南華大學管理學院企業管理學系管理科學博士班

博士論文

Doctoral Program in Management Scineces
Department of Business Administration
College of Management
Nanhua University

Doctoral Dissertation

影響旅客使用手機應用程式意願以決定旅遊目的地之因素

Factors Influencing Travelers' Intentions to Adopt Mobile Apps for Identifying Tourism Destinations

阮福雄

Nguyen Phuc Hung

指導教授：郭東昇 博士
黃國忠 博士

Advisor: Tung-Sheng Kuo, Ph.D.
Kuo-Chung Huang, Ph.D.

中華民國 109 年 1 月

January 2020

南　華　大　學

企業管理學系管理科學博士班

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博士生：阮福雄　阮福雄

經考試合格特此證明

口試委員：紀麗秋

吳萬益

姜國忠

連雅慧

鄭誠中

余東平

指導教授：余東平 姜國忠

系主任(所長)：余東平

口試日期：中華民國 108 年 11 月 12 日

準博士推薦函

本校企業管理學系管理科學博士班研究生 阮福雄 君在本系修業　年，已經完成本系博士班規定之修業課程及論文研究之訓練。

1、在修業課程方面：阮福雄 君已修滿 43 學分，其中必修科目：研究方法、最佳化理論、企業倫理專題研討、書報討論等科目，成績及格

2、在論文研究方面：阮福雄 君在學期間已完成下列論文：

(1)博士論文：Factors Influencing Travelers' Intentions to Adopt Mobile Apps for Identifying Tourism Destinations

(2)學術期刊：

Title of paper	**Journal Title**	**Accepted time**	**Available online**
Factor Affecting International Tourists' Decision on Choosing Travel Destination: Why Vietnam?	Journal of Economic & Management Perspectives (ISSN: 2523-5338, JEMP is listed in ABI ProQuest and Ulrich's Directory)	October 19, 2018	Volume 12, Issue 3, 88-100
Adoption of Mobile Applications for Identifying Tourism Destinations by Traveler: An Integrative Approach	Journal of Business Economics and Management (ISSN: 1611-1699, VGTU is listed in SSCI)	May 14, 2019	June 26, 2019

本人認為 阮福雄 君已完成南華大學企業管理學系管理科學博士班之博士養成教育，符合訓練水準，並具備本校博士學位考試之申請資格，特向博士資格審查小組推薦其初稿，名稱：Factors Influencing Travelers' Intentions to Adopt Mobile Apps for Identifying Tourism Destinations，以參加博士論文口試。

指導教授：

中華民國108年11月13日

ACKNOWLEDGEMENT

The success and final outcomes of this thesis required a lot of guidance and assistance from many people and I extremely fortunate to have got this all along the completion my thesis. Whatever I have done is only due to such guidance and assistance and I would not forget to thank them. I respect and thank my advisor Dr. Tung-Sheng Kuo, Dr. Kuo- Chung Huang for giving me an opportunity to do this research and providing me all support and guidance which made me completed the research on time, I extremely grateful to their providing such a nice support and guidance.

I also would like to express my gratitude to my friends and respondents for the support and willingness to spend some times with me to fill in the questionnaires. Without their help, this research would not have been finished.

Last but not least, I would like to thank my parent, who love and guidance are with me in whatever I pursue. They are the ultimate role models.

Nguyen Phuc Hung

12 November, 2019

南華大學企業管理學系管理科學博士論文

108 學年度第 1 學期博士論文摘要

論文題目：影響旅客使用手機應用程式意願以決定旅遊目的地之因素

研究生：阮福雄　　**指導教師：郭東昇　博士**

黃國忠　博士

論文摘要內容:

如今，移動旅遊應用程序(Apps)是一種營銷工具，正在迅速開發，作為向遊客提供豐富信息並促進前往旅遊目的地的最有效方法之一。但是，移動應用程序的差異也會對旅行者的態度和意向產生重大影響。該研究的目的是評估消費者如何使用移動旅遊應用程序以及消費者如何使用這些應用程序來定向客戶訪問旅遊目的地的意向。此外，通過對旅遊應用的研究，目的地可以解決發展戰略所面臨的機遇和挑戰。研究還考慮了客戶採用旅遊應用程序是否會對客戶訪問旅遊目的地的意向產生積極影響。技術接受模型(TAM)也用作研究模型，以探索客戶採用旅遊應用程序的意向。

該研究使用了來自 630 位遊客的問卷調查數據來評估研究模型，並通過偏最小平方(SmartPLS 3)方法檢驗了假設。這項研究的發現表明，在決定採用旅遊應用程序和訪問旅遊目的地的意向時，電子服務景境環境和電子口碑傳播在決定採用旅遊應用程序和訪問旅遊目的地的意向方面起著主要作用。感知的易用性和感知的實用性傾向於充當中介連接的兩個中介，其可以緩解電子服務環境和電子口碑傳播對使用此類應用程序的態度的影響。考慮了不同的管理含義，包括應用差異營銷工具的應用程序，改善對使用旅遊應用程序的態度以及細分客戶以設計營銷策略。

關鍵詞：移動旅遊應用程序、技術接受模型(TAM)、電子服務景觀環境、電子口碑傳播、感知易用性、感知有用性、移動應用程序

Title of Thesis: Factors Influencing Travelers' Intentions to Adopt Mobile Apps for Identifying Tourism Destinations

Department: Ph.D. Program in Management Sciences, Department of Business Administration, Nanhua University

Graduate Date: November, 2019 Degree Conferred: Ph.D.

Name of Student: Nguyen Phuc Hung Advisor: Tung-Sheng Kuo, Ph.D.

Kuo-Chung Huang, Ph.D.

Abstract

Nowadays, mobile tourism applications (apps) are marketing tools which are rapidly being developed as one of the most effective ways to provide abundant information to tourists and facilitate access to tourism destinations. However, the difference in mobile apps also has a great impact on the attitudes and intentions of travelers. The purpose of the study is to provide an assessment both of how consumers adopt mobile tourism apps and how consumers use those apps to orient customers' intentions to visit tourism destinations. In addition, through research into tourism apps, the destinations can address and identify both opportunities and challenges from which a development strategy is developed. Besides, the study considers whether customers' adoption of tourism apps would have a positive impact on customers' intentions to visit tourism destinations. The technology acceptance model (TAM) is also utilized as the research model to explore customers' intentions to adopt tourism apps.

The study uses questionnaire survey data from 630 tourists to evaluate the research model; and the hypotheses are tested via the Partial Least Squares (SmartPLS 3) method. The findings of this study reveal that the e-servicescape environment and e-Word-of-Mouth communication play main roles in deciding the intentions to adopt tourism apps and to visit tourism destinations. Perceived ease of use and perceived usefulness tend to serve as two of the moderators that

can moderate the influences of the e-servicescape environment and e-Word-of-Mouth communication on attitudes towards using such apps. The different managerial implications including apps to differential marketing tools, improving attitudes towards using tourism apps, and segmenting customers in order to design marketing strategies are considered.

Keywords: Mobile Tourism App, Technology Acceptance Model (TAM), E-Servicescape Environment, E-Word-of-Mouth Communication, Perceived Ease of Use, Perceived Usefulness, Mobile Apps

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CHAPTER ONE
INTRODUCTION

In chapter one, research background and motivations, research objectives and research process are discussed.

1.1 Research Background

Nowadays, tourism is one of the major contributors of economic sectors that help the economy of one country. Tourism is one of the sectors to help the economic growth. International tourist arrivals grew by 6 % in 2018 to 1.4 billion in 2018; Revenue of international tourism increased by 5% in 2017 (The World Tourism Organization report, 2018). Forecast of world tourism sector's income shows that it will continue to grow substantially in the coming years, The World Tourism Organization (UNWTO) forecasts a growth in international tourist arrivals increased 3-4 % in 2019 and Vietnam tourism is gradually improving and powerful munitions. UNWTO Secretary-General Zurab Pololikashvili said "The growth of tourism in recent years confirms that the sector is today one of the most powerful drivers of economic growth and development. It is our responsibility to manage it in a sustainable manner and translate this expansion into real benefits for all countries, and particularly, to all local communities, creating opportunities for jobs and entrepreneurship and leaving no one behind"

According to the Vietnam National Administration of Tourism in 2019, Vietnam has 15,497,791 international travelers that increased 19. 9% compared within 2017 (General Statistics Office of Vietnam report, 2018). In order to make Vietnam become an interesting destination to attract visitors

that is more international so the tourism industry should understand the visitor's needs. That is crucial to find out the factors affect the international visitors to visit Vietnam that is exactly the issues research in this study in order to solve the above problems. It also catered to 80 million domestic travelers last year, generating VND620 trillion (USD$26.66 billion) in revenue. It was ranked the world's fourth fastest-growing travel destination in a 2018 UN World Tourism Organization report for its impressive growth in international arrivals over recent years. Vietnam plans to welcome up to 20 million foreign visitors by 2020, earning $35 billion in tourism revenues and contributing 10 percent to the country's GDP. In 2018, Vietnam ranked 67 in the world and Vietnam has increased by 5 degrees in 2015 (Travel & Tourism Competitiveness Report 2018, World Economic Forum). The competitive advantage of Vietnamese tourism is indicators of price competition in the travel and Tourism Administration (ranked 22/141), that have the potential in Vietnam tourism industry. Besides, the availability of labor force, Vietnam ranked 33 over 139 countries and for the cultural resource ranked 22 over 139 countries (The Travel & Tourism Competitiveness Report, 2018). For National Long-term tourism growth, Vietnam ranked 12 over 181 countries rated by World Travel and Tourism Council, 2018 (WTTC). Vietnam is various resources and the culture is very interesting. In 2015, Vietnam has been designated by UNESCO as a world heritage that is including two natural heritages, cultural heritage, seven cultural heritages and intangible heritage. Vietnam transportation systems are relatively easy for international tourism selection because much transportation to choose that is very convenient to select the tourist types.

To develop the great potential of tourism in Vietnam, one of the necessary solutions is to use information technology in tourism exploitation. Information technology (IT) is growing tremendously and has brought great changes to all fields of human life. The development of information technology has generated many new technologies that serve people's needs. Consumers must therefore also be able to adapt themselves to these new technologies. New technologies have a great impact on all areas of business, including marketing. In today's manufacturing business, almost all marketing activities use the results of modern technology to replace ineffective traditional marketing activities. Mobile apps provide an effective way for travel-related companies to build loyal relationships with customers. In today's business environment, mobile apps help travel-related companies provide exciting, interesting, and innovative experiences for their customers (Ukpabi, & Karjaluoto, 2017). Travel-related companies are making plans to attract and promote their products and services to consumers using mobile apps for tourism.

In the travel industry, mobile marketing devices help consumers identify and understand more about travel information, products, and services; and travel managers often use mobile devices to build marketing strategies for providers. The number of customers who use a mobile device to seek information related to tourism – information such as the location of destinations; flight ticket booking; hotel booking; etc. – is growing very fast. Therefore, tourism marketers cannot afford opportunities to approach customers. Mobile apps bring huge benefits to consumers – but in fact, there have been very few researches on what factors may affect the use of consumer mobile apps; although mobile apps attract a lot of interests among a lot of people (Lu, Mao, Wang, & Hu, 2015). Besides, few studies have evaluated the

impact of the relationship between other constructs (e-Servicescape environment, e-Word-of-mouth Communication) on tourists' attitudes towards using tourism apps.

To perform better research on consumer engagement with regards to the use of mobile apps, the problem is how to understand the difference between behavior and adoption. Along with the development of IT, tourists these days often use mobile apps in order to select tourism destinations as the most effective way. In this study will answer some questions that are:

- What factors are affecting users' attitude towards using mobile apps and intention to visit tourism destinations?
- How do e-servicescape environment, eWOM communication, perceived ease of use and perceived usefulness affect users' attitude toward using tourism apps?
- How do these factors influence users' intention to adopt the apps and to visit tourism destinations?

1.2 Research Object

Based on the above discussion and answer these questions which can be able to answer the research objectives as follows:

1. To explore the impact of tourism on the selection of destinations using a mobile app.
2. To determine the effect of the online environment through mobile apps for travellers.
3. Reviews the theoretical and empirical research on tourism destinations and considers the interaction effects of the e-servicescape environment

and eWOM communication, based on the relationship between perceived ease of use and perceived usefulness.

4. To consider the interaction effects of either intention to adopt tourism apps or intentions to visit tourism destinations.

1.3 Research Contribution

This study contributes to the current literature from the following three aspects:

First, the study clearly identifies the relationship between marketing factors affecting the intention to visit tourism destinations. Second, in addition, the study identifies the relationship between Electronic-Word-of-Mouth (eWOM) communication and e-servicescape communications factors affecting the technology acceptance model (TAM). Third, the study also assessed the relationship between the elements of the research model in the selection of travel destinations.

From the above contribution points of view, it is necessary to clearly define the awareness and satisfaction of visitors when using applications in determining tourist destinations. In addition, the element of indigenous culture is also considered an important factor in the perception and intention in using applications. Therefore, understanding the psychology and needs of tourists can provide positive solutions from which to build appropriate marketing strategies in attracting tourists to tourist destinations. Analyzing the marketing factors (eWOM, e-servicescape) will bring about the most obvious awareness of tourists from which tourism management organizations and travel companies and marketers have appropriate solution in approaching and attracting tourists at the destination.

In particular, the interrelationship between eWOM communication or the e-servicescape environment and tourists' attitudes with the moderating effect of perceived usefulness and perceived ease of use is still unexplored. This interrelationship is the gap in the tourism industry that we will fulfill with this study by exploring the factors that affect mobile apps users in choosing travel destinations using the technology acceptance model (TAM).

1.4 Research Project and Scope of the Study

From the research objectives, this study develops the research project and scope as shown in Table 1-1.

Table 1-1 The Scope of this study

Items	Scope of the study
Types of the research	The literature reviews are adopted to build up the research hypotheses and structure. Questionnaires and construct measurements are used to collect empirical data and to test the hypotheses and draw the conclusions.
Key issue	This study focuses on identifying the moderators of Perceived Ease of Use (PEOU) and Perceived Usefulness (PU).
Dependent variables	Intention to Visit Tourism Destination.
Independent variables	eWOM Communication, e-servicescape Environment, Attitudes towards Using Tourism Apps, Intentions to Adopt Tourism Apps.
Moderating variables	Perceived Ease of Use (PEOU) and Perceived Usefulness (PU).
Underlying theory	Technology Acceptance Model (TAM).
Research instruments	Survey: Theory inference, primary data, and statistical analysis instruments.

1.5 Research Process

The research process of this study is shown in Figure 1-1

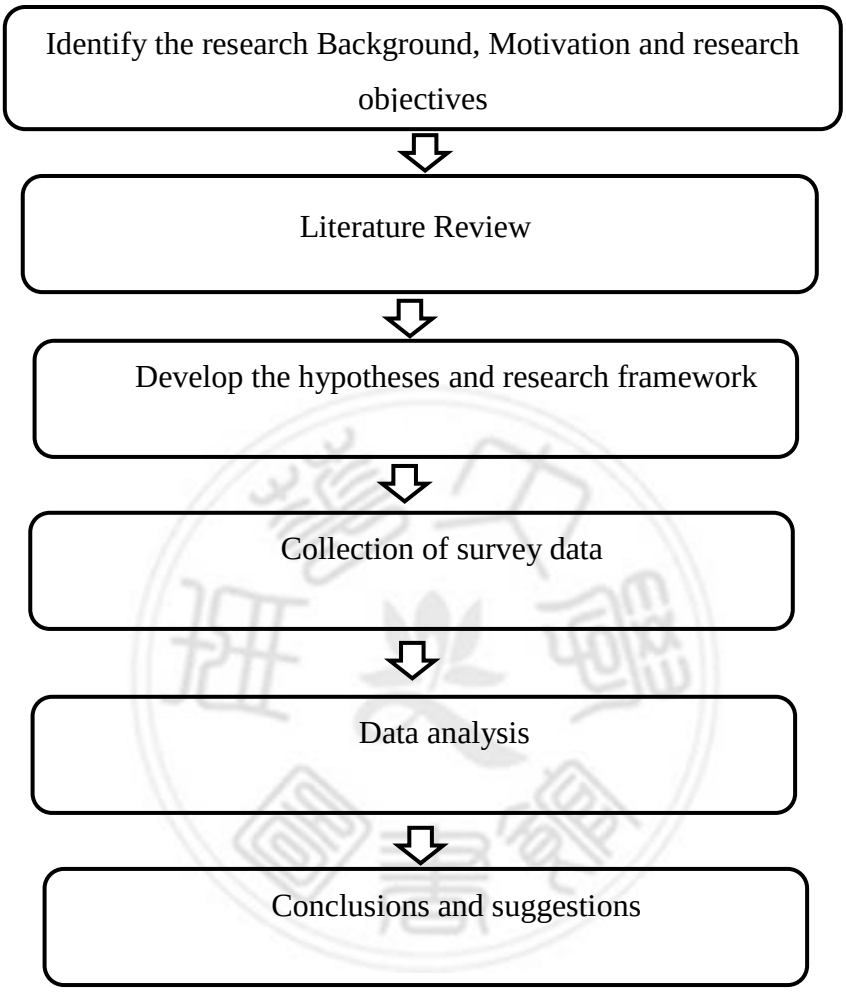

Figure 1-1 The Flow Chart for this research

1.6 Research Structure

First, this study belongs to a marketing-related topic in that particular area of tourism that is intended to influence the intention to use smart apps to visit tourism destinations. In the next section, the study organized a research model with 11 research hypotheses to clarify the relationship between research structures. Finally, the study used a survey questionnaire to collect data from

international tourists and then analyze the data to elucidate the research hypothesis. The study was organized to include 5 chapters. Specific contents of each chapter are shown as follows:

Chapter one: Introduction

Chapter one outlines the background and then to raise the objectives and the structure of the study.

Chapter two: Literature Review

Chapter two presents the research theories and hypotheses about the background of mobile marketing apps, Technology Acceptance Model (TAM) and our proposed research model

Chapter three: Method of research

Chapter three mentioned the construct measurements and research design. The effect of Independent variables on dependent variables and moderating impact of moderator variable on the relationship among independent and dependent variable propose research model. The research design of this study used the survey method. Besides, this chapter also refers to the measurement scale, the process of collecting and processing data.

Chapter four: Empirical Result

Chapter four presents statistical results and research descriptions, including data collection, basic information of respondents, detailed case study, and analysis of factors with survey results. The descriptive analysis, reliability, and validity of the measurement scales and the hypotheses testing were also presented in this chapter. After that, the results will combine with each hypothesis which also is presented in this chapter.

Chapter five: Conclusion

Chapter five presented the conclusion and suggestions. Chapter five also provides assessments of synthetic reviews based on research results. In addition, it demonstrates the discussion and conclusion which are critical for our implications, limitations and future study direction are developed in this section.

CHAPTER TWO

LITERATURE REVIEW

This section presents a review with respect to detailed description of the theory pertaining to the research model, and each research construct upon which concrete definitions will be drawn by this study.

2.1 The Development of Mobile Marketing for Tourism

2.1.1 The Background of Mobile Marketing

Nowadays, the internet has become an effective tool to convey information effective way. The marketing is shaped for the purpose of distribution and consumption of tourism products and services (Buhalis & Law, 2008). The rapid development of major technological impetus for social media development and tourists can find information destinations (Xiang & Gretzel, 2010). Recent studies show that the development of tourism destinations and promote the image of destinations tend to focus on the web-page material and a few tools such as point- of - view. In addition, the validity of electronic word-of-mouth is considered as one of the ways to convey and create momentum for potential tourists choose destinations. In studies in the field of tourism and hospitality have mentioned a lot of problems to the role and using social media to influence the choice of tourist destinations. (Sigala et. al., 2012). The media are increasingly important and relevant to destination marketing (Pike & Page, 2014). Nowadays there are a lot of industries affected by the advantages of the technology, in which tourism is one of the sectors affected by ICT (Information and Communication Technologies) in business activities because in business activities because “not only do ICTs

empower consumers to identify, customize and purchase tourism products but they also support the globalization of the industry by providing effective tools for suppliers to develop, manage and distribute their offerings worldwide"(Buhalis & Law, 2008).

Social media sites facilitate consumer-generated content (CGC) such as blogs, photos, videos, wikis, or reviews (Sigala.et. al., 2012; Wenger, 2008) and are widely used by online travelers thereby marking a shift toward users rather than organizations taking charge of Internet content. Sometimes CGC and online reviews (such as those published by Tripadvisor.com) might even challenge the authority of established destination management Organizations (DMOs) and conventional advertisements, by undermining their reputation (Yuan & Fesenmaier, 2000). Destination Management Organizations(DMOs) at both the national and local level need to pay attention to how they use social media, as this can play a crucial role in effectively promoting and marketing a tourism destination in a global context, characterized by hyper-competition not only among companies (Finkelstein & D'aveni, 1994) but also among destinations (Czakon et.al., 2014).

Mobile marketing, defined as "the two-way or multi-way communication and promotion of an offer between a firm and its customers using a mobile medium, device, or technology" (Shankar & Balasubramanian, 2009), is becoming a core activity. Therefore, over-the-phone marketing solutions they used in the sense of these means or avenues of communication being exploited. Mobile marketing solutions are increasingly replacing traditional marketing channels (Lindstrom et al., 2011). According to one study, the convenience, universality and portability of mobile devices has increased the interest of consumers (Wang et al., 2015).

2.1.2 The Development of Mobile Application in Vietnam

According to the statistical data from WTTC's "Travel & Tourism Economic, Impact-2018", the total contribution of Travel & Tourism to GDP was VND367, 238.0bn (9.3% of GDP), making more than 4,088,500 jobs (7.7 % of total employment), and attracting investment capital of VND96, 452.7bn (10% of total investment). The report also predicts that in 2025 these figures, respectively, will reach VND721, 805.0bn (9.4% of GDP), making 4,842,000 jobs in 2025 (7.9% of total), and attracting VND188.653bn investment capital (9.0% of total). Following by the recent Travel & Tourism Competitiveness Report 2015 from the World Economic Forum (WEF), the indices ICT Readiness (e.g. individuals using Internet) reach 4.9% (ranked 77/141 countries); broadband internet subs. per 100 pop. Reaches 5.6 (77/141); mobile telephone subs. per 100 pop. Reaches 130.9 (40/141); mobile broadband subs. per 100 pop. Reaches 18.8 (83/141); mobile network coverage reaches 70% pop (128/141). Vietnam travel was ranked 75th overall. It was also ranked 15th in the region (Travel & Tourism Economic, Impact-2018).

"We are Social" collecting statistical data showed that Vietnam population, as of March 2019, was 90.7 million people in which 41 million ones used Internet (approximately 45%), 30 million people had their own social network accounts (33%), 128.3 million people had their cellphones connected to Internet (approximately 141%). It turned out each person subscribed to 1.4 mobile phone numbers and the quantity of social network users on cellphone 26 million (approximately 29%). In term of Internet popularization, Internet users are 41 million (45% of total population) and 33.4 million people use Internet via cellphones (37% of total population). On

the criterion of social network users, the total social network accounts of Vietnamese is 30 million, accounting for 33% of total population, in which the number of social network users via cellphones is 26 million, making 29% of total population.

Table 2-1 International Tourism - Number of Arrivals in Vietnam from 2014-2018

	2014	2015	2016	2017	2018
Number of Arrivals	5,049,855	6,014,032	6,847,678	7,572,352	7,874,312

Source: Vietnam National Administration of Tourism. 2018

In spite of great advantages in tourism resource, Vietnam has not completely exploited its potential. The number of international tourists steadily rises throughout the years but it still remains under ten million, for instance, in 2018, Vietnam welcomed 7,974,312 million visitors (Vietnam National Administration of Tourism, 2018). Along with traditional travel types, developing smart tourism is a must to sharpen the competitiveness among countries in region and in the world.

Internet in Vietnam was set up and progressed in 1997. Till now, Vietnam has been appreciated as one of the countries with fastest yearly growth in Internet users as its Internet service is getting more and more diverse. Forms of high speed connection service grow in a rapid manner. In recent years, Internet access service via 3G on mobile phone has performed its outstanding growth for the easy use. The speed of domestic and international connection is gradually improved and fosters the prosperity in users and service efficiently. Based on the figures above, Vietnam is totally capable of developing such mobile applications.

The development on mobile applications in Korea and Taiwan reveals that investing and applying IT are regarded as the most important mission for sustainable development. Technology serves as a facility in smart tourism including a series of intelligent computational technologies of assembling software, hardware, and network technology, all of which help users make good decisions in selecting (Washburn et al. 2010). Accordingly, the stability of information system needs to be ensured for continuous and synchronized connectivity.

Tourist is believed to directly use applications of smart mobile technology so (1) anticipating customers 'demands based on ultimately analyzing elements and useful information such as sights, cuisines, and entertainments is required; (2) experiencing tourism by furnishing a variety of trustworthy information based on highly interactive interface which diminishes technical barriers for tourists should be strengthened; and (3) leaving tourists more freedom as letting them share their own experience should be encouraged so that next users can easily decide and reinforce travel experience. Besides, all of the applications must be synchronized, kept updated and away from disintegration and a synchronization.

2.2 Mobile Applications (Apps)

In today's marketing environment, mobile marketing is a positive solution in the digital age. According to an online survey, the number of global smartphone users has neared 17.5 billion on the global (eMarketer, 2014) and the smartphone penetration level had been expected to be close to 50% of the potential global market in 2017 (eMarketer, 2016). Smartphone apps are integrated with the navigation system to perform location positioning function

on personal phones to locate places and orient oneself more easily. Apps are used for a variety of purposes (such as catering, entertainment, travel, etc.).

The classification of mobile applications has been evaluated by previous studies and indicates that there are four main types of mobile applications accessible in the travel sector (Online Bookings, Information Resources, Location Based Services, trip journal) (Borras, Moreno & Valls, 2014; Wagner et al., 2013) shown in Figure 2-1:

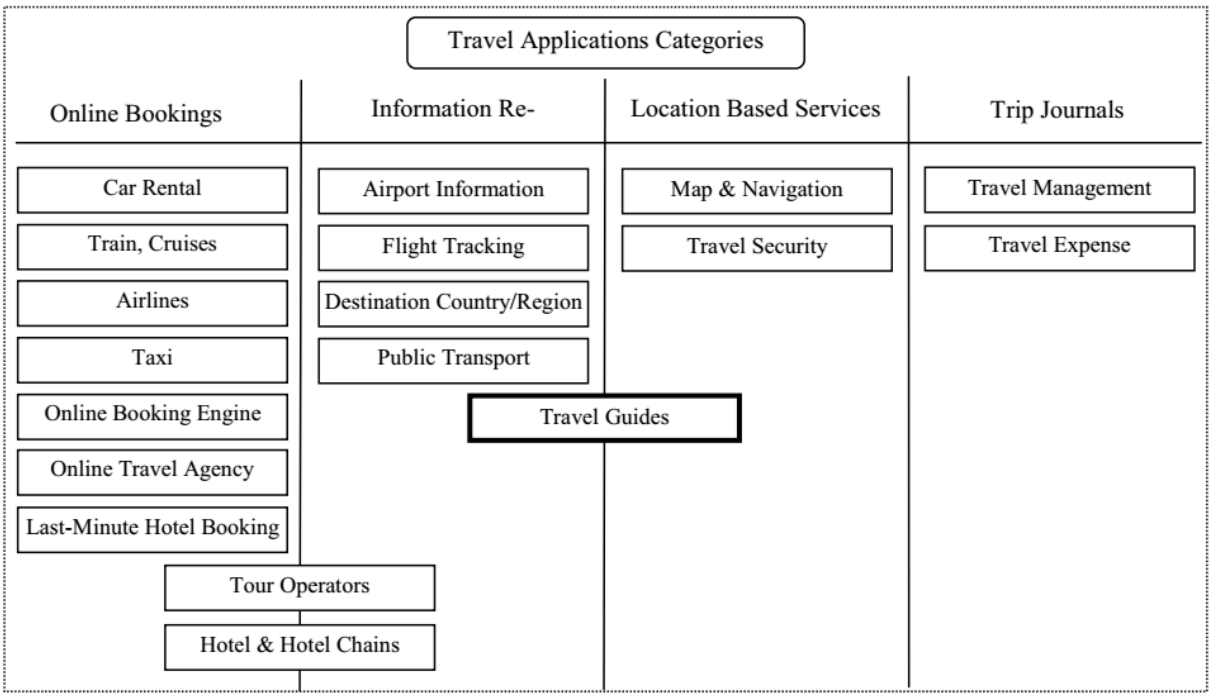

Figure 2-1 Classification of Mobile Tourism Applications

(Borras, Moreno & Valls, 2014)

The first is “Online Bookings” sector that this factor allows tourists to find the necessary services for travel itineraries including services such as booking flights, train, cruises, and car rental…. The next category is “Information resource”. When confirming customers' needs, the application will display relevant information such as type, quantity, price, time, payment method,

destination information. , airport shuttle service, accommodation service, flight itinerary tracking. “Location based services” sector will provide tourist assistance services by locating users' locations such as maps, emergency assistance centers, police phone numbers, currency exchange areas. The last sector is “Trip Journals” that is to analyze and evaluate information related to travel after searching for information on demand.

Current tourism applications are relatively diverse and application groups are usually divided into 3 basic phases. Most applications contain 2 or 3 specific phase as follows:

- Pre- travel phase: The applications often provide relevant information for a specific travel plan such as search, service description, needs such as finding hotels, entertainment centers... This group of applications helps visitors to build trip plans, gather useful information.

- Travel phase: The second phase of the application introduces relevant information about destinations, services, information about ongoing and upcoming events, helpful tips and recommendations. This application group provides useful information for users based on personal information about tourism destinations.

- Post- travel phase: The third stage receives feedback from tourists and shares experiences with others. This application group aims to collect information, images, clips about travel destinations so that other application users refer to the appropriate destination selection.

Understanding the attitudes regarding the user adoption of mobile tourism apps, especially in a developing country like Vietnam, will aid in suggesting new ways to attract customers, new ways to develop tourism marketing strategies, and new ways to improve customer experience. When it comes to

mobile marketing, it is important to differentiate between the two different types of mobile marketing apps. These are:

1. The level of understanding of the consumer, and
2. The trigger of communication.

2.3 Technology Acceptance Model (TAM)

The first person who created the Technology Acceptance Model (TAM) was Davis (1986), whose model was adopted by the Theory of Reasoned Action. The impact on the use of personal technology has been considered as being elements of intent to use the technology and as being the direct determinants of behavior.

Theory of reasoned action (TRA) is used to explain technology acceptance by an individual by questionnaire and its analysis. PU and PEOU are influenced by external variables (social, cultural, political factors). TAM3 depends on two models, TAM2 and a model of easy to use factor (Venkatesh). The variables that affect PEOU are divided into two types of foundation or base (anchors) and systematization (adjustments). In foundation or base (anchors) type including variables like efficiency, awareness and external control, computational anxiety and playfulness. The systematization (adjustments) includes systematization and real usability.

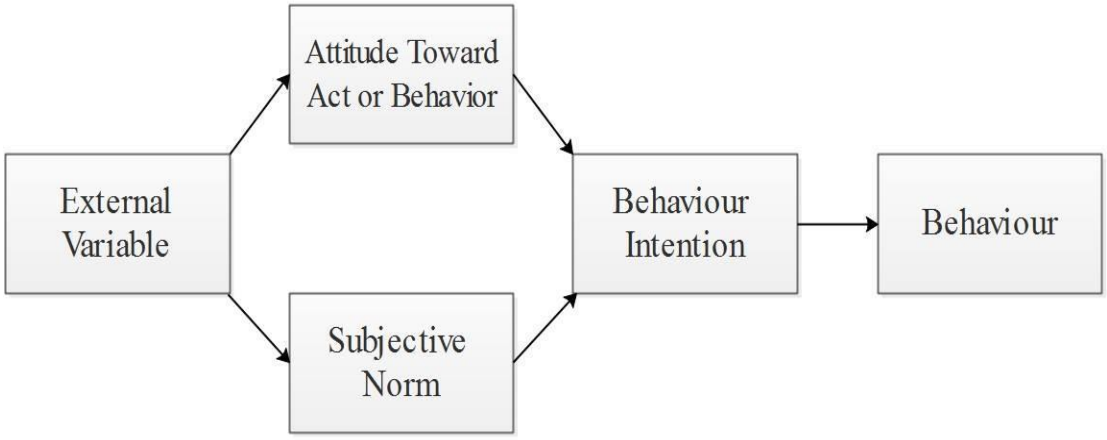

Figure 2-2 Theory of Reasoned Action (Ajzen & Fishbein, 1980)

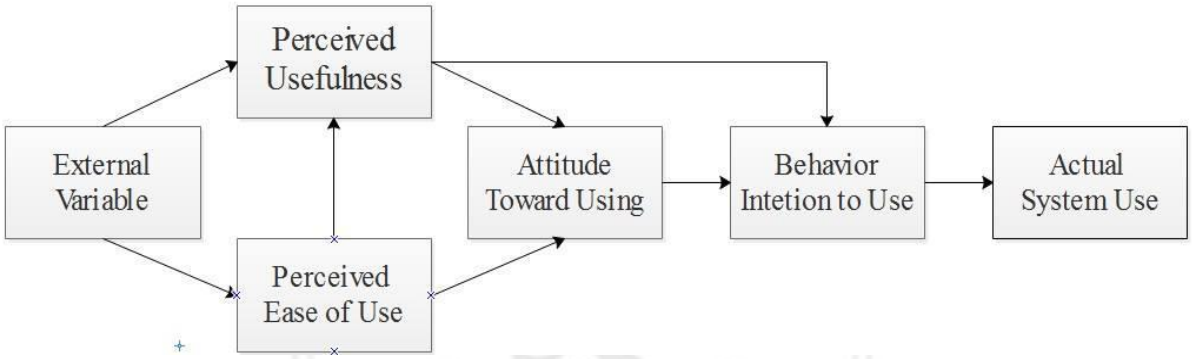

Figure 2-3 Technology Acceptance Model (Davis et al., 1989)

Compared to the TRA model, TAM proposes an additional factor that influences the behavior intention besides attitude (Davis, 1989). TAM has been tested on a large scale with different sample capacities and demonstrates that this is a valid and reliable model based on technology systems (Legris, Ingham, & Collerette, 2003). Previous studies have also shown that studying attitudes through TAM application systems is more effective than TRA and the theory of planned behavior (TPB) (Ajzen, 1985). In this model, the effect of PU on behavior intention is to evaluate the idea that people believe the ease of use or benefits of innovation. Therefore, the assessment of technological awareness and benefits will improve the process (Davis, 1989).

TAM determines attitudes by using two beliefs: perceived ease of use, and perceived usefulness. The app system is relatively easy to use—consumers easily learn how to use it; and they ultimately intend to use it. Previous studies have shown that perceived ease of use has a positive effect on continued use in the current technology context (Chiu & Wang, 2008). In addition, consumers are more likely to improve their performance and this is especially important in the use of technological innovations, particularly in the use of mobile apps (Venkatesh, 2000). In TAM, perceived usefulness (PU) is assumed to be a direct predictor of behavioral intentions regarding using technology (Roh, Seol, & Park, 2014). Previous studies have shown that perceived usefulness is associated with the intentions to use mobile devices; as are blogging and knowledge creation (Abbas & Hamdy, 2015), blogging and knowledge creation (Tseng & Chang et al., 2009). In the mobile device environment, perceived usefulness is described in terms of how efficiently mobile services can be incorporated into daily operations. In general, consumers tend to have a positive intentions to adopt the benefits provided by mobile apps.

Determinants to Attitude toward Using

- TRA model does not determine Attitude toward using factor while TAM model has two factors that determine the attitude because it is an important factor to determine the belief for the first context.

- Through the TAM model, several factors will be applied because of the impact of customers applying on phone applications such as PEOU, PU. That is the advantage that mobile provides.

In this study, TAM is used to assess interactions between constructs and also to assess the relationship between the factors associated with perceived

usefulness and perceived ease of use. In addition, perceived ease of use and perceived usefulness are used as moderator variables to assess the impact between the external factors affecting customers' attitudes and intentions to use mobile apps.

2.4 Definition of Research Construct

2.4.1 E-servicescapes

- **Servicescape**

Recent tourism and hotel research shows that servicescape elements focus on creating physical innovations in the service environment (Line et al., 2018). When building a hotel, servicescape are explained for environmental, decoration, layout (Dedeoglu et al., 2015) and the "substantive staging" of the servicescape. The concept of decó includes music, taste, light (Heung and Gu, 2012). In which layout elements relate to the positioning of furniture and various decorative equipment used by customers (Turley and Milliman, 2000). The definition of "decó" is much related to the color and quality of materials (Han and Ryu, 2009). In the field of hotel business, many studies focus on social factors (Line et al., 2018), factors such as "communicative staging," and consider employees serving as the main channel in communication (Gwinner et al., 1998). In which the factor of "Communicative staging" includes both personnel elements of the organization and cultural factors (Dong and Siu, 2013).

- **E-servicescapes**

Nowadays, the Internet is considered as having undergone remarkable developments, especially in the business environment, to promote Internet

sales. In an increasingly competitive environment, online shopping makes a difference when it comes to knowing a website through marketing efforts influence buyer perceptions regarding the seller's efforts and to distinguish it from other websites (Keller, 2009). The e-servicescape environment studies have emerged that have shown consumer perceptions, emotions, and trends (Harris & Goode, 2010). According to State Koering's view, the internet environment evolves positively evolves from the traditional servicescape. It was designed to create a better impression and to more effectively help customers have a positive customer service experience (Koering, 2003). Creating good quality and functional design is important to the service provider; and customers want to easily get information about useful services, so customers are affected by the virtual environment. Therefore, mobile apps for the tourism industry must also meet those standards in order to satisfy the needs of travelers. The e-servicescape environment must ensure the aesthetics; and how those apps are designed to match the characteristics and expectations of customers is particularly important.

- **E-servicescape Dimension**

Many studies show that in outstanding e-marketing solutions, e-servicescape is an effective tool in the online environment. The dimensions are presented with different aspects. The elements mentioned are created as convenience, layout and design, financial security and satisfaction appreciated by consumers on the online environment (Szymanski, 2000). In an online environment, the servicescape is divided into three main dimensions including aesthetic appeal, financial security, and layout and functionality.

The first dimension is the aesthetic appeal that is the direct impact of the environment (Harris, 2010). In the online environment the impact on the senses plays an important role in which hearing and vision are directly affected by the user. Quality images have a strong impact on application users. Visual attributes attract users to spend time to experience applications impacted by graphic elements, typography and interesting images.

Financial risk is the second dimension affecting user perception of application security, the level of security and the actual payment process of the application. This dimension is useful to the psychology and users' behavior (Schiffman, Sherman, & Long, 2003). In the online environment, the physical stimuli affect individual perceptions and gradually affect their perception. The services are often invisible, so in an online environment that allows the interaction between service providers and service users through the characteristics of core services (Zeithaml et al., 2006), or focus on increased user awareness through e-servicescape.

The last dimension is layout and functionality. Layout and functionality are all related to the physical element of the application (Harris & Goode, 2010). Basically, layout and functionality include interactivity, usability, customization/ personalization and relevance of information.

2.4.2 Electronic Word of Mouth (eWOM)

Electronic word-of-mouth (eWOM) communication is one of the important marketing strategies in the areas of social media. Consumers have the habit of sharing information with others on social networks such as Facebook or Twitter. Electronic WOM communication is identified as "Verbal informal communication occurring in person, by telephone, e-mail, mailing

list, or any other communication method regarding a service or a good. A recommendation source may be personal or impersonal" (Goyette et al., 2010). According to Xia and Bechwati (2008), eWOM communication is an effective tool for communicating about products and services. In the virtual environment, it becomes an interesting field for managers to use.

eWOM is considered to be one of the traditional marketing methods that bring great business results. Currently, in the e-commerce market, the influence of eWOM communication is particularly important. Customer reviews of products and services are numerous, and they affects attitudes towards potential customers. They give the company and its customers it refer to an excellent cost-per-response ratio (Nambisan, 2002). Consequently, companies encourage their customers to write reviews of products and online services and review online services in which the use of easy-to-use apps is a criterion (Bronner & Hoog, 2010). Manufacturing activity is being done on the internet; alternatively, criteria for assessing ease of use are rated relatively highly through mobile apps that the assessments determine consumers' attitudes and acceptance of innovation (Pan & Chiou, 2011) because they believe in online reviews more than in traditional media (Cheung & Thadani, 2012).

eWOM is more effective when goods are consumed when it is searched (Park and Lee, 2009). eWOM leads to customer loyalty post- purchase (Czaplewski, 2006). Compared to WOM, eWOM provides a higher level of positivity that brings fairness to avoid bias because consumer identity is not public (Abubakar, Ilkan, & Sahin, 2016). eWOM is a form of online assessment as another consumer support service and makes the right consumer decision (Bronner & Hoog, 2011).

eWOM describes the exchange of information between experienced people and others in an online environment (Cabezudo, 2013). Many people who do not have experience in products / services often believe in the experience of others other than advertising (Bronner & Hoog, 2010). According to Cheng, 2014, eWOM has an impact on the adoption of products / services in the online environment. In multimedia communications, eWOM allows users to exchange information anytime and anywhere, and eWOM management is relatively complicated because consumers also act as co-producers to create values and marketing messages (Chung and Koo, 2015). Customers' opinions always impact strongly on other consumers, usually eWOM builds a communication process that includes giving opinions and seeking opinions. Members of online applications are more closely connected to sharing information with each other (Gilbert & Karahalios, 2009).

In the online environment, people share everything about movies, food, life (Rosen, 2000) and they are provided with additional information from their surroundings and other media (East, Hamond and Wright, 2007). Especially in the field of services, eWOM is extremely necessary because service-related expectations are not as clear as tangible products. Besides cultural and pass experience-related factors can affect consumer choices (Ateşoğlu and Bayraktar, 2012). Besides, communication through eWOM will bring about positive things like enhancing communication ability, increasing the level of personal expertise and establishing relationships (Cheung, Anitsal and Anitsal, 2007). Therefore, eWOM is an effective mode of communication, especially important information transmitted from reliable sources (Ennew, Banerjee and Li, 2000).

The strategy of advertising image is based on available information sources, and these sources of information are influential in decision-making (Govers et al., 2007). Therefore, tourists often use media resources and word of mouth messages to make the decision to travel. Hence, the influencing mechanism of information resources is an important issue for decision making. Being awareness of the mechanism is important for destination marketers to formulate effective promotional strategies in an attempt to develop suitable destination image which in turn may promote high sales and profit margin for the destination. In the tourism industry, informal sources like WOM is more effective than media sources such as telephone, radio, newspapers, journal or internet, because media is a communicational tool that sender need to send their meaning to the receiver, meanwhile WOM has no trade identity. Hence, information transferred by word of mouth and by tourism destination can affect tourists' perceptions about a certain destination.

However, OCRs and eWOM are different from several important ways. First, eWOM is created by customers and marketers, while OCRs are created only by the consumer (Cheong & Morrison, 2008), in the context of eWOM any individual can use Facebook or Twitter's personal social network and they can control their information, but for OCRs, information can only be posted on general forums like eBay and Amazon. Secondly, eWOM can only share the information directly to specific recipients on social networks as mentioned above, while OCRs information is publicly available (Arkolakis. Costinot & Rodriguez-Clare, 2012). Bae and Lee (2011) claimed that OCRs are a form of eWOM but it is more unique. OCRs provide more information to customers (Park et al., 2007) and have more positive impact on customer intent than expert reviews (Dellarocas et al., 2007), because most of consumers know

marketer can manipulate eWOM, but for OCRs it's difficult to be controlled, their comments normally can direct inflect their opinions according to their own experiences. As suggested by Senecal and Nantel (2004), OCRs might be a consequence of recommendations being possibly biased by commercial motives. On the other hand, online recommendation systems have been found to be more influential than customer and expert reviews in affecting customer product choice (Senecal & Nantel, 2004). There are 3 measures of OCRs, which are volume, valence, and dispersion (Cui et al., 2012; Dellarocas & Narayan, 2006; Dellarocas et al., 2007). Firstly, OCRs volume is the number reviews of customer via internet. Dellarocas et al., (2007) stated that the rationale behind assessing the influence of volume is that the more a product is discussed, the higher the level of awareness among customers. Secondly, valence refers to the review which is positive or negative. Dellarocas et al., (2007) also stated that positive review will create a positive attitude and negative review may create negative attitude when choosing a product. Finally, dispersion refer to the message spreads into the communities (Chatterjee, 2001). According to Kaisare & Vlachos (2012), about 87% of travelers find their trip through the internet and about 43% of tourists refer to online reviews from other travelers before making decision. Therefore, traveler's reviews are very important in purchasing travel services, as the quality of service is intangible, the visitors find it difficult to evaluate the quality of the products (Ye, Law, Gu and Chen, 2011). Furthermore, OCRs have been found to have a significant impact on brand reputation (Amblee & Bui, 2008), and trustworthiness of an online store (Awad & Ragowsky, 2008). Online reviews are currently a market phenomenon that is evolving, and play an important role in the decision making (Liu and Park, 2015).

2.4.3 Perceived Usefulness

Perceived Usefulness refers to “the extent to which a person believes that using a particular technology will enhance her/his job performance,” (Davis, 1989). PU is considered to be one of the sources of impact that makes users believe that they will improve performance when using applications (Davis, 1989). PU has a direct impact on customer intent on technology innovation. The main reason is that the use of technology to promote work efficiency will be highly appreciated and encourage people to use more than this innovation. That is the perceived positivity in e-commerce application (Chau & Hu, 2001; Davis, 1989). The application of technology and the use of applications can help users achieve their goals and satisfaction, thus promoting motivation for more frequent use. Previous studies have indicated that PU affects mobile service provider (Abbas & Hamdy, 2015), online travel services (Li & Liu, 2014), e-learning (Lin & Wang, 2012), blog learning (Tang, Tang & Chiang, 2012), knowledge creation (Chou, Min, Chang, & Lin, 2009).

PU described level of trust user’s online applications on mobile devices to help improve the efficiency of information search. Current research relates to PU mentioned in tourism behavior research (Kim et al., 2016), or not related to consumer behavior (Matute et al., 2011). Mobile application basically supports shopping behavior (information search). Consumers have a connection between belief and consumer behavior, so the study will consider different consumer behaviors with PU. The PU of online mobile applications shows the level of personal trust that online applications will improve search efficiency. Consumer / shopping behaviors are interrelated with each action comprising many specific objectives (Darden and Dorsch, 1990).

2.4.4 Perceived Ease of Use

Perceived Ease of Use as "the degree to which a person believes that using a technology will be free from effort" (Davis, 1989). In the context of this study, PEOU refers to the extent to which users believe they continue to use the application without too much effort. For perceived ease of use applications, users will be ready to explore the feature and intend to continue using it. It is an important structure in the study of tourism information systems (Bilgihan, Barreda, Okumus, & Nusair, 2016). This factor affects application users through technology development (Venkatesh, 2000).

However, the differences between individuals together in perceived Ease of use for the technology applications are often subjective. In other words, the opinions of the advantages of each common person (Rowlandset al., 2007), according to a study by Al-Suqri (2014), people who often use applications on electronic devices often find them easier.

2.4.5 Attitude toward using Tourism Apps

Smith et al. (2015) suggest that consumers with a positive opinion about their beliefs and intentions will develop trust in their beliefs. Attitudes are an important turning point in understanding the adoption of new technology with TAM theory. Customer attitudes towards the use of new technology are also examined by three attitudinal factors: perceived ease of use (PEOU), perceived usefulness (PU), and individual intentions to use technology. Kim et al. (2009) suggested that users' attitudes toward mobile devices are that such devices are good and entertaining and that such attitudes, therefore, affect user

intentions. Block, Glavas, Mannor, and Erskine (2017) have suggested that attitudes are important when engaging in activities.

Attitudes of tourists describing psychological trends expressed by positive or negative assessments with certain behaviors (Kraus, 1995). According to Vincent & Thompson (2002) tourist attitudes include cognition, affection and behavior. The cognitive response is an evaluation in the process of forming an attitude. Besides, the affective response is the psychological response that expresses the interests of tourists at the tourist destination. The preferences expressed through that statement are the behavioral components. Um and Crompton (1990) point out that the attitude has a great influence on whether a potential destination is considered an attractive option and makes a final choice decision.

Tourists' first reaction to an unethical incident will be to engage in cognitive evaluations, which are represented here by their perceptions of the degree of severity of the unethical incident, the image that is publicized by the destination and on whom they place the blame (Moors, Ellsworth, Scherer & Frijda, 2013). Measurement of affective tourism destination image, based on four affective characteristics, was firstly applied to destinations by Baloglu and Brinberg (1997). It was developed on Russell and Pratt (1980) affective responses to physical environment and places. Visitor attitude can helps predict effective the decision to travel to a certain destination (Jalilvand and Samiei, 2012). Crompton (1990) found that attitude is influential in determining whether a potential destination is selected as part of the evoked set and in selecting a final destination. Lee (2009) also found that tourist attitude affects future tourist behavior. The study by Ekinci & Hosany (2006)

has showed that the attitudes of travelers to destinations affect their behavioral intentions.

2.4.6 Intentions to Adopt Tourism Apps

Mobile users accept the use of apps when they perform their first mobile activities. More specifically, consumers accept apps when they are downloaded. The increase in the number of people who use phone apps means that the number of people who accept apps is higher than those who do not. They include non-verbal reactions, verbal reactions and behavioral responses, which are a behavioral response. Many people use mobile applications first when they perform their first online activities (Einav et al., 2014). Application users accept an application when it is downloaded. In technology innovation, many applications are created that stimulate the application and download of users. It shows that those who accept the application use more than those who do not. Many theories also mention this element such as TAM, theory of reasoned action (TRA), theory of planned behavior (TBA). For TAM, it is assumed that when a person decides to use the application, that decision is influenced perceived useful and perceived easy-to-use factor of the technology. When technology has developed, most fields also have the application of technology including tourism. Support applications on mobile devices today are seen as motivating for tourism development (Law, Leung, & Buhalis, 2009).

2.4.7 Intention to Visit Tourism Destination

In addition, there is a correlation between behavior and intention to visit the destination (Prayag, Hosany, Muskat, & Chiappa, 2017). Tourism

destinations with negative images will be excluded from the decision-making process of tourists; and positive image destinations will be selected (Tan & Wu, 2016).

In S-O-R theory, Mehrabian & Russell (1974) indicated that the response denoted two kind customer's behavior intention: approach behavior and avoidance behaviors. 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 behaviors 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 (2003) defined this term as a basic factor which appears when individuals has specific plan in the future-oriented cognitive activities. 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, Lee & Law, 2008).

Nowadays, meeting the demand and satisfying customers is always an important objective for business activities in general and for the tourism industry in particular, the 19 higher the satisfaction, the more willingness to buy. Many companies, for that reason, have started to observe a high customer defection even with high satisfaction levels (Turner, Lindsay and Yvette Reisinger, 2001). Customer satisfaction is also the main subject of travel behavior. Surveying customer satisfaction and their feedback can helps managers find out the strategies to improve services (Danaher & Haddrell,

1996). These feedbacks are very effective in comparing the operation of destinations with others (Kotler, et al., 1994). Therefore, satisfaction, being positive or negative, can be determined by performance and regarded as a vital basis of competitive issues. Moreover it also plays a very important role in tourist's mind to choose the destination as well as the visit intention of visitors (Yoon, & Uysal, 2005). Customer satisfaction is significant to achieve loyalty when visitors intent to visit the same destination (Kozak, 2002). Many studies have examined the antecedents of repeat purchase intentions.

CHAPTER THREE
METHOD OF RESEARCH

3.1 Hypothesis Development

3.1.1 The effect of e-Servicescape Environment to Attitudes towards using Tourism Apps

Wu et al. (2017) identified that the e-servicescape environment was inclusive environmental cues that indirectly affected clients. The cues refer to evidence related to customer perceptions, satisfaction, purchase intent, and trust (Harris & Goode, 2010). Many studies mentioned the relationship between the e-servicescape environment and consumer behavior. The e-servicescape environment within the service offered by the provider is comprised of the surrounding conditions, functions, and space. Further studies found that color and light (as parts of the e-servicescape environment) affect customer attitudes towards using that service (Teng, Ni, & Chen, 2018). This also happens in almost exactly the same way in the tourism mobile app environment.

Hypothesis 1: The e-servicescape Environment will have positive effect on Attitudes towards using Tourism App.

3.1.2 The effect of Electronic-Word-of-Mouth (eWOM) Communication to Attitudes towards using Tourism Apps

The change in attitude through the influence of eWOM communication is based on the trust of individuals towards its origin. According to Maio, Haddock, and Verplanken (2018), there are two dimensions of attitudes:

effective and cognitive. An effective attitude is an extent to which a person loves an object and the attitudes of perception are the individual's belief in something.

Hypothesis 2: eWOM communication will have positive effect on attitudes towards using tourism app.

3.1.3 The Relationship between Attitudes towards using Tourism Apps and Intentions to Adopt Tourism Apps, Perceived Ease of Use and Perceived Usefulness

According to Technology Acceptance model (TAM), the main factor that affects the intention to use apps is the individual's attitude towards technology (Hong, Lin, & Hsieh, 2017). Attitudes play an important role in the decision-making process (Manning & DiLollo, 2017) and is used to guess intentions (Yang & Yoo, 2004). A study of mobile app adoption in business suggests that attitudes have a positive effect on consumer intentions to continue using the service. The results show that attitudes are a strong predictor of the intention to continue using an app (Shaikh & Karjaluoto, 2015).

Hypothesis 3: Attitudes towards using tourism apps will have positive effect on Tourism App Adoption Intentions.

Hypothesis 4: Perceived ease of use will have (positive) effect on Attitudes towards using Tourism Apps.

Hypothesis 5: Perceived usefulness will have (positive) effect on Attitudes towards using Tourism Apps.

3.1.4 The effect of Intentions to Adopt Tourism Apps on Visit Tourism Destinations.

Many studies have addressed the adoption of technology with theories and models such as the technology acceptance model (TAM), the theory of reasoned action (TRA), the unified theory of acceptance and use of technology (UTAUT), and the theory of planned behavior (TBA). With TAM, it is determined that when a person decides to use technology, their decision is strongly affected by perceived usefulness and perceived ease of use. In the field of tourism, information technology apps are successful and highly effective in influencing consumers and their intentions to visit destinations through tourism apps.

Hypothesis 6: Intentions to adopt tourism apps will positively affect intentions to visit tourism destinations.

3.1.5 The effect of e-Servicescape Environments for Tourism Apps on Intentions to Visit Tourism Destinations

Information technology apps such as augmented reality (AR) apps are an important factor in the field of tourism. Studies have examined the relationship between information technology and tourism because of the use of influence by travel experience and behavioral factors (Kim & Yang, 2017). At tourism destinations, when using AR, tourists will express positive or negative attitudes towards AR. Destination images are important elements in the creation of the intentions of potential visitors to revisit that destination (Papadimitriou, Kaplanidou, & Apostolopoulou, 2018). In addition, according to Kurgun, Kurgun, & Aktaş (2018) the promised use of internet technology

apps (such as AR apps) at a destination advertised on the website is an important motivation for travel to that destination

Hypothesis 7: e-Servicescape Environments for Tourism Apps will positively affect intentions to Visit Tourism Destinations.

3.1.6 The effect of eWOM Communication for Tourism Apps on Intent to Visit Tourism Destinations

Pizam and Tasci (2018) explain that providing the aesthetics of the e-servicescape environment is very important and that traditional services must be adapted to the surrounding environment and space/function of the virtual landscape. In addition, other studies also mention the positive aspects of the e-servicescape environment in the web system such as hospitals and tourism destinations to the intentions of customers. The use of the website is to display information and brand image and to increase the positive of the brand and increase the intentions to use the service.

Previous studies included the intentions to purchase services and products (Wang, 2018), to seek (Braunstein-Bercovitz & Lipshits-Braziler, 2017), to use, to travel (Kaplan, Wrzesinska, & Prato, 2018), to participate in festivals (Ye, Zhang, & Yuan, 2017), and to follow the advice of the online travel community (Casalo, Flavián, & Ibanez-Sanchez, 2017).

Hypothesis 8: eWOM communication for tourism apps will positively affect Intentions to Visit Tourism Destinations.

3.1.7 The Moderating effect of Perceived Ease of Use on the Relationship of e-Servicescape Communications on Attitudes towards using Tourism Apps

According Hakim & Deswindi (2015) argued that the e-servicescape environment is designed to impress the online environment when a customer experiences service. The e-servicescape environment is also defined as an atmospheric environment in virtual space when establishing a relationship between customers and suppliers (Wu et al., 2017). Hopkins, Grove, Raymond, and LaForge (2009) stated that attitudes towards using application with respect to what it offers was directly and/or indirectly affected by the design of the e-servicescape environment. Karjaluoto, Shaikh, Saarijärvi, and Saraniemi (2018) have determined that the perceived ease of use of online apps contributes to the impression of the customer and thus affects attitudes positively effects attitudes when customers are using mobile apps. Lindberg, Salomonson, Sundström, and Wendin (2018) showed that the e-servicescape environment on apps ought to be designed to ensure the aesthetics, layout, and functions suitable for consumers. The e-servicescape environment design ensures that an app is easy to use and this implies that the users' attitudes are already positive. Alternatively, it has a positive impact on users' attitudes regarding, and intent to use, the apps.

Hypothesis 9: Perceived ease-of-use characteristics moderate the influence of the E-servicescape Environment on Attitudes towards using Tourism Apps.

3.1.8 The moderating effect of Perceived Usefulness in the Relationship between e-Servicescape on Attitudes towards using Tourism Apps

According to Huang, Mou, and Liu (2017), the e-servicescape affects consumers' attitudes towards using apps and to meet their needs. Hopkins et al. (2009) stated that all the dimensions of the e-servicescape environment affected customers' attitudes towards using technology, yet ambient conditions had a huge impact. This virtual environment helps customers observe and experience potential products or services before consuming them. Davis, Bagozzi, and Warshaw (1989) showed that "perceived usefulness" is considered as being the degree of confidence that the use of mobile apps will enhance individuals' performance, and they showed that it impacts on attitudes through the use of apps.

Consequently, perceived usefulness is considered a very important factor in providing a value between the e-servicescape environment and consumers' attitudes. Mobile apps are increasingly becoming popular and have been identified as being perceived as useful. It serves as a determining factor for influencing consumers' attitudes towards the use of innovations; and it serves to provide customers with more efficient and convenient apps while using services (Chen & Sundar, 2018). The design of the e-servicescape environment ensures the perceived usefulness the apps and that perceived usefulness has a positive impact on users' attitudes and intent to use the apps.

Hypothesis 10: The Perceived Usefulness of characteristics moderates the influence of the E-servicescape Environment on Attitudes towards using Tourism Apps.

3.1.9 The moderating effect of Perceived Usefulness in the Relationship between eWOM Communication on Attitudes towards using Tourism Apps

eWOM communication is an important and useful source of information for travelers seeking destination information and choosing suitable destinations online (Pesonen & Pasanen, 2017). eWOM communication has a positive impact on shaping attitudes by using mobile apps when deciding which tourism destination to choose. Mobile apps will be a useful tool for travelers to make the right decision. Perceived usefulness is an important factor and determines the attitudes of travelers and the intentions to use an app for tourism purposes (Choi, Wang, & Sparks, 2018).

User trust in the advice given through eWOM communication has a significant influence on people's attitudes towards using apps (Chu, Lien, & Cao, 2018). Ayeh, Au, and Law (2013) also suggested that there is a positive impact of attitudes to eWOM communication, which has a positive impact on future travel plans. At the same time, the perception of usefulness has a major impact through eWOM communication and attitudes through using such apps.

Hypothesis 11: Perceived Usefulness characteristics moderate the influence of eWOM Communication on Attitudes towards using Tourism Apps.

3.2 Research Framework

The purpose of the study is to provide an assessment both of how consumers adopt mobile tourism apps and how consumers use those apps to orient customers' intentions to visit tourism destinations. This study develops a research model as shown in Figure 3-1:

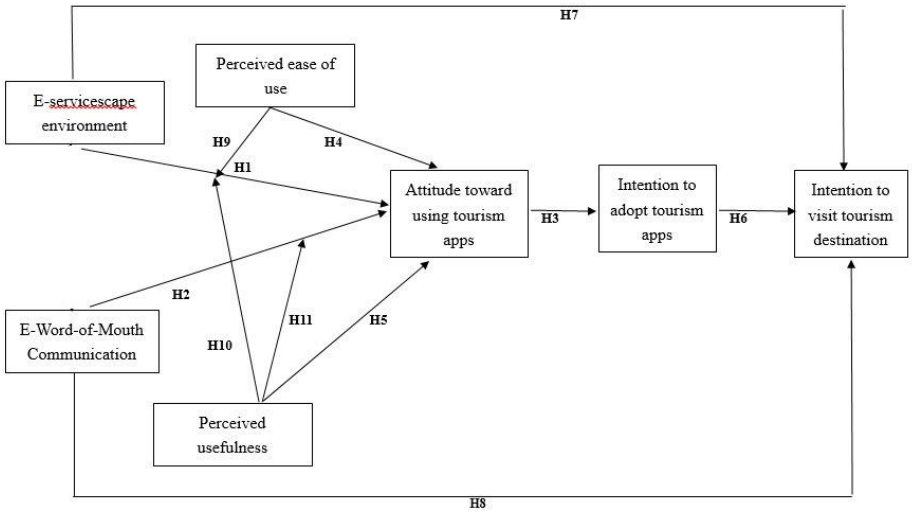

Figure 3-1 Research Model

3.3 Research Instruments

This study identified 7 research constructs and evaluated the inter-relationship among constructs. These constructs are e-servicescape environment, e-WOM communication, Perceived Usefulness, Perceived Ease of Use, Attitude toward Using tourism apps, Intention to adopt tourism apps, and Intention to Visit tourism destination. For each construct, the operational conceptions and measurement items were also identified. The detailed questionnaire items are shown in Appendix.

3.3.1 E-servicescape Environment

On the basis of the study of Harris and Goode (2010), e-servicescape environment 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 environment dimensions of Harris and Goode (2010) and conducted an exploratory analysis to identify a shortened version. The e-servicescape environment 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". All of the above items were measured based on a seven-point Likert scale, with "1" indicating "strongly disagree" and "7" indicating "strongly agree".

Table 3-1 Measurement of E-servicescape Environment

E-servicescape Environment
Aesthetic Appeal
(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
Layout and functionality
(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

3.3.2 E-Word-of-Mouth (e-WOM) Communication

e-WOM communication is defined that share consumer 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 communication dimensions of 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 Wang (2016). In particular, opinion receiving is comprised 3 items and 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 scale, with "1" indicating "strongly disagree" and "7" indicating "strongly agree".

Table 3- 2 Measurement of E-Word-of-Mouth Communication

E-Word-of-Mouth Communication
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

3.3.3 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 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 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 seven-point Likert scale, with “1” indicating “strongly totally disagree” and “7” indicating “strongly agree”

Table 3- 3: 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

3.3.4 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 Al-Husein (2015). Then, this study also adopted the Perceived ease of use of Al-Husein (2015) and conducted an exploratory analysis. Perceived ease of use of the study will be measured with 4 items modified from 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 seven-point Likert scale, with “1” indicating “strongly disagree” and “7” indicating “strongly agree”

Table 3-4 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

3.3.5 Attitude toward using Tourism Apps

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 tourism apps, 4 items was measured based on Mohammed Al-Husein (2015).

Then, this study also adopted the Attitude toward using tourism apps of Al-Husein (2015) and conducted an exploratory analysis. Attitude toward using tourism apps of the study will be measured with 4 items modified from Al-Husein (2015). Sample survey items included “Mobile tourism application

development will support travelers" and "Overall, my attitude towards using this kind of tourism application is positive". All of the above items were measured based on a seven-point Likert scale, with "1" indicating "strongly disagree" and "7" indicating "strongly agree".

Table 3-5: Measurement of Attitude toward using Tourism Apps

Attitude toward using Tourism Apps
(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

3.3.6 Intention to Adopt Tourism Apps

Einav (2014) stated that users had adopted mobile application when making their first online activity in this application. 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 Intention to adopt tourism apps, 3 items was measured based on Bidin, S., & Ziden (2012).

Then, this study also adopted the Application Adoption of Bidin, S., & Ziden (2012) and conducted an exploratory analysis. Application Adoption of the study will be measured with 3 items modified from Bidin, S., & Ziden (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 seven-point

Likert scale, with “1” indicating “strongly disagree” and “7” indicating “strongly agree”.

Table 3-6 Measurement of Intention to Adopt Tourism Apps

Intention to Adopt Tourism Apps
(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

3.3.7 Intention to Visit Tourism Destination

Intention is an act of determining mentally relies on result before (in this study, the result is intention to visit tourism destination). To measure the Intention to visit tourism destination, 3 items was measured from Oliver, 1997) and Kozak & Rimmimgton (2000). Then, this study also adopted the Intention to visit tourism destination of Kozak & Rimmimgton (2000) and conducted an exploratory analysis. Intention to Visit of the study will be measured with 3 items modified from Kozak & Rimmimgton (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 seven-point Likert scale, with “1” indicating “strongly disagree” and “7” indicating “strongly agree”.

Table 3-7 Measurement of Intention to Visit Tourism Destination

Intention to Visit tourism Destination
(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 Sampling Plan

This research performed the first phase of a larger project evaluating the relationship between marketing factors affecting the intention to visit tourism destinations. Pre-testing was needed for the questionnaires to ensure clarity of the questionnaires, to guarantee the questions are understandable, and check if changes were necessary before the survey was to be fully deployed. A group of fifty respondents, who had the reasonably similar characteristics with the survey population, were sufficient for the pre-testing. After that, the questionnaire was reviewed and confirmed through the pretest results. The pre-test was undertaken with visitors who had previously traveled to Vietnam. The aims of the pretest were to determine the reactions of international tourists to the questionnaire, validate the translation of key technical terms used, estimate the time needed to complete the interview, ascertain whether the sequence of the questions solicited the desired information, and to determine whether respondents could understand any of the technical terms. All Cronbach's alpha values were higher than 0.7. After the pretest procedure, the research used quantitative data from a mailed survey questionnaire to classify factors and examine their significance in influencing or determining the impacts of destination brand equity and familiarity regarding travel intentions.

In the second phase, a sampling plan was developed to ensure that certain types of respondents would be included. The study adopted convenience sampling method. The main data were collected from a survey conducted the middle of November 2018 to the middle of December 2018 in Ho Chi Minh City (HCMC), Vietnam. Respondents to the study were visitors arriving in Ho Chi Minh City and all were in the first few days of their stay. While there is no doubt a flush of initial enthusiasm, or trepidation, in arrival in the busy city, their plans to visit other parts of Vietnam - HCMC is not as such their 'destination' were taken as prospective. It is surmised that the enthusiasm of arrival could be productive of responses that otherwise would be more difficult to elucidate, or even to procure, since access to visitors before arrival would not mean they could be defined as visitors. Survey respondents were interviewed in three of the most attractive tourism destinations of HCMC: (1) Notre-dame Cathedral Basilica of Saigon, (2) Ben Thanh market, (3) Reunification Palace. Respondents were identified as foreign visitors and asked about their intentions in visiting Vietnam and if they would agree to participate in the survey, they were informed that all responses would remain anonymous. Additionally, the survey was conducted face-to-face on site so that any potential confusion could be clarified right away. A total of 650 survey questionnaires were delivered, but the total valid sample was 630. This sample can be representative if comparing to the general profile of international tourists to Vietnam, because foreign tourists come to Vietnam mainly from Asia.

3.5 Data Analysis Procedure

In order to achieve the purposes of this research and test the hypotheses, SPSS 23.0 and SmartPLS software will be employed to analyze the collected data. We have conducted the following data analysis:

3.5.1 Descriptive Statistic Analysis

To better understand the characteristics of each variable, descriptive statistical 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.

3.5.2 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 numbers 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 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.

3.5.3 Partial Least Squares (PLS)

The Partial Least Squares (PLS) path modeling algorithm was adopted in this study for both the measurement model and the structural model. According to Karin (2009), PLS is less restrictive in regard to its normal distribution assumption, sample size restriction, and multicollinearity situation (Ribink, Liligander & Streakens, 2004; Anderson & Swaminathan, 2011) than other options. According to Hair et al. (2011), PLS is particularly more appropriate in the following conditions:

(1) When the goal of the study is predicting key driven components or constructs;

(2) When the structural model is very complex (including many constructs and many indicators);

(3) When the sample size is relatively low;

(4) When the collected data are to some extent no normal;

(5) When the latent variable score will be used in the subsequent analysis.

Hair, Sarstedt, Ringle, and Mena (2012) further argued that the primary criterion for the PLS model assessment was the coefficients of determination (R^2), which represented the amount of explained variance of each endogenous latent variable. The second important global criterion was the goodness-of-fit (i.e., the GoF index), which was the geometric mean of the average communality and the models' average R^2 value. According to Schroer and Herterl (2009) and Chin (1988), an R^2 value of more than 0.672 is considered to be substantial; 0.33 is described as moderate, while 0.19 is described as weak. According to Vinzi et al. (2010), The goodness of fit index (GoF) greater than 0.36 is considered to be large; 0.25 is described as medium, while 0.10 is described as small.

In addition, following Hair et al. (2011), the average variance extracted (AVE) is another criterion used to assess the convergent validity, which should be greater than 0.5 to assure that the latent variables can explain more than half of the variance of the indicators on average (Henseler et al., 2009). The composite reliability (CR) should be greater than 0.6 to confirm that the variance shared by the respective indicators is robust (Nunnally & Bersin, 1994). Using the above criteria, the reliability and validity of the measurement model can be verified. When the measurement model and structural model

were justified to be reliable, then the coefficients of the path parameters were used to test the hypotheses as developed in this study. The PLS procedure was implemented using Smart PLS software package.

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

4.2.1 Research Space

Our survey was conducted from the middle of November 2018 to the middle of December 2018 in Ho Chi Minh City (HCMC), Vietnam. HCMC conveniently borders with many provinces in the Southwestern and Southeastern regions, creating favorable conditions for the development of economic and tourism sectors. In order to perform this research, this study has chosen three of the most attractive tourism destinations of HCMC: (1) Notre-dame Cathedral Basilica of Saigon, (2) Ben Thanh market, (3) Reunification Palace. They are famous structures with the great value of art and history. These three destinations have been chosen for this research because they attract a large number of foreign tourists. The three tourism operators have been contacted for permissions for this research. The reason for choosing these three destinations to survey is that these three areas are famous symbols of Ho Chi Minh City. These areas often attract a lot of international tourists to visit and experience tourism.

4.2.2 Data Collection

The questionnaire assessed respondent levels of agreement or disagreement with all the constructs (with a statement for the measurement in the study and the questionnaires) using a seven-point Likert scale ranging from "1 = strongly disagree" to "7 = strongly agree" (Casaló et al., 2011). All respondents completed a questionnaire after they had read an explanation about how to share information. The questionnaire consisted of eight parts.

Twenty students at Ho Chi Minh City University of Culture voluntarily helped the authors to deliver the printed questionnaires to appropriate participants and then collect their responses. These students were divided into three groups. Six of them went to the Notre-dame Cathedral, eight to Ben Thanh market, and the other six to the Reunification Palace. They also had been trained before they performed the research for appropriate methods. After filling the survey, every tourist would be offered a small notebook of appreciation for their participation.

650 questionnaires were sent to tourists who had known about tourism mobile apps or had been using them for seeking information on the smartphone. Eventually, a response rate of 96.9% was obtained, 630 questionnaires were successfully collected for analysis. In order to achieve the purposes of this research and test the hypotheses, SPSS 23.0 and partial least squares (SmartPLS) software analysis and choose using SmartPLS 3.0 software will be employed to analyze the collected data.

4.3 Characteristics of Respondent

Concerning the respondent's profile in Table 4-1, the frequency analysis indicated that 364 (58%) of the respondents were male, and 266 (42%) were

female. The age groups were as follows: 168 (26.6%) of the respondents were aged 20–29, followed by 30–39 (163, 25.9 %), 40–49 (138, 21.9%), and >50 (161, 25.6%). The monthly income of respondents was USD <300 (103, 16.3%), 301–600 USD (169, 26.8%), 601–900 USD (113, 17.9%), 901–1200 USD (214, 34%) and > 1200 USD (31. 5%). Most respondents were from Korea (48%), followed by Singapore 14.6%), Thailand (12%), China (10.4%), Indonesia (10%) and Taiwan (5.0%).

Table 4-1 Demographic Information for the Sample

Characteristics		**Frequency**	**%**
Gender	Male	364	58
	Female	266	42
Age	20-29	168	26.6
	30-39	163	25,9
	40-49	138	21,9
	>50	161	25.6
Income (USD/month)	<300	103	16.3
	301-600	169	26.8
	601-900	113	17.9
	901-1200	214	34
	>1200	31	5
Nationality	Korea	302	48
	Indonesia	63	10
	Singapore	92	14.6
	Thailand	76	12
	China	66	10.4
	Taiwan	31	5
Total		630	

4.4 Descriptive Analysis of Research Variables

Table 4–1 indicates the descriptive statistics by questionnaire items for sample. There are seven items of Electronic- Word – of – Mouth Communication (three items of Opinion Receiving, four items of Opinion Seeking), eleven items of e-Servicescape environment (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 tourism apps, three items of Intention to adopt tourism apps, three items of Intention to Visit tourism destination.

As show in Table 4-2, for e- Word-of-Mouth communication factor are more than e-Servicescape environment factor, but the difference between these items is inconsiderable, from 3.85 to 4.07. In term of e-Servicescape environment, the highest mean value is LF5 which is 4.45, while the lowest mean value is AA1 which stands only 3.95. Besides, a range of item's mean value from 4.19 to 4.34 in 5 – point Likert scales of factor Perceived Usefulness. Factor Perceived Ease of Use indicated mean value of its items in 7 – point Likert scales, which ranges from 4.12 (PEOU2) to 4.37 (PEOU4). In factor Attitude toward using tourism apps, there are a similarity between items' mean value, which are AT1 (4.24), AT2 (4.23), AT3 (4.20), while AT4 has highest mean value which is 4.29. For Intention to adopt tourism apps, the sample case shows a range from 4.13 to 4.36 in the 7-point Likert scales. For the Intention to Visit tourism destination, the sample case shows a range from 4.21 to 4.32 in the 7-point Likert scales.

Table 4-2 Descriptive Analysis for Questionnaire Items

Items	Description (5 – point scale)	Mean	Std. Dev
	E-Servicescape Environment		
AA1	It is visually attractive	3.95	0.892
AA2	It uses stimulating images and graphics	3.96	0.961
AA3	Displays products in an attractive or desirable fashion	4.07	0.917
AA4	It is aesthetically appealing	4.08	0.876
LF1	There are useful navigational aids	4.25	0.836
LF2	The links are obvious in their intent and destination	4.30	0.833
LF3	The functions on this application is easy to operate	4.34	0.899
LF4	Navigation through this application is intuitively logical	4.43	0.879
LF5	This mobile application has clear instructions for use	4.45	0.916
LF6	This mobile application is user-friendly.	4.26	0958
LF7	In general, mobile applications should be easy to use	4.43	0.859
	Electronic- Word- of -Mouth Communication		
OR1	My contacts often introduce me using mobile applications which they like.	4.03	0.954
OR2	My choice of mobile applications is partly influenced by my friends and contacts.	3.85	0.865
OR3	I often try using new application based on suggestion or advertise on internet.	3.83	0.984
OS1	When I consider using new mobile application, I ask my contacts on social networks for advice.	3.95	1.022
OS2	I like to get my contacts' opinions on social networks before I download new mobile application	3.92	1.322
OS3	I tend to seek out or search for others' opinions or comments regarding new mobile application to download.	4.07	1.024
OS4	I like to seek out negative reviews about new application on internet before I make a decision to download it.	3.99	1.124

Table 4-2 Descriptive Analysis for Questionnaire Items (continue)

Items	Description (5 – point scale)	Mean	Std. Dev
Perceived Usefulness			
PU1	Using tourism applications helps me save much time	4.21	0.971
PU2	Tourism applications help me easily search many tourism destinations.	4.19	0.975
PU3	Tourism applications provide useful information for my travel.	4.34	0.936
PU4	It is convenient when using tourism application to plan out a trip	4.25	0.856
Perceived Ease of Use			
PEOU1	It is easy to learn how to use tourism applications	4.21	0.891
PEOU2	Instruction of tourism applications would be clear and understandable.	4.32	0.837
PEOU3	Many flexible ways to access information on tourism applications	4.36	0.951
PEOU4	The user-friendly aspect of tourism applications is very important.	4.16	0.983
Attitude Toward Using Tourism Apps			
AT1	Mobile tourism application development will support travelers	4.24	0.863
AT2	I will use these kind of tourism applications in the future	4.23	0.852
AT3	I am satisfied when using tourism applications for creating travel plan	4.20	0.878
AT4	Overall, my attitude towards using this kind of tourism applications is positive	4.29	0.813
Intention to Adopt Tourism Apps			
AAp1	I have decided to use these kind of tourism applications for the next travel	4.13	0.812
AAp2	I will use tourism applications to make travel plan	4.21	0.834
AAp3	I will use tourism applications when travelling	4.36	0.972
Intention to visit Tourism Destination			
IV1	After using tourism applications, my travel intention is clearer	4.23	1.032
IV2	Tourism destinations suggested by travel applications are usually my first choice when I plan on travelling	4.32	1.012
IV3	I expect to travel more with these kind of applications in near future	4.21	1.021

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 accesses 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

4.5.1 Electronic -Word - of - Mouth Communication

There are total seven items in this construct using to explain the e-Word of Mouth. This construct is divided factors and items of each factor are listed in Table 4-3. (3 items in factor Opinion Receiving and 4 items in factor Option seeking).

In general, the KMO value for all factors in each Construct is 0.87 and 0.81 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 0.913, which indicates the highest relation to factor Opinion Receiving of construct e-Word of Mouth.

In fact, factor 1 has Eigenvalue is 2.425 higher than 1, total variance explained by the factor analysis of Opinion Receiving is 80.824%, 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 consistency in construct.

For factor 2 – Opinion Seeking, Eigenvalue is 2.596 higher than 1, total variance explained by the factor analysis of Opinion Receiving is 64.895% and Option seeking 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 α = 0.889, thus representing a high internal consistency in construct.

Table 4-3 Results of Factor Analysis and Reliability Analysis on Electronic- Word-of-Mouth Communication

Research construct	Research Item	Factor Loading	Eigen value	Accumulative Explanation %	Item to Total	Cronbach's α
	Opinion Receiving		2.425	80.824		0.884
Electronic-Word-of-Mouth Communication KMO=0.87 KMO= 0.81 BTV=0.000	**OR3** My choice of mobile Applications is partly influenced by the suggestion or advertises on internet.	0.913			0.788	
	OR2 My choice of mobile Applications is partly influenced by my friends and contacts.	0.890			0.786	
	OR1 My contacts often introduce me using mobile applications which they like.	0.889			0.750	
	Option seeking		2.596	64.895		0.889
	OS2 I like to get my contacts' opinions on social networks before I download new mobile application	0.833			0.780	
	OS4 I like to seek out negative reviews about new application on internet before I make a decision to download it.	0.819			0.772	
	OS1 When I consider using new mobile application, I ask my contacts on social networks for advice.	0.798			0.737	
	OS3 I tend to seek out or search for others' opinions or comments regarding new mobile application to Download	0.774			0.736	

4.5.2 E-Servicescape Environment

There are total eleven items in this construct using to explain the e-Servicescape. This construct is divided factors and items of each factor are

listed in table 4-4. (4 items in factor Layout and Functionality and 7 items in factor Aesthetic Appeal).

In general, the KMO value for all factors in each Construct is 0.922 and 0.875 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 0.827, which indicates the highest relation to factor Layout and Functionality of construct e-Servicescape environment.

In fact, factor 1 has Eigenvalue is 3.143 higher than 1, total variance explained by the factor analysis of Layout and Functionality is 64.853%, 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 $\alpha = 0.906$, thus representing a high internal consistency in construct.

For factor 2 – Aesthetic Appeal, Eigenvalue is 2.905 higher than 1, total variance explained by the factor analysis of Aesthetic Appeal is 72.636 % 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 $\alpha = 0.926$, thus representing a high internal consistency in construct.

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

Research construct	Research Item	Factor Loading	Eigen value	Accumulative Explanation %	Item to Total	Cronbach's α
	Layout and functionality		3.143	64.853		0.906
e-Servicescape Environment KMO=0.922 KMO=0.875 BTV=0.000	**LF2** The links are obvious in their intent and destination	0.827			0.823	
	LF3 The functions on this application are easy to operate	0.825			0.807	
	LF6 This application is user-friendly	0.804			0.767	
	LF1 There are useful navigational Aids	0.802			0.736	
	LF7 In general, this is an easy application to use	0.767			0.656	
	LF5 This application has instruction for use	0.765			0.652	
	LF4 Navigation through this application is intuitively logical	0.746			0.647	
	Aesthetic Appeal		2.905	72.636		0.926
	AA2 It uses stimulating images and Graphics	0.895			0.880	
	AA1 Tourism applications should be visually attractive	0.862			0.861	
	AA4 It is aesthetically appealing	0.835			0.812	
	AA3 Displays products in an attractive or desirable fashion	0.814			0.810	

4.5.3 Perceived Usefulness

There are total four items in this construct using to explain the Perceived Usefulness, which are listed in table 4-5.

In general, the KMO value for all factors in each Construct is 0.832 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 PU2 “Tourism application helps me searching many tourism destination” had the highest factor loading is 0.832, which indicates the highest relation to construct Perceived Usefulness. Besides, construct’s Eigenvalue is 2.596 and total variance explained by the factor analysis of Perceived Usefulness is 64.895%, which getting reasonable proportion of Accumulative Explained is 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 α = 0.952 thus representing a high internal consistency in construct

Table 4-5 Results of Factor Analysis and Reliability Analysis on Perceived Usefulness

Research construct	Research Item	Factor Loading	Eigen value	Accumulative Explanation %	Item to Total	Cronbach’s α
			2.596	64.895		0.952
Perceived Usefulness KMO=0.832 BTV=0.000	**PU1** Using tourism application help save much time.	0.832			0.888	
	PU3 Tourism application provides much useful information for my travel.	0.818			0.880	
	PU2 Tourism application helps me searching many tourism destination.	0.797			0.876	
	PU4 It is convenient when using tourism application to plan out a trip.	0.774			0.870	

4.5.4 Perceived Ease of Use

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

In general, the KMO value for all factors in each Construct is 0.812 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 PEOU4 "The user-friendly aspect of tourism application is very important" had the highest factor loading is 0.847, which indicates the highest relation to construct Perceived Ease of Use. Besides, construct's Eigenvalue is 3.183 higher than 1, total variance explained by the factor analysis of Perceived Ease of Use is 63.445%, and substantive sense, which show these are important underlying factors for this construct of all items are above 0.5, contributing to high value of - Cronbach's coefficient alpha $\alpha = 0.952$, thus representing a high internal consistency in construct.

Table 4-6 Results of Factor Analysis and Reliability Analysis on Perceived Ease of Use

Research construct	Research Item	Factor Loading	Eigen value	Accumulative Explanation %	Item to Total	Cronbach's α
			3.183	63.445		0.952
Perceived Ease of Use KMO=0.812 BTV=0.000	**PEOU3** Many flexible ways to access information on tourism Application	0.847			0.735	
	PEOU2 Instruction of tourism application would be clear and understandable	0.794			0.714	
	PEOU4 The user-friendly aspect of tourism application is very important	0.790			0.683	
	PEOU1 It is easy to learning how to use tourism application	0.787			0.689	

4.5.5 Attitude toward using Tourism Apps

There are total four items in this construct using to explain the Attitude toward using tourism apps, which are listed in table 4-7.

In general, the KMO value for all factors in each Construct is 0.910 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 AT2 “I will use these kind of tourism application in the future” had the highest factor loading is 0.943, which indicates the highest relation to construct Attitude toward using tourism apps. Besides, construct’s Eigenvalue is 4.202 higher than 1, total variance explained by the factor analysis of Attitude toward using Tourism Apps is 86.083%, 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 $\alpha = 0.911$, thus representing a high internal consistency in construct.

Table 4-7 Results of Factor Analysis and Reliability Analysis on Attitude toward using Tourism Apps

Research construct	Research Item	Factor Loading	Eigen value	Accumulative Explanation %	Item to Total	Cronba ch's α
			4.204	86.083		0.911
Attitude toward using Tourism Apps KMO=0.910 BTV=0.000	**AT1** Mobile tourism application development will support travelers	0.943			0.824	
	AT3 I am not satisfied without using tourism application when creating travel plan	0.932			0.818	
	AT2 I will use these kind of tourism application in the future	0.926			0.803	
	AT4 Overall, my attitude towards using this kind of tourism application is positive	0.920			0.746	

4.5.6 Intention to Adopt Tourism Apps

There are total three items in this construct using to explain the Application Adoption, which are listed in table 4-8.

In general, the KMO value for all factors in each Construct is 0.736 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 AAp3

"I will use tourism application when travelling" had the highest factor loading is 0.914, which indicates the highest relation to construct Application Adoption. Besides, construct's Eigenvalue is 2.425 higher than 1, total variance explained by the factor analysis of Intention to Adopt Tourism Apps is 80.827%, 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 α = 0.896, thus representing a high internal consistency in construct.

Table 4-8 Results of Factor Analysis and Reliability Analysis on Intention to Adopt Tourism Apps

Research construct	Research Item	Factor Loading	Eigen value	Accumulative Explanation %	Item to Total	Cronbach's α
			2.425	80.827		0.896
Intention to Adopt Tourism Apps KMO=0.736 BTV=0.000	**AAp2** I will use tourism application to make travel plan	0.914			0.816	
	AAp1 I decide to use this kind of tourism application for the next travel	0.891			0.815	
	AAp3 I will use tourism application when travelling	0.891			0.752	

4.5.7 Intention to Visit Tourism Destinations

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

In general, the KMO value for all factors in each Construct is 0.746 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 "I predict I will travel more with this tourism application" had the highest factor loading is 0.914, which indicates the highest relation to construct Intention to Visit. Besides, construct's Eigenvalue is 2.424 higher

than 1, total variance explained by the factor analysis of Intention to Visit Tourism Destinations is 80.813%, 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 α = 0.928, thus representing a high internal consistency in construct.

Table 4-9 Results of Factor Analysis and Reliability Analysis on Intention to Visit Tourism Destinations

Research construct	Research Item	Factor Loading	Eigen value	Accumulative Explanation %	Item to Total	Cronba ch's α
			2.424	80.813		0.928
Intention to Visit Tourism Destinations KMO=0.746 BTV=0.000	**IV1** After using tourism application, my travel intention is clearer	0.915			0.860	
	IV3 I predict I will travel more with this tourism application	0.892			0.856	
	IV2 Tourism destinations suggested by travel applications are usually my first choice when I plan on travelling	0.890			0.811	

4.6. Hypotheses Testing

4.6.1 Evaluation of the Measurement Model

According to Hair, Hult, Ringle, and Sarstedt (2011), there are several criteria in the evaluation study for measuring the reliability and validity of the measurement model.

The covariance-based structural equation modeling (CB-SEM) has dominated since it's first appeared in the 1980s, the partial least square SEM

(PLS-SEM) has called a great deal of attention in recent years. While CB-SEM aims at reproducing the theoretical covariance matrix rather than on explained variance, PLS-SEM focuses on maximizing the explained variance of the dependent latent constructs. Therefore, PLS path modeling has been encountered increasingly among marketing researchers, because of its ability to model latent constructs under conditions of non-normality distribution with small to medium sample sizes (Hair et al., 2011). PLS has been recognized as an effective analytical technique, particularly for those studies focusing on prediction of an outcome (Chin, Marcolin, & Newsted, 2003). Hair et al. (2011) contended that PLS-SEM path modeling can be a "silver bullet" to provide parameters that can maximize the explained variance (R^2 value) of the dependent constructs. The first criterion is the determinant R^2, which is used to measure the level of interpretation of each latent variable. Following Hair et al. (2011), there are several criteria to measure the reliability and validity of the measurement model. The first criterion is the coefficient of determination (R^2) which measures the amount of explained variance of each endogenous latent variable. According to Schroer and Herterl (2009), R^2 value of more than 0.672 is considered to be substantial, 0.33 is described as moderate, while less than 0.19 is considered to be weak.

The second criterion is the average variance extracted (AVE) which assess the convergent validity, AVE should be greater than 0.5 to assure that the latent variables can explain more the average (Henseler et al., 2009). The third criterion is the composite reliability (CR), which should be greater than 0.6 to confirm that the variance shared by the respective indicators is robust (Nunnally & Bersin, 1994). The fourth criterion is the Cronbach's alpha

coefficient, which should be higher than 0.7 to confirm the internal consistency of the research construct.

Using the above criteria, the validated reliability of the measurement model is clearly verified. The results showed the coefficient of determination R^2 for 7 endogenous latent variables being as follows: 0.9 for the “attitude towards using tourism apps” factor and “intentions to visit destinations” factor; 0.8 for the “intention to adopt tourism apps” factor. 0.76 for “e-Servicescape Environment for tourism apps”; 0.66 for “e-Word-of-Mouth Communication for Tourism Apps” ; 0.75 for “Perceived Usefulness” ; 0.59 for “Perceived Ease of Use”.

According to Schroer and Herterl (2009), the coefficients for determining R^2 are considered as being significant. The AVE structure is much higher than the 0.5 indicator as suggested and this proves the relevance and rationality of the research. The AVEs of the constructs are ranged from 0.64 to 0.85, which are much higher than the benchmark of 0.5 as recommended, and demonstrate a satisfactory reliability and convergent validity of the research constructs. The Cronbach’s alpha coefficients satisfy the predefined requirement of 0.7 and confirm the internal consistency of the items. The Cronbach’s alpha coefficients are ranged from 0.959 to 0.990, which have fulfilled the criteria of 0.7, and confirm the internal consistency of the measurement items. The CR coefficients are sorted higher than 0.8 and show the difference between relatively strong indicators. With the above conclusions, it can be concluded that the reliability and validity of the research model are appropriate and allows for the evaluation of the structural model shown in Table 4-10, Table 4-11:

Table 4-10 Construct of factor Analysis and Reliability Analysis

Construct	No. of Items	Factor Loading	Cronbach's Alpha
e-Servicescape environment for tourism apps	11	.852-.882	.926
e-Word-of-Mouth Communication for Tourism Apps	7	.838-.892	.889
Perceived Usefulness	4	.919-.930	.952
Perceived Ease of Use	4	.913-.932	.952
Attitude towards Using Tourism Apps	4	.853-.903	.911
Intention to adopt Tourism Apps	3	.88-6.922	.896
Intention to Visit Tourism Destinations	3	.866-.914	.928

Table 4-11 Evaluation of the Measurement Model

Construct	AVE	CR	R^2
e-Servicescape Environment for tourism Apps	0.64	0.90	0.76
e-Word-of-Mouth Communication for Tourism Apps	0.72	0.91	0.66
Perceived Usefulness	0.64	0.88	0.75
Perceived Ease of Use	0.65	0.89	0.59
Attitude towards Using Tourism Apps	0.80	0.92	0.9
Intention to Adopt Tourism Apps	0.85	0.96	0.8
Intention to Visit Tourism Destinations	0.73	0.78	0.9

CR=Composite reliability AVE=average variance extracted; N/A=Not available

4.6.2 Evaluation of the Structural Model

Structural models with research hypotheses were tested using partial least squares (PLS) analysis and choose using SmartPLS 3.0 software and bootstrapping technique (Table 4-12). Using a sample of 630, a non-parametric bootstrapping procedure was used; with 5,000 additional samples being used to obtain meaningful statistics for hypothesis testing. The goodness-of-fit (GOF) index is used to measure all the matches overall

between the data and research models. The GoF of this research model is 0.91; it is considered as being large. The results confirm that the research model structure is consistent with high predictive power.

4.6.2.1 Relationship between dimensions of e-Servicescape Environment, e-Word-of-Mouth Communication, Perceived Usefulness, Perceived Ease of Use, Attitude towards Using Tourism Apps, Intention to adopt Tourism Apps and Intention to Visit Tourism Destinations

Hypothesis 1 was tested by examining the path coefficient between the e-servicescape environment for tourism apps and attitudes towards using tourism apps (β=0.0, t-value=1.1). The results showed that the e-servicescape environment for tourism apps did not necessarily have a positive attitude towards tourism app use. The meaning that even a quality e-servicescape environment did not necessarily result in a positive attitude towards the apps. For instance, maybe the app was loaded with so many quality features that it took extra time to load, thus resulting in both positive and negative attitudes.

- Hypothesis 1's result is not consistent with the findings of previous studies (Abarbanel, 2013; Van Haperen, 2012). Harris & Goode (2010) stated that factors important to the e-servicescape environment are environmental cues that indirectly affect clients. It refers to evidence related to customer perceptions, satisfaction, purchase intent, and trust. In this study, the e-servicescape environment dimension had a lower mean score (1.1) than did other dimensions. It can be assumed that the e-servicescape

environment has a variety of perceptions and visitors (consumers) from many different cultural backgrounds. That is perhaps the reason customers have different attitudes towards using mobile apps.

Hypothesis 2 was tested by examining the path coefficient between e-WOM for apps and attitude towards tourism app use (β=0.3, t-value=6.4). The results showed that eWOM communications for apps were likely to result in positive attitudes towards using tourism apps.

- Hypothesis 2's result is consistent with the findings of previous studies (Pan & Chiou, 2011; Cheung & Thadani, 2012; Doh & Hwang, 2009; Park & Kim, 2009). Nambisan (2002) stated that the influence of eWOM communication is particularly important; that customer reviews of products and services are numerous; that this affects attitudes towards potential customers; and that this brings value to companies and consumers.

Hypothesis 3 was tested by examining the path coefficient between attitudes towards tourism app use and the intention to adopt tourism apps (β=0.9, t-value=71.7). The results showed that attitudes towards using tourism apps were likely to result in positive intentions to adopt tourism apps.

- Hypothesis 3's result is consistent with the findings of previous studies (Smith et al., 2015; Kim et al., 2009; Lu & Ling, 2009). Shaikh and Karjaluoto (2015) showed that attitudes have a positive influence on consumers' intentions to continue using the service.

Hypothesis 4 was tested by examining the path coefficient between perceived ease of use and attitude towards using tourism apps (β=0.3, t-

value=9.0). The results showed that perceived ease of use will positively affect attitudes towards tourism app use.

- Hypothesis 4's result is consistent with the findings of previous studies (Celik et al., 2011); Smith & Raine et al., 2015). A study by Gefen et al. (2003) suggested that the perceived ease of use has a positive effect on continued use of some other form of technology in the current technology context.

Hypothesis 5 was tested by examining the path coefficient between perceived usefulness and attitude towards using tourism apps (β=0.4, t-value=26.3). The results showed that perceived usefulness will positively affect attitudes towards tourism app use.

- Hypothesis 5's result is consistent with the findings of previous studies (Roh, Seol, & Park, 2014; Tseng, Chang, & Chen, 2009). Shaikh and Karjaluoto (2015) showed that perceived usefulness has been identified as a positive correlation between attitudes and intentions. Therefore, perceived usefulness has a positively effects on the intentions to adopt using mobile internet and mobile devices. Mobile apps have highly useful properties will affect the attitudes of consumers and would stimulate demand for apps.

Hypothesis 6 was tested by examining the path coefficient between the intention to adopt tourism apps and the intention to visit tourism destinations (β=0.7, t-value=15.5). The results showed that intentions to adopt tourism apps will positively affect intentions to visit tourism destinations.

- Hypothesis 6's result is consistent with the findings of previous studies (Majchrzak et al., 2000; Im et al., 2011). Aboelmaged and

Gebba (2013) showed that TAM theory as a model to test the adoption intentions of mobile apps. This is a widely-used model used for addressing the intent to use technology personally.

Hypothesis 7 was tested by examining the path coefficient between the e-servicescape environment for tourism apps and intentions to visit tourism destinations (β=0.1 t-value=2.2). The results showed that the e-servicescape environment for tourism apps will positively affect intentions to visit tourism destinations.

- Hypothesis 7's result is consistent with the findings of previous studies (Tan & Wu, 2016; Li & Kulkarni et al., 2011). Kaplanidou and Vogt (2006) showed that the use of information technology to determine the destination has created positive attitudes among app users and that it can be an important factor in their making the intention in their arriving at the intention to visit tourism destinations.

Hypothesis 8 was tested by examining the path coefficient between eWOM communication for tourism apps and intentions to visit tourism destinations (β=0.2, t-value=6.3). The results showed that eWOM communication for tourism apps will positively affect intentions to visit tourism destinations.

- Hypothesis 8's result is consistent with the findings of previous studies (Nambisan, 2002; Cheung & Thadani, 2012). Wang et al. (2012) showed that eWOM communication is considered as being one of the traditional marketing tools that bring great business results; and eWOM communication affects tourism intentions to visit destinations.

Table 4-12 Results for the Hypothesized model using PLS

Hypotheses	Standardize Estimate	t -value	P -value	Result
H_1 e-Servicescapes for app - Attitude towards tourism app use	0.0	1.1	-	Not Supported
H_2. eWOM communication for an app - Attitude towards using tourism apps	0.3	6.4	***	Supported
H_3. Attitude towards using an app - Intention to adopt tourism apps	0.9	71.7	***	Supported
H_4. Perceived ease of use - Attitude towards	0.3	9.0	***	Supported
H_5. Perceived usefulness - Attitude towards tourism app use	0.4	26.3	***	Supported
H_6. Intention to adopt tourism apps- Intention to visit destinations	0.7	15.5	***	Supported
H_7. e-Servicescape environments for tourism apps - Intention to visit destinations	0.1	2.2	**	Supported
H_8. eWOM for tourism apps - Intention to visit destinations	0.2	6.3	***	Supported

*p < 0.10; **p < 0.05; *** p < 0.01

4.6.2.2 Moderating effect of Perceived Ease of Use and Perceived usefulness

Hypothesis 9 was tested by examining the path coefficient between perceived ease of use characteristics which moderate the effect of tourism apps on the e-servicescape environments for tourism apps and the attitude towards using tourism apps (β=0.1, t-value=2.4). The results showed that perceived ease of use characteristics are moderate and will positively affect/influence both the e-servicescape environments for tourism apps and attitudes towards tourism app use.

- Hypothesis 9's result is consistent with the findings of previous studies (Van Haperen, 2012; Harris & Goode, 2010). Hung et al. (2003) stated that the perceived ease of use of online apps create a positive impression with customers and has an influences positively on the attitudes towards using mobile apps. In the relationship between the e-servicescape environments for tourism apps and attitudes towards tourism app use, perceived ease of use plays an important role—and it is the link between the e-servicescape environment and attitudes towards tourism app use. The element of perceived ease of use in designing mobile apps will create positive attitudes; the perception of ease of use, actual ease of use, well-designed apps has an impact on travelers (people who have already visited similar destinations using the apps.

Hypothesis 10 was tested by examining the path coefficient between the moderating effect of perceived usefulness on the relationship of the e-servicescape environments for tourism apps and attitude towards tourism app use (β=-0.1, t-value=1.9). The results showed that perceived usefulness characteristics moderate but will not positively affect/influence both the relationship with the e-servicescape environments for tourism apps and attitudes towards using tourism apps.

- Harris & Goode (2010) stated that the aesthetics of the e-servicescape environment are very important and that traditional services must adapt to the surrounding environment and to the space/function of the virtual landscape. Although, according to Van Haperen (2012), "The initial impression can be influenced

by the design of the e-servicescape environment." Yet, in this study, perceived usefulness element does not have an impactful role on the relationship between the e-servicescape environments for tourism apps and attitudes towards using tourism apps.

Hypothesis 11 was tested by examining the path coefficient between the moderating effect of perceived usefulness on the relationship of eWOM communication for tourism apps and attitude towards tourism apps (β=0.1, t-value=2.8). Hypothesis 11's result showed that perceived usefulness characteristics moderate and will positively affect/influence both eWOM communication for tourism apps and attitudes towards tourism app use.

- Hypothesis 11's result is consistent with the findings of previous studies (Cheung R., 2014; Goyette et al., 2010). Coulter, Brengman, M., & Karimov (2012) stated that eWOM communication affects attitudes towards potential customers and that it gives the company and customers the best value (Nambisan, 2002). Therefore, in this study, perceived usefulness have a significant impact on the relationship between eWOM communication for tourism apps and attitudes towards using tourism apps. That is a reason why perceived usefulness will be a strong connection between the customer and the travel agency and will help tourists acquire positive attitudes help them develop positive attitudes to the service or to the travel agency through using tourism apps.

Table 4-13 Moderation tests using PLS.

Hypotheses	Standardize Estimate	t -value	p -value	Result
H_9 Perceived Ease of Use moderates the e-servicescape environment for tourism apps - Attitude towards tourism app use	0.1	2.4	***	Supported
$H_{10.}$ Perceived usefulness moderates the e-servicescape environment for tourism apps - Attitude towards tourism app use	-0.1	1.9	-	Not Supported
$H_{11.}$ Perceived usefulness moderates eWOM communication for tourism apps - Attitude towards tourism app use	0.1	2.8	***	Supported

*** p<0.001, ** p<0.01, * p<0.05.

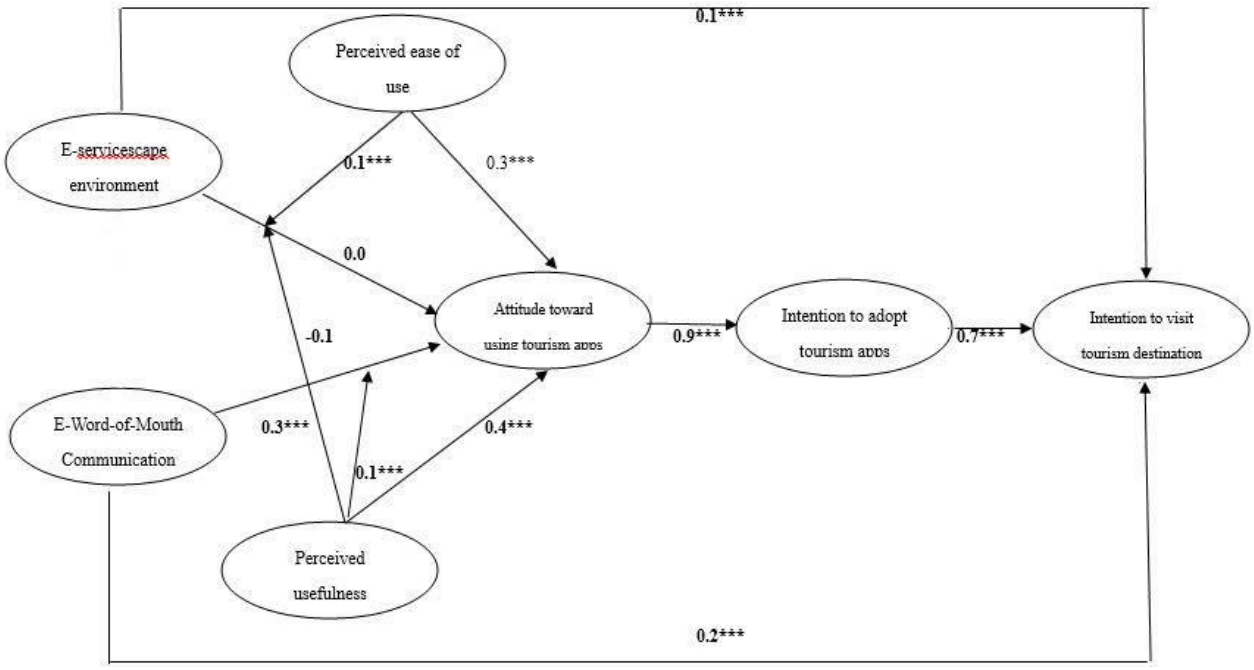

Figure 4-1 The Measurement Model of this research

CHAPTER FIVE
CONCLUSION

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 Findings

The study examines how consumers adopt mobile tourism apps and use tourism apps to orient customer intentions to visit tourism destinations. It also uses key factors such as perceived usefulness, perceived ease of use and attitudes towards using apps to clarify the extent to which the user is affected by apps. This study found that there are many factors that determine the impact of mobile users on tourism factors such as perceived usefulness, perceived ease of use, e-servicescape environment, and eWOM communication. This result is consistent with previous studies using TAM models (Hsu et al., 2011). Consumers accept mobile apps because they are more likely to accept apps if they are perceived as useful and easy to use. In this study, perceived usefulness and perceived ease of use had a positive effect on attitudes towards using tourism apps – and this is also the study's contribution. It reaffirms the positive relationship and impact between perceived usefulness and perceived ease of use. The study also evaluates the relationship between eWOM communication and the e-servicescape environment in their tourism products (such as apps) or tourism services, affecting attitudes towards using tourism apps. These are the two main factors

that directly affect consumer attitudes towards using tourism apps, with the peculiarity that mobile apps were made for smartphones. In addition to the necessary factors such as perceived usefulness and perceived ease of use, external factors – such as eWOM communication and the e-servicescape environment – also create attitudes that affect the use of apps for travel purposes. This is one of the factors that greatly affect the attitudes of consumers. The study also demonstrates that the impact of eWOM communication on tourism apps is strongly affected by attitudes towards using mobile tourism apps. Factors such as experience in the use of mobile apps, working in combination with elements of eWOM communication, are an issue that app providers and marketers should pay attention to in order to better understand the customer. In this study, however, the effect of the e-servicescape environment for tourism apps on the attitudes towards using tourism apps was not significant even at a low level of impact. Previous studies have shown that this is also an important factor in influencing attitudes towards using tourism products (such as apps) or tourism services (Hanafizadeh, Behboudi, Koshksaray, & Tabar, 2014). The main thing that can be concluded is that consumers still tend to choose mobile apps, even if those the e-servicescape environments of those apps are unattractive.

5.2 Implications

The research has discovered how eWOM communication, the e-servicescape environment affect attitude while using tourism apps, intention to adopt and intention to visit tourism destination in the relationship with perceived usefulness and perceived ease of use.

Theoretically, this study attempted an empirical explanation of intent to visit destinations with a TAM model using moderating factors such as not only perceived usefulness itself, but also perceived usefulness in the relationship with eWOM communication, the e-servicescape environment, and attitudes towards using tourism apps. Most significantly, the initial assumptions of this study support the important factors (eWOM communication, the e-servicescape environment) affecting attitudes towards using tourism apps. Huang et al. (2017) argue that the use of information technology makes the experience of travelers better. Factors like eWOM communication and e-servicescape are two important factors that are thought to have a great impact on customer behavior. This study considers the two factors in providing mobile apps in the field of tourism for clients. The research evaluates the impact of two factors – perceived ease of use and perceived usefulness – with regards to attitudes towards apps in the field of tourism. The impact of these factors on travelers intending to visit destinations is very important. Research indicates that perceived ease of use and perceived usefulness have a positive effect on behavioral patterns through the use of tourist apps. Besides, we also evaluate two factors – eWOM communication and the e-servicescape environment for tourism apps – that have a positive impact on intentions to visit tourism destinations. This research has shown that travelers are easily affected by mobile apps with eWOM communication elements and travelers highly rate apps which include such elements. Therefore, eWOM communication and the e-servicescape environment are two important factors that affect the attitudes and intentions to visit tourist destinations. These two factors have been clearly examined by TAM and are completely consistent with the original research model.

Practically, the study points out that eWOM communication and e-servicescape environmental factors are very important in influencing customer attitudes. Therefore, app providers need to have new effective marketing strategies such as controlling customer psychology or increasing positive feedback from users of the apps. Moreover, the customers will be influenced by factors such as eWOM communication, the e-servicescape environment, the perceived ease of use, and the perceived usefulness of mobile apps. Therefore, app providers need to understand the positive and negative effects of these factors in order to build and create the right apps. For these travel company, in building systems for customers, travel agencies should be aware that the customers may see the active app, the two factors of perceived ease of use and perceived usefulness both directly and indirectly affect the attitudes of app users. Moreover, some implications provide application designers with basic ideas for more effective applications designing in the future. The contribution of this study shows that an application needs to be built with an online feedback mechanism as strong support for more effective updates. Therefore, besides the implication of word-of-mouth, an application should display information attractively, and also display comparing information to help mobile users to make a decision easily.

5.3 Limitations and Suggestion for Future Research

The primary limitation of this study is that the developed scale should be checked against more diverse samples using tourism apps from different countries and regions. Future researchers need to check the scale in wider and comparatively more diverse contexts to identify the impacts of perception and behaviors regarding tourism apps' consumption value on customers who use

the apps. The study examined the role of perceived ease of use and the perception of perceived usefulness as background in moderating the relationships between attitudes, using tourism apps constructs and the identified constructs.

Future research needs to determine how perceived ease of use and perceived usefulness affect the relationship between tourism apps and intention to adopt apps and other constructs. The study focused on how customers adopt mobile apps in destination selection – but did so without considering the factors involved in their use of mobile apps and their motivations for travel. Future studies need to find out more about the satisfaction of mobile apps users both before and after usage and the experience-sharing factor in other fields such as food and beverage, sport, technology, and business. Finally, future research should do so by testing a variety of apps and expanding the demographics model in theory and practice to see whether targeting this demographic would result in an increase in higher-priced sales.

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APPENDICES

SURVEY QUESTIONNAIRE

Dear Respondents:

This academic questionnaire is to investigate the factors affecting customer's adoption of Mobile tourism applications. This study proposes a theoretical framework integrating mobile application adoption which use mainly based on Technology Acceptance Model (TAM). This study also analyzes the interaction effects of E-servicescape environment and Word-of-mouth communication 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.

Research Investigator

Tung-Sheng Kuo, Associate Professor, Department of Business Administration, Nanhua University

- Email:

- Mailing address: No. 55, Sec. 1, Nanhua Rd., Dalin Township, Chiayi County 62249, Taiwan.

Research Investigator

Kuo- Chung Huang, Professor, Department of Business Administration, Nanhua University

Email:

- Mailing address: No. 55, Sec. 1, Nanhua Rd., Dalin Township, Chiayi County 62249, Taiwan

Research Assistant

Nguyen Phuc Hung (阮福雄)

Ph.D Student

Department of Business Administration

Nanhua University

Email:

Section 1. Electronic Word of Mouth Communication

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

Section 2. e-Servicescapes Environment

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

Section 3. Perceived Usefulness

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

Section 4. Perceived Ease of Use

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

Section 5. Attitude Toward Using Tourism Apps

Please take a short look on the questions below related to Destination brand equity, and then **CIRCLE** the level of agreement on each of the items below based on your opinion.	**Levels of Agreement**						
	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	<———————>						
Attitude Toward Using Tourism Apps							
1. Mobile tourism application development will support travelers							
2. I will use these kind of tourism application in the future							
3. I am not satisfied without using tourism application when creating travel plan							
4. Overall, my attitude towards using this kind of tourism application is positive							

Section 6. Intention to Adopt Tourism Apps

Please take a short look on the questions below related to Destination brand equity, and then **CIRCLE** the level of agreement on each of the items below based on your opinion.	**Levels of Agreement**						
	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	<———————>						
Intention to adopt tourism apps							
1. I decide to use this kind of tourism application for the next travel							
2. I will use tourism application to make travel plan							
3. I will use tourism application when travelling							

Section 7. Intention to Visit Tourism Destination

Please take a short look on the questions below related to Destination brand equity, and then **CIRCLE** the level of agreement on each of the items below based on your opinion.	**Levels of Agreement**						
	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
	<———————>						
Intention to visit tourism destination							
1. After using tourism application, my travel intention is clearer							
2. Tourism destinations suggested by travel applications are usually my first choice when I plan on travelling							
3. I predict I will travel more with this tourism application							

Section 8. 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. How many times have you visited Vietnam?

(1). 1 time

(2). 2 times

(3). 3 ~ 5 times

(4). Above 5 times

2. How many days did you spend on sightseeing in Vietnam?

(1). Under 3days

(2). 3~7 days

(3). 8~14 days

(4). 15~ 30 days.

(5). Over one month

3. Who travels with you?

(1). Alone

(2). Spouse/Girlfriend/Boyfriend

(3). Friends / Co-workers/ Classmates

(4). Family or relatives

(5). Group tour

4. Main purpose(s)

(1). food & cuisine	(2). Religion	(3). Visit friend/ family
(4). Shopping		
(5). Sightseeing	(6). Conference	(7). Night life
(8) Visit historic relics	(9). Cultural experience	(10). Others

5. Gender

(1). Male

(2). Female

6. Age

(1). <20	(2). 20-30	(3). 31-40	(4). 41-50
(5). 51-60	(6). >61		

7. Marital status

(1). Single

(2). Married/partner

(3). Divorced/separated/widowed

8. Education

(1). Junior high school

(2). Senior high school

(3). University

(4.) Graduate school