technologies*, 165.
- Kennedy-Eden, H., & Gretzel, U. (2012). A taxonomy of mobile applications in tourism. *E review of Tourism Research*, 10(2): 47-50.
- Kleinrock, L. (1996). Nomadicity: anytime, anywhere in a disconnected world. *Mobile networks and applications*, 1(4), 351-357.
- Kozak, M., & Rimmington, M. (2000). Tourist satisfaction with Mallorca, Spain, as an off-season holiday destination. *Journal of travel research*, 38(3), 260-269.
- Krishnamurthy, S., & Singh, N. (2005). The international e-marketing framework (IEMF) identifying the building blocks for future global e-marketing research. *International Marketing Review*, 22(6), 605-610.
- Lamarre, A., Galarneau, S., & Harold Boeck, H. (2012). Mobile marketing and consumer behaviour: current research trend. *International Journal of Latest Trends in Computing*, 3(1), 1-9
- Law, R., Leung, R., & Buhalis, D. (2009). Information technology applications in hospitality and tourism: A review of publications from 2005 to 2007. *Journal of Travel & Tourism Marketing*, 26(5-6), 599-623.
- Lazarus, R. S. (2013). Fifty years of the research and theory of RS Lazarus: An analysis of historical and perennial issues. Psychology Press.

- Lipsman, A. (2014). Major mobile milestones in May: Apps now drive half of all time spent on digital. *Insights (blog), comScore, June, 25*.
- Mattila A. (1999). Consumers' value judgments, *The Cornell Hotel and Restaurant Quarterly*, 4(3), 111-121
- Nadeau, J., Heslop, L., O'Reilly, N., & Luk, P. (2008). Destination in a country image context. *Annals of Tourism Research*, 35(1), 84–106
- Nguyen, N. (2006). The collective impact of service workers and servicescape on the corporate image formation. *International Journal of Hospitality Management*, 25(2), 227-244.
- Olmeda, I., & Sheldon, P. J. (2002). Data mining techniques and applications for tourism Internet marketing. *Journal of Travel & Tourism Marketing*, 11(2-3), 1-20.
- Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnla, S. (2004). Consumer acceptance of online banking: an extension of the technology acceptance model. *Internet research*, 14(3), 224-235.
- Püschel, J., Afonso Mazzon, J., & Mauro C. Hernandez, J. (2010). Mobile banking: Proposition of an integrated adoption intention framework. *International Journal of Bank Marketing*, 28(5), 389-409.
- Ramos-de-Luna, I., Montoro-Ríos, F., & Liébana-Cabanillas, F. (2015). Determinants of the intention to use NFC technology as a payment system: an acceptance model approach. *Information Systems and e-Business Management*, 1-22.
- Reimer, A., & Kuehn, R. (2005). The impact of servicescape on quality perception. *European Journal of Marketing*, 39(7/8), 785-808.
- Sheng, M., Wang, L., & Yu, Y. (2011, October). An empirical model of individual mobile banking acceptance in China. In *Computational and Information Sciences (ICCIS), 2011 International Conference on* (pp. 434-437). IEEE.
- Shi, W., Shambare, N., & Wang, J. (2008). The adoption of internet banking: An institutional theory perspective. *Journal of Financial Services Marketing*, 12(4), 272-286.
- Soderlund, M., & Ohman, N. (2003). Behavioral intentions in satisfaction research revisited. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 16, 53-66.

- Solis, B. (2011, September 30). Digital Darwinism: Who's Next? Retrieved November 1, 2011 from Brian Solis: <http://www.briansolis.com/2011/09/end-of-business/>
- Ström, R., Vendel, M., & Bredican, J. (2014). Mobile marketing: A literature review on its value for consumers and retailers. *Journal of Retailing and Consumer Services*, 21(6), 1001-1012.
- Szymanski, D. M., & Hise, R. T. (2000). E-satisfaction: an initial examination. *Journal of retailing*, 76(3), 309-322.
- Tomislav Car et al, Mobile marketing and advertising strategies in tourism and hospitality industry. Retrieved from: <http://www.aabri.com/NO2013Manuscripts/NO13039.pdf>
- TTI, "Mobile Messaging: Which technologies and applications will succeed? *Telecom Trends International*, 2003.
- Varnali, K., & Toker, A. (2010). Mobile marketing research: The-state-of-the-art. *International Journal of Information Management*, 30(2), 144-151.
- Verkasalo H, López-Nicolás C, Molina-Castillo F et al. (2010): Analysis of users and non-users of smartphone applications. *Telematics and Informatics* 27(3): 242–255
- Vietnamnet (Jan. 01, 2016). AEC brings opportunities, challenges for Vietnam's tourism, Retrieved from <http://english.vietnamnet.vn/fms/travel/149508/aec-brings-opportunities--challenges-for-vietnam-s-tourism.html>
- Vu, H. T. H. (2013). Vietnam and the ASEAN Socio-Cultural Community (ASCC): Prospects, Challenges and Opportunities. *Unpublished Master Thesis, Victoria University of Wellington*
- Wagner, S., Franke-Opitz, T., Schwartze, C., & Bach, F. (2013). Mobile Travel App Guide: Edition 2013 powered by ITB. *Pixell Online Marketing GMBH*. Retrieved from: http://www.itb-berlin.de/media/itb/itb_media/itb_pdf/publikationen/MTAG_2013.pdf
- Wang, R. J. H., Malthouse, E. C., & Krishnamurthi, L. (2015). On the go: How mobile shopping affects customer purchase behavior. *Journal of Retailing*, 91(2), 217-234.
- Wang, T., Yeh, R. K. J., Chen, C., & Tsydypov, Z. (2016). What drives electronic word-of-mouth on social networking sites? Perspectives of social capital and self-determination. *Telematics and Informatics*, 33(4), 1034-1047.

- Watson, C., McCarthy, J., & Rowley, J. (2013). Consumer attitudes towards mobile marketing in the smart phone era. *International Journal of Information Management*, 33(5), 840-849.
- Watson, R. T., Pitt, L. F., Berthon, P., & Zinkhan, G. M. (2002). U-commerce: expanding the universe of marketing. *Journal of the Academy of Marketing Science*, 30(4), 333-347.
- Wu, W. Y., Lee, C. L., Fu, C. S., & Wang, H. C. (2013). How can online store layout design and atmosphere influence consumer shopping intention on a website?. *International Journal of Retail & Distribution Management*, 42(1), 4-24.
- Yang, M. M. (2007). An exploratory study on consumers' behavioral intention of usage of third generation mobile value-added services. *Unpublished Master Thesis, National Cheng Kung University*.



QUESTIONNAIRE

Appendix 9: English Questionnaire

Dear Respondents:

This academic questionnaire is to investigate the factors affecting customers adoption of Mobile tourism application. This study proposes a theoretical framework integrating mobile application adoption which use mainly based on Technology Acceptance Model (TAM) and Stimulus-Organism-Response. This study also analyzes the interaction effects of E-servicescape and Word-of-mouth on the impact of online environment stimuli to inner organism. Besides, it examines whether the application adoption of customers would affect positively to their intention to visit tourism destinations.

You have been reported as one of the interested respondents for this study. We have taken the liberty of your joining to express your viewpoint about these issues. Your countenance and assistance will be greatly appreciated. We sincerely invite you to spend a maximum of 15 minutes to complete the questionnaire below. No personal information will be made public. Please be assured that your answers will be kept in strict confidentiality. Please take the time to fill out this questionnaire as accurately as possible. Your help is crucial for this research and also for our understanding about these issues. We deeply appreciate your kind cooperation.

Thank you.

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Section 1. Application Awareness

Please take a short look on the questions below related with your company’s service-dominant orientation, and then CIRCLE the level of agreement on each of the items below based on your opinion.	Levels of Agreement				
	Strongly Disagree	Somewhat Disagree	Disagree	Neutral	Agree
	< - - - - - >				
Application Awareness					
1. I have received enough information about tourism applications on mobile device.	1	2	3	4	5
2. I have received enough information of how to use tourism applications.	1	2	3	4	5
3. I think I fully understand what tourism application on mobile device is.	1	2	3	4	5
4. I am aware about the benefit of tourism applications on mobile device.	1	2	3	4	5

Section 2. Word of Mouth

Please take a short look on the questions below related with your company's dynamic service innovation capabilities, and then CIRCLE the level of agreement on each of the items below based on your opinion.	Levels of Agreement				
	Strongly Disagree	Somewhat Disagree	Disagree	Neutral	Agree
	< - - - - - >				
Opinion Receiving					
1. My contacts often introduce me using mobile application which they like	1	2	3	4	5
2. My choice of mobile applications is partly influenced by my friends and contacts.	1	2	3	4	5
3. I download applications partly based on mutual use by friends and family	1	2	3	4	5
Opinion Receiving					
4. When I consider to use new mobile application, I ask my contacts on social networks for advice	1	2	3	4	5
5. I like to get my contacts' opinions on social networks before I download new mobile application	1	2	3	4	5
6. I tend to seek out or search for others' opinions or comments regarding new application to download	1	2	3	4	5
7. I like to seek out negative reviews about new application on internet before I make a decision to download it	1	2	3	4	5

Section 3. e-Servicescapes

Please take a short look on the questions below related with your company's knowledge resources, and then CIRCLE the level of agreement on each of the items below based on your opinion.	Levels of Agreement				
	Strongly Disagree	Somewhat Disagree	Disagree	Neutral	Agree
	<	-	-	-	>
Aesthetic Appear					
1. Tourism applications should be visually attractive	1	2	3	4	5
2. It uses stimulating images and graphics	1	2	3	4	5
3. Displays products in an attractive or desirable fashion	1	2	3	4	5
4. It is aesthetically appealing	1	2	3	4	5
Layout and Functionality					
5. There are useful navigational aids	1	2	3	4	5
6. The links are obvious in their intent and destination	1	2	3	4	5
7. The functions on this application are easy to operate	1	2	3	4	5
8. Navigation through this application is intuitively logical	1	2	3	4	5
9. This application has instruction for use	1	2	3	4	5
10. This application is user-friendly	1	2	3	4	5
11. In general, this is an easy application to use	1	2	3	4	5

Section 4. Perceived Usefulness

Please take a short look on the questions below related with your company's service innovation, and then CIRCLE the level of agreement on each of the items below based on your opinion.	Levels of Agreement				
	Strongly Disagree	Somewhat Disagree	Disagree	Neutral	Agree
	< - - - - - >				
Perceived Usefulness					
1. Using tourism application help save much time.	1	2	3	4	5
2. Tourism application helps me searching many tourism destination	1	2	3	4	5
3. Tourism application provides much useful information for my travel	1	2	3	4	5
4. It is convenient when using tourism application to plan out a trip	1	2	3	4	5

Section 6. Perceived Ease of Use

Please take a short look on the questions below related with your company's knowledge sharing practice, and then CIRCLE the level of agreement on each of the items below based on your opinion.	Levels of Agreement				
	Strongly Disagree	Somewhat Disagree	Disagree	Neutral	Agree
	< - - - - - >				
Perceived Ease of Use					
1. It is easy to learning how to use tourism application	1	2	3	4	5
2. Instruction of tourism application would be clear and understandable.	1	2	3	4	5
3. Many flexible ways to access information on tourism application	1	2	3	4	5
4. The user-friendly aspect of tourism application is very important					

Section 7. Attitude Toward Using

Please take a short look on the questions below related with your company's knowledge integration mechanism, and then CIRCLE the level of agreement on each of the items below based on your opinion.	Levels of Agreement				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<	-	-	-	>
Attitude Toward Using					
1. Mobile tourism application development will support travelers	1	2	3	4	5
2. I will use these kind of tourism application in the future	1	2	3	4	5
3. I am not satisfied without using tourism application when creating travel plan	1	2	3	4	5
4. Overall, my attitude towards using this kind of tourism application is positive	1	2	3	4	5

Section 8. Application Adoption

Please take a short look on the questions below related with your company's contingencies, and then CIRCLE the level of agreement on each of the items below based on your opinion.	Levels of Agreement				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<	-	-	-	>
Application Adoption					
1. I decide to use this kind of tourism application for the next travel	1	2	3	4	5
2. I will use tourism application to make travel plan	1	2	3	4	5
3. I will use tourism application when travelling	1	2	3	4	5

Section 9. Intention to Visit

Please take a short look on the questions below related with your company's environmental conditions, and then CIRCLE the level of agreement on each of the items below based on your opinion.	Levels of Agreement				
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<	-	-	-	>
Intention to Visit					
1. After using tourism application, my travel intention is clearer	1	2	3	4	5
2. Tourism destinations suggested by travel applications are usually my first choice when I plan on travelling	1	2	3	4	5
3. I predict I will travel more with this tourism application	1	2	3	4	5

Section 10. Personal Information

We sincerely appreciate your time and efforts to answer the following questions. Your answer will be treated in strict confidence. For our information, would you please indicate the following questions:					
1. Gender	Male	Female			
2. Age	Below 20	21 - 30	31 - 40	Over 40	
3. Nationality	Short answer:.....				
4. Income (USD/month)	Below 300	300 - 600	600 - 900	900 - 1200	Over 1200
5. Which mobile application did you use to do when you went travel?	Agoda	UNESCO	TripAdvisor	Google Maps	
6. The reason makes you want to continue using mobile applications for tourism purpose	Short answer:.....				

Appendix 10 Vietnamese Questionnaire

Kính gửi

Bảng câu hỏi học thuật này được thu thập để điều tra các nhân tố ảnh hưởng đến sự chấp nhận sử dụng ứng dụng du lịch trên điện thoại di động. Nghiên cứu này đề xuất một mô hình lý thuyết về lý do chấp nhận sử dụng ứng dụng du lịch, được dựa trên lý thuyết TAM (Technology Acceptance Model) và lý thuyết phản xạ có điều kiện của Pavlov. Bên cạnh đó, nghiên cứu này cũng đề xuất tác động trung gian của yếu tố không gian dịch vụ mạng với yếu tố truyền miệng lên mối quan hệ giữa tác động ngoại cảnh và quan điểm cá nhân. Cuối cùng, nghiên cứu đề xuất liệu rằng có mối quan hệ tích cực nào giữa việc sử dụng ứng dụng du lịch trên điện thoại của người dùng lên dự định du lịch của họ

Bạn sẽ thực hiện bảng khảo sát này bằng cách trả lời câu hỏi. Chúng tôi mong muốn được thu thập ý kiến của bạn về vấn đề trên chỉ trong tối đa 15 phút. Sự đồng tình và trợ giúp của bạn là niềm vinh hạnh cho chúng tôi. Xin bạn bỏ ra chút thời gian để thành thật điền câu trả lời vào bảng hỏi. Sự giúp đỡ của bạn là điểm tích cực cho bà nghiên cứu này.

Chúng tôi xin chân thành cảm ơn

Thank you.

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Section 1. Nhận thức

<p>Hãy nhìn qua vào câu hỏi bên dưới rồi KHOANH TRÒ N vào mức độ đồng ý đối với mỗi câu hỏi dựa trên ý kiến bản thân.</p>	Mức độ đồng ý				
	Hoàn toàn không đồng ý	Không đồng ý	Không chắc	Đồng ý	Hoàn toàn đồng ý
	<	-	-	-	>
Nhận thức					
1. Tôi nhận đủ thông tin về ứng dụng du lịch trên điện thoại.	1	2	3	4	5
2. Tôi nhận được đủ thông tin về cách sử dụng ứng dụng du lịch trên điện thoại.	1	2	3	4	5
3. Tôi nghĩ rằng tôi hoàn toàn hiểu ứng dụng du lịch trên điện thoại là gì.	1	2	3	4	5
4. Tôi nhận thức được lợi ích của ứng dụng du lịch trên điện thoại	1	2	3	4	5

Section 2. Truyền miệng

<p>Hãy nhìn qua vào câu hỏi bên dưới rồi KHOANH TRÒ N vào mức độ đồng ý đối với mỗi câu hỏi dựa trên ý kiến bản thân.</p>	Mức độ đồng ý				
	Hoàn toàn không đồng ý	Không đồng ý	Không chắc	Đồng ý	Hoàn toàn đồng ý
	< - - - - - >				
Thu nhận ý kiến					
1. Bạn tôi thường giới thiệu tôi sử dụng ứng dụng di động mà họ thích	1	2	3	4	5
2. Tôi thường bị ảnh hưởng bởi các ý kiến của người khác về sản phẩm mới.	1	2	3	4	5
3. Tôi hay thử dùng một ứng dụng di động mới được quảng cáo trên mạng	1	2	3	4	5
Opinion Receiving					
4. Khi đắn đo về một ứng dụng mới, tôi hay kiếm lời khuyên từ người quen đã/đang sử dụng	1	2	3	4	5
5. Tôi thích nhận ý kiến từ người dùng khác trước khi quyết định sử dụng một ứng dụng mới	1	2	3	4	5
6. Tôi thường tìm kiếm các quan điểm hay bình luận trên mạng liên quan đến ứng dụng mới	1	2	3	4	5
7. Tôi thường tìm kiếm các quan điểm tiêu cực trên mạng liên quan đến ứng dụng mới trước khi quyết định tải	1	2	3	4	5

Section 3. Không gian dịch vụ mạng

<p>Hãy nhìn qua vào câu hỏi bên dưới rồi KHOANH TRÒ N vào mức độ đồng ý đối với mỗi câu hỏi dựa trên ý kiến bản thân.</p>	Mức độ đồng ý				
	Hoàn toàn không đồng ý	Không đồng ý	Không chắc	Đồng ý	Hoàn toàn đồng ý
	<	-	-	-	>
Mỹ quan					
1. Ứng dụng mong muốn phải thật lôi cuốn	1	2	3	4	5
2. Ứng dụng nên sử dụng đồ họa bắt mắt	1	2	3	4	5
3. Nội dung hiển thị bên trong ứng dụng phải lôi cuốn người dùng	1	2	3	4	5
4. Các hiển thị cần dễ nhìn	1	2	3	4	5
Layout and Functionality					
5. Ứng dụng có nhiều chỉ dẫn hữu ích	1	2	3	4	5
6. Các liên kết đến chỉ mục trong rõ ràng	1	2	3	4	5
7. Các chỉ dẫn cần dễ hiểu	1	2	3	4	5
8. Chỉ dẫn trong ứng dụng được sắp xếp có hệ thống	1	2	3	4	5
9. Đối với người sử dụng lần đầu, ứng dụng cần có hướng dẫn tổng quát	1	2	3	4	5
10. Thiết kế phải thân thiện với người dùng	1	2	3	4	5
11. Nhìn chung, ứng dụng này phải đơn giản	1	2	3	4	5

Section 4. Mong đợi hữu ích

Hãy nhìn qua vào câu hỏi bên dưới rồi KHOANH TRÒ N vào mức độ đồng ý đối với mỗi câu hỏi dựa trên ý kiến bản thân.	Mức độ đồng ý				
	Hoàn toàn không đồng ý	Không đồng ý	Không chắc	Đồng ý	Hoàn toàn đồng ý
	<	-	-	-	>
Mong đợi hữu ích					
1. Using tourism application help save much time.	1	2	3	4	5
2. Ứng dụng điện thoại giúp tôi dễ dàng tìm ra các địa điểm du lịch	1	2	3	4	5
3. Ứng dụng điện thoại cung cấp nhiều thông tin hữu ích	1	2	3	4	5
4. Tiện lợi khi sử dụng các ứng dụng trên điện thoại để lên kế hoạch du lịch	1	2	3	4	5

Section 6. Dễ sử dụng

Hãy nhìn qua vào câu hỏi bên dưới rồi KHOANH TRÒ N vào mức độ đồng ý đối với mỗi câu hỏi dựa trên ý kiến bản thân.	Mức độ đồng ý				
	Hoàn toàn không đồng ý	Không đồng ý	Không chắc	Đồng ý	Hoàn toàn đồng ý
	<	-	-	-	>
Dễ sử dụng					
1. Học cách sử dụng ứng dụng du lịch trên điện thoại khá dễ dàng.	1	2	3	4	5
2. Các hướng dẫn về ứng dụng rất rõ ràng và dễ hiểu.	1	2	3	4	5
3. Có nhiều cách linh hoạt để tìm kiếm thông tin trên ứng dụng	1	2	3	4	5
4. Sự thân thiện đối với người dùng của ứng dụng là điều rất quan trọng	1	2	3	4	5

Section 7. Thái độ

Hãy nhìn qua vào câu hỏi bên dưới rồi KHOANH TRÒ N vào mức độ đồng ý đối với mỗi câu hỏi dựa trên ý kiến bản thân.	Mức độ đồng ý				
	Hoàn toàn không đồng ý	Không đồng ý	Không chắc	Đồng ý	Hoàn toàn đồng ý
	<	-	-	-	>
Thái độ					
1. Ứng dụng du lịch trên nền tảng di động được phát triển sẽ là công cụ hỗ trợ rất tốt cho du khách	1	2	3	4	5
2. Tôi sẽ sử dụng những ứng dụng điện thoại cho du lịch kiểu này trong tương lai	1	2	3	4	5
3. Tôi thấy không hài lòng nếu sử dụng những kiểu ứng dụng này hỗ trợ việc xây dựng kế hoạch du lịch cho bản thân	1	2	3	4	5
4. Nói chung, thái độ đối với kiểu ứng dụng này là tích cực	1	2	3	4	5

Section 8. Chấp nhận

Hãy nhìn qua vào câu hỏi bên dưới rồi KHOANH TRÒ N vào mức độ đồng ý đối với mỗi câu hỏi dựa trên ý kiến bản thân.	Mức độ đồng ý				
	Hoàn toàn không đồng ý	Không đồng ý	Không chắc	Đồng ý	Hoàn toàn đồng ý
	<	-	-	-	>
Chấp nhận					
1. Tôi quyết định sử dụng ứng dụng du lịch trên điện thoại cho lần du lịch tới	1	2	3	4	5
2. Tôi sẽ sử dụng ứng dụng du lịch trên điện thoại để lên kế hoạch du lịch	1	2	3	4	5
3. Tôi sẽ sử dụng ứng dụng điện thoại này trong khi đi du lịch	1	2	3	4	5

Section 9. Dự định du lịch

Hãy nhìn qua vào câu hỏi bên dưới rồi KHOANH TRÒ N vào mức độ đồng ý đối với mỗi câu hỏi dựa trên ý kiến bản thân.	Mức độ đồng ý				
	Hoàn toàn không đồng ý	Không đồng ý	Không chắc	Đồng ý	Hoàn toàn đồng ý
	<	-	-	-	>
Dự định du lịch					
1. Sau khi sử dụng ứng dụng du lịch trên điện thoại, ý định đi du lịch của tôi đã rõ ràng hơn	1	2	3	4	5
2. Tôi dự định tham quan các địa điểm du lịch được tìm kiếm thông qua ứng dụng điện thoại, đây là sự lựa chọn đầu tiên khi đi du lịch	1	2	3	4	5
3. Tôi hy vọng được du lịch nhiều hơn với ứng dụng du lịch kiểu này trong tương lai gần	1	2	3	4	5

Section 10. Thông tin cá nhân

Chúng tôi chân thành cảm ơn và hiểu rõ giá trị thời giờ và công sức của bạn để trả lời câu hỏi sau. Câu trả lời của bạn sẽ được giữ hết sức bí mật. Xin bạn làm ơn trả lời câu hỏi sau về thông tin cá nhân :					
1. Giới tính	Nam	Nữ			
2. Tuổi	Dưới 20	21 - 30	31 - 40	Trên 40	
3. Quốc tịch	Trả lời ngắn:.....				
4. Thu nhập (USD/tháng)	Dưới 300	300 - 600	600 - 900	900 - 1200	Trên 1200
5. Ứng dụng du lịch nào bạn đã dùng sử dụng (Tùy chọn)	Agoda	UNESCO	TripAdvisor	Google Maps	
6. Lý do khiến bạn tiếp tục sử dụng ứng dụng điện thoại cho mục đích du lịch	Trả lời ngắn:.....				